EVALUATING COMPETENCE, PERFORMANCE AND PERCEPTIONS:  
A MULTI-METHOD LONGITUDINAL STUDY 
IN COMMUNITY PHARMACY PRACTICE

Thesis submitted in accordance with the requirements of the 
University of London for the Degree of Doctor of Philosophy by

Raisa Aurora Laaksonen

School of Pharmacy, University of London
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Plagiarism Statement

This thesis describes research conducted in the School of Pharmacy, University of London between January 2002 and October 2005 under the supervision of Doctor Catherine Duggan and Professor Ian Bates. I certify that the research described is original and that any parts of the work that have been conducted by collaboration are clearly indicated. I also certify that I have written all the text herein and have clearly indicated by suitable citation any part of this dissertation that has already appeared in publications.

Raisa Aurora Laaksonen 19/10/2005
Abstract

The expertise community pharmacists need to attain and maintain has extended towards more patient oriented clinical competencies, with a shift from dispensing medicines to provision of services such as smoking cessation and reviews of patients’ medication. What’s more, pharmacists are expected to demonstrate competence through learning, training, improving practice, in short, by engaging in continuing professional development. This multi-method study aimed to evaluate the influence of participating in clinical training and reviewing the medicines of elderly patients on the performance of community pharmacists and their perceptions of their professional competence and satisfactions in four London Primary Care Trusts between 2002 and 2004.

A longitudinal study of community pharmacists’ performance in providing clinical medication reviews showed that the better their training performance the more favourable their performance in providing medication reviews. However, trained pharmacists providing these medication reviews did not perceive themselves to be more competent in patient care than pharmacists who had not participated in the training, suggesting a difficulty when self-assessing competence which requires confidence and personal insight. Additionally, pharmacists who performed better at providing medication reviews assessed themselves to be less competent. These findings indicate that the more competent pharmacists had become, the more they were able to identify the skills or knowledge they lacked. Such a mismatch between performance and competence may result in not attaining or maintaining competence and subsequent deterioration of patient care. This emphasises the need for feedback on performance so that these assessments reflect competence appropriately.

A longitudinal postal survey found that many community pharmacists were not satisfied with their jobs or careers before completing their training and having started providing medication reviews. This highlights challenges for recruiting and retaining workforce in community pharmacy. In-depth interviews revealed hope that new roles would increase professional satisfactions. There was a trend of increasing job and career satisfactions in the intervention group during the study, while the satisfactions remained unchanged in the non-intervention group; having a more clinical role enhances professional satisfactions. The non-intervention group perceived no change in their role over time; the intervention group associated increased satisfactions with providing medication reviews, other local initiatives and national policies.
## Contents

List of Tables......................................................................................................................15
List of Figures......................................................................................................................18
Abbreviations....................................................................................................................21
Acknowledgements..........................................................................................................22
Preface..............................................................................................................................23

Chapter 1  INTRODUCTION........................................................................................26
  1.1 INTRODUCTION.....................................................................................................27
  1.2 PROFESSIONAL COMPETENCE................................................................................28
    1.2.1 Defining Competence.............................................................................................28
    1.2.2 Competence in Healthcare......................................................................................30
    1.2.3 Changing Role of Pharmacists....................................................................................31
      1.2.3.1 Competencies of Pharmacists.............................................................................32
    1.2.4 Assessing Competence and Performance.................................................................34
    1.2.5 Attaining and Maintaining Competence....................................................................36
      1.2.5.1 Factors Influencing Competence and Performance.................................................38
  1.3 CONTINUING PROFESSIONAL DEVELOPMENT..........................................................39
    1.3.1 Defining Lifelong Learning and Continuing Professional Development....................39
    1.3.2 Continuing Professional Development in Healthcare...................................................39
      1.3.2.1 Continuing Professional Development in Pharmacy.............................................41
    1.3.3 Learning Approaches and Styles..............................................................................43
    1.3.4 Participation in Learning Activities..............................................................................44
      1.3.4.1 Participation in Different Types of Learning Activities..........................................45
      1.3.4.2 Motivation for Participation in Learning Activities...............................................45
      1.3.4.3 Perceived Barriers to Participation in Learning Activities......................................46
      1.3.4.4 Characteristics of Participants in Learning Activities.............................................48
    1.3.5 Effect of Participation in Learning Activities..............................................................49
  1.4 JOB AND CAREER SATISFACTION............................................................................51
    1.4.1 Approaches to Job Satisfaction.................................................................................51
    1.4.2 Job Satisfaction in Healthcare......................................................................................52
### Contents

1.4.2.1 **Job Satisfaction in Pharmacy** ................................................................. 53
1.4.3 **Assessing Job and Career Satisfactions** .................................................. 54
  1.4.3.1 **Assessing Job and Career Satisfactions with Individual Statements** ....... 55
  1.4.3.2 **Assessing Job and Career Satisfactions with Scales** .............................. 55
1.4.4 **Factors Influencing Job and Career Satisfactions** ..................................... 57
  1.4.4.1 **Characteristics Influencing Job and Career Satisfactions** ...................... 57
  1.4.4.2 **Sources of Satisfaction and Causes of Dissatisfaction** ......................... 58
1.4.5 **Effects of Job and Career Satisfactions** .................................................... 60

**Chapter 2** **AIMS OF THE RESEARCH** ................................................................. 62

  2.1 **BACKGROUND TO DEVELOPMENT OF RESEARCH QUESTIONS** .......... 63
  2.2 **THE PRINCIPAL RESEARCH QUESTIONS** ................................................. 63
  2.3 **OPERATIONALISATION OF THE PRINCIPAL RESEARCH QUESTIONS** ....... 64
  2.3.1 **Aims** ........................................................................................................ 64
  2.3.2 **Objectives** ............................................................................................... 64

**Chapter 3** **MATERIALS AND METHODS** ............................................................ 66

  3.1 **INTRODUCTION** ............................................................................................ 67
  3.2 **RESEARCH FRAMEWORK** .......................................................................... 67
  3.3 **RESEARCH DESIGN** ..................................................................................... 68
  3.3.1 **Quantitative Studies** ................................................................................. 68
    3.3.1.1 **Descriptive Surveys** ......................................................................... 68
    3.3.1.2 **Experimental Trials** ......................................................................... 69
  3.3.2 **Qualitative Studies** ................................................................................... 70
  3.4 **SAMPLE SELECTION** .................................................................................. 72
    3.4.1 **Sampling in Quantitative Studies** ......................................................... 72
    3.4.2 **Sampling in Qualitative Studies** ............................................................. 73
    3.4.3 **Sampling in Longitudinal Studies** .......................................................... 74
  3.5 **DATA COLLECTION** .................................................................................... 74
    3.5.1 **Collecting Quantitative Data** ................................................................. 74
    3.5.2 **Collecting Qualitative Data** .................................................................. 75
  3.6 **PROCESSING AND ANALYSING DATA** ..................................................... 76
## Contents

4.1.1 Aims ......................................................................................................................97  
4.1.2 Objectives .............................................................................................................97  

4.2 METHODS ..........................................................................................................................98  
4.2.1 Study Design...........................................................................................................98  
4.2.2 Clinical Training for the Pharmacists in the Intervention Group.....................................99  
4.2.2.1 Data Collection, Handling and Analysis. ............................................................99  
4.2.3 Professional Perceptions Survey .............................................................................100  
4.2.3.1 Developing the Questionnaire. ........................................................................100  
4.2.3.2 Piloting the Questionnaire. ............................................................................101  
4.2.3.3 Administering the Questionnaire. .................................................................102  
4.2.3.4 Data Handling and Analysis. ...........................................................................102  
4.2.4 In-Depth Interviews ...............................................................................................102  
4.2.4.1 Developing the Interview Guide. .....................................................................102  
4.2.4.2 Developing the Interview Schedule. ...............................................................103  
4.2.4.3 Interviews. ......................................................................................................103  
4.2.4.4 Data Handling and Analytical Procedures. ....................................................104  

4.3 CLINICAL TRAINING: RESULTS AND ANALYSIS ........................................................106  
4.3.1 Sample .................................................................................................................106  
4.3.2 Clinical Training Performance...................................................................................106  
4.3.2.2 Clinical Training Analysis. .............................................................................107  

4.4 SURVEY OF PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS ..................109  
4.4.1 Sample ................................................................................................................109  
4.4.1.1 Non-respondents ...........................................................................................109  
4.4.2 Demographics ......................................................................................................109  
4.4.3 Exploring Demographics ......................................................................................110  
4.4.4 Responses to the Survey Items ...............................................................................112  
4.4.4.1 Handling Missing Values ..............................................................................113  
4.4.5 Internal Reliability of the Factors ...........................................................................114  
4.4.6 Scores of the Factors .............................................................................................115  
4.4.7 Exploring the Factors ............................................................................................116  
4.4.7.1 Analysing Job Satisfaction ............................................................................116  
4.4.7.2 Analysing Career Satisfaction .......................................................................117
Chapter 5 PHASE TWO: EXPLORING PROFESSIONAL PERFORMANCE, PERCEPTIONS AND SATISFACTIONS

5.1 INTRODUCTION ............................................................................................................... 182
5.1.1 Aims .................................................................................................................................. 182
5.1.2 Objectives ......................................................................................................................... 182
5.2 METHODS ............................................................................................................................. 183
5.2.1 Study Design ..................................................................................................................... 183
5.2.2 Medication Review Performance ...................................................................................... 184
5.2.2.1 Assessing the Medication Review Performance .......................................................... 184
5.2.2.2 Data Collection, Handling and Analysis ....................................................................... 186
5.2.3 Professional Perceptions Survey ....................................................................................... 186
5.2.3.1 Administering the Questionnaire .................................................................................. 186
5.2.3.2 Data Handling and Analysis .......................................................................................... 187
5.2.4 Continuing Professional Development Diaries ................................................................. 187
5.2.4.1 Designing the Diary ....................................................................................................... 187
5.2.4.2 Administering the Diaries ............................................................................................ 188
5.2.4.3 Diary Collection and Analysis ....................................................................................... 188
5.3 ASSESSMENT OF PERFORMANCE: RESULTS AND ANALYSIS ........................................ 189
5.3.1 Sample .............................................................................................................................. 189
5.3.1.1 Community Pharmacists ........................................................................................... 189
5.3.1.2 General Practitioners, Surgeries and Patients ............................................................... 189
5.3.2 Analysing Patient Referrals .............................................................................................. 190
5.3.2.1 Analysing Identification of Drug Related Problems .................................................... 190
5.3.2.2 Analysing Suggested Actions to Solve Drug Related Problems ................................ 192
5.3.3 Comparing Training and Medication Review Performances ........................................... 194
5.4 SURVEY OF PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS .................... 199
5.4.1 Sample .............................................................................................................................. 199
5.4.1.1 Non-respondents ......................................................................................................... 199
5.4.2 Demographics .................................................................................................................. 199
5.4.3 Exploring Demographics .................................................................................................. 200
5.4.3.1 Comparing Demographics at Phases One and Two .................................................... 201
5.4.4 Responses to the Survey Items .......................................................................................... 201
### Contents

5.4.4.1 Handling Missing Values ................................................................. 203
5.4.5 Internal Reliability of the Factors ......................................................... 203
5.4.6 Scores of the Factors ........................................................................... 204
5.4.7 Exploring the Factors ........................................................................... 204
5.4.7.1 Analysing Job Satisfaction ................................................................. 204
5.4.7.2 Analysing Career Satisfaction ............................................................ 205
5.4.7.3 Analysing Satisfaction with Duties ..................................................... 205
5.4.7.4 Analysing Degree of Autonomy at Job ............................................... 205
5.4.7.5 Relationships between Factor Scores ............................................... 205
5.4.8 Comparing Factor Scores at Phases One and Two ............................... 206
5.4.9 Responses to the Personal Development and Perceived Appreciation Items ......................................................... 207
5.4.10 Exploring the Personal Development and Perceived Appreciation Items ................................................................. 207
5.4.10.1 Analysing Opportunities for Training and Education ....................... 207
5.4.10.2 Analysing Personal Planning of Training and Education ................... 208
5.4.10.3 Analysing Perceived Appreciation by Patients ................................. 208
5.4.10.4 Comparing Responses to the Personal Development and Perceived Appreciation Items at Phase One and Two ......................................................... 210
5.5 RECORDING CONTINUING PROFESSIONAL DEVELOPMENT: RESULTS ........................................ 211
5.5.1 Sample .................................................................................................... 211
5.5.2 Exploring Recording of Continuing Professional Development .............. 211
5.6 EVALUATING INFLUENCES BETWEEN PERFORMANCE AND A SERVICE DEVELOPMENT, AND PERCEPTIONS AND SATISFACTIONS ........................................ 212
5.7 DISCUSSION OF INFLUENCES BETWEEN PERFORMANCE IN MEDICATION REVIEWS AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS ........................................ 214

Chapter 6 PHASE THREE: EXPLORING SELF-ASSESSED COMPETENCE AND CHANGES IN PROFESSIONAL PERCEPTIONS AND SATISFACTIONS ........................................ 216

6.1 INTRODUCTION ............................................................................................ 217
6.1.1 Aims ......................................................................................................... 217
6.1.2 Objectives ................................................................................................. 217
6.2 METHODS .................................................................................................... 218
## Contents

6.2.1 Study Design........................................................................................................218
6.2.2 Self-Assessed Competence Survey........................................................................219
6.2.2.1 Designing the Questionnaire...........................................................................219
6.2.2.2 Administering the Questionnaire....................................................................220
6.2.2.3 Data Handling and Analysis.............................................................................220
6.2.3 Professional Perceptions Survey............................................................................220
6.2.3.1 Administering the Questionnaire, Data Handling and Analysis.......................221
6.2.4 In-Depth Interviews.............................................................................................221
6.2.4.1 Reviewing the Interview Guide........................................................................221
6.2.4.2 Interviews......................................................................................................222
6.2.4.3 Data Handling and Analytical Procedures.......................................................222
6.3 Survey of Self-Assessed Competence: Results and Analysis.................................224
6.3.1 Sample.................................................................................................................224
6.3.1.1 Non-respondents............................................................................................224
6.3.2 Demographics.....................................................................................................224
6.3.3 Exploring Demographics....................................................................................227
6.3.4 Scores of the Competency Clusters......................................................................230
6.3.5 Exploring the Competency Clusters....................................................................231
6.3.5.1 Analysing Delivery of Patient Care Competencies..........................................233
6.3.5.2 Analysing Personal Competencies...................................................................234
6.3.5.3 Analysing Problem Solving Competencies......................................................235
6.3.5.4 Analysing Management and Organisation Competencies...............................235
6.3.6 Comparing Training and Medication Review Performances with Self-Assessed Competence.......................................................................................................236
6.4 Survey of Professional Perceptions: Results and Analysis....................................240
6.4.1 Sample.................................................................................................................240
6.4.1.1 Non-respondents............................................................................................240
6.4.2 Demographics.....................................................................................................240
6.4.3 Exploring Demographics....................................................................................241
6.4.3.1 Comparing Demographics at Phases One, Two and Three..............................242
6.4.4 Responses to the Survey Items............................................................................243
6.4.4.1 Handling Missing Values................................................................................244
6.4.5 Internal Reliability of the Factors ................................................................. 245
6.4.6 Scores of the Factors .................................................................................... 245
6.4.7 Exploring the Factors .................................................................................... 246
6.4.7.1 Analysing Job Satisfaction ...................................................................... 246
6.4.7.2 Analysing Career Satisfaction ............................................................... 247
6.4.7.3 Analysing Satisfaction with Duties ......................................................... 248
6.4.7.4 Analysing Degree of Autonomy at Job .................................................. 248
6.4.7.5 Relationships between Factor Scores ...................................................... 248
6.4.8 Comparing Factor Scores at Phases One, Two and Three ........................... 249
6.4.8.1 Analysing Job Satisfaction over Time ..................................................... 250
6.4.8.2 Analysing Career Satisfaction over Time .............................................. 253
6.4.8.3 Analysing Satisfaction with Duties over Time ...................................... 255
6.4.8.4 Analysing Degree of Autonomy at Job over Time ................................. 257
6.4.9 Responses to the Personal Development and Perceived Appreciation Items .. 259
6.4.10 Exploring the Personal Development and Perceived Appreciation Items ...... 259
6.4.10.1 Analysing Opportunities for Training and Education ............................ 259
6.4.10.2 Analysing Personal Planning of Training and Education ...................... 260
6.4.10.3 Analysing Perceived Appreciation by Patients ..................................... 261
6.4.10.4 Comparing Responses to the Personal Development and Perceived Appreciation Items at Phases One, Two and Three .............................. 262

6.5 INTERVIEWS ON PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS....... 264
6.5.1 Sample ......................................................................................................... 264
6.5.2 Demographics .............................................................................................. 264
6.5.3 Exploring Changes in Perceptions of Continuing Professional Development .... 265
6.5.3.1 Meaning of Continuing Professional Development ................................. 265
6.5.3.2 Assessment of Learning ......................................................................... 266
6.5.3.3 Choosing Learning Activity ..................................................................... 268
6.5.3.4 Learning Needs and Development ......................................................... 270
6.5.3.5 Responsibility for Continuing Professional Development ...................... 270
6.5.3.6 Evaluating Learning ................................................................................ 272
6.5.3.7 Overcoming Perceived Barriers to Participation in Continuing Professional Development .............................................................................................. 274
6.5.3.8 Current Level of Participation in Learning Activities................................. 276
6.5.3.9 Perceptions of Need for Mandatory Continuing Professional Development...276
6.5.4 Exploring Changes in Perceptions of Professional Satisfactions...........................277
6.5.4.1 Perceived Changes in the Level of Satisfaction.............................................. 278
6.5.4.2 Changes in Sources of Satisfaction and Causes of Dissatisfaction and Suggested Improvements..............................................................................................................283
6.5.5 Exploring Perceptions of Medication Review Service........................................ 289
6.5.5.1 Influences on Perceptions and Methodological Difficulties..............................289
6.5.5.2 Training for the Medication Review Service................................................... 292
6.5.5.3 Providing the Medication Review Service....................................................... 295
6.5.5.4 Medication Review Service in the Future....................................................... 297
6.6 EVALUATING INFLUENCES BETWEEN SELF-ASSESSED COMPETENCE AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS................. 302
6.7 DISCUSSION OF INFLUENCES BETWEEN SELF-ASSESSED COMPETENCE AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS................. 308

Chapter 7 DISCUSSING PROFESSIONAL PERFORMANCE, COMPETENCE, PERCEPTIONS AND SATISFACTIONS.......................................................................................310
7.1 INTRODUCTION........................................................................................................... 311
7.1.1 Limitations........................................................................................................... 311
7.1.2 Methodological Difficulties.................................................................................. 312
7.2 DISCUSSION............................................................................................................... 315
7.3 CONCLUSIONS.......................................................................................................... 322

References...........................................................................................................................................393

Appendices...............................................................................................................................................i
Appendix 1 Summary of the Medicines Management protocol.............................................ii
Appendix 2 Map of the north east sector of the Strategic Health Authority in London............iv
Appendix 3 Ethical approval..............................................................................................................v
Appendix 4 Professional perceptions and satisfactions questionnaire: phases one, two and three....................................................................................................................vi
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 5</td>
<td>Professional perceptions and satisfactions interview guides and schedules: phase one</td>
<td>vii</td>
</tr>
<tr>
<td>Appendix 6</td>
<td>Context of professional perceptions and satisfactions questions in the interview guides and schedules</td>
<td>xii</td>
</tr>
<tr>
<td>Appendix 7</td>
<td>Medication review performance assessment form</td>
<td>xvii</td>
</tr>
<tr>
<td>Appendix 8</td>
<td>Diaries for recording of continuing professional development: phases one and two</td>
<td>xix</td>
</tr>
<tr>
<td>Appendix 9</td>
<td>Self-assessed competence questionnaire</td>
<td>xxi</td>
</tr>
<tr>
<td>Appendix 10</td>
<td>Professional perceptions and satisfactions interview schedule: phase three</td>
<td>xxxviii</td>
</tr>
</tbody>
</table>
List of Tables

Chapter 4

Table 4.1. Selection of items and factors on professional satisfactions and perceptions..............101
Table 4.2. Results of the training modules.............................................................................................106
Table 4.3. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase one..............................................................110
Table 4.4. Distribution of responses to professional perceptions and satisfactions items at phase one..................................................................................................................113
Table 4.5. Internal reliability of factors at phase one............................................................................115
Table 4.6. The factor scores at phase one...............................................................................................115
Table 4.7. Exploration of 'job satisfaction': one-way ANOVA test at phase one.................................117
Table 4.8. Exploration of 'job satisfaction': t-test at phase one............................................................117
Table 4.9. Exploration of 'satisfaction with duties': t-test at phase one................................................118
Table 4.10. Pearson's correlation coefficients between the satisfaction scales at phase one.............119
Table 4.11. Exploration of item C70: Mann-Whitney U test at phase one..........................................121
Table 4.12. Exploration of items E39, E40 and E43: Mann-Whitney U test at phase one....................123
Table 4.13. Pharmacists' perceptions of assessment of CPD.................................................................128
Table 4.14. Pharmacists' perceptions on learning activities.................................................................131
Table 4.15. Pharmacists' perceptions on responsibility for CPD..........................................................136
Table 4.16. Pharmacists' perceptions of motivational factors that influence their participation in CPD........................................................................................................................................140
Table 4.17. Pharmacists' perceptions of barriers to their participation in CPD....................................147
Table 4.18. Pharmacists' expressed participation in learning activities..............................................154
Table 4.19. Pharmacists' feelings towards introduction of mandatory CPD......................................156
Table 4.20. Pharmacists' expressed satisfaction or dissatisfaction with work....................................159
Table 4.21. Pharmacists' perceptions of sources of satisfaction at work............................................161
Table 4.22. Pharmacists' perceptions of causes of dissatisfaction at work........................................165
Table 4.23. Influences between training performance and job satisfaction........................................172
Table 4.24. Influences between training performance and career satisfaction....................................173
Table 4.25. Influences between training performance and perceptions of professional development......................................................................................................................174
Table 4.26. Influences between training performance and perceptions of identifying learning needs...............................................................................................................................175
Table 4.27. Influences between participation in a service development and job satisfaction.............176
Table 4.28. Influences between participation in a service development and career satisfaction...........176
List of Tables

Table 4.29. Influences between participation in a service development and being encouraged to develop.................................................................177
Table 4.30. Influences between participation in a service development and perceived need to develop.................................................................................................177
Table 4.31. Influences between participation in a service development and perceptions of identifying learning needs...............................................................178

Chapter 5
Table 5.1. Identified drug related problems.................................................................................................................................191
Table 5.2. Suggested actions to solve drug related problems...........................................................................................................193
Table 5.3. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase two.................................................................200
Table 5.4. Distribution of responses to professional perceptions and satisfactions items at phase two.................................................................................................202
Table 5.5. Internal reliability of factors at phase two.........................................................................................................................203
Table 5.6. The factor scores at phase two........................................................................................................................................204
Table 5.7. Pearson's correlation coefficients between the factors at phase two.......................................................................................206
Table 5.8. Exploration of item C70: Mann-Whitney U test at phase two.........................................................................................207
Table 5.9. Exploration of item D75: Mann-Whitney U test at phase two.........................................................................................208
Table 5.10. Exploration of items E39 and E40: Mann-Whitney U test at phase two................................................................................209

Chapter 6
Table 6.1. Demographics of the pharmacists in the self-assessed competence survey at phase three.................................................................................................225
Table 6.2. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase three.................................................................241
Table 6.3. Distribution of responses to professional perceptions and satisfactions items at phase three.................................................................................................244
Table 6.4. Internal reliability of factors at phase three.........................................................................................................................245
Table 6.5. The factor scores at phase three........................................................................................................................................246
Table 6.6. Exploration of 'job satisfaction': t-test at phase three...........................................................................................................247
Table 6.7. Exploration of 'career satisfaction': t-test at phase three...........................................................................................................247
Table 6.8. Pearson's correlation coefficients between the factors at phase three................................................................................249
Table 6.9. Mauchly's test of sphericity for measurements of 'job satisfaction' (JS) over time........................................................251
Table 6.10. Tests (Greenhouse-Geisser) of within subjects effects for 'job satisfaction' (JS) over time.................................................................................................252
List of Tables

Table 6.11. Test of between-subjects effects for 'job satisfaction' over time .................................................. 252
Table 6.12. Exploration of item C70: Mann-Whitney U test at phase three .................................................. 260
Table 6.13. Exploration of item D75: Mann-Whitney U test at phase three .................................................. 261
Table 6.14. Exploration of items E39 and E43: Mann-Whitney U test at phase three ................................. 262
Table 6.15. Perceived changes in satisfaction with work .............................................................................. 279
Table 6.16. Perceptions of problems within the Medicines Management project ........................................ 290
Table 6.17. Perceptions of the clinical training ......................................................................................... 292
Table 6.18. Influences between self-assessed competence and job satisfaction ........................................ 302
Table 6.19. Influences between self-assessed competence and career satisfaction ................................. 303
Table 6.20. Influences between self-assessed competence and perceptions professional development ........................................................................................................... 304
Table 6.21. Influences between self-assessed competence and perceptions of evaluating learning ........................................................................................................................................... 304
Table 6.22. Influences between participation in a service development and job satisfaction .................. 305
Table 6.23. Influences between participation in a service development and career satisfaction .................. 305
Table 6.24. Influences between participation in a service development and being encouraged to develop ............................................................................................................................. 306
Table 6.25. Influences between participation in a service development and perceptions of evaluating learning .......................................................................................................................... 307
## List of Figures

### Chapter 1

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>ACPD cycle (Department of Health, 2004b)</td>
</tr>
<tr>
<td>1.2</td>
<td>ACPD cycle (RPSGB, 2004b)</td>
</tr>
<tr>
<td>1.3</td>
<td>Relationships between competence, professional perceptions and satisfactions and extending role of community pharmacists</td>
</tr>
</tbody>
</table>

### Chapter 3

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Flowchart showing the design and the timeline of the project</td>
</tr>
<tr>
<td>3.2</td>
<td>Flowchart showing the process of GP surgery recruitment</td>
</tr>
</tbody>
</table>

### Chapter 4

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Flowchart showing the timeline of the project: phase one is in bold</td>
</tr>
<tr>
<td>4.2</td>
<td>Flowchart showing the timeline of evaluation of performance and competence: phase one is in bold</td>
</tr>
<tr>
<td>4.3</td>
<td>Flowchart showing the timeline of the professional perceptions and satisfactions surveys: phase one is in bold</td>
</tr>
<tr>
<td>4.4</td>
<td>Flowchart showing the timeline of the qualitative research on professional perceptions and satisfactions: interviews at phase one are in bold</td>
</tr>
<tr>
<td>4.5</td>
<td>Flowchart of the processes involved in analysing the interviews at phase one</td>
</tr>
<tr>
<td>4.6</td>
<td>Quantifications of the clinical training results</td>
</tr>
<tr>
<td>4.7</td>
<td>Scatterplot of the relationship between time since graduation and length of tenure</td>
</tr>
<tr>
<td>4.8</td>
<td>The analysis strategy for exploring emergent themes of pharmacists’ perceptions of CPD</td>
</tr>
<tr>
<td>4.9</td>
<td>Pharmacists’ perceptions of the CPD cycle: achieving competence</td>
</tr>
<tr>
<td>4.10</td>
<td>Pharmacists’ perceptions of the CPD cycle: learning and achieving competence</td>
</tr>
<tr>
<td>4.11</td>
<td>Pharmacists’ perceptions of the CPD cycle: assessing learning needs, learning and achieving competence</td>
</tr>
<tr>
<td>4.12</td>
<td>Pharmacists’ perceptions of the CPD cycle: planning learning, assessing learning needs, learning and achieving competence</td>
</tr>
<tr>
<td>4.13</td>
<td>Pharmacists’ perceptions of the CPD cycle: evaluating learning in the complete cycle</td>
</tr>
<tr>
<td>4.14</td>
<td>The analysis strategy for exploring the emergent themes of professional satisfactions</td>
</tr>
</tbody>
</table>
### List of Figures

#### Chapter 5

| Figure 5.1 | Flowchart showing the time line of the project: the phase two is in bold | 183 |
| Figure 5.2 | Flowchart showing the time line of evaluation of performance and competence: phase two is in bold | 184 |
| Figure 5.3 | Flowchart showing the time line of the professional perceptions and satisfactions surveys: the phase two is in bold | 186 |
| Figure 5.4 | Flowchart showing the time line of the qualitative research on professional perceptions and satisfactions: CPD diaries at phase two are in bold | 187 |
| Figure 5.5 | Scatterplot of percentages of identified DRPs and beneficial actions suggested to solve them | 195 |
| Figure 5.6 | Boxplot showing outliers and an extreme value in number of reviews conducted | 195 |
| Figure 5.7 | Boxplot showing outliers in number of referrals written | 195 |
| Figure 5.8 | Scatterplot of percentages of pharmaceutical care planning results and 'identified DRPs' | 196 |
| Figure 5.9 | Scatterplot of percentages of pharmaceutical care planning results and 'beneficial actions suggested to solve DRPs' | 196 |
| Figure 5.10 | Scatterplot of community pharmacists and standardised DfBetas for pharmaceutical care planning result and 'identified DRPs' | 197 |
| Figure 5.11 | Scatterplot of community pharmacists and standardised DfBetas for pharmaceutical care planning result and 'actions suggested to solve DRPs' | 197 |
| Figure 5.12 | Scatterplot of percentages of pharmaceutical care planning results and 'identified DRPs' after removing influential cases | 197 |
| Figure 5.13 | Scatterplot of percentages of pharmaceutical care planning results and 'actions suggested to solve DRPs' after removing influential cases | 197 |

#### Chapter 6

| Figure 6.1 | Flowchart showing the time line of the project: the phase three is in bold | 218 |
| Figure 6.2 | Flowchart showing the time line of evaluation of performance and competence: phase three is in bold | 219 |
| Figure 6.3 | Flowchart showing the time line of the professional perceptions and satisfactions surveys: the phase three is in bold | 220 |
| Figure 6.4 | Flowchart showing the time line of the qualitative research on professional perceptions and satisfactions: interviews at phase three are in bold | 221 |
| Figure 6.5 | Flowchart of the processes involved in analysing the interviews at phase three | 222 |
| Figure 6.6 | Mean competency cluster scores in the intervention and non-intervention groups | 231 |
List of Figures

Figure 6.7. Mean competency scores within ‘delivery of patient care’ cluster in the intervention and non-intervention groups.................................................................................................................................................................233
Figure 6.8. Scatterplot of percentages of ‘identified DRPs’ and ‘delivery of patient care’ scores .................................................................................................................................................................................................................................237
Figure 6.9. Scatterplot of percentages of ‘beneficial actions suggested to solve DRPs’ and ‘delivery of patient care’ scores.................................................................................................................................................................................................................................237
Figure 6.10. Scatterplot of community pharmacists and standardised DfBetas for ‘identified DRPs’ and ‘delivery of patient care’ scores.................................................................................................................................................................................................................................237
Figure 6.11. Scatterplot of community pharmacists and standardised DfBetas for ‘actions suggested to solve DRPs’ and ‘delivery of patient care’ scores.................................................................................................................................................................................................................................237
Figure 6.12. Scatterplot of percentages of ‘identified DRPs’ and ‘delivery of patient care’ scores after removing influential cases.................................................................................................................................................................................................................................238
Figure 6.13. Scatterplot of percentages of ‘actions suggested to solve DRPs’ and ‘delivery of patient care’ scores after removing influential cases.................................................................................................................................................................................................................................238
Figure 6.14. ‘Job satisfaction’ scores over time in intervention and non-intervention groups.................................................................................................................................................................................................................................251
Figure 6.15. ‘Career satisfaction’ scores over time in intervention and non-intervention groups.................................................................................................................................................................................................................................254
Figure 6.16. ‘Satisfaction with duties’ scores over time in intervention and non-intervention groups.................................................................................................................................................................................................................................256
Figure 6.17. ‘Degree of autonomy at job’ scores over time in intervention and non-intervention groups.................................................................................................................................................................................................................................258
Figure 6.18. The analysis strategy for exploring changes in perceptions of CPD at phase three.................................................................................................................................................................................................................................265
Figure 6.19. Influences on choosing learning activity.................................................................................................................................................................................................................................................................268
Figure 6.20. Overcoming perceived barriers to CPD participation.................................................................................................................................................................................................................................................................274
Figure 6.21. The analysis strategy for exploring changes in professional satisfactions.................................................................................................................................................................................................................................277
Figure 6.22. Changes in career satisfaction of pharmacists interviewed at both phases.................................................................................................................................................................................................................................278
Figure 6.23. Sources of satisfaction at both phases.................................................................................................................................................................................................................................................................................................284
Figure 6.24. Causes of dissatisfaction at both phases.................................................................................................................................................................................................................................................................................................284
Figure 6.25. The analysis strategy for exploring perceptions of the medication review service.................................................................................................................................................................................................................................289
Figure 6.26. Perceptions of requirements for, and effects of medication reviews as an enhanced service.................................................................................................................................................................................................................................298
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>continuing education</td>
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<td>CPD</td>
<td>continuing professional development</td>
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<td>CPPE</td>
<td>Centre for Pharmacy Postgraduate Education</td>
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<td>DRP</td>
<td>drug related problem</td>
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<td>GP</td>
<td>general practitioner</td>
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<td>HCP</td>
<td>healthcare professional</td>
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<td>LPC</td>
<td>Local Pharmaceutical Committee</td>
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<td>NHS</td>
<td>National Health Service</td>
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<td>NICE</td>
<td>National Institute for Health and Clinical Excellence</td>
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<td>NPA</td>
<td>National Pharmacy Association</td>
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<td>NSF</td>
<td>National Service Framework</td>
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<tr>
<td>PEC</td>
<td>Professional Executive Committee</td>
</tr>
<tr>
<td>PCT</td>
<td>primary care trust</td>
</tr>
<tr>
<td>RPSGB</td>
<td>The Royal Pharmaceutical Society of Great Britain</td>
</tr>
</tbody>
</table>
Acknowledgements

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Preface

The purpose of this study was to explore community pharmacists’ perceptions of continuing professional development, and job and career satisfactions, to investigate their training and medication review performances and their self-assessed competence over time and relationships between these.

The thesis comprises seven chapters. Chapter 1, the Introduction, gives an overview of competence, continuing professional development, and job and career satisfactions in healthcare and pharmacy. The new community pharmacy contract for NHS services requires pharmacists to demonstrate their competence to provide advanced services. While mandatory participation in continuing professional development has been planned to support pharmacists to maintain and attain competence, confusion seems to prevail. Literature has reported low levels of professional satisfactions within pharmacy which healthcare and pharmacy policies have attempted to address which all have influenced the design of this work.

Chapter 2, the Aims and Objectives, describes the purpose of this study, the multi-method, longitudinal evaluation of competence, performance and perceptions in community pharmacy practice. Chapter 3, the Materials and Methods, introduces methods employed in health services research and provides an insight of the methods employed in the study, including credibility of research. The study materials are described together with the participating agencies and the roles of individuals involved in supporting this study.

Chapter 4, the Phase One, describes the professional training, perceptions and satisfactions of community pharmacists. It comprises aims; methods; results of the training, the first postal survey measuring professional perceptions and satisfactions, and the first interviews exploring professional perceptions and satisfactions; evaluation of relationships between training and a service development, and professional perceptions and satisfactions; and discussion of these influences. The results section describes the performance of the 37 pharmacists during training. Achieving better results in one module was correlated with achieving better results in others. The perceptions and satisfactions of 70 pharmacists responding to the postal survey and 57 interviewed pharmacists are described. Job and career satisfactions of the pharmacists were
found to be low in both the intervention and non-intervention groups. This was attributed to a perceived lack of appreciation and demands imposed on pharmacists. Most were uncertain of what continuing professional development meant and did not feel responsible for their own development. Relationships between the findings at Phase One are discussed.

Chapter 5, the Phase Two, explores professional performance, perceptions and satisfactions of pharmacists. It is divided into aims; methods; results of performance in providing medication reviews, the second postal survey measuring professional perceptions and satisfactions, and the recording of continuing professional development; evaluation of relationships between performance and a service development, and professional perceptions and satisfactions; and discussion of these influences. The findings of 461 medication reviews performed by 26 pharmacists are described. The favourable effect of the training on the reviews is detailed; pharmacists identified 75% of the drug related problems and suggested 58% of the potential beneficial actions to solve them. Development of a regression model to predict performance in medication reviews based on performance in the training is described. The results section also describes successful follow-up of 56 pharmacists in the postal survey and an increase in job and career satisfactions in the intervention group. The relationships between the results at Phase Two are discussed.

Chapter 6, the Phase Three, explores self-assessed competence and changes in professional perceptions and satisfactions. It consists of aims; methods; results of the survey measuring self-assessed competence, the third postal survey measuring professional perceptions and satisfactions, and the second interviews exploring perceptions of the service development, and changes in professional perceptions and satisfactions; evaluation of relationships between self-assessed competence and a service development, and professional perceptions and satisfactions and discussion. The results section describes influences on the self-assessed competence of the 90 pharmacists. The need for more support for pharmacists in self-assessment was highlighted by the non-intervention group who tended to perceive themselves to be more competent than the intervention group. Additionally, it is suggested that the more the pharmacists knew, the more they were aware of their knowledge gaps, better performance in training and in medication reviews were related to poorer self-assessed competence. Development of a regression model to predict self-assessed competence based on ‘beneficial
performance in suggesting actions to solve DRPs' is described. The postal survey followed-up 49 pharmacists and 38 were interviewed. Overall, the intervention group seemed more satisfied with their jobs and careers. This improvement was attributed to providing medication reviews, which they wanted to continue providing, and the concurrent local initiatives and national policies. Pharmacists' persisting poor insight into continuing professional development is also described. The relationships between the findings at Phase Three are discussed.

Chapter 7 concludes the thesis with a discussion of the results from all the three phases and the conclusions emerging from the studies. The consequences of the findings within the development of community pharmacy and changes within pharmacy profession are discussed. The findings recommend involvement of community pharmacists in medication reviews, contributing to patient care and pharmacists' professional satisfaction. The chapter concludes that pharmacists need support and feedback to attain and maintain competence. The implications for further research are discussed throughout.
Chapter 1

INTRODUCTION
1.1 INTRODUCTION

This introduction, made up of three sections, gives an overview of competence, continuing professional development, and job and career satisfactions in healthcare, particularly in pharmacy. The first section introduces definitions of competence which may influence approaches to professional development in healthcare, and uses a holistic definition of competence whereas competencies are regarded as tasks, traits behaviours or capabilities. Ensuring patient safety is the crucial aim of policies supporting attaining and maintaining competence in pharmacy as community pharmacists are undertaking new roles, such as reviewing patients' medication. There is a clear need for evaluating influences on pharmacists' performance and self-assessed competence, which may have an impact on their continued competence.

Governmental policies have identified professional bodies as responsible for maintaining competence of healthcare professionals in the United Kingdom. The second section describes concepts of lifelong learning and continuing professional development as means to attain and maintain competence. However, motivation, individual learning approaches and styles may influence participation in learning activities and learning outcomes. Commitment to change, which may be dependent on professional satisfactions, may also influence performance.

The last section describes approaches to measure job and career satisfactions. Recently, policies to improve professional satisfactions amongst healthcare professionals have been introduced while it is recognised that feelings of responsibility or positive challenge in the job may enhance satisfaction. Dissatisfaction may have a detrimental effect on performance of pharmacists, rendering any effort to maintain competence ineffective, potentially compromising patient safety. Issues surrounding job and career satisfactions require clarification.
1.2 PROFESSIONAL COMPETENCE

The nineteenth century saw the formation of professional societies, for example the Pharmaceutical Society of Great Britain in 1841, to protect the interests of their members. Eraut (1994) suggested that the members of these societies perceived themselves as skilled practitioners whose future status was threatened by the inability of the public to distinguish between those who were competent and those who were not. The School of Pharmacy in London was established by the Pharmaceutical Society in 1842 to provide education for the pharmacy profession - to ensure competence. Qualifying examinations were introduced to ensure the public of competence of the members of these societies (Eraut 1994), for example the Royal College of Physicians examination in 1859. However, being competent does not convey the extent or quality of competence: competence may be general or specific, or it may be seen as a position on a scale, ranging from the competence of a novice to expertise (Eraut 1994). The extent and quality of competence have become essential in pharmacy in recent years with new roles emerging for pharmacists (Department of Health 2000a; Department of Health 2003a; Department of Health 2004a; Department of Health 2005a).

1.2.1 Defining Competence

Performance and competence are inherently related; being competent is described as “having the necessary ability or knowledge to [perform] something successfully” in the Oxford English Dictionary. However, researchers have taken different approaches to explain competence and have used different terms to describe similar concepts. Eraut (1994) described three main approaches to competence: competency-based training; generic approaches to competence; and cognitive constructs of competence. Competency-based training was designed to ensure that employees were adequately competent to perform what was required of them in one organisation. However, this approach did not take the individual into account, it concentrated on the task and the large number of competencies to be assessed made it cumbersome. Generic competences, independent of organisation, emphasised what, including personal traits, enabled employees to perform well. Competence comprised knowledge, skills and attributes. Competency-based training and generic competences were both related to
performance whereas cognitive constructs of competence distinguished competence from performance. Messick (1984) argued that competence refers to what a person knew and could do under ideal circumstances, whereas performance referred to what was actually done. Observing performance was thought to be straightforward and observing specific capabilities possible; however, observing competence was difficult, suggesting that some challenges face pharmacists to prove their competence.

Whiddett and Hollyforde (2003) described differences between competence and competency. Competence is defined as an ability based on work tasks; competency is an ability based on behaviour. Competences are job or role specific, describing what tasks had to be achieved. They may be regarded as forms of competency-based training (Eraut 1994). Competencies are independent of jobs or roles, a characteristic of a person, describing how these tasks are achieved (Whiddett & Hollyforde 2003). They were defined as behaviours that individuals demonstrate when undertaking job-relevant tasks effectively within any organisational context. Generic competences, similarly, enabled individuals to perform well in a job (Eraut 1994). While Eraut (1994) and Whiddett and Hollyforde (2003) employed opposing terms for being able perform a task and how these tasks are achieved, the idea behind the concepts was similar.

Barnett (1994) advocated the importance of combined operational and academic competence, life-world competence, for higher education which was more than the sum of its components. The two opposing concepts of competence, operational and academic, were seen to be too narrow in their “knowing-how” and “knowing-that” definitions of competence. The value orientation of operational competence may be seen as the effective undertaking of tasks, for example dispensing of medicines accurately, and that of academic competence may be seen to be knowledge of, for example pharmacy. The value orientation of life-world competence was seen to be common good, combining operational and academic competence, for example good performance in patient care and resulting in satisfaction of patients and pharmacists. Thus, life-world competence was defined as reflective knowing; evaluating knowledge and learning (Barnett 1994). Competence may also have a holistic meaning related to overall capacity, whereas competencies may refer to specific capabilities, tasks and traits (Eraut 1994); these descriptions are used throughout this thesis.
1.2.2 Competence in Healthcare

Healthcare professionals (HCPs) are expected to be competent in what they are doing to provide safe, high quality services. However, the inquiry into the management of the care of children receiving paediatric cardiac surgical service at the Bristol Royal Infirmary between 1984 and 1995 questioned this assumption (Department of Health 2001a). The inquiry reported flaws in the service and lack of competence among HCPs that led to patients receiving inadequate care. It was found that the HCPs did not communicate with each other and did not work effectively for the interests of their patients. The quality of the provided care was not being assessed and the performance of the providers was not being evaluated. However, no national standards had been set for the services of National Health Service (NHS) since its inception 1948 (Department of Health 2000b). “The new NHS Modern - Dependable” (Department of Health 1997) and “A First Class Service” (Department of Health 1998) introduced clinical governance as a means to ensure the quality of healthcare and the competence of HCPs. “An Organisation with a Memory” (Department of Health 2000c) urged health organisations and HCPs to learn from their failures to improve the quality of healthcare.

The Bristol Royal Infirmary report (Department of Health 2001a) recommended national standards be set for different levels of professional competence so that patients could trust that the HCPs they came into contact with were able to do their jobs and had up-to-date knowledge and skills. Furthermore, the Healthcare Commission, then called the Commission for Health Improvement, was established to monitor efforts to improve quality through assessing performance of healthcare organisations (Department of Health 1998).

Maintaining and attaining competence throughout a HCP’s career was emphasised (Department of Health 2001a; Department of Health 2001b). Learning should not stop at graduation or registration. Professional regulation, comprising the initial education, registration, training, continuing professional development and revalidation were advocated to ensure HCPs’ competence (Department of Health 2001a). NHS employers were urged to support their employees’ professional development and maintaining their competence by providing them with the opportunities, time and funding needed for learning (Department of Health 2001a). “NHS Knowledge and Skills Framework” (Department of Health 2004b) set out the skills and knowledge required for each job within the NHS, recommending employers to conduct
Introduction

regular appraisals of competence and professional development. The appraisals would support and benefit continued competence of HCPs to improve the quality of services to patients. Additionally, HCPs were encouraged to assess their own skills and knowledge to develop professionally, to identify their learning needs and competence gaps, acknowledging that the level of competence may vary within a HCPs' career and between HCPs (Department of Health 2001a; Department of Health 2004b). To motivate NHS employees to excel "Agenda for Change" (Department of Health 2005b) has set out a structure for careers where employees demonstrate their competence to progress into higher status jobs with higher pay. Further, mandatory participation in continuing professional development was suggested as a means for ensuring maintaining and attaining competence (Department of Health 2001a). The continuing professional development systems designed for these purposes have to be developed suitably to ensure that they enhance competence and to be evaluated for their appropriateness once they are in place.

1.2.3 Changing Role of Pharmacists

The role of pharmacists has shifted from compounding medicines through dispensing them to advising patients, their carers and other HCPs in their use (Department of Health 2000a; National Prescribing Centre 2000; Department of Health 2002a; Department of Health 2003a). Pharmacists need to develop and maintain expertise in new areas (Department of Health 2003a), for example, in reviewing patients' medication for efficacy and continuing appropriateness. "Room for Review" (Medicines Partnership 2002) described problems related to medicine taking, for example patients with long-term conditions may not be taking their medicines as prescribed. "National Service Framework for Older People" (Department of Health 2001c) recommended annual medication reviews for all patients over 75 years and six monthly for those with four or more medicines to minimise any medication related problems such as prescribing discrepancies (Duggan et al. 1998). These problems may otherwise lead to adverse drug reactions causing hospital admissions (Hurwitz 1969; Beard 1992), lengthening a stay in hospital (Medicines Partnership 2002). While general practitioners (GPs) were recommended to review medications of their patients (Department of Health 2001d), they were found often not to review patients' repeat prescriptions (Zermansky 1996). Pharmacists have been shown...
to be able to identify drug related problems then resolved with GPs (Mackie et al. 1999; Granås & Bates 1999; Zermansky et al. 2001). The Department of Health (2001c) has recommended that every Primary Care Trust, commissioning healthcare services locally, should support community pharmacists to offer services to the elderly in using their medicines and to ensure they receive appropriate therapy.

"Pharmacy in the Future" (Department of Health 2000a) emphasised that patients should be confident in pharmacists' good advice. The Royal Pharmaceutical Society of Great Britain and Department of Health recommended clinical governance, comprising competence, risk management and continuing professional development, as a means to improve pharmacy services (RPSGB 1999; Department of Health 2001e). The community pharmacy contract for providing NHS services (Department of Health 2004a; Department of Health 2005c) outlined the essential and advanced services on a national level and enhanced services on a local level. All community pharmacists were assumed to be competent in providing essential services, for example, to dispense medicines and promote self-care for patients with minor ailments. However, to start providing advanced services, medicines use reviews and prescription interventions, or enhanced services, such as clinical medication reviews or smoking cessation, pharmacists were required to demonstrate competence (Department of Health 2005c). This was with emphasis that development of competence continues throughout pharmacists' professional careers. Similarly, within the NHS, pharmacists were required to advance through a new career structure based on demonstrating competence underpinned by appropriate knowledge and skills (Department of Health 2004b; Department of Health 2005a; Department of Health 2005b).

1.2.3.1 Competencies of Pharmacists

Competencies perceived to be essential for practising pharmacists have been identified, pertaining to dispensing, patient care and management. Different approaches to these competencies exist. Some require those with certain roles to be able to perform defined tasks (Dunn et al. 1984; National Prescribing Centre 2000; Austin et al. 2004; RPSGB 2004a) whereas others expect pharmacists to progress through an individual continuum of competence to become experts in their chosen field (McRobbie et al. 2001; Meadows et al. 2004; Department
of Health 2005a; Mills et al. 2005). The RPSGB (2003a; 2004a) identified 266 competencies some of which were specific to community pharmacy, hospital or primary care. Many competencies were job descriptions, for example ‘dispensing’ or ‘recording individual medication histories’, that all pharmacists working in patient care should have the ability to perform rather than behaviours that could be improved. Similarly, Dunn et al. (1984) identified 58 competencies needed by community pharmacists, pertaining to ‘processing the prescription’, ‘administration’, ‘patient care functions’ and ‘education of healthcare professionals’. Pharmacists were subsequently asked to rate these competencies for their importance for good performance. Most competencies were found to be at least advisable to have, suggesting their applicability. However, the level of required performance in these competencies and what pharmacists could do to achieve competence were not defined.

Austin et al. (2004) described that the Ontario College of Pharmacists had identified competency areas related to ‘legal requirements within the pharmacy’, ‘drug distribution practices’, ‘managerial role of the pharmacist’ and ‘patient care’. A process was developed to test pharmacists’ performance in ‘patient care competencies’, comprising ‘clinical knowledge’, gathering information’, ‘patient management and education’ and ‘communication’ to ensure that pharmacists met at least minimum performance levels in these. Pharmacists deemed to have maintained their competence were encouraged to continue self-directed professional development whilst others were either provided educational resources for, or peer support in their professional development depending on the gravity of falling below standards. The latter group was required to complete a reassessment.

Rather than assessing maintenance of competence, McRobbie et al. (2001) developed a competency framework to support the development of junior hospital pharmacists’ performance, comprising ‘delivery of patient care’, ‘problem solving’ and ‘personal’ competency clusters. The framework may be used for assessing performance, identifying neglected areas of practice and encouraging pharmacists to achieve competence (Goldsmith et al. 2003; Antoniou et al. 2004). Mills et al. (2005) developed a general level framework for primary care and community pharmacists with a new competency cluster, ‘management and organisation’ based on the junior pharmacist framework. As pharmacists progress through these competencies and become more competent, other more advanced competencies in ‘building

33
working relationships', 'expert professional practice', 'leadership', 'education, training and development', 'research and evaluation' and 'management' may be required of them (Meadows et al. 2004). While supporting pharmacists' competence and career progression, the general and advanced level competency frameworks also provided evidence of competence.

1.2.4 Assessing Competence and Performance

Miller (1990) described how examinations could be used to test the knowledge most medical or other healthcare undergraduates should possess to effectively deliver healthcare services. After graduating they should know how to use this knowledge they possess to become functionally adequate in providing healthcare and they should be able to show how they would provide healthcare services. The use of either simulated standardised patients presenting a condition or objective structured clinical examinations with an array of clinical problems were suggested to assess baseline competence and performance of graduating students (Miller 1990). Converting competence and performance into action in practice as an independent HCP may be a complex process and more difficult to assess. Indeed, general practitioners' (GP) competence in providing healthcare services in an examination setting was higher than their actual performance in a practice setting (Rethans et al. 1991), suggesting multiple influences, such as limited time, on performance. The learning of pharmacists participating in the courses provided by Centre for Pharmacy Postgraduate Education (CPPE 2005) has been assessed through multiple choice questions. While this assessment method may give an indication of the pharmacists' understanding of the subject once a course is completed, the influence on work in practice is uncertain.

Different methods have been employed to evaluate healthcare interventions among community pharmacists to test change in practice. Pharmacists' knowledge of appropriate advice on medicines dispensed without prescriptions was tested before and after implementation of guidelines for counselling (Bond et al. 1998). Additionally, the number of times the guidelines were used was recorded as a measure of performance. Similarly, Krass (1996) asked patients whether pharmacists participating in an educational intervention advised them on their
prescribed medicines. Simulated patients were employed to test the performance of trained pharmacists when counselling on asthma control, anti-fungal treatment and smoking cessation advice (Anderson 1995; Watson et al. 2002; Thornley et al. 2004). However, this method is ethically questionable as pharmacists may be unaware that they are being tested (Anderson 1995), and may cause apprehension among pharmacists (Watson et al. 2004).

Portfolios or diaries documenting learning were used to assess competence of nurses and GPs, and to support their learning (Pitts et al. 1999; Webb et al. 2003; Endacott et al. 2004). Assessment of portfolios varied, some assessments emphasised the process, using the portfolio for documenting evidence, rather than the outcome, developing through using of the portfolio (Endacott et al. 2004). The reliability of assessing competence through portfolios was questioned (Pitts et al. 1999; Spence & El-Ansari 2004). Webb et al. (2003) suggested that methods used in assessing competence based on a learning portfolio should adhere to similar criteria employed to assess the rigour of qualitative research (for example, Miles & Huberman 1994), indicating the need for further development and evaluation of this method.

Austin et al. (2004) described the use of a written test of clinical knowledge and objective structured clinical examinations in assessing pharmacists’ competencies in patient care as part of revalidation process in Ontario, Canada, over five years. The method was suggested to be feasible and accepted in practice; however, it concentrated on assessing competency only in patient care. As described, competency frameworks, comprising competencies required for good performance in providing healthcare services, have been developed for assessing performance among nurses (Baulcomb & Watson 2003; Redsell et al. 2003) and pharmacists (McRobbie et al. 2001; Meadows et al. 2004; Mills et al. 2005). They comprise different areas of competencies and provide an overall assessment of competence (Whiddett & Hollyforde 2003). Competency may be assessed through observing performance, for example, as pharmacists are providing patient care through behavioural indicators, such as, ‘identifying pharmaceutical problems’ or ‘using guidelines’ (Mills et al. 2005). Ratings of behaviour demonstrate performance and an overall score in closely related behavioural indicators shows competency in, for example, monitoring drug therapy. Mentors providing feedback on junior hospital pharmacists’ performance were shown to support them to attain and maintain their competency (Goldsmith et al. 2003; Antoniou et al. 2004). In the case of hospital or primary
care pharmacists, feedback may be easily provided whereas community pharmacists may need more support in self-assessment of their own skills, knowledge and competence since they do not often work in teams and may not access regular appraisals of their competence. They may also need more encouragement to learn and develop, and a system facilitating their learning.

1.2.5 Attaining and Maintaining Competence

As discussed earlier the development of competence in HCPs begins at the undergraduate level and continues throughout one’s career (Department of Health 2001a). The more experienced HCPs become, the more independent and self-directed their learning (Kaufman 2003; RPSGB 2004b). However, studies on self-assessed competence provide a complex picture of their ability to assess their own competence. Meretoja et al. (2004) suggested that as nurses’ self-assessed competency increased with their self-reported frequency of applying individual competencies in clinical practice these nurses were able to assess their own competence. Similarly, the perceived competency for providing palliative care to terminally ill patients by primary care physicians was reported to follow the frequency of providing these services (Farber et al. 2004). However, the accuracy of the physicians’ perceptions was questioned. Jansen et al. (1995) reported that whilst GPs’ knowledge and self-assessed competence were higher, their performance was similar to GP trainees’ performance, indicating that GPs may not be able to assess their own competence.

Taking responsibility for one’s development is important in adult learning (Kaufman 2003); however, pharmacists or other HCPs may not be able to attain or maintain competence unless they are aware of their own competence. A study into the training needs of primary care physicians in asthma management revealed that whilst both physicians, pharmacists and respiratory therapists perceived themselves to be competent enough, pharmacists, respiratory therapists and patients described areas where physicians lacked competence (Davis et al. 2000). This finding suggests that it may be easier to identify gaps in others’ competence than in one’s own; perhaps there is an inherent need for believing that one is competent. External assessment of medical practitioners’ consultation performance was suggested to provide direct information on practitioners’ competence and to support their further development (McKinley...
et al. 2001; Southgate et al. 2001). However, GPs were reluctant to external assessment (Bruce et al. 2004), indicating that HCPs should feel reassured with the assessment criteria and assessors and, perhaps, become more aware of their own competence. Austin et al. (2004) suggested assessments of pharmacists' competence should be based on simulations of real-life pharmacy practice situations relevant to practice to pharmacists to feel comfortable with being assessed.

Further, attaining and maintaining competence may be complicated if HCPs are not motivated to learn. Girgis et al. (2001) described newly graduated surgeons who were unwilling to participate in postgraduate training on preventive care whilst rating themselves least competent at providing preventive care. Kaufman (2003) suggested that engaging learners in their own learning motivates them and gives them control over their learning. The experience of adult learners may be used as a resource for learning in involving learners to identify their own needs and in encouraging them to formulating their learning objectives. Furthermore, learners require support with their learning and in evaluating their own learning; Spence and El-Ansari (2004) suggested that using a learning portfolio enhanced nursing students' self-awareness of their competence. While using a portfolio was reported to lead to identifying learning needs with support of a mentor and a group of peer GPs (Mathers et al. 1999), whether this resulted in improved competence was not reported. Different approaches to the structure and use of portfolios amongst institutions and nursing students influenced learning outcomes and development of competence (Endacott et al. 2004), indicating potential differences in attaining and maintaining competence.

A study into junior hospital pharmacists’ performance reported that at the start of their career pharmacists may not perform all tasks expected of them, for example, when delivering patient care (Goldsmith et al. 2003; Antoniou et al. 2004). Close feedback provided by mentors with a competency framework improved the pharmacists’ performance and was sustained over a period of time (Antoniou et al. 2004). In contrast, the performance of others not receiving feedback based on the framework did not improve as much, suggesting the need for mentoring and becoming self-aware in developing competence and in becoming an independent learner. However, whether the framework is suitable for self-assessment of competence remains unanswered. James et al. (2002) described using objective structured
clinical examinations, focus group discussion and individual facilitation to identify learning needs of community pharmacists and supporting them to attain competence. While the pharmacists felt more confident in identifying their learning needs after the intervention many perceived professional development was not possible without external facilitation, suggesting a more widespread lack of self-awareness of competence and difficulties in attaining and maintaining competence.

1.2.5.1 Factors Influencing Competence and Performance

Nurses' self-assessed competence increased with age and length of work experience (Meretoja et al. 2004). However, while knowledge of trainee GPs also improved with experience, the same was not true of GPs, neither performance in practice nor self-assessed competence improved with experience in either of the groups (Jansen et al. 1995). Perhaps alarmingly, pharmacists with at least 25 years' work experience showed greatest difficulty in meeting required standards in 'patient care competencies' (Austin et al. 2004). Additionally, community pharmacists tended to score less in the 'patient care competencies' than hospital pharmacists. This suggests that community pharmacists may be less supported in professional development or may not regard professional development as their own responsibility.
1.3 CONTINUING PROFESSIONAL DEVELOPMENT

This section introduces the concept of continuing professional development and its role in healthcare and in pharmacy. It was recommended as one way to ensure competence of HCPs (Department of Health 2001a).

1.3.1 Defining Lifelong Learning and Continuing Professional Development

The European Lifelong Learning Initiative (ELLI) described lifelong learning as "the development of human potential through a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances and environments" (in Longworth 1995). Longworth (1995) and Evans (2003) emphasised that lifelong learning includes all types of learning, both those related to work and leisure. However, the Department of Health (1998) linked lifelong learning to quality of healthcare provided by National Health Service (NHS) staff and suggested that it would enable the staff to identify learning needs and update their professional skills and knowledge.

1.3.2 Continuing Professional Development in Healthcare

"A First Class Service: Quality in the new NHS" (Department of Health 1998) described continuing professional development (CPD) as "a process of lifelong learning for all individuals and teams which meets the needs of patients and delivers the health outcomes and healthcare priorities of the NHS and which enables professionals to expand and fulfil their potential". "Continuing Professional Development: Quality in the New NHS" (Department of Health 1999) suggested that "CPD should be a partnership between the individual and the organisation, its focus should be the delivery of high quality NHS services as well as meeting individual career aspirations and learning needs, and all opportunities should be taken for patients and patient groups to have an input". Individual learning needs were linked to wider organisational needs to ensure the quality of healthcare and competence of HCPs (Department of Health 2001b; Department of Health 2004b), instilling the core values, skills and knowledge of the NHS.
Through lifelong learning and CPD individuals and teams would be able to deliver the health outcomes and health priorities of the NHS (Department of Health 1999). A model for CPD was described as a cycle of adult learning (Figure 1.1, section 1.2.5), emphasising the collaboration between an individual and a manager (Department of Health 2004b).

![Figure 1.1. A CPD cycle (Department of Health, 2004b).](image)

Review of an individual's learning needs and how they may be combined with the greater targets of the healthcare organisation starts the cycle. "NHS Knowledge and Skills Framework" (Department of Health 2004b) has identified job dimensions that all NHS staff should base their development on. The National Institute for Health and Clinical Excellence (NICE) guidelines and National Service Frameworks were recommended for assessing clinical learning needs (Department of Health 1998; Department of Health 1999). This assessment and the other steps of the cycle are documented in a personal development plan (a PDP). The cycle continues by deciding how to implement the individual learning objectives through supported learning, such as work shadowing, reading, or participating in formal continuing education (CE) courses. The cycle ends by evaluating whether and how the set targets were met, and potentially identifying new learning needs.
Professional bodies, such as the Royal Pharmaceutical Society of Great Britain (RPSGB), have a key role in supporting CPD (Department of Health 1998), for example by influencing the standards of practice. "Pharmacy in the Future" (Department of Health 2000a) and "Clinical Governance in Community Pharmacy" (Department of Health 2001e) promoted CPD to enable pharmacists to be confident in providing high quality services. The RPSGB (2003b) described CPD as "everything that [pharmacists] learn that makes them better able to do their job" linking learning to performance but excluding career aspirations. The aim of CPD was "to provide a means for the profession to reassure the public that pharmacists maintain and enhance their capabilities throughout their working lives" (RPSGB 2004b; RPSGB 2005a), indicating the link between CPD and attaining and maintaining competence. In accordance with the Department of Health, the RPSGB (2004b) described CPD as a cyclical process (Figure 1.2); emphasising taking responsibility for individual learning.

![CPD cycle](image)

"Plan and Record Continuing Professional Development" (RPSGB 2004b) encouraged pharmacists to reflect on their current competence to form learning needs. However, it was recognised that not all learning could be planned and based on reflection but may occur
unplanned. Prioritising learning and assessing suitability of different learning activities were described as important parts of planning that could influence learning outcomes. After learning pharmacists were expected to evaluate the effect of learning on their competence and performance, potentially leading to identifying new learning objectives. This CPD model offers little support for pharmacists in identifying and prioritising their learning needs let alone accessing learning opportunities, which may become a barrier for community pharmacists who often work alone.

"Pharmacy in the Future" (Department of Health 2000a) considered the RPSGB to be responsible for ensuring the competence of pharmacists. The RPSGB (2001a) associated undertaking CPD with competence and continued registration, whereas poor performance and misconduct were linked to disciplinary procedures. It was envisaged that a Competence Audit Committee would decide the details of CPD requirements. It was proposed that practising pharmacists should record their CPD and submit their documentation to the RPSGB to provide evidence of their competence. However, development of the competencies pharmacists were to demonstrate had not begun. Following a consultation on the disciplinary reform and competence-based practising rights, the Council of the RPSGB decided to enforce mandatory participation in CPD for all members who wished to practise professionally (RPSGB 2001b). Before mandatory CPD can be implemented an Order to amend existing legislation under the Health Act 1999 is required (Department of Health 1999; RPSGB 2001b; RPSGB 2002a; RPSGB 2003b).

After consultations of Pharmacy in a New Age (PIANA) CPD schemes were started in 1999 by the RPSGB (2003b; 2003c). Another voluntary scheme for CPD recording was introduced in 2000 to test feasibility of recording CPD and submitting records (RPSGB 2002b). Commitment to CPD and the quality of CPD records was to be assessed, not the number of records (RPSGB 2002b). It is of concern that methods for this assessment of quality of CPD records had neither been developed nor validated when the scheme began (RPSGB 2002b). This implied that pharmacists’ CPD records could be judged to be unsatisfactory against unknown assessment criteria (RPSGB 2003b). Pharmacists not participating in these schemes were expected to participate in continuing education and training to enable them to provide competently professional services until 2001 when an annual requirement of undertaking at least 30 hours
of CE was introduced (RPSGB 2000; RPSGB 2001c). “Plan and Record Continuing Professional Development” encouraged pharmacists to participate in CPD as appropriate (RPSGB 2004b) and the requirement of 30 hours of CE was abolished (RPSGB 2005a). The individuality of learning needs and different types of learning activities were acknowledged.

In 2002 a CPD programme developed by the RPSGB was introduced to all who had participated in the pilot schemes, all tutors and tutor managers of pre-registration trainees, pharmacists working in the north west and south west of England and in Wales, members of the Council of RPSGB and senior members of the RPSGB’s staff (RPSGB 2003c). The Council encouraged all pharmacists to start keeping CPD records by the end of 2004 (RPSGB 2004c). When registering to practise for 2005, all pharmacists had to commit to undertaking and recording CPD unless they declared themselves non-practising or were not providing any advice as a pharmacist (Bellingham 2004; RPSGB 2005a). Those who chose to become non-practising are not allowed employ any of their pharmaceutical expertise. Meanwhile the existing legislation has not been amended, but CPD is expected to become mandatory within 2006 (RPSGB 2005a).

1.3.3 Learning Approaches and Styles

Individuals may have different approaches or styles to learning which may influence their learning. Marton and Säljö (1976) described two types of learning approaches: ‘deep’ and ‘surface’. ‘Deep’ learners try to understand the overall meaning of what they are learning and then relate this to their previous experiences, whereas ‘surface’ learners attempt to memorise what they are learning resulting in superficial understanding. Entwistle and Ramsden (1983) described a third learning approach, ‘strategic’, that may combine both ‘deep’ and ‘surface’ learning to achieve an aim, for example, to pass an examination. However, ‘strategic’ learners may have an incomplete understanding, suggesting potential differences in quality of patient care provided by HCPs employing different approaches. Furthermore, three learning orientations ‘meaning’, ‘reproducing’ and ‘achieving’ that incorporated the learning approaches and other characteristics were described (Entwistle & Ramsden 1983). Pharmacists studying for a postgraduate qualification demonstrated more ‘meaning’ than ‘reproducing’ orientation
(Kostrzewski & Dhillon 1997), suggesting either a high level of learning amongst pharmacists or that pharmacists engaging in postgraduate learning were predominantly ‘deep’ learners whilst others may not have participated.

Kolb (1981) suggested that individuals have learning styles which combine their preferred ways of learning. Four preferences were described: active involvement in a learning experience; observation of others in a learning experience; creating conceptions to understand observations; and using conceptions to solve problems. Those preferring active involvement and observation of others in learning situations were described as ‘divergers’ and thought to tilt towards observation. ‘Assimilators’ preferred observing others, creating concepts to understand what they had observed and were portrayed to concentrate on ideas and analytical work. Those creating concepts and trying to use these to solve problems were described as ‘convergers’ who wanted to use ideas in practice. Those using conceptions to solve problems and preferring active involvement in learning situation were depicted as ‘accommodators’ and needed practical experience to learn. Pharmacists attending workshops on learning styles showed all these learning styles; most ‘assimilators’ preferred expert lectures or reading texts or journals, most ‘accommodators’ favoured laboratory exercises, most ‘convergers’ and ‘divergers’ liked individual teaching and small group discussions (Austin 2004), indicating differences between pharmacists and that their preferred learning activities may be inherent to their learning style. This suggests that pharmacists may learn best through their favoured learning activity. Whereas participating in another type of activity, while potentially offering a better learning outcome in theory, may not result in a good learning experience and improved competence.

1.3.4 Participation in Learning Activities

Attewell et al. (2005) reported that half the interviewed community pharmacists had not participated in the required 30 hours worth of CE in the Nottingham area in the UK, suggesting that some pharmacists may have gaps in their skills and knowledge or they may have participated in other type of learning activities. The RPSGB described a multitude of learning activities, comprising, for example, workshops, distance learning, meetings, reading, work
shadowing and postgraduate courses for pharmacists to consider when planning their CPD and encouraged them to choose appropriate activities to meet their learning needs (RPSGB 2004b). This may be a relief for pharmacists who previously may not have participated in CE. Indeed, pharmacists' individual needs for CE may vary according to their interest and experience (Mottram et al. 2002).

1.3.4.1 Participation in Different Types of Learning Activities

Learning activities range from formal to informal, for example, a postgraduate course in clinical pharmacy to consulting another HCP during the course of a working day. Hanson and DeMuth (1991; 1992) reported that pharmacists were likely to 'communicate with peers' at least once every two to three days. Reading professional journals was a common learning activity (Hanson & DeMuth 1991; Attewell et al. 2005), suggesting that informal learning sources were common activities. Talking with colleagues and other work based activities were sources of information more often for hospital pharmacists than community pharmacists (Hanson & DeMuth 1991; Swainson & Silcock 2004) who often do not work in teams, suggesting differences in attaining and maintaining competence. Indeed, community pharmacists often participated in workshops and distance learning (Mottram & Rowe 1996; Swainson & Silcock 2004; Attewell et al. 2005). Postgraduate degree holders, full-time pharmacists, and hospital pharmacists reported highest participation in different learning activities (Hanson & DeMuth 1991), suggesting that others may not have updated their skills and knowledge or that maintaining competence was not dependent on how often pharmacists participated in learning activities. While attaining a postgraduate degree may have contributed to participation in learning activities, pharmacists who had a postgraduate degree may have been more motivated to learn.

1.3.4.2 Motivation for Participation in Learning Activities

Different reasons motivate pharmacists, responding to surveys, to participate in learning activities in the USA (Mergener & Weinswig 1979; Mergener 1981; Hanson & DeMuth 1991; Hanson & DeMuth 1992). Mergener and Weinswig (1979) and Mergener (1981) observed that 'competency related curiosity' was the most motivating reason to participate in continuing education. Similarly, Hanson and DeMuth (1991) described that 'personal desire to learn or
intellectual curiosity’ almost always facilitated pharmacists’ participation in learning activities. Pharmacists reported that ‘the opportunity to break the routine’ provided by learning, ‘having the opportunity to interact and exchange ideas with others’ and support in form of ‘ease of access to and facilitation with learning opportunities’ and ‘affordable learning opportunities’ influenced their participation (Hanson & DeMuth 1991). Perhaps not surprisingly, the desire to learn motivated pharmacists to participate in learning activities, thus reflecting the purpose of personal development.

However, ‘compliance with external influence’ and ‘requirements for maintenance of professional licensure’ were also important reasons to participate (Mergener & Weinswig 1979; Hanson & DeMuth 1991). Complying with a professional obligation was more important for pharmacists who had to take part in mandatory continuing education whereas personal development was less important (Mergener & Weinswig 1979; Hanson & DeMuth 1991). Whether mandatory participation in continuing education prompted pharmacists to participate in a greater number and a greater variety of learning activities was not studied. Mergener (1981) reported that while motivational factors to participate in learning activities were stable over time, a shift from voluntary to mandatory participation in continuing education influenced responses. After participation in continuing education became mandatory the importance of ‘competency related curiosity’ decreased while ‘compliance with external influence’ increased, indicating differences in motivating factors and maybe in learning outcomes. In the UK, where participation in CPD is to become mandatory, pharmacists participated in learning activities for their personal development, attaining and maintaining competence by gaining new knowledge and skills or improvement of patient care (Swainson & Silcock 2004; Attewell et al. 2005). While pharmacists were motivated to learn to enhance their own competence, their motivation to participate in learning activities may change when CPD participation becomes mandatory. Whether this has any implications on pharmacists’ competence remains to be seen.

1.3.4.3 Perceived Barriers to Participation in Learning Activities

Hanson and DeMuth (1991) reported that pharmacists perceived the greatest barrier to participation in learning activities was ‘job constraints’ followed by ‘scheduling group learning activities’ and ‘family constraints’ in the USA. Similarly, Mottram and Rowe (1996), Mottram et
al. (2002), Bell et al. (2002) and Attewell et al. (2005) described that many pharmacists perceived that 'lack of time' at work and after work, 'workload', 'not wanting to use spare time' or 'the workshops being organised at the wrong time' were important reasons for not participating in learning activities in the UK and Northern Ireland, suggesting time constraints may be widespread. What's more, pharmacists working full-time were more likely to perceive 'job constraints' and 'professional burnout' as barriers to their participation in learning activities (Hanson & DeMuth 1991), suggesting that CPD and participation in learning activities should be incorporated to the working day.

Indeed, Ward et al. (1999; 2000) described that newly qualified community pharmacists participating in focus groups perceived that there were 'competing demands on their time' that prevented their participation. Studying was not possible during working hours, and after work studying was not a priority (Ward et al. 2000; Attewell et al. 2005). Pharmacists may be frustrated as they may feel motivated to participate in learning activities but may not have enough time (Bell et al. 2002). Hanson and DeMuth (1991) suggested pharmacists in their thirties and forties may feel torn between family and work responsibilities as they reported more frequently that 'scheduling of the group learning activities' and 'family constraints' were barriers to their participation than others. Perhaps surprisingly, participation of female pharmacists was not influenced more by, for example, 'family constraints'.

While some pharmacists perceived that 'lack of remuneration' prevented them from participating in learning in the UK and Northern Ireland (Mottram & Rowe 1996; Ward et al. 2000; Bell et al. 2002), few thought that 'lack of financial resource' was a barrier (Mottram et al. 2002). Cost of participation was not a great barrier for retail pharmacists but for hospital pharmacists in the USA (Hanson & DeMuth 1991), suggesting differences between countries. Newly registered community pharmacists did not want to participate in formal learning activities because they felt 'disillusioned with further study' and were 'at the peak of their pharmaceutical knowledge' (Ward et al. 1999; Ward et al. 2000). Instead, concentrating on learning communication skills through experience was perceived more important. In contrast, other pharmacists reported 'being out of date' as a reason for not participating in learning activities (Mottram et al. 2002), indicating potential differences in motivations to learn or not and knowledge and skills between age groups.
Introduction

Feeling ‘disillusioned with community pharmacy’ was common. Further studies in clinical pharmacy were pointless as the attained skills or knowledge could not be used in practice (Ward et al. 2000). Paradoxically, while pharmacists may expect to attain new knowledge and skills, they did not seem to expect to maintain all their knowledge in community pharmacy. Pharmacists may perceive that ‘lack of relevance of learning opportunities’ (Hanson & DeMuth 1991) and loss of interest to the subject (Mottram et al. 2002; Attewell et al. 2005) prevent them from participating, suggesting that available learning activities may not be considered relevant or they were not interested in pharmacy. Additionally, the conceptual change from continuing education to continuing professional development and ‘lack of information about CPD’ was reported to be a barrier to participation (Bell et al. 2002). Few pharmacists understood what CPD entailed or indeed practised CPD (Swainson & Silcock 2004; Attewell et al. 2005), highlighting the greatest barrier to implementation of mandatory participation of CPD in the UK that needs to be rectified to ensure successful and full participation.

1.3.4.4 Characteristics of Participants in Learning Activities

Hanson and DeMuth (1992) suggested that the greater the ‘intellectual curiosity’, or an internal motivation to learn, the greater number of learning activities pharmacists participated in. Possessing a postgraduate degree or working full-time also influenced participation. Perhaps surprisingly, wanting to ‘keep updated and competent’ had little influence on participation, indicating that attaining and maintaining competence were not the driving forces for participation at that time. What’s more, mandatory participation in CE did not increase participation in a greater number of learning activities, suggesting that other motives may be more important. Although participation is mandatory, pharmacists may not start participating in a greater number of learning activities let alone change their practice.

Many pharmacists perceived themselves to be ‘lifelong learners’, many had a post-graduate degree and thought they were ‘able to identify goals in their pursuit of learning’ (Hanson & DeMuth 1992), suggesting that others may need help to identify their learning needs. What’s more, few thought that they were ‘successful in achieving their lifelong learning goals’, suggesting that pharmacists may need support in studying to attain and maintain competence.
1.3.5 Effect of Participation in Learning Activities

Pharmacists and other HCPs are recommended to participate in relevant learning activities to maintain and attain competence (Department of Health 1999). However, participation in learning activities may have differing influences on pharmacists' practice and performance depending on their motivation to participate in learning activities (section 1.3.5.2), their learning approach and style (1.3.4) and the type of learning activity (section 1.3.5.1), and their commitment to change (Cantillon & Jones 1999). Pharmacy students' knowledge of community pharmacy practice improved after participating in work-based learning (Rees et al. 1996) and, generally, learning activities comprising interaction between the learners themselves or between the learners and information providers had favourable outcomes on practice (Roter et al. 1998; Cantillon & Jones 1999; Davis et al. 1999; Kansanaho et al. 2003; Thomson O'Brien et al. 2004; Agrawal et al. 2004). Roter et al. (1998) suggested that, after training in communication skills using roleplay, doctors let their patients talk more which resulted in them giving more information to their doctors. However, while trained community pharmacists may have changed their communicating with patients, implementing the change in the pharmacy may be difficult without support of others (Kansanaho et al. 2003).

Interactive discussions and didactic seminars were equally effective in improving physicians' appropriate drug use in treatment of diarrhoea (Santoso 1996). However, Reeves and Francis (2001) suggested that hospital pharmacists participating in problem based learning were more likely to report adverse drug reactions than those attending a didactic lecture, indicating benefits of active participation in learning. While pharmacists attending workshops or completing distance learning were more aware of reasons for reporting adverse drug reactions than untrained pharmacists, they were not able to use their knowledge in practice (Hughes & Whittlesea 2000). A review into the effect of formal CE on practice of physicians, indeed reported that lectures did not seem to influence performance (Davis et al. 1999). However, pharmacists attending a formal meeting where the use of guidelines on treatment of dyspepsia was explained were more likely to report using them in advising patients than those receiving the guidelines only by outreach visits or by post (Bond et al. 1998). Whether pharmacists had received guidelines on treatment of thrush at a CE meeting, through outreach visits or by post did not make any difference on their performance when counselling simulated patients.
Motivation to change practice may be influenced by individual learning styles and the learning activity, perception of sensitivity or importance of the topic, or different methods used to assess change of practice may yield different results.

Jamtvedt et al. (2003) reviewed 85 studies and suggested that auditing current practice and giving feedback without any other educational interventions changed little in professional practice. What's more, Watson et al. (2001) and Witt et al. (2004) found that providing prescribing guidelines or feedback on current prescribing during outreach visits did not improve prescribing of non-steroidal anti-inflammatory drugs or treatment of asthma, indicating the importance of planning which learning activities may cause a desired effect on practice and providing different types of learning activities to match individual learning styles.
1.4 JOB AND CAREER SATISFACTION

This section discusses recent policies and suggestions to enhance job and career satisfactions in healthcare and in community pharmacy and influences on and of job and career satisfactions.

1.4.1 Approaches to Job Satisfaction

Content approaches to job satisfaction emphasise the influence of needs or values on satisfaction (Maslow 1954; Herzberg et al. 1959), whereas process approaches to job satisfaction emphasise the influence of combinations of concepts on satisfaction (Vroom 1964; Locke 1969; Hackman & Lawler 1971). Maslow (1954) argued that individuals progress through a hierarchy of needs: physiological; safety; social; esteem; and self-actualisation needs. Once an individual has fulfilled a lower order need it no longer dominates one’s behaviour, another need begins to motivate one’s behaviour. While the need for self-actualisation was described as an innate need to fulfil one’s potential capabilities, it and another higher order need, esteem, would not influence satisfaction unless others have been fulfilled.

In 1959, Herzberg et al. found that whilst individuals were motivated by achievement, recognition, responsibility, advancement and growth in competence, other factors such as working conditions, salary, company policy, and interpersonal relations caused dissatisfaction. It was thought that jobs could be redesigned to incorporate more motivators as sources of satisfaction. It was claimed that perceived low pay would cause dissatisfaction; however, increased pay could not improve satisfaction. Low salary may be a common cause of dissatisfaction, but an abundance or a lack of it should be both a source of satisfaction and a cause of dissatisfaction.

Vroom (1964) suggested that individuals related rewards, such as an increase in salary or growth in competence, with satisfaction. The rewards were perceived to be of different importance or attractiveness for an individual. The perceived probability of good performance producing these rewards influenced the effort needed for better performance. If a reward was important for an individual, a greater effort could be expected of them to achieve this reward,
for example community pharmacists may participate in learning activities to change their current role if the reward motivating them is attractive enough.

Locke (1969) has argued that job satisfaction and dissatisfaction were a function of the perceived relationship between what one wants from one's job and what one perceives it as offering. While Vroom (1964) had emphasised the rewards of a job, Locke (1969) saw the potential discrepancy between the reality of the job and what was wanted from the job to contribute to satisfaction with a job. If the reality neared what individuals valued, they would be satisfied. Job satisfaction was described as the pleasurable emotional state resulting from appraising whether one's job achieved or facilitated the achievement of job related values. Herzberg et al. (1959) had suggested that jobs could be redesigned for greater satisfaction, now individuals were seen to interact with their work environment, potentially trying to change their conditions to achieve increased satisfaction.

Hackman and Lawler (1971) recognised that individuals should perceive their work to be meaningful, feel responsibility for the outcomes of the work, and learn the results from work to feel job satisfaction. They suggested that five job dimensions would influence an individual's perceptions. To experience meaningfulness individuals should feel a variety of positive challenges, be involved in a complete piece of work and understand the significance of their work to others' well-being. Individuals with autonomous jobs were thought to feel responsibility for the outcomes of their work. Lastly, receiving feedback on performance was thought to enhance satisfaction. Enrichment of work, for example becoming involved in new roles, was thought to lead to satisfaction.

1.4.2 Job Satisfaction in Healthcare

In 1997, the Department of Health pledged to modernise the NHS in the UK. Investment in staff and staff morale was seen as essential for better healthcare in the NHS (Department of Health 2000b). More nurses, doctors and other HCPs were recruited to work for the NHS to address the stress existing staff was experiencing and to improve the quality of care (Department of Health 2000b; Department of Health 2000c; Department of Health 2003b). More flexible and
family friendly employment policies were implemented to retain and recruit staff (Department of Health 1997; Department of Health 2003b). What's more, the Department of Health (2000b) announced that hierarchies between staff affecting morale would be broken down.

Staff were encouraged to excel by modernising pay and contracts that emphasised competence and opportunities to extend roles (Department of Health 1997; Department of Health 2000b; Department of Health 2004b; Department of Health 2005b). Jobs were redesigned to provide staff with more rewarding and motivating roles, further development through appropriate skill mix was encouraged (Department of Health 2003b). The skills of staff may be utilised efficiently, for example, administrators may support healthcare professionals in their administrative tasks and release their time towards clinical work. "Working Together - Learning Together" (Department of Health 2001b) emphasised the importance of offering learning opportunities to attain and maintain competence and further careers, and to recruit and retain staff. Additionally, "Agenda for Change" described the guidelines for career progression within the NHS, linking training and development, career development and pay (Department of Health 2004b; Department of Health 2005b). More challenging jobs with a higher pay would be offered to HCPs who demonstrated their competence.

1.4.2.1 Job Satisfaction in Pharmacy

"Improving Working Lives for the Pharmacy Team" (Department of Health 2001f) and "A Vision for Pharmacy in the New NHS" (Department of Health 2003a) recommended changes to pharmacy work within the NHS. The changes comprised flexible working schedules, improving the working environment, and job enrichment in forms of work rotations, working in different settings, and skill mix. The Department of Health acknowledged that pharmacists' skills had been under-utilised in the past, and has been promoting the use of pharmacists' expertise in supporting patients and other HCPs (Department of Health 2000a; Department of Health 2002a; Department of Health 2003a). Appropriate skills mix would ensure that while pharmacists may become supplementary prescribers, have a role in monitoring chronic conditions and in ensuring good quality of healthcare, pharmacy technicians become responsible for other roles (Department of Health 2003a).
Traditionally, community pharmacists have been remunerated according to the number of NHS prescriptions they dispensed (Department of Health 2000a), often forcing them to concentrate on one role which made the work monotonous and potentially caused dissatisfaction. Recently, a new community pharmacy contract, expanding the role of community pharmacists and changing the remuneration system for NHS services, was implemented (Department of Health 2004a; Department of Health 2005c). The new contract requires all community pharmacists to provide essential services, such as dispensing and support for self-care. It also promotes provision of the advanced services; medicines use review and prescription intervention service, and supports provision of local Primary Care Trust (PCT) commissioned enhanced services; for example, clinical medication review, smoking cessation, and minor ailment schemes in primary care. Thus, pharmacists may be less financially dependent on the numbers of prescription drugs dispensed, enabling them to undertake advanced and enhanced services. Within the NHS career progression and competence were linked together (Department of Health 2004b; Department of Health 2005a; Department of Health 2005b). Similarly, demonstration of competence is required for undertaking the new roles in community pharmacy (Department of Health 2004a) and growth of competence may increase satisfaction. Ensuring appropriate skill mix by delegating tasks to technicians was suggested to support community pharmacists in their new roles which may further enhance job satisfaction (Department of Health 2002a).

1.4.3 Assessing Job and Career Satisfactions

Pharmacists' job and career satisfaction has been assessed using different individual items and assessment methods (Ortiz et al. 1992; Anderson-Harper et al. 1999; O’Loughlin et al. 1999; Boardman et al. 2001; Bond & Raehl 2001), which has made comparisons difficult, and potentially less reliable. Whilst assessing pharmacists' satisfaction using measurement scales that comprise several items in surveys may give a more comprehensive and reliable picture of satisfaction (for example, Curtiss et al. 1978; Barnett & Kimberlin 1986; Willett & Cooper 1996; Rajah et al. 2001), various methods have been used to assess satisfaction which further complicates comparisons between different studies. What’s more, qualitative studies have not explored why pharmacists are satisfied or, indeed, dissatisfied which would enable a deeper understanding of such issues.
1.4.3.1 Assessing Job and Career Satisfactions with Individual Statements

Whilst half of the respondents reported that they were very satisfied with their job in community pharmacy in New South Wales, Australia (Ortiz et al. 1992), less than one in five community pharmacists were highly satisfied with their jobs in Quebec, Canada (O'Loughlin et al. 1999), indicating differences between countries. In a US study the mean job satisfaction score of pharmacists was 79.3 ± 19.9 on a scale from 0 to 100 (Anderson-Harper et al. 1992), suggesting general satisfaction. In another study in Texas, the USA, the mean satisfaction score was 52.6 ± 18.1 on a visual analogue scale from 0 to 100 (Bond & Raehl 2001), indicating lower satisfaction levels and differences within the country. In one UK study almost half of the respondents perceived that 'their career as a pharmacist had been satisfying' (Boardman et al. 2001). While giving an indication of the level of work related satisfaction, these studies did not explore deeply what may have caused satisfaction or dissatisfaction.

1.4.3.2 Assessing Job and Career Satisfactions with Scales

A generic scale developed to assess job satisfaction was employed to measure job satisfaction amongst US pharmacists (Curtiss et al. 1978; Hammel et al. 1979; Noel et al. 1982; Deselle & Tipton 2001). In two surveys, the mean general satisfaction score amongst pharmacists graduating in three different years from eight colleges of pharmacy was 3.03 on a five-point Likert scale (Curtiss et al. 1978; Hammel et al. 1979) and 3.09 amongst pharmacists in Tucson and Phoenix metropolitan area hospitals (Noel et al. 1982). In another survey the satisfaction score was 74.2 ± 15.0 amongst community pharmacists registered with the New York Board of Pharmacy (Deselle & Tipton 2001), again suggesting general satisfaction. However, the mean scores for different specific aspects of the job were below the midpoint (Curtiss et al. 1978; Hammel et al. 1979; Noel et al. 1982), indicating that whilst it is possible to be generally satisfied with one's job, specific aspects of the job may lead to dissatisfaction.

However, pharmacists were reported to be more satisfied with specific aspects of the job than pharmacy support staff (Noel et al. 1982), more satisfied with their jobs than unskilled workers, but less than nurses (Deselle & Tipton 2001). Willett and Cooper (1996) used an Occupational Stress Indicator scale as a measure of stress experienced by community pharmacists in the
north-west of England. Their level of stress was compared with that of general practitioners, health authority workers, managers, and a sample of normative white and blue collar workers. Intrinsic aspects of the job, for example workload, autonomy, variety of tasks and role ambiguity, caused more stress amongst community pharmacists than others. However, total job satisfaction was reported to be similar across all the groups, suggesting other causes of dissatisfaction than stress among the others, or that despite the stress, community pharmacists were quite satisfied.

Barnett and Kimberlin (1986) developed and validated a scale to measure pharmacy specific job and career satisfactions on a five-point Likert scale based on other standardised measures of job satisfaction in the USA. The mean job and career satisfaction scores were 3.41 and 3.09 (Barnett & Kimberlin 1988), suggesting general job satisfaction but lower career satisfaction. The scale measuring job satisfaction was used in other studies (Olson & Lawson 1996; Kawabata et al. 1998; Neuhauser et al. 2004). In the USA the mean job satisfaction scores were similar: 3.4 amongst hospital pharmacists employed in forty states (Olson & Lawson 1996); 3.8 amongst pharmacists who were certified to provide immunisations and 3.6 amongst those who were not certified in Texas (Neuhauser et al. 2004). In Japan pharmacists working at forty-three hospitals reported a lower level of job satisfaction, 2.9, (Kawabata et al. 1998), suggesting, perhaps, differences between the working patterns or perceptions of satisfaction in different countries.

The job and career satisfaction survey tool developed by Barnett and Kimberlin (1986) was subsequently modified and validated for UK hospital pharmacists (Rajah et al. 2001). The job satisfaction score was 13.1 and the career satisfaction score 12.4 amongst hospital pharmacists working in NHS hospital trusts within two regions in the south of England, both scores above the mid-scale. Pharmacists tended to be satisfied; job satisfaction was again higher than career satisfaction as observed by Barnett and Kimberlin (1986), indicating either that career paths of pharmacists may not be perceived satisfactory or that career satisfaction may be more difficult to assess.
1.4.4 Factors Influencing Job and Career Satisfactions

Many characteristics and factors have been reported to influence job and career satisfaction. Characteristics of pharmacists themselves may have an effect on their perceived job and career satisfaction. The factors may be divided into those that pharmacists perceived to enhance their satisfaction and to those that pharmacists perceived to cause dissatisfaction.

1.4.4.1 Characteristics Influencing Job and Career Satisfactions

Studies of gender differences in job and career satisfactions have reported contradictory results. One study in Japan found no differences (Kawabata et al. 1998), while another reported that US female pharmacists were less satisfied with specific aspects of the job (Noel et al. 1982). However, since 1980's more women have become pharmacists in the UK than before (Hassell 2003), and female pharmacists were more satisfied with their jobs (Rajah et al. 2001; Boardman et al. 2001). Additionally, female pharmacists were more likely to perceive that 'their career had been satisfying' and that 'they would again choose pharmacy as their career' in a postal survey in West Midlands (Boardman et al. 2001). They were also more likely to report that 'they were satisfied with their working conditions' and showed more 'optimism for the future of pharmacy'. Female hospital pharmacists were more satisfied with their careers in two regions in the south of England (Rajah et al. 2001); and have also reported greater career commitment (Gaither & Mason 1992; Hussain & Bates 2002).

Older pharmacists showed more satisfaction with their jobs and careers (Noel et al. 1982; Barnett & Kimberlin 1988; Willett & Cooper 1996; Boardman et al. 2001). They may have higher salaries, which were associated with higher job and career satisfactions (Barnett & Kimberlin 1988). Boardman et al. (2001) observed older pharmacists generally to be more likely to report greater satisfaction with their careers and to be more satisfied with their working conditions. While the younger pharmacists were more likely to perceive that their job was not challenging enough, they were more likely to report 'optimism for the future of pharmacy' and willingness to work more closely with other health professionals. They may have aspired to changes in working patterns and expected to become more satisfied in the future. The older pharmacists may have contented themselves with their current role and working patterns.
Introduction

Additionally, the longer the pharmacists had been in their post, the more satisfied they felt (Noel et al. 1982; Barnett & Kimberlin 1988; Willett & Cooper 1996). Pharmacists who graduated more recently were less satisfied with their jobs and careers (Barnett & Kimberlin 1988), perhaps the older the pharmacists the more satisfied they were. Job satisfaction and satisfaction with duties increased with the grade of hospital pharmacists and a higher job title (Kawabata et al. 1998; Rajah et al. 2001), suggesting that job descriptions may influence satisfaction. Those who were least satisfied may not have been involved in many clinical or managerial activities. Barnett and Kimberlin (1988) found that the greater the number of services pharmacists personally provided the more satisfied they were. Possessing a postgraduate qualification may also influence job satisfaction (Kawabata et al. 1998; McPherson et al. 1999), suggesting that possessing a postgraduate qualification may be linked to more advanced jobs.

Job and career satisfaction may vary between or within different sectors of pharmacy. Whilst hospital pharmacists showed less satisfaction with 'compensation when compared with others' than community pharmacists, their general job satisfaction scores were higher (Hammel et al. 1979), perhaps indicating that higher pay may not influence satisfaction overall. Hospital pharmacists were more positive about choosing career in pharmacy again than pharmacists in other sectors (Bond & Raehl 2001) and community pharmacists showed less satisfaction with their careers than hospital pharmacists (Boardman et al. 2001), suggesting that a clear career path may not exist for community pharmacists. What's more, community pharmacists were more likely to perceive that 'their professional role was not sufficiently challenging' and showed less 'optimism for the future of pharmacy' than hospital pharmacists (Boardman et al. 2001). Whilst pharmacists working in independent community pharmacies were more satisfied with their jobs than those working in chain community pharmacies (Bond & Raehl 2001), community pharmacy owners were more satisfied than employees (Anderson-Harper et al. 1992; Willett & Cooper 1996), suggesting that more independence or higher pay may enhance satisfaction within community pharmacy.

1.4.4.2 Sources of Satisfaction and Causes of Dissatisfaction

Ortiz et al. (1992) and Boardman et al. (2001) described interaction with patients and others, being able to help them and being appreciated by them, contributed to pharmacists'
satisfaction. In contrast, pharmacists reported external factors such as lack of recognition of the pharmacy profession by authorities or patients, working conditions with high workload and perceived pressures, and government policies to cause dissatisfaction (Barnett & Kimberlin 1988; Ortiz et al. 1992; Willett & Cooper 1996; Tweddell & Wright 2000; Boardman et al. 2001). This suggests factors contributing to general satisfaction may be complex and influencing these may be difficult.

Barnett and Kimberlin (1988) suggested that one's general job role, with opportunities to utilise skills and abilities, and the presence of challenge in the work, may be a great contributor to job and career satisfaction. Pharmacists perceived that lack of a challenge and professional fulfilment led to feeling dissatisfied with their jobs and careers (McPherson et al. 1999; Tweddell & Wright 2000). Young pharmacists in particular perceived that they were unable to use their knowledge in their job and wished they could be involved more in patient care (Boardman et al. 2001). Noel et al. (1982) found that clinical pharmacists' general satisfaction was influenced by being challenged and being able to utilise skills and knowledge. Maintaining and attaining competence through education and training opportunities may contribute to satisfaction (McPherson et al. 1999), indicating that being able to participate in CPD and perception of self-confidence may influence job and career satisfactions (Swainson & Silcock 2004).

Community pharmacists perceived that working with GPs together with an increased clinical and advisory role enabled them to utilise their skills, that their contribution was valued and felt less isolated from peers and other healthcare professionals (Tweddell & Wright 2000; Boardman et al. 2001). Community pharmacists also reported dissatisfaction with the remuneration offered, and the terms of service of the NHS contract in England and Wales (Thomas et al. 1996a; Thomas et al. 1996b; Tweddell & Wright 2000). Others in the USA perceived uncertainty in the future and ambiguity and conflict with roles caused dissatisfaction with job (Deselle & Tipton 2001). The shift towards provision of services, instead of mainly dispensing medicines (Department of Health 2004a; Department of Health 2005c), may improve satisfactions of community pharmacists with the new terms for remuneration and as they become more clinically involved in patient care.
Indeed, pharmacists involved in clinical, research and administrative roles were more satisfied with their jobs (Quandt et al. 1982; Noel et al. 1982; Olson & Lawson 1996; Kawabata et al. 1998), indicating that the traditional role of dispensing may not be satisfying. What's more, the greater the number of clinical activities reported and the greater the amount of time spent performing these activities, the greater the reported job satisfaction (Kawabata et al. 1998). Being able to decide how to manage one's time between managerial, dispensing, patient education and counselling duties may influence job satisfaction (Anderson-Harper et al. 1992). Feeling ownership over decisions concerning work may improve satisfaction. Indeed, Anderson-Harper et al. (1992) found that counselling did not automatically lead to greater job satisfaction if pharmacists perceive that they are unable to spend as much time as they wish on patient education and counselling. Willingness to counsel patients may be related to the level of apprehension caused by communication with others (Anderson-Harper et al. 1992; Deselle & Tipton 2001). This indicates differences in sources of satisfaction and the complexity involved.

1.4.5 Effects of Job and Career Satisfactions

Job and career satisfactions may influence pharmacists’ commitment to work. Gaither and Mason (1992) suggested that organisational commitment and career commitment may influence intentions to withdraw from a job and a career. Pharmacists who were committed to their organisation or their career were less likely to be planning to leave their jobs or the profession. Two in five pharmacists working in forty-two hospitals in Chicago metropolitan area reported that they had moved from community to hospital pharmacies due to ‘pay and benefits’, ‘promotion and advancement opportunity’ and ‘unmet expectations and dissatisfaction’ (Smith et al. 1986). Those who had been in their jobs for less than two years were more likely to leave due to ‘unmet expectations and dissatisfaction’, perhaps suggesting lower organisational commitment. Boardman et al. (2001) found that a lack of job satisfaction, poor working conditions, a lack of career structure, and recognition may lead to wanting to leave the pharmacy profession rather than wanting to suggest improvements. Indeed, respondents to a postal survey perceived that a lack of job satisfaction had resulted in leaving posts in one national pharmacy chain (Tweddell & Wright 2000). However, the majority had continued
working in community pharmacy, suggesting that it was that pharmacy chain that contributed to their dissatisfaction. It was not reported whether changing jobs within community pharmacy, or starting to work in hospitals or as primary care pharmacists, potentially with more clinical involvement, had influenced job satisfaction.

Job and career satisfactions may also influence the services pharmacists provide. Desselle and Tipton (2001) suggested that job satisfaction and the number of professional services provided contributed to pharmacists' perceived performance ability. Bond and Raehl (2001) found that greater job satisfaction may contribute towards fewer dispensing errors, indicating that the quality of patient care may not only be dependent on pharmacists' competence but may be influenced by how satisfied pharmacists feel with their work. However, more importantly from pharmacists' point of view, dissatisfaction with work may not only lead to wanting to leave or leaving the profession but to mental and physical ill health (Willett & Cooper 1996), indicating the importance of ensuring job and career satisfactions of pharmacists.

Certain questions around these complex issues remained unanswered at this point. The impact the performance in training for an enhanced service would have on the performance in medication reviews was unknown and the ability of community pharmacists to self-assess their competence to identify their learning needs had not been evaluated. It remained questionable whether community pharmacists would be able to engage in CPD when it becomes mandatory as their perceptions had not been explored over time. Additionally, it was unclear how the changing role of community pharmacists would influence their professional satisfactions: these important issues informed the design for this thesis (Figure 1.3).

![Figure 1.3. Relationships between competence, professional perceptions and satisfactions and extending role of community pharmacists.](image)
Chapter 2

AIMS OF THE RESEARCH
2.1 BACKGROUND TO DEVELOPMENT OF RESEARCH QUESTIONS

Challenges of changing practice and roles are occurring in community pharmacy. Pharmacists need to demonstrate their competence to provide advanced services and may need to complete training. In the meanwhile, mandatory participation in CPD has been introduced to all pharmacists to maintain and attain competence. Both require self-assessment of competence to identify learning needs. Low levels of job and career satisfactions have been reported in community pharmacy. Changes to community pharmacy practice, including a more advisory, clinical role, have been suggested to improve the situation. While the changes may have a beneficial impact on pharmacists' satisfactions, they may inundate pharmacists and cause dissatisfaction. This work aimed to evaluate associations between participation in a service development project, training and medication review performances, self-assessed competence, professional perceptions and satisfactions.

2.2 THE PRINCIPAL RESEARCH QUESTIONS

Research questions for each of the three areas were developed. The questions were:

i) How do community pharmacists perform in training on certificate level?

ii) Is performance in providing a medication reviews related with training performance by distance learning?

iii) Are pharmacists able to self-assess their competence?

iv) Is self-assessed competence influenced by performance?

v) How satisfied are community pharmacists with their jobs and careers?

vi) Do changing professional roles and providing new services influence job and career satisfactions?

vii) What are community pharmacists' perceptions of CPD?

viii) Does participation in additional training have an effect on pharmacists' perceptions?
2.3 OPERATIONALISATION OF THE PRINCIPAL RESEARCH QUESTIONS

2.3.1 Aims

The aims of the research were in line with the aims of the “NHS Plan” (Department of Health, 2000b) employing national standards for healthcare to guarantee the quality of care, improving healthcare services and competence of healthcare professionals, enhancing professional satisfaction and supporting CPD. The first aim of the research was to describe and explore community pharmacists’ professional perceptions and satisfactions over time. A second aim was to describe and explore community pharmacists’ training and medication review performances and their self-assessed competence. A third aim was to evaluate relationships between participation in a medication review service scheme, training and medication review performances, and self-assessed competence, and pharmacists’ perceptions and satisfactions.

2.3.2 Objectives

Objective 1 Assessing Performances and Self-Assessed Competence

In order to meet the aims for describing and exploring performance and self-perceived competence, the following objectives were operationalised:

i) To describe pharmacists’ training performance in the intervention group;

ii) To assess pharmacists’ medication review performance in the intervention group;

iii) To measure all pharmacists’ self-assessed competence;

iv) To evaluate the impact of performances in training and medication reviews on their self-assessed competence in the intervention group; and

v) To explore pharmacists’ perceptions of participating in providing medication reviews.

Objective 2 Measuring Professional Perceptions and Satisfactions

In order to meet the aims for measuring professional perceptions and satisfaction, the following objectives were operationalised:

i) To measure all pharmacists’ professional satisfactions, and perceptions of their personal development needs and behaviour at three points in time;
ii) To evaluate whether participation in a service development scheme influences pharmacists' measured professional perceptions and satisfactions over time; and

iii) To evaluate whether performances in training and medication reviews or self-assessed competence influence pharmacists' measured professional perceptions and satisfactions in the intervention group.

Objective 3  Exploring and Evaluating Professional Perceptions and Satisfactions

In order to meet the aims for exploring professional perceptions and satisfactions, the following objectives were operationalised:

i) To explore pharmacists' perceptions of CPD, and professional satisfactions in-depth at two points in time;

ii) To explore pharmacists' recording of their CPD in the intervention group;

iii) To evaluate whether participation in a service development scheme influences pharmacists' professional perceptions and satisfactions over time; and

iv) To evaluate whether performances in training and medication reviews or self-assessed competence influence pharmacists' perceptions of CPD and professional satisfactions.
Chapter 3
MATERIALS AND METHODS
3.1 INTRODUCTION

This chapter is an introduction to methods employed in health services research. It is not an exhaustive description of all research methodologies available in health services research, but instead provides an overview of the methods employed in the study. Furthermore, the study materials are described.

3.2 RESEARCH FRAMEWORK

A research framework is the underlying structure that supports the research process. Different schools of thought are available for a researcher to choose as appropriate (Bowling 1997; Smith 2002). The researcher may begin the research process by thinking and brainstorming ideas which can be developed further into theories, then formed into measurable hypotheses to be tested. Data are collected and analysed to prove or disprove the hypotheses and theories. This approach is called deductive; the researcher has arrived at a conclusion by reasoning, thinking and data (Bowling 1997).

In contrast, the researcher may begin the research process by observing the object of interest and collecting relevant data. The observations and collected data can lead the researcher to form ideas into theories and hypotheses. The hypotheses can be tested by further observations and collection of data. This approach is called inductive; the researcher has obtained the conclusion from observations and data (Bowling 1997).

Thirdly, the researcher may combine the two approaches. At the beginning of the research project the researcher may have ideas that are developed into theories and formed further to hypotheses. Subsequent observations and data collection may prove or disprove the hypotheses. The researcher can modify the refuted hypotheses to fit the observations.

At the beginning of the research project the researcher may have ideas on the research topic but has not formed theories and hypotheses. The researcher sets out to collect and analyse data systematically. The theory is derived and developed from the methodically collected and
analysed data. This approach is called grounded theory; the theory emerges from the data that gives a firm basis to it (Smith 2002).

### 3.3 RESEARCH DESIGN

Once the research topic has been decided and a hypothesis may have been formed, the researcher has to consider an appropriate research design that will reflect the purpose of the study. This section is an introduction to quantitative survey designs and qualitative study designs.

#### 3.3.1 Quantitative Studies

**3.3.1.1 Descriptive Surveys**

The study may aim to measure or describe feelings, perceptions, performance or knowledge in a large sample (sections 3.4.1 and 3.4.2); this design is a survey. The survey may aim to examine or describe associations in a study population; this design is descriptive (Bowling 1997).

The researcher may choose to measure or describe, for example, the general practitioners’ self-assessment of knowledge at one point in time; a cross-sectional design (Bowling 1997; Tracey et al. 1997). Cross-sectional surveys allow the researcher to describe the perceptions and feelings of the population and potentially observe associations between them and other characteristics. Often cross-sectional studies provide information on past and current events and are called retrospective.

By contrast, the researcher may choose to measure, for example, performance in a population over time; longitudinal design (Bowling 1997; Antoniou et al. 2004). Often the performance is followed to the future and measured at several points in time when the survey is prospective. Longitudinal surveys not only allow the researcher to describe the performance and potentially observed associations but also to estimate causality (Smith 2002). Since the researcher has chosen to measure performance in a population over time, performances at least at two points
in time are compared. The researcher may select a different representative sample of the population every time the performance is measured; giving rise to trends. On the other hand, the researcher may select a representative sample of the population and measure the performance of this sample over time; a panel design (Bauman et al. 2002).

3.3.1.2 Experimental Trials

The researcher may aim to measure the effect of an intervention on feelings, perceptions or knowledge. One group in a study population is subjected to an intervention and the effect of the intervention on one of the groups is studied; an experimental design (Bowling 1997). The group that is exposed to the intervention is called the experimental or intervention group, conversely the group that is not exposed is called the non-intervention group. The characteristics of the two groups should be similar to each other, that is, apart from the intervention, to allow a comparison without confounding factors interfering with the analysis.

There are different ways to decrease the interference of confounding factors. The participants can be allocated to the intervention and non-intervention groups by employing different methods. The researcher may choose to randomise the participants; the participants have equal chance of being allocated to one of the groups. Random allocation minimises the interference of confounding factors, for example sex or age, may have on the research findings and makes it easier to observe if there are any real differences between the groups.

It may not always be possible to randomise the participants to the experimental and control groups (Bowling 1997). The researcher may choose another method called matching to assign the participants to the intervention and non-intervention groups and to control for the confounding factors. It is possible to match the participants in pairs: for each participant of certain sex and age in the intervention group there is a participant with the same characteristics in the non-intervention group; this method is called precision control. Precision control may lead to discarding of participants because they cannot be matched or enough participants with a certain combination of characteristics have already been selected. Instead of controlling for combinations of characteristics, the researcher may choose to control each of the factors separately; this method is called frequency distribution control. The age or sex distribution of
matched participants is equal in the intervention and non-intervention groups but the combination of age and sex distribution may differ between the groups. Frequency distribution control does not control for combinations of confounding factors but leads to fewer discarded participants than precision control. On the other hand, the analysis may be adjusted for the confounding factors, for example, sex and age; this method is called control through measurement (Bowling 1997).

The researcher may decide to measure the feelings or performance of participants in intervention and non-intervention groups after the intervention; this design is called after-only study. However, in case of non-random allocation of participants, it cannot be assumed that any observed differences between the groups have been caused by the intervention (Bowling 1997). Hence, if possible, the feelings or performance of participants in intervention and non-intervention groups in an experimental study should be measured before and after the intervention in order to assess the effect of the intervention (Bowling 1997; Agrawal et al. 2004). A before-after study may comprise one or more pre- and post-intervention tests (Bowling 1997).

3.3.2 Qualitative Studies

If the researcher aims to explore and describe the feelings and experiences of participants in-depth, qualitative or combined methods may be chosen. Qualitative methods are often employed to develop ideas, to gather information in order to develop research questions and, furthermore, to develop data collection tools (Bowling 1997). Qualitative methods are not only used in the development stages of research projects but they are employed to explore complex research topics on feelings and behaviours, when quantitative methods would be inapplicable (Smith 2002); for example, when exploring patients’ perceptions and experiences of stroke rehabilitation (Hearn et al. 2003).

The researcher may choose to gather data from a setting or participants systematically by watching and listening and recording the observations; an observational study (Bowling 1997; Smith & Cotts Watkins 2005). The researcher may choose to become a member of a setting
or a group that is being studied; this design is called *participant observation*. The observer can be known to the other participants or might choose not to reveal to the other participants that they are being observed. Because the researcher is reporting observations of, for example, events or relationships it is important that the observations are as objective as possible to minimise observer bias (Smith 2002). The observer should also be aware that their presence might influence a setting and participants, for example participants may change their behaviour (section 3.7.3).

Instead of observing a setting or participants, the researcher may decide to interview participants (Bowling 1997; Free et al. 2002). The respondents are allowed freely to describe their feelings and tell about their experiences and perceptions in their own words in one-to-one interviews (Smith 2002). The interviewees are prompted and encouraged by the researcher. Interviews are usually unstructured or semi-structured in qualitative research; the researcher has an interview schedule as a memory aid. Since participants are asked to convey their experiences or feelings, bias may arise. For example, the interviewees may forget or may not wish to tell something. The potentially biassing influence of the researcher on the participants should be minimised, the researcher should maintain neutrality and avoid leading questions or prompts.

Group or focus interviews provide information from many participants at the same time (Smith 2002; Chambers et al. 2003). The researcher uses an unstructured topic guide for the interview. The participants interact and may stimulate each other. In focus groups the individual participants can think about the topic while others talk and then offer their insights. Unlike face-to-face interviews, group interviews are not confidential and participants may feel inhibited by the other members of the group. Hence, the researcher needs to consider whom to include in the group to create a non-threatening and relaxed atmosphere. On the other hand, the group can help to the participants to discuss difficult topics and they might be encouraged to reveal something they would not admit in face-to-face interviews.
3.4 SAMPLE SELECTION

3.4.1 Sampling in Quantitative Studies

Once the researcher has identified the study population, a representative sample of participants should be drawn. A member of the sample population is called sampling unit which may be, for example, primary care trusts, pharmacies or pharmacists. It is important that the sample is drawn from the appropriate level (Bowling 1997). For example, if primary care trusts and pharmacists are being studied then a representative sample of both sample units should be drawn. A study comprising more than one sampling unit is called multilevel. These units are listed in a sampling frame which is used for drawing the sample.

In quantitative studies the researcher is recommended to calculate the size of a required sample to increase the chance of detecting significant differences or relationships that exist and to decrease the chance of detecting non-existing differences or relationships (Bowling 1997). Acceptance of non-existing differences is called type I or α error and conversely, acceptance of no differences when they do exist is called type II or β error. The sampling error (the sample is not representative of the population) is usually smaller; statistically significant results are more likely to be detected in larger samples (Bryman & Cramer 1997). However, statistically significant differences observed in smaller samples may be more worthy of attention than those observed in larger samples (Bowling 1997). On the other hand, the significance of a result does not indicate the importance which the researcher has to take into account.

Ideally, random sampling should be employed in quantitative studies in order to be able to generalise the research findings (Bowling 1997). Random sampling ensures that every member of the population has a chance to be included in the study. Despite random sampling the results may not be wholly generalisable. Although each member of the population may have a chance to be included, exclusion criteria may omit some members of the population and others may refuse to participate. The findings may be limited to respondents if they and non-respondents differ from each other (Bryman & Cramer 1997). Other sampling methods used in quantitative research include systematic, stratified and cluster sampling (Bowling 1997). In systematic sampling, for example, every tenth member in a sampling frame is selected and sampling would start at a random point between one and ten. Stratified sampling is used to
avoid potential occurrence of either under- or over-representation of certain groups of the population. Random sampling is used to select participants from, for example groups of community and hospital pharmacists. Cluster sampling is used to randomly select participants in groups, for example all community pharmacists in a number of geographical areas.

### 3.4.2 Sampling in Qualitative Studies

The following sampling methods are usually used in qualitative research; however, accepting the limitations they may be used in quantitative studies where appropriate (Bowling 1997). Due to the complexity of the qualitative research, where both data collection and analysis are intensive, qualitative research is restricted to small sample sizes (Smith 2002). While the findings may not be generalisable to the whole study population, the researcher may aim to ensure a degree of representativeness. Small sample size may not be a limitation: the researcher is allowed to conduct detailed work and optimal sample size meets the aim of the study (Smith 2002). The researcher may wish to recruit participants with a certain characteristic or characteristics; this method is called *purposive sampling* (Smith 2002; Free et al. 2002). For example, the participants may be chosen because they work or live in a deprived area or because they work for a particular type of pharmacy. This method is used if a characteristic is deemed essential to meet the study objectives.

In order to facilitate recruitment and increase participation, the researcher may choose to sample the participants from an accessible population; this method is called *convenience sampling* (Bowling 1997; Chambers et al. 2003). For example, if the aim of the study is to evaluate adult learners’ perceptions of a workshop, participants should ideally be potential attenders of the workshop. The participants may be recruited when they attend a course or order learning material. However, a convenience sample is likely to be unrepresentative and may introduce bias (Smith 2002). If the researcher is unable to use a sampling frame, the initial respondents can be asked to identify others who belong to the target group. The number of respondents increases with every new respondent; this method is called *snowballing* (Bowling 1997).
3.4.3 Sampling in Longitudinal Studies

In order to study change, longitudinal study design may be applied. However, prospective, longitudinal studies present their own difficulties (Bowling 1997). They take a long time, take effort in administration and can be expensive to conduct. Participants may become unavailable as the study progresses, that is they may leave the area, not wish to continue to participate or even die in some cases; this is called sample attrition. The possibility for sample attrition should be taken into account when recruiting the initial sample which should be large enough to withstand losing participants. Sample attrition may cause bias to the findings. In health services research participants can be patients and those who are most vulnerable, most ill or oldest are most likely to be lost in the successive waves of data collections. Analyses of missing participants and data should be conducted in order to see if sample attrition influences the results. Bowling (1997) recommends that if sample attrition is small and no biassing effects are detected, all respondents can be included in the analysis at each stage. In contrast, if the sample attrition is large, only data from the participants at the last stage are included at each stage.

3.5 DATA COLLECTION

Depending on the design employed in a project, the researcher can choose between different data collection methods.

3.5.1 Collecting Quantitative Data

Quantitative data may be collected through case records, questionnaires and interviews (Bowling 1997). The data may be collected in face-to-face, telephone or self-administered surveys. In face-to-face and telephone interviews, the interviewer is able to elucidate questions and control the order the questions are asked. However, participants may feel more at ease completing self-administered questionnaires if the interviewer is to ask them potentially embarrassing questions.
The data collection tools can be structured or semi-structured depending on the data required (Bowling 1997). Structured tools comprise standardised items to which participants are usually given pre-defined response options that have been coded in advance. Although structured questionnaires provide unequivocal information that is easy to analyse, not all participants may understand the questions in the same way. Additionally, the response options may not allow the participants to express their perceptions and they may have to choose an alternative that does not quite fit. Semi-structured questionnaires or interview schedules, in contrast, comprise a set of questions but no pre-defined response options. The respondents are allowed more freedom to answer questions and in interviews unclear questions can be clarified. This, of course, means that the analysis becomes more complex and more time consuming.

3.5.2 Collecting Qualitative Data

Qualitative data can be collected through interviews, observations, focus groups, narratives and documents (Smith 2002). An unstructured or semi-structured topic guide may be used to support data collection through individual and group interviews. The researcher may decide to take detailed notes, audio- or videotape interviews and observations and transcribe them verbatim. Accurate transcriptions are a prerequisite for a valid analysis (Smith 2002).

The setting of the interview and perceived privacy may influence the findings. Data collection should provide the required data efficiently and be acceptable for the researcher and the participants (Smith 2002). As discussed in section 3.3.2, face-to-face interviews may be perceived intrusive, whereas group interviews do not offer confidentiality (Bowling 1997; Smith 2002). However, participants may be prompted to express their feelings and perceptions because of interaction with others in a group interview. In order to achieve beneficial interaction, groups have to be balanced according to participant characteristics. The researcher has to remain objective throughout the data collection while facilitating and stimulating discussion. In group interviews, the researcher should encourage participation by all group members (Smith 2002).
3.6 PROCESSING AND ANALYSING DATA

3.6.1 Processing and Analysing Quantitative Data

Quantitative research generates often large data sets; computer software may be used to assist storage and analysis of data. After entering coded data onto a database according to a predefined coding scheme, the data should be cleaned (Moser & Kalton 1971). Before analysis data are checked for missing entries, typographical errors and outlying values and subsequently corrected. Additionally, a sample of randomly chosen cases should be checked for coding errors. If no errors are found, the number of coding errors may be assumed to be minimal in the whole database and the analysis reliable.

The choice of a statistical test depends on the objectives of the study and the type of data (Smith 2002). Quantitative data includes nominal or categorical data, for example, gender variables; ordinal data, for example, quality of work; or interval or ratio data, for example, age. Categorical data are classified in groups but cannot be ordered. Ordinal data can be ranked or ordered; however, the difference between ordered categories cannot be measured whereas interval data not only can be ordered but the difference or interval between values can be measured (Bryman & Cramer 1997).

3.6.1.1 Analysing Non-Parametric Data

Non-parametric tests are employed for categorical and ordinal data as appropriate (Bryman & Cramer 1997). When testing for associations (similarities and differences) between variables, \( \chi^2 \)-test for categorical data and Spearman’s \( r \) for ordinal data are employed. \( \chi^2 \)-test should not be used if any cross-tabulation cell has an expected frequency of less than one or if 20% or more of the cells have an expected frequency of less than five; observed associations may not exist (Bryman & Cramer 1997). In longitudinal studies the researcher may employ McNemar \(-\)test for two related dichotomous categorical variables and Cochran \( Q \)-test for three or more related variables. A Mann-Whitney \( U \)-test is applied for unrelated ordinal data when two groups are compared, and a Kruskal-Wallis \( H \)-test is used when three or more groups are compared. In longitudinal studies Wilcoxon and Friedman \(-\)tests are used for two and three or more ordinal variables, respectively.

76
Multiple correspondence analysis or HOMALS may be employed to explore relationships and differences between multiple categorical variables (Grassi et al. 2003). The relationships between variables are described in a low-dimensional space by assigning numerical values to categories of variables, revealing underlying structures between categories (Zanting et al. 2001; Grassi et al. 2003). Each category is plotted in the centre of the group objects or cases that belong to that category minimising the total distance between cases. The categories that are similar are plotted close to each other and those with less similarity are plotted further apart.

3.6.1.2 Analysing Parametric Data

Parametric tests are used for interval data as appropriate; assuming that the level of measurement is interval or ratio, distribution of the population scores is normal, and the variances of both variables are equal. However, it has been suggested that robust tests are able to withstand violations to these assumptions, for example, the level of measurement may also be ordinal since tests apply to numbers, not to what these signify (Bryman & Cramer 1997). However, if both distributions of scores are non-normal, or the size of the samples is small, under 15, non-parametric tests are recommended (Bryman & Cramer 1997).

Pearson's $r$ is employed for testing correlations between variables, assuming relationships are linear and the dispersion of data points in a scatterplot is assumed to be homoscedastic, that is the points show no clear pattern (Bryman & Cramer 1997). The correlation coefficient $r$ allows the strength and direction of relationships to be explored. Values 0.20 to 0.39 are considered low, showing weak relationships (Bryman & Cramer 1997). Additionally, the coefficient of determination $r^2$ provides an indication of how much variation in a variable is explained by another. For example, two inversely correlated variables may share 36% of variance ($r = -0.60$, $r^2 = 0.36$). Multivariate relationships may be explored through partial correlation coefficient. The test allows examination of the effect of one or more variables that are held constant on a relationship between two others (Bryman & Cramer 1997).

Simple or multiple regression may be used not only to summarise the nature of a relationship between variables by producing a line and equation which fits the data, but for predicting likely values of the dependent variable within applicable limits (Field 2000). In a regression equation,
\[ y = b_0 + b_1x \]
y represents the dependent and \( x \) the independent variable, \( b_0 \) the regression constant, containing error, \( b_1 \) the regression coefficient. There may be multiple independent variables and regression coefficients. Whilst regression shares assumptions with Pearson’s \( r \), in order to produce an appropriate prediction, the residuals, or the discrepancies between observed (\( y \)) and estimated (\( \hat{y} \)) values for the dependent variable, should be normally distributed (Field 2000).

T-test is employed to explore differences between two unrelated or related means. In the former, differences between means are compared with the standard error of the difference in the means, whereas in the latter, the mean differences between pairs of scores within the sample and the mean differences in the population (Bryman & Cramer 1997). Analysis of variance (ANOVA) is used to determine differences between more than two unrelated or related means. An estimate of the between-groups variance is compared with an estimate of the within-groups variance in ANOVA (Bryman & Cramer 1997). A general linear model comprises different factorial designs for analysis of variance (Kinnear & Gray 2004). For example, this test enables a comparison of measured scores between demographic groups at different points in time at the same time, as well as a comparison of measured scores within a demographic group at different points in time. In order to compare within subjects variances, covariances among the scores of the various levels of the within subjects factor should be homogeneous. However, if the data fails the assumption, the test may be made more conservative; less susceptible to type I error (Kinnear & Gray 2004).

### 3.6.1.3 Factor Analysis

Factor analysis aims to simplify complex sets of data and is often applied to correlations between variables (Kline 1994). For example, if the researcher has developed items for a tool that measures satisfaction related to work, factor analysis can be employed to investigate which of the items form a construct that measures job or career satisfactions. In order for factor analysis results to be reliable, at least five respondents are required per item (Bryman & Cramer 1997). A factor or a construct comprises items or variables that correlate with each other and condenses the general idea of the items (Kline 1994). Items in a factor measuring job satisfaction, of course, correlate with each other but may correlate with other items measuring
career satisfaction because both measure satisfaction related to work. What then decides which factor an item belongs to, is its factor loading, that is, how much it correlates with a factor (Kline 1994). Loadings below 0.3 can be ignored as they account for less than 9% of the variance in the factor and may be considered unimportant (Kline 1994). If the content of an item is similar to other items that have high loadings in one factor, the item belongs to that factor. Factor analysis may be used to explore or to discover condensed factors from a multitude of variables. Factor analysis may also be used to confirm hypotheses based on theory or previous studies.

3.6.2 Processing and Analysing Qualitative Data

Audiotaped interview data is transcribed before analysis (section 3.5.2). The researcher may include other data, for example field notes (Miles & Huberman 1994). Computer software may be employed to assist coding, organising, storing, searching data and to facilitate interfacing qualitative and quantitative data. While the approach depends on the objectives of the study, a process of coding the data is essential (Miles & Huberman 1994; Smith 2002). Initially, some codes may be based on, for example research questions or field notes, and are subsequently refined during the analysis by "grounding" them to the data, and by adding others emerging from the data (Miles & Huberman 1994). A first wave of coding may be descriptive, generating labels for transcript segments; a second wave of coding may be interpretive, explaining the meaning of the segments; in a third wave the coding may be arranged in patterns, explaining data by themes. Emerging themes may be arranged in matrices and differences in the matrices are then compared and analysed. Quotes from the transcripts may provide examples of typical, atypical and interesting perceptions or feelings. In order to show the range of perceptions, the researcher may decide to report numbers or proportions of participants expressing particular opinions (Smith 2002). Qualitative data may be interfaced with quantitative data as appropriate to provide explanations why participants may or may not feel, for example, satisfied with their work. Ensuring credibility of qualitative analysis is described in section 3.7.
Chapter 3: Materials and Methods

3.7 CREDIBILITY OF RESEARCH

To ensure the credibility of the research findings the researcher should employ appropriate and rigorous research methods in line with the research aims and objectives. As described above the researcher has to decide between quantitative and qualitative research methods or to combine the two. The researcher selects a relevant sample from the population and collects data with an applicable tool and with an appropriate method. Finally, the collected data are analysed with an appropriate method.

The researcher is recommended to combine different types of approaches, methods or data to increase reliability and validity, and to minimise the bias of the research findings as appropriate (Miles & Huberman 1994; Bowling 1997; Smith 2002; Hearn et al. 2003). This is called triangulation and is particularly important for rigorous qualitative research (Miles & Huberman 1994). While the researcher should be aware that triangulation may lead to discrepancy between data sources, using multiple methods is likely to result in corroboration between data sources (Miles & Huberman 1994; Smith 2002). In order to gather comprehensive data, to complement and to support the different research methods, for example, in this study both quantitative and qualitative research designs were employed as appropriate and different types of data were collected at different points in time.

3.7.1 Validity

In order to ensure that the research findings are credible, a data collection tool, for example, a questionnaire or an interview schedule, has to be valid (Smith 2002). If an instrument has been constructed to measure job satisfaction, it should measure this and not something else. On the other hand, in qualitative research verbatim transcriptions are important in ensuring that the collected data are accurate reflections of the perceptions of feelings studied (Smith 2002). Additionally, two or more researchers may independently code collected data as a validity check of the analysis, and literature may be used as appropriate to confirm the findings (Smith 1998, Smith 2002). Ensuring validity mainly in quantitative research is described below.
3.7.1.1  Face Validity

The researcher begins constructing a data collection tool by thinking relevant and clear questions for the research topic; this is called face validity (Bowling 1997). The researcher can discuss the relevance of questions with other members of the research team in order to ensure face validity. Additionally, the data collection tool can be piloted amongst potential study participants, for example, community pharmacists. The pilot respondents are asked whether they perceive questions as unambiguous and relevant. The results of the pilot may lead to changes in the tool.

3.7.1.2  Content Validity

To ensure that the data collection tool investigates a research topic comprehensively and does not omit relevant issues the researcher should examine its content validity (Smith 1997). For example, the researcher can conduct interviews with potential study participants to explore a topic in detail, or ask a panel of experts to judge whether an intended tool covers a topic fully and if anything should be added, changed or removed. Qualitative work has inherent content validity; participants are able to discuss issues that are important to them and not only what the researcher thinks is important to the topic (Smith 1998). Participants can, for example, talk about why they on the whole are happy about their job but disgruntled because of one aspect.

3.7.1.3  Construct Validity

Does the data collection tool measure what it aims to measure; is the construct valid (Bowling 1997)? For example, community pharmacists may be generally dissatisfied with work but they may be satisfied with a particular aspect of their job. A data collection tool that aims to measure satisfaction with work should distinguish between different domains of satisfaction.

3.7.1.4  Responsiveness to Change

If change in job satisfaction is expected over time, the data collection tool should show its validity by responding to change (Bowling 1997). In contrast, results of a measurement, for
example, job satisfaction, are reliable if they can be repeated in the same study sample at a new point in time when no change is expected.

3.7.2 Reliability

A data collection tool should not only be valid but reliable. In quantitative research this may mean reproducibility of responses (Bryman & Cramer 1997). In contrast, in qualitative research the data are expected to be context specific; consistency of collecting, processing and analysing data are important (Smith 2002). The following methods for testing reliability may be used in quantitative and qualitative research as applicable.

3.7.2.1 Internal Consistency

The measured response equals to true response and error; responses to any one item may contain random error. When the researcher develops items or variables for a data collection tool, it has to be accepted that measured responses will contain some error that the researcher should try to minimise. If a scale (several items) detects or measures a single idea, for example job satisfaction, the scale is internally reliable (Bryman & Cramer 1997). Similarly, in qualitative research one single method should yield consistent results.

Instead of using one item to measure job satisfaction, the researcher may increase the reliability of a measurement by developing several items that measure different aspects of, for example, job satisfaction (section 1.4.3). Items in a construct should measure a single idea, for example a tool measuring job satisfaction should seek not to measure career satisfaction and the responses to items should correlate in a reliable construct (Streiner & Norman 1989). Different methods may be employed to test internal consistency. One of the methods is called split-half, where the responses to the items in a scale are split randomly into two halves, for example odd-numbered items in one half and even-numbered in the other (Streiner & Norman 1989). The responses in the halves should correlate with each other. A correlation coefficient can be calculated; a coefficient of 1 is a sign of total correlation and a coefficient of 0 is a sign of no correlation. The nearer the value of the coefficient is to 1, the more internally reliable is the scale.
Chapter 3: Materials and Methods

The split-half method tests only one of the split-half options and yields one of the possible reliability coefficients which may differ from one split to another (Streiner & Norman 1989).

Another method for testing internal reliability is called Cronbach’s coefficient $\alpha$. The coefficient is a sign of correlation between the items in a scale and, as above, can have any value between 0 and 1. Cronbach’s $\alpha$ is essentially a calculation of the average of all possible split-half reliability coefficients (Bryman & Cramer 1997). The coefficient of a scale should be as high as possible for good internal reliability; the lowest values researchers have accepted have been between 0.5 to 0.7 (Cronbach 1951; Nunnally 1978; Bowling 1997). The higher the value of the coefficient the more the set of items explains of variance in, for example job satisfaction, and the less may be attributed to error. On the other hand, if the correlations between the items are too high, the internal consistency is high, there could be redundancy as the items measure exactly the same thing and not different aspects of a trait (Streiner & Norman 1989). Redundant items should be omitted from the scale because they contribute little new information. An item with low correlation to the scale total should be omitted if an item does not correlate with the total score above 0.2 (Streiner & Norman 1989).

3.7.2 External Reliability

Reliable results should be reproducible where no change is expected; called external reliability (Bryman & Cramer 1997). For example, if a measurement of job satisfaction is repeated with a study population the results should be stable at different points in time. The test is called test-retest. Furthermore, the test-retest can be employed to check if a researcher codes data in the same way at different points in time. Appropriate statistical tests, for example, Cohen’s $\kappa$ coefficient for nominal, weighted $\kappa$ coefficient, Spearman’s $\rho$ or Kendall’s $\tau$ for ordinal, or Pearson’s $r$ for interval data, are applied to prove agreement between the results from two points in time. Stability of observations is similarly expected in qualitative research when one data collection method is employed (Bowling 1997). At the same time, the researcher should remain as objective as possible when collecting and analysing data to ensure external reliability (Miles & Huberman 1994).
3.7.2.3 Reliability of Coding

The reliability of coding of collected data should be tested as appropriate (Bowling 1997). For quantitative data an appropriate statistical test, such as Cohen’s $\kappa$ test, weighted $\kappa$ test, Pearson’s $r$, Spearman’s $p$ or Kendall’s $\tau$, may be used to verify inter-rater reliability (Bowling 1997). The $\kappa$ coefficient corrects for chance; an overall agreement for coding without agreement arisen by chance may be calculated (Streiner & Norman 1989). For example, if the performance of pharmacists to provide a service is assessed by one researcher, the reliability of that researcher’s assessment can be ensured by another. The $\kappa$ coefficient should be as high as possible for good agreement; values less than 0.40 indicate poor agreement, 0.40-0.59 fair agreement, 0.60-0.74 good agreement and 0.75-1.00 excellent agreement (Fleiss 1981). A weighted $\kappa$ takes into account partial agreement where responses differ by only one or two categories (Streiner & Norman 1989).

For qualitative data it is not possible to employ statistical tests to ensure the reliability of one researcher’s coding and analysis, but another researcher can check the credibility of the coding and analysis (Miles & Huberman 1994). Triangulation of data collection methods may also be employed to check similarity of the observations within the same time period (Bowling 1997).

3.7.3 Bias

The credibility of research findings is threatened by bias and error (Bowling 1997). The researcher should take great care to design the study appropriately, use applicable data collection methods, relevant sampling procedures and appropriate analysis methods to ensure that the findings are not biased.

The study participants can have a biasing influence on the results. The findings may be distorted because participants are more likely to agree when asked a question than disagree (Bowling 1997). Incorporation of negative questions to a data collection tool may help to avoid acquiescence and to check if participants are agreeing without thinking. Furthermore, respondents may give responses they think are expected of them instead of revealing their true
perceptions or feelings. In an interview situation the researcher should try to create as unthreatening an atmosphere as possible to encourage trust and free expression of perceptions and feelings (Smith 1998). The interviewer may unwittingly influence the participants; the researcher should not ask leading questions or let their preconceptions influence the interviewees (Smith 1998).

Awareness of being studied may have an effect on participants and they may change their behaviour; this is called the Hawthorne effect (Bowling 1997; Smith 2002). In longitudinal studies the same data are collected in waves: participants may become familiar with a topic and learn the responses they perceive are expected or even remember their own earlier responses. Additionally, becoming aware of the research topic can influence the participants’ perceptions, behaviour and feelings. Participants, their circumstances and perceptions can change over time. The changes in their responses can be real, but the values which the participants use to make judgements can change which changes their responses, or they may form a new mental concept of the research topic which, of course, changes their responses (Bowling 1997). The researcher has to weigh the likelihood of the shifts in response in longitudinal studies.

3.8 THE STUDY DESIGN

A concise description of the whole study design is given here. The study was prospective and longitudinal; the professional perceptions and satisfactions of a group of community pharmacists were studied concurrently with the advancement of a service development scheme called Medicines Management project within primary care. Whilst the Medicines Management project comprised an extensive evaluation of the implementation of a medication review service from the clinical patient perspective (Appendix 1), this study concentrates on describing and exploring the professional perceptions and satisfactions of participating pharmacists. The study also incorporated assessments of performance and competence, whilst cross-sectional, together they provide longitudinal evidence of the progress of pharmacists' performance and self-assessed competence.
In order to evaluate influences between participation in the Medicines Management project, an intervention of additional training and providing a new service, and pharmacists' professional perceptions and satisfactions, two groups of pharmacists were studied (sections 3.9.1 and 3.9.2). The panel of community pharmacists comprised an intervention group who had been recruited to provide medication reviews by two Primary Care Trusts. In order to participate, these pharmacists had to successfully complete clinical pharmacy training at Certificate level by distance learning provided independently by the Robert Gordon University before they could begin providing medication reviews. The panel also comprised a non-intervention group of pharmacists who had not been recruited to provide the service.

Additionally, a longitudinal study design was chosen to evaluate whether the pharmacists' professional perceptions would alter over time and when this potential change would occur. The study comprised three phases corresponding with the progress of the Medicines Management project (Figure 3.1). At phase one ($t_0$) the pharmacists in the intervention group participated in the clinical training between January and September 2002. This was followed by the first medication review period for the pharmacists in the intervention group at phase two ($t_1$) from January to December 2003. The second medication review period completed the study at phase three ($t_2$) from January to December 2004.

Triangulated methods were employed at all phases of the study to ensure valid and reliable data were collected, to decrease bias in the exploration of professional perceptions and satisfactions, and performance and self-assessed competence. Hence, quantitative data were collected through records and self-completed semi-structured postal surveys and qualitative data were collected through in-depth interviews and learning diaries. Data were collected in the three phases (Figure 3.1). In the intervention group, training performance was assessed at phase one and medication review performance at phase two. The assessment methods for training and medication review performance are described in sections 4.2.2 and 5.2.2 and the findings are described and explored in sections 4.3 and 5.3. Self-assessed competence of both groups was evaluated at phase three; the design of a postal questionnaire measuring self-assessed competence is described in section 6.2.2 and the findings are explored in section 6.3.
Figure 3.1. Flowchart showing the design and the time line of the project.
Pharmacists in both groups were asked to complete a postal questionnaire measuring professional perceptions and satisfactions at all three phases. The development of the postal questionnaire is described in section 4.2.3. The analysis methods and findings at phases one, two and three are described and explored in sections 4.4, 5.4 and 6.4. Both groups were interviewed on their professional perceptions and satisfactions at phases one and three. The development of an interview guide and a schedule for the in-depth interviews, and analysis processes are described in sections 4.2.4 and 6.2.4. The interview findings at phases one and three are described and explored in sections 4.5 and 6.5. The intervention group were asked to record their learning experiences at phases one and two. The development of diaries for recording learning and the findings at phases one and two are described in sections 5.2.4 and 5.5. The findings at each phase are compared and contrasted in sections 4.6, 5.6 and 6.6 and further discussed in sections 4.7, 5.7 and 6.7.

3.9 STUDY MATERIALS

3.9.1 Participating Agencies

The study was based in the north east sector of the Strategic Health Authority in London (Appendix 2). The Strategic Health Authorities manage the National Health Service (NHS) locally; there are twenty-eight in England. The Authorities are responsible for, for example, developing plans for improving health services in their local area, making sure local health services are of a high quality and are performing well, making sure national priorities, for example, programmes for medicines management are integrated into local health service plans (Department of Health 2005d).

The north east sector of the Strategic Health Authority in London comprises seven Primary Care Trusts (PCTs), four of which comprised the study area. These were Barking and Dagenham, Havering, Tower Hamlets, and City and Hackney PCTs. Primary Care Trusts manage primary care services, for example, community pharmacy (Department of Health 2005e). Eighty pharmacies were located within the former Barking and Havering Health Authority in 2002; thirty-seven in the Barking and Dagenham PCT and forty-three in the Havering PCT. Forty-three pharmacies were located within Tower Hamlets PCT in 2002, and fifty-eight within the City and Hackney PCT in
2004. The Robert Gordon University was commissioned to implement and evaluate a service development project, the Medicines Management project, by the former Barking and Havering Health Authority (predecessor of Barking and Dagenham, and Havering PCTs); this study is part of that project. Ethical approval application for the Medicines Management project was submitted by the Robert Gordon University to the London Region Ethical Committee; the approval, LREC (B&H) 167, was obtained (Appendix 3).

3.9.2 Pharmacists in the Intervention Group

Ideally, when comparing professional perceptions of pharmacists in an intervention group and a non-intervention group participants should be randomised into two groups, in order to minimise the influence of potentially confounding factors. Here, combined methods requiring and enabling detailed work were employed. Additionally, pharmacists were recruited to the intervention group by the former Barking and Havering Health Authority; a pragmatic, real world approach to sampling. The Health Authority invited all community pharmacists working within the Barking and Dagenham, and Havering PCTs to participate in the service development project in 2001, restricting the number of participants around 40 (Appendix 1). Seventy-nine pharmacists were willing to participate, only one pharmacist declined by referring to old age.

The pharmacists were then informed about the additional training they had to complete before starting to provide medication reviews. Forty-three community pharmacists consented to take part and were recruited to this Medicines Management project; twenty-two of these worked within the Barking and Dagenham PCT and twenty-one in the Havering PCT. Four of the pharmacists worked in national pharmacy chains and the rest in independent or small chain pharmacies. As part of the Medicines Management project, the pharmacists participated in compulsory training and education, which was a form of CPD, before beginning provision of medication reviews. The training was independently provided by the Robert Gordon University in 2002 (Appendix 1). Thirty-seven community pharmacists became accredited as service providers.
Two accredited pharmacists withdrew from the study, thus leaving thirty-five pharmacists to provide the service. Standardised summaries of patients’ medical notes held at the GP surgeries were provided for the pharmacists by the researcher (a pharmacist) and another community pharmacist. The pharmacists were allocated a minimum of 20 patients to be interviewed on their medications. The pharmacists identified potential DRPs based on the summary of the medical notes and the patient interview. If the pharmacists thought that any patient they had interviewed was experiencing any DRPs, they wrote a pharmaceutical care plan for that patient detailing all the identified DRPs and the actions they suggested to solve these problems. They also wrote a patient referral prioritising DRPs they perceived to be most important and the actions suggested to solve these to the patient’s GP who would decide on implementation of the suggestions, excluding other less significant DRPs from the care plan to not overwhelm GPs with a number of DRPs at the baseline. At follow-up the pharmacists referred any potentially unresolved DRPs from baseline and any new DRPs they identified to the GP.

3.9.3 Pharmacists in the Non-Intervention Group

3.9.3.1 Pharmacists in the Longitudinal Study

Purposive sampling methods were applied to recruit participants to the non-intervention group, to longitudinally study professional perceptions and satisfactions (Smith 2002). Most pharmacists in the intervention group worked in independent pharmacies or small chain pharmacies. Hence, pharmacists working in similar pharmacies were recruited to the non-intervention group. What’s more, it was essential to diminish the attrition likely to occur in longitudinal studies (Bowling 1997); according to anecdotal evidence pharmacists working for national pharmacy chains may change jobs more often than those working for independent pharmacies (also section 6.3.3). Those who worked in national pharmacy chains were not approached.

Since community pharmacists were recruited to provide a medication review service within the Barking and Dagenham, and Havering PCTs, pharmacists were recruited to the non-intervention group from the same PCTs. These pharmacists worked within the same geographical entity and may be assumed to have similar characteristics as those in the intervention group. However, all
pharmacists working within these two PCTs had been invited to participate in the service development project by the former Health Authority; half declined due to reasons unknown to this study. It may be assumed that their professional perceptions may have differed from the views of those who did decide to participate at the outset of this study. Therefore, two non-intervention groups were recruited from PCTs in the north east sector of the Strategic Health Authority in London. Pharmacists not participating in the Medicines Management project in the Barking and Dagenham, and Havering PCTs comprised one non-intervention group and pharmacists working within the Tower Hamlets PCT comprised the other; these pharmacists had neither been offered participation in the Medicines Management project nor additional training.

Within the Barking and Dagenham, and Havering PCTs thirty-eight of the pharmacies did not participate in the Medicines Management project; fourteen in the Barking and Dagenham PCT and twenty-two in the Havering PCT in 2002. In order to identify contact details of these pharmacies, a Directory of Primary Health Care Services in Barking, Dagenham and Havering and the NHS web site were used as sampling frames (Barking and Havering Health Authority 2001; Department of Health 2002b). At the time, one pharmacy was temporarily closed. Subsequently twenty-seven pharmacists were identified as eligible; working in independent or small chain pharmacies. The pharmacists were contacted by the telephone to obtain their names as it was essential the same respondents were followed throughout the longitudinal study.

In total there were forty-three pharmacies within the Tower Hamlets PCT in 2002. Thirty-seven pharmacists were identified as eligible; working in independent or small chain pharmacies. In order to identify contact details of the pharmacies a mailing list of pharmacies and the NHS web site for local services were used as sampling frames (Department of Health 2002b; Tower Hamlets PCT 2002). Three of the pharmacies did not have their telephone numbers on the NHS web site and, therefore they could not be approached. Twenty-nine pharmacists were successfully contacted by the telephone and their names were acquired for the study.
3.9.3.2 Pharmacists in the Cross-Sectional Study

Purposive sampling methods were applied to recruit participants to the second non-intervention group to study competence (Bowling 1997). In order to enhance response rate, the non-intervention group comprised pharmacists working in any type of community pharmacies. Furthermore, three non-intervention groups of pharmacists were recruited from PCTs in the north east sector of the Strategic Health Authority in London. Pharmacists not participating in the Medicines Management project in the Barking and Dagenham, and Havering PCTs comprised one non-intervention group, and those working within the Tower Hamlets PCT comprised another (section 3.9.3.1). The third non-intervention group comprised pharmacists working within City and Hackney Teaching PCT. Within the Barking and Dagenham, Havering, Tower Hamlets, and City and Hackney PCTs altogether 143 pharmacies did not participate in the Medicines Management project. Pharmacy premises and addresses were identified through the NHS website for local pharmacy services for the sampling frame (Department of Health 2004c).

3.9.4 Participating General Practitioner Surgeries

Purposive sampling methods were employed to recruit general practitioner (GP) surgeries and GPs to the Medicines Management project. Random selection of the GP practices would have been impractical due to the high level of collaboration required between the pharmacists and GPs. Hence, the former Barking and Havering Health Authority had asked the pharmacists in the intervention group to identify local GP surgeries in order to establish or to utilise existing working relationships between GPs and pharmacists in the Medicines Management project. The Health Authority assumed that patients registered at these surgeries were likely to use the services of the participating pharmacies and the pharmacists would provide the service to their own patients in the intervention group of patients. Additionally, GP surgeries had to have a computerised repeat prescription system in order to participate (Appendix 1). The recruitment process of GP surgeries is described in Figure 3.2. The former Health Authority inquired GPs' willingness to participate in project in 2001 and held an information meeting in 2002.
The Health Authority contacted the GP surgeries. The researcher and a pharmaceutical or a prescribing advisor held recruitment meetings with GPs. The Health Authority held an information meeting for GPs and pharmacists. The PCTs and the Robert Gordon University contacted the GP surgeries. 61 GP surgeries identified by community pharmacists. 53 GP surgeries indicated their support. 19 GP surgeries recruited.

Figure 3.2. Flowchart showing the process of GP surgery recruitment.

The Barking and Dagenham, and Havering PCTs and the Robert Gordon University approached the GPs once more in 2002. At this stage two GP practices were excluded; one did not have a computer based repeat prescribing system and the pharmacist hoping to work with another had not completed his training. Meanwhile, after the pharmacists had completed the training, recruitment meetings were arranged with individual GP surgeries. Twenty-two GP surgeries were visited and nineteen were recruited. Whilst two surgeries declined to participate, one was willing to participate at a later date.

3.9.5 Participating Patients

Patients aged sixty-five or older receiving four or more medicines on repeat prescription were eligible to participate in the Medicines Management project (Appendix 1). They were identified by the researcher and another pharmacist using the patient databases of the participating surgeries. Patients who were unable to give informed consent due to cognitive impairment, or lived in a residential or nursing home were excluded. GPs, practice nurses or practice managers assisted the researcher to identify ineligible patients.
The Robert Gordon University aimed to recruit a sample of 600 patients, 300 in an intervention group and in a non-intervention group. A population of 15508 were aged 65 years or older, and 6626 patients (42.7 %) had been prescribed four or more medicines. In total, 6096 patients were eligible; 8.0 % or 530 patients were excluded. The researcher sent recruitment information with a cover letter to all eligible patients registered at GP surgeries with less than or equal to 200 eligible patients, and to 200 randomly chosen patients registered at surgeries with more than 200 eligible patients. For one of the surgeries 210 recruitment letters were prepared; all were sent. In order to fulfil the target of recruiting 600 patients, 300 additional recruitment letters were sent to patients registered at three large GP practices; 100 randomly chosen patients at each. In total, 3897 recruitment letters were sent to 64 % of the identified eligible patients. Consenting patients were asked to contact the Robert Gordon University; a final total of 11 % or 672 patients were recruited.

Patients were randomly allocated into intervention and non-intervention groups. Patients in both groups were interviewed on their medications and care plans and referrals were written for them. However, only the referrals of the patients in the intervention group were sent to the GPs at the baseline. Patients in the non-intervention group received the standard care from their GP between the baseline and the follow-up. After the follow-up interview referrals of both groups of patients were sent to the GPs. Any life threatening DRPs were to be referred to the GPs immediately, leading to the exclusion of the patient from the project.

3.9.6 Project Support

One pharmacist was employed to assist the researcher to identify eligible patients and another to summarise patients’ medical notes held at the GP surgeries prior to the patient interviews. The pharmacists in the intervention group interviewed the patients and delivered the medication reviews. A clinical pharmacist reviewed the patient referrals written by the community pharmacists. The researcher conducted all in-depth interviews and administered the longitudinal postal survey exploring pharmacists’ professional perceptions and satisfactions. Two undergraduate pharmacy students administered the cross-sectional postal survey on self-assessed competency and were jointly supervised with another researcher.
3.9.7 Administrative Support

Two administrators were employed by the Robert Gordon University to assist the researcher with recruitment and the community pharmacists with arranging appointments for patient interviews. Three others at the School of Pharmacy assisted the researcher to transcribe a quarter of the phase one and all the phase three interviews.

The researcher was registered at the School of Pharmacy, University of London. A Dell personal computer with Windows 2000 operating system was used throughout the study. The employed software were Word Perfect 11 for word processing, SPSS 12.01 (Statistics Package for Social Sciences) for statistical analysis of quantitative data, and QSR NVivo 1.3 for assisting the qualitative analysis and for interfacing qualitative and quantitative data.

3.9.8 Academic Support

The researcher participated in a two-day introductory short course on computer assisted qualitative data analysis and in two one-day introductory NVivo software and follow-up NVivo software training courses for qualitative data analysis at Institute of Social Research, Sociology Department, University of Surrey. The researcher also attended a three-day SPSS for Windows II: intermediate course for quantitative data analysis at Centre for Applied Statistics, Lancaster University.

The researcher was supported academically by two Academic Supervisors. One was Director of Academic Department of Pharmacy at Barts and the London NHS Trust, London, and Senior Clinical Lecturer at the School of Pharmacy. The other was Professor of Pharmacy Education and Head of Educational Development at the School of Pharmacy.
Chapter 4
PHASE ONE
DESCRIBING PROFESSIONAL TRAINING,
PERCEPTIONS AND SATISFACTIONS
4.1 INTRODUCTION

This chapter comprises the aims and the objectives, the methods and materials, the results and analysis, and discussion of the first part of the study, phase one (t₀).

4.1.1 Aims

The aims of this part of the study were to describe the professional perceptions of community pharmacists; to evaluate whether the decision to participate in a medication review service scheme and participation in clinical pharmacy training influenced their perceptions and satisfactions.

4.1.2 Objectives

In order to meet the aims, the following objectives were operationalised:

i) To explore the effect of clinical training on pharmacists in the intervention group;

ii) To measure community pharmacists’ professional satisfactions, and perceptions of their personal development needs and behaviour;

iii) To explore community pharmacists’ perceptions of CPD, and professional satisfactions, using different data collection methods; and

iv) To evaluate effects of performance in training and participation in a Medicines Management project on pharmacists’ perceptions and satisfactions.
4.2 METHODS

4.2.1 Study Design

A description of the whole longitudinal study design is given in Chapter 3; a concise description of the study design at phase one \((t_0)\) is given here. In order to explore whether a decision to participate in a service development project had influenced community pharmacists' satisfactions and professional perceptions, a survey and in-depth interviews with pharmacists in both intervention and non-intervention groups were undertaken (Figure 4.1). Additionally, in order to explore the effect of clinical training on pharmacists' subsequent performance as medication reviewers and on self-assessed competence, their performance during training is explored. The study area and the recruitment of pharmacists to the intervention and non-intervention groups are described in section 3.9.

Figure 4.1. Flowchart showing the time line of the project: the phase one is in bold.
Clinical Training for the Pharmacists in the Intervention Group

In order to explore the effect of clinical training on the intervention group their course performance was assessed (Figure 4.2). The training is described in Appendix 1.

Figure 4.2. Flowchart showing the time line of evaluation of performance and competence: phase one is in bold.

Data Collection, Handling and Analysis

The data on the pharmacists’ clinical training results were received from the Robert Gordon University. All collected data were coded and anonymised; the pharmacists were not identifiable through any analysis. The data were entered onto an SPSS database for statistical analysis. The entered data were cleaned; the ranges of codes were checked for outlying values, subsequently corrected. Ten per cent of randomly chosen cases was checked for coding errors. No errors were found, therefore, the number of coding errors could be assumed to have been minimal in the whole database. Similar data handling procedures were employed for all quantitative data throughout the study. Appropriate descriptive and inferential analyses were conducted on the data.
4.2.3 Professional Perceptions Survey

In order to measure and explore pharmacists' professional satisfactions and perceptions of their personal development needs and behaviour of community pharmacists at all the three phases a self-completed survey questionnaire was developed (Figure 4.3).

Figure 4.3. Flowchart showing the time line of the professional perceptions and satisfactions surveys: phase one is in bold.

4.2.3.1 Developing the Questionnaire

A questionnaire was developed based on previously validated scales to measure pharmacy specific job related facet-free and facet-specific satisfactions (Barnett & Kimberlin 1986). Whilst other survey tools exist, they have not been developed specifically for pharmacy (Curtiss et al. 1978; Willett & Cooper 1996). The tool selected for this study had been previously validated for hospital pharmacists in the UK (Rajah et al. 2001). In order to make the hospital instrument more suitable for community pharmacists it was modified to comprise two sections; pharmacists' demographics and a set of quantitative items (Appendix 4). The number of items was kept to a minimum to encourage response.

The original questionnaire comprised 79 items to measure hospital pharmacists' professional satisfaction (Rajah et al. 2001), items and factors inapplicable in community setting were excluded. Five factors, comprising 21 items, were included in the current questionnaire: 'job satisfaction'; 'career satisfaction'; 'perceived appreciation by patients'; 'satisfaction with duties'; and 'degree of autonomy at job'. Six items were modified for community pharmacy. Two previous factors, 'opportunities for postgraduate training and education', and 'personal support
with postgraduate training and education comprised only two items each. The latter was re-labelled to better reflect the modified items (Table 4.1). The four items are analysed individually and used to explore community pharmacists’ perceptions of personal development needs and behaviours (section 4.4.9). The questionnaire was reviewed for face validity by two researchers. A five-point Likert-scale was employed, scores ranged from strongly agree (5) through uncertain (3) to strongly disagree (1). The scoring was reversed for negative items. The total satisfaction score for each factor was calculated as the sum of the responses to the items.

Table 4.1. Selection of items and factors on professional satisfactions and perceptions.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Job satisfaction</td>
<td>61, 62, 63, 64</td>
</tr>
<tr>
<td>B Career satisfaction</td>
<td>65, 66, 67, 68</td>
</tr>
<tr>
<td>C Opportunities for postgraduate training and education</td>
<td>70, 77</td>
</tr>
<tr>
<td>D Personal planning of postgraduate training and education</td>
<td>72, 75</td>
</tr>
<tr>
<td>E Perceived appreciation by patients</td>
<td>38, 39, 40, 43</td>
</tr>
<tr>
<td>F Satisfaction with duties</td>
<td>30, 35, 36, 56, 60</td>
</tr>
<tr>
<td>G Degree of autonomy at job</td>
<td>8, 22, 34, 55</td>
</tr>
</tbody>
</table>

4.2.3.2 Piloting the Questionnaire

The questionnaire was piloted amongst a sample of community pharmacists in order to check the respondents’ understanding of the instructions and the questions. Ten questionnaires were distributed and five were returned. The respondents did not record any difficulty in understanding any of the instructions or the questions on demographics. Two pharmacists commented on items A64 and G55, respectively, but did not record any difficulty in understanding them. Since these items had been extracted without modification from the validated hospital pharmacy survey (Rajah et al. 2001), no changes were made.
4.2.3.3 Administrating the Questionnaire

The survey questionnaire (Appendix 4) was mailed to the community pharmacists in both groups (section 3.9) with a cover letter and a pre-paid self-addressed return envelope. To ensure the highest possible response rate, two reminders were sent to non-respondents at two and four week intervals. The questionnaires were coded to identify individual pharmacists in the longitudinal survey and to keep track of non-respondents.

4.2.3.4 Data Handling and Analysis

Data handling procedures are described in section 4.2.4.1. Appropriate descriptive and inferential analyses were conducted on the data (Bryman & Cramer 1997).

4.2.4 In-Depth Interviews

In order to explore professional perceptions and satisfactions of community pharmacists in-depth individual interviews were conducted at phase one and three (Figure 4.4).

![Flowchart showing the time line of the qualitative research on professional perceptions and satisfactions: interviews at phase one are in bold.](image)

4.2.4.1 Developing the Interview Guide

A semi-structured interview guide was developed for the interviews. The topics related to the factors in the survey questionnaire on professional perceptions and satisfactions (Appendix 5).
Chapter 4: Methods

The guide was reviewed for its face validity by two researchers. The interview guide was developed to allow the interview to respond and to assure that every pharmacist had an equal opportunity to express their perceptions and feelings (Smith 2002). The respondents directed the interviews and could discuss issues important to them within the context of professional perceptions and satisfactions. If an interviewee discussed similar issues not present in the schedule, these were added to the guide. It was also possible for the researcher to rephrase questions during the interviews and to add others if deemed necessary. Changes to the interview guide were made as the first interviewed pharmacists were willing to discuss CPD in more detail than had been anticipated. In the subsequent interviews pharmacists were asked these new questions (Appendix 5). Additionally, the order of the questions was changed to make the interview flow more smoothly. The interviews were started with an open question on perceived meaning of CPD to allow pharmacists to raise issues that were important to them. The context of each question is explained in Appendix 6.

4.2.4.2 Developing the Interview Schedule

The refined interview guide was modified for telephone interviews with the pharmacists in the non-intervention group (Appendix 5). To maximise response, the interview time was shortened and two questions were omitted from the interview schedule.

4.2.4.3 Interviews

All pharmacists were interviewed by the researcher. Having sent the survey questionnaires, the researcher arranged interview appointments with pharmacists in the intervention group. Pharmacists in the non-intervention group were contacted for an interview following the completion of the questionnaire. The pharmacists in the intervention group were interviewed face-to-face in their pharmacies. In contrast, in order to maximise response rate the pharmacists in the non-intervention group were invited to be interviewed by telephone. It was accepted that the telephone interviews might not yield the same depth of information as the face-to-face interviews; however, it was thought that respondents would discuss perceptions that were important to them personally regardless of the method of the interview.
All pharmacists consented for recording of the interviews. The interviews with the pharmacists in the intervention group were recorded with a mini disc recorder and transcribed verbatim. The telephone interviews with the pharmacists were recorded in writing; detailed notes were taken during the interviews and updated with further detail immediately after the telephone call.

### 4.2.4.4 Data Handling and Analytical Procedures

All collected data were anonymised. The data were entered onto a database using NVivo software for assistance of data storage, coding of the interviews and data retrieval once coded. The process of the qualitative interview analysis is presented in Figure 4.5. A grounded approach was employed in the descriptive analyses of the interviews; the codes and themes were allowed to emerge from the interviews, rather than using a pre-defined coding frame.

![Figure 4.5. Flowchart of the processes involved in analysing the interviews at phase one.](image)

A preliminary coding frame was constructed based on the interview guide and the interviews. The coding frame subsequently included the in-vivo codes emerging from the interviews as the analysis progressed. An iterative process was applied to ensure exhaustive analysis had been undertaken and to ensure credibility. In the first iteration the transcribed data were described...
in detail, and coded for meaning. The interviews were coded by attaching labels to passages of text and then by describing what was being said in the passages. In the second iteration the labels and descriptions were entered onto the database for more coding and descriptions. The credibility of coding was ensured by another researcher. Coding reports were generated with the assistance of the software to analyse the coding further; the third iteration yielded more descriptions of labels. A thematic approach arranged patterns of labels and the descriptions emerging from the interviews. The themes were described and further arranged in clusters. The perceptions and satisfactions of pharmacists were interfaced with quantitative data to evaluate the influences between the intervention and perceptions and satisfactions, and to enhance the credibility of the findings (section 4.7). The themes emerging from interviews in this phase were compared with the themes emerging from phase three interviews in Chapter 6.
Chapter 4: Results and Analysis

4.3 CLINICAL TRAINING: RESULTS AND ANALYSIS

This section presents the results and the analysis undertaken to explore the effect of clinical training on pharmacists in the intervention group.

4.3.1 Sample

Thirty-seven pharmacists completed their training successfully and became accredited as service providers; eight were female pharmacists. Other characteristics were obtained from the respondents of the professional perceptions and satisfactions survey (section 4.4.2).

4.3.2 Clinical Training Performance

The results of the course work are presented in Table 4.2. Results of the Pharmaceutical care planning module were approximately normally distributed, whereas results of other compulsory modules were bimodal. The marks of the compulsory modules ranged greatly between 40 and 96 %, whereas the marks of the optional modules varied less. Pharmacists may have chosen the optional module for their own interest or for their patients' benefit or because they were familiar with the subject and wanted to make sure that they passed.

Table 4.2. Results of the training modules.

<table>
<thead>
<tr>
<th>Module</th>
<th>Mean (%)</th>
<th>Median (%)</th>
<th>Range (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmaceutical Care Planning</td>
<td>72</td>
<td>74</td>
<td>41 - 96</td>
</tr>
<tr>
<td>Cardiovascular Therapeutics 1</td>
<td>59</td>
<td>60</td>
<td>40 - 82</td>
</tr>
<tr>
<td>Cardiovascular Therapeutics 2</td>
<td>63</td>
<td>64</td>
<td>40 - 90</td>
</tr>
<tr>
<td>Endocrine Therapeutics</td>
<td>66</td>
<td>66</td>
<td>40 - 92</td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal Therapeutics (n = 4)</td>
<td>70</td>
<td>65</td>
<td>60 - 88</td>
</tr>
<tr>
<td>Musculoskeletal Therapeutics (n = 10)</td>
<td>57</td>
<td>55</td>
<td>44 - 72</td>
</tr>
<tr>
<td>Respiratory Therapeutics (n = 23)</td>
<td>70</td>
<td>68</td>
<td>50 - 86</td>
</tr>
<tr>
<td>All modules</td>
<td>65</td>
<td>66</td>
<td>47 - 79</td>
</tr>
</tbody>
</table>
4.3.2.2 Clinical Training Analysis

HOMALS was employed in the analysis of the training results to illustrate relationships between variable categories (section 3.6.1). Some variables were dichotomised around the median score, for example training results. Quantifications of the categorical variables were explored. The results of the optional modules were excluded from the analysis as categories with low numbers may distort HOMALS quantifications. In a two-dimensional solution the Pharmaceutical care planning training results contributed to dimension two (Eigenvalue = 0.228), time since graduation, and the other training results contributed to dimension one (Eigenvalue = 0.304), length of tenure contributed to both dimensions, gender and employment status did not discriminate on either dimension (Figure 4.6).

Figure 4.6. Quantifications of the clinical training results.
Whilst the categories of results to Cardiovascular therapeutics 1 were grouped close together with time since graduation and employment status, the categories of the results to the other modules did not correspond with characteristics, though female pharmacists seemed to have a tendency towards higher results. The three therapeutics modules contributed to the same dimension, indicating that similar type of knowledge was attained through these modules. Indeed, Cardiovascular therapeutics 2 results correlated positively with Cardiovascular therapeutics 1 and Endocrine therapeutics (Spearman’s $p = 0.549$, $p < 0.0005$; Spearman’s $p = 0.547$, $p < 0.0005$, respectively). Interestingly, the categories of results to Endocrine and Cardiovascular 2 therapeutics grouped closer together with Pharmaceutical care planning, instead of with Cardiovascular therapeutics 1. Pharmaceutical care planning results correlated positively with Endocrine therapeutics and Cardiovascular therapeutics 2 (Spearman’s $p = 0.526$, $p = 0.001$; Spearman’s $p = 0.354$, $p = 0.032$, respectively). The assessment method changed between the first module, Pharmaceutical care planning, and the second module, Cardiovascular therapeutics 1 (Appendix 1). The change of the assessment method may have influenced the training results in the latter; in the subsequent two modules, the pharmacists may have grown accustomed to the new types of assignments. However, participants who achieved higher results in one module were likely to do so in others, and vice versa. The potential influence of the training results on performance and self-assessed competence is explored further in Chapters 5 and 6.

Whilst employees and those who had graduated more recently tended to achieve higher results in the Cardiovascular therapeutics module 1, the differences were not statistically significant ($\chi^2$ tests, $p > 0.05$). Those who held a postgraduate degree or an additional qualification tended to achieve higher results in the Pharmaceutical care planning module; not significant ($\chi^2$ test, $p > 0.05$). Perhaps surprisingly, having attained similar knowledge earlier did not seem to help with the training. However, those who held a postgraduate degree in pharmacy may have achieved lower results in previous examinations.

**SUMMARY**

- 37 pharmacists successfully completed clinical training
- Training results were not associated with pharmacist characteristics
- Pharmacists achieving higher results in Cardiovascular therapeutics 2 module were likely to do so in other compulsory modules
This section presents the results and the analysis undertaken to measure and explore community pharmacists’ professional satisfactions and perceptions of their personal development needs and behaviour.

4.4.1 Sample

The questionnaire was sent to 98 eligible community pharmacists, 20 of whom were women. In total 70 usable responses were received, a response rate of 71%. Thirty-seven pharmacists in the intervention group and thirty-four pharmacists in the non-intervention group completed and returned the questionnaire. One respondent disagreed strongly with all the 25 items; this response was omitted from the analysis as it can be assumed unreliable.

4.4.1.1 Non-respondents

Twenty-seven pharmacists did not respond to the postal survey at phase one. The majority were male (22/27); as expected as most pharmacists in the sample frame were male. Additionally, most non-respondents were in the non-intervention group (binomial test, test proportions 0.44:0.54, p = 0.016). They may have felt less obliged to respond than those in the intervention group, also found by Pendergast et al. (1995).

4.4.2 Demographics

A summary of demographics of the respondents is displayed in Table 4.3. Female pharmacists were in minority, expected from the sample frame. Half of the community pharmacists in Britain are women (Hassell 2003) and according to the registration department of the RPSGB the majority of all pharmacists who are registered in London are women, 55% (Gardner 2003). There were as many owners as there were employees. The majority of pharmacists had a permanent contract, one pharmacist worked part-time. Almost two in five pharmacists had a
consultation area in their pharmacy. Only a few respondents had a post-graduate or additional qualification; ranging from a Certificate to a PhD. Pharmacists in the intervention group were the only ones to have an additional personal appointment, such as being a member of Local Pharmaceutical Committee (LPC) or Professional Executive Committee (PEC). On average, the pharmacists had graduated nineteen years previously with a length of tenure almost twelve years. Both time since graduation and length of tenure were approximately normally distributed.

Table 4.3. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase one.

<table>
<thead>
<tr>
<th></th>
<th>All % (n)</th>
<th>Intervention % (n)</th>
<th>Non-intervention % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21 (15/70)</td>
<td>24 (9/37)</td>
<td>18 (6/33)</td>
</tr>
<tr>
<td>Male</td>
<td>79 (55/70)</td>
<td>76 (28/37)</td>
<td>82 (27/33)</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>50 (35/70)</td>
<td>49 (18/37)</td>
<td>51 (17/33)</td>
</tr>
<tr>
<td>Employee</td>
<td>50 (35/70)</td>
<td>51 (19/37)</td>
<td>49 (16/33)</td>
</tr>
<tr>
<td><strong>Job security</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>89 (57/64)</td>
<td>91 (31/34)</td>
<td>87 (26/30)</td>
</tr>
<tr>
<td>Fixed term contract</td>
<td>11 (7/64)</td>
<td>9 (3/34)</td>
<td>13 (4/30)</td>
</tr>
<tr>
<td><strong>Consultation area in the pharmacy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation area</td>
<td>38 (26/68)</td>
<td>39 (14/36)</td>
<td>38 (12/36)</td>
</tr>
<tr>
<td>None</td>
<td>62 (42/68)</td>
<td>61 (22/36)</td>
<td>62 (20/36)</td>
</tr>
<tr>
<td><strong>Postgraduate or additional qualification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>81 (57/70)</td>
<td>73 (27/37)</td>
<td>91 (30/33)</td>
</tr>
<tr>
<td>Qualification</td>
<td>19 (13/70)</td>
<td>27 (10/37)</td>
<td>9 (3/33)</td>
</tr>
<tr>
<td><strong>Additional appointment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>89 (62/70)</td>
<td>78 (29/37)</td>
<td>100 (33/33)</td>
</tr>
<tr>
<td>Appointment</td>
<td>11 (8/70)</td>
<td>92 (33/37)</td>
<td>-</td>
</tr>
</tbody>
</table>

4.4.3 Exploring Demographics

Apart from the intervention itself there were no statistically significant differences between the characteristics of the pharmacists working within the three PCTs: a comparison of the pharmacists' perceptions was possible. There was a correlation between the number of years
after graduation and the number of years in current post (Pearson’s $r = 0.722$, $p < 0.0005$),
accounting for 52% of the variance. Many community pharmacists had remained working in
the same pharmacy and were not likely to change jobs. The relationship between the two
variables is shown in Figure 4.7.

![Figure 4.7. Scatterplot of the relationship between time since graduation and length of tenure.](image)

Pharmacists who remained in the same pharmacy for longer were likely to be owners (t test, 
$t = 6.904$, $p < 0.0005$), four outlying values were excluded from analysis. Additionally, owners
were more likely to have graduated earlier (t test, $t = 2.385$, $p = 0.020$). Becoming an owner
seems to offer a career path in community pharmacy; younger pharmacists work as employees
before they decide or are able to become owners. Male pharmacists tended to be owners,
to have graduated earlier and to have been working in the same pharmacy for longer, however
the differences between genders were not significant ($\chi^2$ test, $p > 0.05$; t tests, $p > 0.05$).
Employees were less likely to have a consultation area in their pharmacy ($\chi^2 = 5.316, \text{df} = 1, p = 0.026$). For owners of independent pharmacies, having a consultation area in their pharmacy could generate more income as they might be able to provide more services, whereas employees may not have been able to influence their employer’s decision of whether to have a consultation area in the pharmacy. Additionally, pharmacists who had worked for a shorter while were less likely to have a consultation area in their pharmacy ($t$ test, $t = 2.122, p = 0.038$), one outlying value was excluded from analysis.

Whilst pharmacists in the intervention group were more likely to have an additional appointment ($\chi^2 = 8.056, \text{df} = 1, p = 0.005$), the expected count was less than five in two cells in cross-tabulation, suggesting that this observed difference should be interpreted cautiously (section 3.6.1.1). Those who had an additional appointment were more likely to have an additional qualification ($\chi^2 = 5.900, \text{df} = 1, p = 0.034$), the expected count was less than five in one of the cross-tabulation cells. These findings indicate the differences between characteristics; pharmacists who study to achieve an additional qualification may become interested in having an additional appointment or vice versa.

### Responses to the Survey Items

Before analysis on the items was undertaken, the item response data were checked for validity. The responses varied from strongly disagree to strongly agree for 22 items (Table 4.4). The frequency of responses to each item was reviewed. Items that had low frequencies (< 10%) at one end of the scale or uniform frequencies across the scale were excluded from further scaling analysis as they did not contribute to the scale variance. Three items were excluded to be analysed individually. Six respondents (8.6%) disagreed with the item D75, in contrast with fifty-four (77.1%) who had either agreed or strongly agreed with the statement. Only two respondents (2.9%) disagreed with item E38. The dispersion of responses to item E40 was poor as three pharmacists (4.3%) disagreed with the statement. Initially the factor ‘perceived appreciation by patients’ (E) comprised four items. The two the remaining items, E39 and E43, could not constitute a factor because a factor should comprise at least three items (Kline 1994).
### Table 4.4. Distribution of responses to professional perceptions and satisfactions items at phase one.

The five point Likert scale response options

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>A61</td>
<td>8.6</td>
<td>6</td>
<td>14.3</td>
<td>10</td>
<td>25.7</td>
</tr>
<tr>
<td>A62</td>
<td>17.1</td>
<td>12</td>
<td>20.0</td>
<td>14</td>
<td>22.9</td>
</tr>
<tr>
<td>A63</td>
<td>20.3</td>
<td>14</td>
<td>39.1</td>
<td>27</td>
<td>5.8</td>
</tr>
<tr>
<td>A64</td>
<td>11.4</td>
<td>8</td>
<td>44.3</td>
<td>31</td>
<td>7.1</td>
</tr>
<tr>
<td>B65</td>
<td>10.0</td>
<td>7</td>
<td>15.7</td>
<td>11</td>
<td>21.4</td>
</tr>
<tr>
<td>B66</td>
<td>37.1</td>
<td>26</td>
<td>18.6</td>
<td>13</td>
<td>22.9</td>
</tr>
<tr>
<td>B67</td>
<td>32.9</td>
<td>23</td>
<td>17.1</td>
<td>12</td>
<td>18.6</td>
</tr>
<tr>
<td>B68</td>
<td>25.7</td>
<td>18</td>
<td>14.3</td>
<td>10</td>
<td>27.1</td>
</tr>
<tr>
<td>C70</td>
<td>12.9</td>
<td>9</td>
<td>30.0</td>
<td>21</td>
<td>15.7</td>
</tr>
<tr>
<td>C77</td>
<td>2.9</td>
<td>2</td>
<td>11.4</td>
<td>8</td>
<td>14.3</td>
</tr>
<tr>
<td>D72</td>
<td>8.6</td>
<td>6</td>
<td>27.1</td>
<td>19</td>
<td>15.7</td>
</tr>
<tr>
<td>D75</td>
<td>-</td>
<td>-</td>
<td>8.6</td>
<td>6</td>
<td>14.3</td>
</tr>
<tr>
<td>E38</td>
<td>1.4</td>
<td>1</td>
<td>1.4</td>
<td>1</td>
<td>15.7</td>
</tr>
<tr>
<td>E39</td>
<td>1.4</td>
<td>1</td>
<td>25.7</td>
<td>18</td>
<td>14.3</td>
</tr>
<tr>
<td>E40</td>
<td>1.4</td>
<td>1</td>
<td>2.9</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>E43</td>
<td>1.4</td>
<td>1</td>
<td>10.0</td>
<td>7</td>
<td>12.9</td>
</tr>
<tr>
<td>F30</td>
<td>10.0</td>
<td>7</td>
<td>35.7</td>
<td>25</td>
<td>20.0</td>
</tr>
<tr>
<td>F35</td>
<td>2.9</td>
<td>2</td>
<td>28.6</td>
<td>20</td>
<td>20.0</td>
</tr>
<tr>
<td>F36</td>
<td>21.4</td>
<td>15</td>
<td>42.9</td>
<td>30</td>
<td>20.0</td>
</tr>
<tr>
<td>F56</td>
<td>5.7</td>
<td>4</td>
<td>20.0</td>
<td>14</td>
<td>12.9</td>
</tr>
<tr>
<td>F60</td>
<td>5.7</td>
<td>4</td>
<td>11.4</td>
<td>8</td>
<td>11.4</td>
</tr>
<tr>
<td>G8</td>
<td>4.3</td>
<td>3</td>
<td>15.7</td>
<td>11</td>
<td>10.0</td>
</tr>
<tr>
<td>G92</td>
<td>5.7</td>
<td>4</td>
<td>40.0</td>
<td>28</td>
<td>8.6</td>
</tr>
<tr>
<td>G34</td>
<td>1.4</td>
<td>1</td>
<td>13.0</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>G55</td>
<td>42.9</td>
<td>30</td>
<td>27.1</td>
<td>19</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Footnote: Poorly performing items are displayed in bold in the item column.

#### 4.4.4.1 Handling Missing Values

One pharmacist (1054) did not respond to item A63 and another (1096) to item G34. Median values of the overall response to each of these items have been used in the analysis in order to retain as many responses as possible in the longitudinal survey (Bowling 1997). Median values were chosen due to the ordinal nature of the item responses.
4.4.5 Internal Reliability of the Factors

The factors observed in the hospital pharmacist survey (Rajah et al. 2001) emerged also in this study. The sample in the hospital survey was much larger (n = 623) than in this study (n = 70), validated factors should apply to data presented here. Further, it has been suggested that there should be at least five cases per variable to conduct a factor analysis (Bryman & Cramer 1997). However, to confirm the assumption an exploratory factor analysis was performed on items C70, C77, D72, E39, and E43; no new factors emerged. These items pertaining to personal development and perceived appreciation were analysed individually.

The factors or scales for 'job satisfaction' (A), 'career satisfaction' (B), 'satisfaction with duties' (F) and 'degree of autonomy at job' (G) comprised all the items that had been included in the survey also after the dispersion of responses to the items had been checked (section 4.4.4). In order to examine whether the items in the scales all measured the same concept and whether the assumption that the same scales could be used to measure both hospital and community pharmacists' satisfactions, the internal reliability of the scales was tested (Table 4.5).

The internal reliability for 'career satisfaction' (B) was very good, \( \alpha = 0.93 \) (Bryman & Cramer 1997). The internal reliability for 'job satisfaction' (A) and for 'satisfaction with duties' (F) were good, \( \alpha = 0.79 \) and \( \alpha = 0.68 \), respectively. Whilst the correlation of two items with the other three was poor (\(< 0.30\)) in 'degree of autonomy at job' (G), internal reliability for this scale was acceptable, \( \alpha = 0.50 \). The scale was retained for further analysis. The combined scores of the items in these four scales may be employed as an indication of community pharmacists' satisfactions, and the factors validated for hospital pharmacists may be applied for community pharmacists.
Table 4.5. Internal reliability of factors at phase one.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Corrected item total correlation</th>
<th>if item removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction (A)</td>
<td>A61</td>
<td>0.73</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>A62</td>
<td>0.76</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>A63</td>
<td>0.60</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>A64</td>
<td>0.34</td>
<td>0.85</td>
</tr>
<tr>
<td>Career satisfaction (B)</td>
<td>B65</td>
<td>0.81</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>B66</td>
<td>0.92</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>B67</td>
<td>0.84</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>B68</td>
<td>0.78</td>
<td>0.93</td>
</tr>
<tr>
<td>Satisfaction with duties (F)</td>
<td>F30</td>
<td>0.32</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>F35</td>
<td>0.45</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>F36</td>
<td>0.41</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>F56</td>
<td>0.42</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>F60</td>
<td>0.61</td>
<td>0.56</td>
</tr>
<tr>
<td>Degree of autonomy at job (G)</td>
<td>G8</td>
<td>0.18</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>G22</td>
<td>0.38</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>G34</td>
<td>0.16</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>G55</td>
<td>0.45</td>
<td>0.24</td>
</tr>
</tbody>
</table>

4.4.6 Scores of the Factors

Scales for 'job satisfaction' (A), 'career satisfaction' (B) and 'degree of autonomy at job' (G) consisted of four items; the theoretical minimum score was four, the maximum 20, and the neutral score or mid-scale was 12. Scale for 'satisfaction with duties' (F) consisted of five items; the theoretical minimum was five, the maximum 25 and the mid-scale was 15. The mean and median factor scores of the respondents (n = 70) are displayed in Table 4.6.

Table 4.6. The factor scores at phase one.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>12.4</td>
<td>4.0</td>
<td>13.0</td>
<td>4 - 19</td>
</tr>
<tr>
<td>Career satisfaction</td>
<td>10.1</td>
<td>4.8</td>
<td>10.0</td>
<td>4 - 19</td>
</tr>
<tr>
<td>Satisfaction with duties</td>
<td>16.5</td>
<td>3.6</td>
<td>17.0</td>
<td>9 - 24</td>
</tr>
<tr>
<td>Degree of autonomy at job</td>
<td>12.4</td>
<td>2.7</td>
<td>12.0</td>
<td>5 - 19</td>
</tr>
</tbody>
</table>
In this sample the mean 'job satisfaction', 'satisfaction with duties', and 'degree of autonomy at job' scores were above the mid-scale, indicating satisfaction. In contrast, the mean 'career satisfaction' score was below the mid-scale, implying dissatisfaction. Lower career satisfaction than job satisfaction may be an indication of a non-existing career path in community pharmacy at the time of the study. However, pharmacists have been found to be less satisfied with their careers in other studies (Barnett & Kimberlin 1988; Rajah et al. 2001).

4.4.7 Exploring the Factors

In order to explore community pharmacists' professional satisfactions, inferential analyses were conducted. Differences in, and relationships with, 'job satisfaction' are explored and similar tests were performed for all the satisfaction scales.

4.4.7.1 Analysing Job Satisfaction

In the intervention group pharmacists who achieved higher mean training results were less satisfied with their jobs (Spearman's $p = -0.383$, $p = 0.028$). Being dissatisfied they may have been more motivated to put more effort in the training to ensure that they would be able to provide medication reviews and change their daily work. Some expected to become more satisfied if work was more varied, they were able to provide new services, had more clinical involvement, or gained new skills and knowledge (section 4.5.4.1). On the other hand, they may have perceived that with their newly attained knowledge they could move to another field of pharmacy and were dissatisfied with the current situation. No other statistically significant differences were found (Tables 4.7 and 4.8). The intervention group seemed as satisfied as the non-intervention group despite having decided to participate in the Medicines Management project. 'Job satisfaction' score did not correlate with length of tenure or time since graduation (Pearson's $r = 0.031$, $p > 0.05$; Pearson's $r = 0.002$, $p > 0.05$, respectively).
Table 4.7. Exploration of job satisfaction: one-way ANOVA test at phase one.

<table>
<thead>
<tr>
<th>PCT</th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>95% CI</th>
<th>F</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barking &amp; Dagenham</td>
<td>24</td>
<td>12.29</td>
<td>3.99</td>
<td>10.61-13.98</td>
<td>0.062</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Tower Hamlets</td>
<td>18</td>
<td>12.72</td>
<td>3.36</td>
<td>11.05-14.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8. Exploration of job satisfaction: t-test at phase one.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>95% CI</th>
<th>t</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>intervention group</td>
<td>37</td>
<td>12.84</td>
<td>3.93</td>
<td>11.53-14.15</td>
<td>0.878</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>33</td>
<td>12.00</td>
<td>4.05</td>
<td>10.57-13.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>15</td>
<td>14.00</td>
<td>3.98</td>
<td>11.79-16.21</td>
<td>1.734</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>male</td>
<td>55</td>
<td>12.02</td>
<td>3.91</td>
<td>10.96-13.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>consultation area</td>
<td>26</td>
<td>13.31</td>
<td>4.09</td>
<td>11.66-14.96</td>
<td>1.461</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>no consultation area</td>
<td>42</td>
<td>11.86</td>
<td>3.91</td>
<td>10.64-13.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>owner</td>
<td>35</td>
<td>12.49</td>
<td>3.66</td>
<td>11.23-13.74</td>
<td>0.089</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>employee</td>
<td>35</td>
<td>12.40</td>
<td>4.33</td>
<td>10.91-13.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no additional qualification</td>
<td>57</td>
<td>12.16</td>
<td>3.83</td>
<td>11.14-13.17</td>
<td>-1.260</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>additional qualification</td>
<td>13</td>
<td>13.69</td>
<td>4.55</td>
<td>10.94-16.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no additional appointment</td>
<td>62</td>
<td>12.18</td>
<td>4.02</td>
<td>11.16-13.20</td>
<td>-1.570</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>additional appointment</td>
<td>8</td>
<td>14.50</td>
<td>3.12</td>
<td>11.89-17.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.7.2 Analysing Career Satisfaction

No statistically significant differences or relationships between characteristics were found in 'career satisfaction'. The intervention group seemed as satisfied (mean = 10.84, 95% CI 9.15-12.53) as the non-intervention group (mean = 9.27, 95% CI 7.70-10.84) despite having decided to participate in the Medicines Management project.
4.4.7.3 Analysing Satisfaction with Duties

Female pharmacists and those who held an additional appointment seemed to be more satisfied with their duties (Table 4.9). No other statistically significant differences or relationships were found. The intervention group was as satisfied with their duties (mean = 17.00, 95% CI 15.73-18.27) as the non-intervention group (mean = 16.00, 95% CI 14.83-17.17).

Table 4.9. Exploration of satisfaction with duties: t-test at phase one.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>95% CI</th>
<th>t</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>15</td>
<td>18.33</td>
<td>3.87</td>
<td>16.19-20.47</td>
<td>2.266</td>
<td>0.027</td>
</tr>
<tr>
<td>male</td>
<td>55</td>
<td>16.04</td>
<td>3.37</td>
<td>15.12-16.95</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>no additional appointment</td>
<td>62</td>
<td>16.11</td>
<td>3.41</td>
<td>15.25-16.98</td>
<td>-2.837</td>
<td>0.006</td>
</tr>
<tr>
<td>additional appointment</td>
<td>8</td>
<td>19.75</td>
<td>3.45</td>
<td>16.86-22.64</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

4.4.7.4 Analysing Degree of Autonomy at Job

No significant differences or relationships between characteristics were found in ‘degree of autonomy at job’. Pharmacists’ perceptions of degree of autonomy in the intervention group (mean = 12.27, 95% CI 11.39-13.15) and in the non-intervention group (mean = 12.58, 95% CI 11.56-13.59) was similar.

4.4.7.5 Relationships between Factor Scores

Pearson’s correlation coefficient was used to test the strength of the relationship between the factors. The scores to factors showed positive correlation with each other (Table 4.10), meaning that increase in one score would result in increase in another (Bryman & Cramer 1997): all the scales measure work related satisfaction. Correlation between scores to ‘job satisfaction’ and scores to ‘career satisfaction’ accounted for 38 % of the variance between the two factors, indicating that also other variables may influence these satisfactions. ‘Satisfaction with duties’ and ‘degree of autonomy at job’ had an effect on the relationship between ‘job satisfaction’ and ‘career satisfaction’. When the two former factors were held constant the partial correlation
coefficient between the two latter was lower (0.363, p = 0.002) than Pearson's correlation coefficient, indicating that the relationship between 'job satisfaction' and 'career satisfaction' was partially explained by 'satisfaction with duties' and 'degree of autonomy at job'.

Table 4.10. Pearson's correlation coefficients between the factors at phase one.

<table>
<thead>
<tr>
<th></th>
<th>Job satisfaction</th>
<th>Career satisfaction</th>
<th>Satisfaction with duties</th>
<th>Degree of autonomy at job</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job satisfaction</strong></td>
<td>-</td>
<td>0.613</td>
<td>0.577</td>
<td>0.560</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>p &lt; 0.0005</em></td>
<td><em>p &lt; 0.0005</em></td>
<td><em>p &lt; 0.0005</em></td>
</tr>
<tr>
<td><strong>Career satisfaction</strong></td>
<td>0.613</td>
<td>-</td>
<td>0.538</td>
<td>0.532</td>
</tr>
<tr>
<td></td>
<td><em>p &lt; 0.0005</em></td>
<td></td>
<td><em>p &lt; 0.0005</em></td>
<td><em>p &lt; 0.0005</em></td>
</tr>
<tr>
<td><strong>Satisfaction with duties</strong></td>
<td>0.577</td>
<td>0.538</td>
<td>-</td>
<td>0.543</td>
</tr>
<tr>
<td></td>
<td><em>p &lt; 0.0005</em></td>
<td><em>p &lt; 0.0005</em></td>
<td></td>
<td><em>p &lt; 0.0005</em></td>
</tr>
<tr>
<td><strong>Degree of autonomy at job</strong></td>
<td>0.560</td>
<td>0.532</td>
<td>0.543</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><em>p &lt; 0.0005</em></td>
<td><em>p &lt; 0.0005</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.8 Responses to the Personal Development and Perceived Appreciation Items

The pharmacists' responses to the individual items were shown in Table 4.4. Two in five community pharmacists perceived that they did not get encouraged to work towards further qualifications relevant to their job (C70); they might not be motivated to participate in CPD or seek to extend their roles (section 4.5.3.8). Additionally, most pharmacists thought that they had sufficient training to do their work effectively (C77); the main role of community pharmacists was dispensing of medicines at this time. Whilst most pharmacists perceived themselves to be competent in their work, they did not see any need for further training and development. They may also have perceived that other roles were not available for them. Whilst implementation of mandatory CPD participation had been announced (RPSGB 2001a; RPSGB 2001b), one in three did not plan their training and development needs regularly (D72). However, the majority of respondents reported attendance of CPD events, and reflecting on what they had learned after attending (D75). Whilst the respondents generally felt valued by patients and customers and perceived that their services were appreciated (E40 and E43), more than half thought that patients were only concerned about getting their medication as
quickly as possible (E39). Four in five perceived that patients attempted to comply with the
directions and advice they gave patients (E38); they perceived that pharmacists could influence
patients' health related behaviours, which was important for implementation of a medication
review service.

4.4.9 Exploring the Personal Development and Perceived Appreciation Items

In order to explore community pharmacists' professional satisfactions, and perceptions of their
personal development needs and behaviours inferential analyses were conducted. Statistical
tests are reported for the items only if they were statistically significant. The coding of negative
statements was reversed to facilitate comparison of responses (section 4.2.3.1): a higher
median value meant a more positive perception.

4.4.9.1 Analysing Opportunities for Training and Education Items

In the intervention group pharmacists who achieved higher mean training results were more
likely to think they were not encouraged to study (Spearman's $\rho = -0.347, p = 0.048$). They
may have tried to perform well as they had been offered this opportunity to attain a
qualification. The intervention group as a whole was more likely to perceive that they were
encouraged to study towards further qualifications (C70) (Table 4.11); the opportunity to
participate in the Medicines Management project may have influenced them. Additionally, those
who held an additional qualification or had a consultation area in their pharmacy felt more
couraged to study. No other statistically significant differences or relationships between
characteristics were found.
Table 4.11. Exploration of item C70: Mann-Whitney U test at phase one.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>37</td>
<td>3.46</td>
<td>4.00</td>
<td>42.36</td>
<td>-3.079</td>
<td>0.002</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>33</td>
<td>2.52</td>
<td>2.00</td>
<td>27.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no additional qualification</td>
<td>57</td>
<td>2.86</td>
<td>3.00</td>
<td>34.59</td>
<td>-2.132</td>
<td>0.032</td>
</tr>
<tr>
<td>additional qualification</td>
<td>13</td>
<td>3.69</td>
<td>4.00</td>
<td>39.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>consultation area</td>
<td>26</td>
<td>3.42</td>
<td>3.50</td>
<td>40.50</td>
<td>-2.026</td>
<td>0.044</td>
</tr>
<tr>
<td>no consultation area</td>
<td>42</td>
<td>2.76</td>
<td>2.50</td>
<td>30.79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No significant differences or relationships were found between characteristics in responses to item C77. In general, the intervention group was as likely to perceive that they had sufficient training to do their job effectively as the non-intervention group. Participation in the clinical training and anticipation of providing medication reviews may have influenced the perceptions of the intervention group.

4.4.9.2 Analysing Personal Planning of Training and Education Items

No significant differences or relationships between characteristics were found between characteristics in responses to items D72 and D75. The intervention group reported planning their training and development as regularly as the non-intervention group (D72). Similarly, the intervention group was as likely to report reflecting on their learning as the non-intervention group (D75). In the intervention group perceptions of personal development did not influence the training results.

4.4.9.3 Analysing Perceived Appreciation by Patients Items

Pharmacists' perceptions of patients did not influence training performance in the intervention group. No significant differences or relationships were found between any sub-groups' response to item E38. Although the intervention group were more inclined to perceive that patients tried to follow their advice, the difference was not significant. However, the intervention group was more likely to perceive that patients were not only concerned about
speed of the service (E39, Table 4.12). This perception may have influenced their willingness to participate in the Medicines Management project and to provide medication reviews. Additionally, female pharmacists and those who had an additional appointment were inclined to have a more positive perception about patients. There were no other statistically significant differences or relationships between characteristics to item E39.

Pharmacists who did not have a consultation area were more likely to perceive that they were treated politely by patients (E40, Table 4.12). Pharmacists may have perceived that if they were seen providing additional services and not serving customers presenting prescriptions or other queries there was a strain on customer relations. While the intervention group had a higher mean score, the difference was not significant. No other significant differences or relationships were found in responses to E40.

The intervention group and owners were more likely to perceive that patients appreciated their services (E43, Table 4.12). The positive opinion of patients’ appreciation may have influenced the decision of the intervention group to participate. Owners were more likely to have remained in the same pharmacy for longer than employees (section 4.4.3); they may have formed closer relationships with patients frequenting their pharmacy. No other statistically significant differences or relationships were found in responses to E43.
Table 4.12. Exploration of items E39, E40 and E43: Mann-Whitney U test at phase one.

<table>
<thead>
<tr>
<th>Variable</th>
<th>intervention group</th>
<th>non-intervention group</th>
<th>female</th>
<th>male</th>
<th>no additional appointment</th>
<th>additional appointment</th>
<th>consultation area</th>
<th>no consultation area</th>
<th>owner</th>
<th>employee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>mean</td>
<td>median</td>
<td>mean</td>
<td>rank</td>
<td>Z</td>
<td>mean</td>
<td>median</td>
<td>mean</td>
<td>mean</td>
</tr>
<tr>
<td>E39 &quot;Patients are only concerned about getting their medication as quickly as possible so that they can leave as quickly as possible&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>37</td>
<td>2.92</td>
<td>3.00</td>
<td>2.00</td>
<td>41.55</td>
<td>-2.733</td>
<td>0.006</td>
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<tr>
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<td>2.00</td>
<td>28.71</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>female</td>
<td>15</td>
<td>3.13</td>
<td>4.00</td>
<td>2.00</td>
<td>45.27</td>
<td>-2.174</td>
<td>0.029</td>
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<td></td>
</tr>
<tr>
<td>male</td>
<td>55</td>
<td>2.36</td>
<td>2.00</td>
<td>32.84</td>
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<td></td>
<td></td>
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<tr>
<td>no additional appointment</td>
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<td>2.00</td>
<td>33.70</td>
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<td>-2.134</td>
<td>0.032</td>
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<tr>
<td>additional appointment</td>
<td>8</td>
<td>3.38</td>
<td>4.00</td>
<td>40.44</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>E40 &quot;Patients and customers treat me courteously&quot;</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>consultation area</td>
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<td>3.73</td>
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<td>-1.979</td>
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<td>no consultation area</td>
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<td>4.00</td>
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<td></td>
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<tr>
<td>E43 &quot;Patients show appreciation for the services I provide them&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
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<td>4.14</td>
<td>4.00</td>
<td>39.93</td>
<td></td>
<td>-2.070</td>
<td>0.039</td>
<td></td>
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</tr>
<tr>
<td>non-intervention group</td>
<td>33</td>
<td>3.67</td>
<td>4.00</td>
<td>30.53</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>owner</td>
<td>35</td>
<td>4.11</td>
<td>4.00</td>
<td>40.20</td>
<td></td>
<td>-2.073</td>
<td>0.039</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>employee</td>
<td>35</td>
<td>3.71</td>
<td>4.00</td>
<td>30.80</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

SUMMARY
*70 pharmacists responded to the postal survey on professional perceptions and satisfactions
*scales measuring professional satisfactions and previously validated in hospital pharmacy setting were internally reliable in community pharmacy setting
*mean job and career satisfaction scores were low in this sample; pharmacists in intervention and non-intervention groups seemed equally satisfied at this phase
*satisfaction with duties and 'degree of autonomy at job' contributed to the relationship between 'job satisfaction' and 'career satisfaction'
The intervention group felt more encouraged to work towards further qualifications relevant to their work and tended to perceive that patients appreciated their services and perhaps, chose to participate in a service development project
INTERVIEWS ON PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS

This section presents the results of community pharmacists' perceptions of continuing professional development (CPD) and professional satisfactions.

4.5.1 Sample

In total, 57 pharmacists were interviewed. All the forty-three pharmacists in the intervention group were interviewed while they were participating in the training. Notes taken during one accidentally deleted interview (B1018) were used in the analysis. Another interview (B1007) was deleted and the pharmacist was re-interviewed. Whilst 18 pharmacists in the non-intervention group working within Tower Hamlets PCT returned the postal survey, 14 were interviewed. Two pharmacists refused to be interviewed, claiming to be too busy to participate. Another two questionnaires were not completed by the recruited pharmacists, so these other pharmacists could not be traced for an interview.

4.5.2 Demographics

The characteristics of the pharmacists were collected from the survey responses; however, six in the intervention group did not complete the survey (section 4.4.2). Eleven were female pharmacists and almost half of the respondents were employees (24/51). Most pharmacists had a permanent contract (42/46) and one pharmacist worked part-time. Many pharmacists had a consultation area in their pharmacy (21/50). While additional or postgraduate qualifications ranged from a Certificate to a PhD, the majority of the respondents did not have a postgraduate qualification (40/51). Interestingly, pharmacists in the non-intervention group did not tend to have any additional personal appointments; PCTs may have had different local structures.
4.5.3 Exploring Perceptions of Continuing Professional Development

This section presents the results and the analysis taken to explore the pharmacists' perceptions of CPD (Figure 4.8). The order of presentation reflects the perceived importance of the stages in the CPD cycle for community pharmacists.

Figure 4.8. The analysis strategy for exploring emergent themes of pharmacists' perceptions of CPD.

4.5.3.1 Meaning of Continuing Professional Development

The pharmacists expressed their perceptions of what CPD meant to them. Although the concept of CPD had been clarified (Farhan 2001; RPSGB 2001b), few pharmacists had gained an insight what the CPD cycle would mean in practice. Many were unable to distinguish CE and CPD. Participation in learning activities was considered to be crucial for CPD. However, some perceived that whilst some activities would be regarded as CPD, others would not:

"I think even now maybe clarification, what is considered CPD, what activities are, which meeting could be considered CPD, which accredited meetings or self-study, or you know, I suppose I'm not clear whether, I assume that it all counts as CPD. But CPD would mean in an overall plan, I imagine. So, I suppose I'm not 100 per cent clear what, what exactly is CPD, whether the CPD is studying on your own time whatever you wish or towards to a certain goal, or to a certain overall plan in development."

1023B, male, intervention group, section 18
However, many described the aim of CPD; it would help them to learn, improve and develop their skills and knowledge, keep up to date with changes in pharmacy, refresh or brush up on skills or knowledge acquired or attained previously:

"[CPD] means keeping up to date with the latest developments and going over old stuff that we probably covered 20 years ago at college, seeing the latest guidelines. [...] Increasing knowledge and hopefully able to use it and help."

1030B, male, intervention group, section 1

Pharmacists considered being able to apply skills and knowledge they possessed or were going to achieve in practice, as essential to their work and for community pharmacy. Many perceived that they wanted to feel more confident in their job and thought that CPD would give them confidence to give correct advice to patients and other healthcare professionals:

"[CPD] gives me, it gives me more confidence. I feel that I've kept up with the knowledge that's out there and, you know, just gives you more confidence."

1022B, male, intervention group, section 8

Some might have felt that they were competent in their job because they were registered pharmacists, others may not have felt comfortable discussing becoming more competent or not being competent enough. One pharmacist in the intervention group directly addressed the issue of becoming more competent:

"CPD means keeping abreast with knowledge, that I can do my job to a level which is more than competent. I just don't become more competent, I want to be more competent than I did."

1036B, male, intervention group, section 2

Achieving competence forms the first part of the pharmacists' perceptions of a CPD cycle (Figure 4.9); a version of which was promoted as good practice by the RPSGB (2001c). The pharmacists' perceptions of the CPD cycle are explored during the course of the analysis; reflecting the importance they assigned to the different parts of the cycle.
4.5.3.2 Assessment of Learning

The pharmacists expressed their perceptions about different forms of assessment (Table 4.13); however, many thought their learning should not be assessed. Two main types of assessments were thought to be employed: assignments to assess pharmacists' knowledge after completing a learning activity and accreditations given to pharmacists for attending a workshop or a meeting. Others included self-assessment or keeping a record of learning experiences, and assessment of performance by recipients of a pharmacist's services or by a mentor or a facilitator. Whilst pharmacists had been recommended to record their CPD (RPSGB 2001c), only three pharmacists in the intervention group kept a record of their learning. Few wondered how the competence of the assessors would be ensured. Two pharmacists in the intervention group perceived that assessment of learning that leads to provision of a service should be structured, indicating perceived discrepancy between training providers and their assessment.
### Table 4.13. Pharmacists' perceptions of assessment of CPD.

<table>
<thead>
<tr>
<th>CPD ASSESSMENT: describes the perceptions of different forms of assessment of CPD</th>
<th>CATEGORY</th>
<th>OPINIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment: describes the perceptions of assignments used to assess learning</td>
<td>Assignment: describes the perceptions of assignments used to assess learning</td>
<td>Some perceived that assignments could be employed to assess pharmacists' knowledge, others thought that assignments did not guarantee competence. Additionally, some pharmacists opposed exams, as that would create stress.</td>
</tr>
<tr>
<td>Attendance: describes the perceptions of attendance accreditation as a learning assessment</td>
<td>Attendance: describes the perceptions of attendance accreditation as a learning assessment</td>
<td>Some pharmacists thought that attending a workshop or a meeting would ensure that they had learnt something and that an accreditation for attendances was enough. However, others thought that mere attendance of a workshop did not guarantee competence.</td>
</tr>
<tr>
<td>Logbook: describes the perceptions of keeping a logbook for learning assessment</td>
<td>Logbook: describes the perceptions of keeping a logbook for learning assessment</td>
<td>Some were unsure how to record their learning activities. Few perceived that logbook entries could be used for CPD assessment.</td>
</tr>
<tr>
<td>Feedback: describes the perceptions of obtaining feedback as learning assessment</td>
<td>Feedback: describes the perceptions of obtaining feedback as learning assessment</td>
<td>Some perceived that patients and other healthcare professionals could give feedback on pharmacists' performance, well performing community pharmacists would have loyal customers and be respected by GPs and nurses. Audits and CPD mentors or facilitators could give feedback on pharmacists' competence and support them with their CPD.</td>
</tr>
<tr>
<td>Able to practise: describes the perception of turning theory into practice and assessment of learning</td>
<td>Able to practise: describes the perception of turning theory into practice and assessment of learning</td>
<td>Many perceived that a competent pharmacist would be able to use achieved skills or knowledge in practice; therefore, no other assessment of competence was needed.</td>
</tr>
<tr>
<td>No need: describes the perception of assessment of learning being unnecessary</td>
<td>No need: describes the perception of assessment of learning being unnecessary</td>
<td>Some thought that as healthcare professionals pharmacists had an obligation to be competent throughout their careers and should be trusted in their efforts to learn.</td>
</tr>
</tbody>
</table>

Whilst half of the pharmacists thought it was possible to assess pharmacists' learning or knowledge, others perceived that an assessment should not be done whilst a third perceived that an assessment was possible but not desirable. Whilst many perceived that pharmacists' learning at formal courses would be easy to assess by using, for example, multiple choice questions, others thought these assessments would not ensure pharmacists' competence. One pharmacist thought that pharmacists may not have to learn anything to be able to answer such questions:
"Again I think the easiest assessments would be the multiple choice assessments or actually attending courses. But that doesn’t necessarily guarantee competence, I don’t think. I find the multiple choices, you could fill them up in about 15 minutes. Even if you didn’t read the course work you could just look at the relevant sections and fill up the multiple choice questions. You know, unless you were dedicated and there is a willingness to learn and not just collect the CPD points, it could have a problem."

1043B, male, intervention group, section 9

Some pharmacists thought there was no need for any assessment because as healthcare professionals they had an obligation to continue to be competent throughout their careers. They would do their utmost to learn and improve and could also be trusted in their pursuit of learning; an assessment was unnecessary. Some reasoned that if any one community pharmacist did not wish to learn, then their skills and knowledge would deteriorate which would result in then losing their livelihood:

"But I think if you’re a professional you, I think eight out of ten will be, but those, those other two whose mind isn’t in, they’re the ones who will be left behind more and more. No, I think most pharmacists will take, you know, make an effort […] and as a professional you will make an effort. There will always be exceptions, you can never, you know, not all the fingers are the same."

1030B, male, intervention group, section 12

"So that only the fittest and the more educated survive. So those that are behind, would fall behind, those that aren’t will keep up to date."

1035B, male, intervention group, section 6

Since many pharmacists perceived the purpose of CPD was to develop, they thought that it would be essential for them to be able to convert attained knowledge or acquired skills into practice. Pharmacists were perceived to be competent if they were able to use their knowledge in practice. Therefore, no other assessment than patients or other healthcare professionals (HCPs) vouching of the pharmacist’s learning would be required. However, they did not seem to realise that patients may not have expertise in clinical knowledge:

"If we have learnt something then we should be able to apply it in a real life situation. I went to a GP interface course a little while back and there was a GP at the end of the course to assess whether we had learnt anything. But the real learning process began when we were registered, then we had to learn how to adopt and learn the local needs of the community. And I think that the testimonial that it works comes from people who come back to the pharmacy."

1096B, male, non-intervention group, section 7
4.5.3.3 Choosing Learning Activity

Many pharmacists described different learning activities that would help them to achieve competence (Figure 4.10). They were describing the outcomes of CPD (section 4.5.3.1), but many had not adopted the recommended ways to reach those outcomes:

"What have I done? Er, in the past I've been to, I've been to a couple of CPPE ones. [...] I've done a couple of the distance learning ones."

1024B, male, intervention group, section 9

Figure 4.10. Pharmacists' perceptions of the CPD cycle: learning and achieving competence.

The pharmacists discussed the advantages and disadvantages of different forms of CPD activities summarised in Table 4.14.
Table 4.14. Pharmacists’ perceptions on learning activities.

<table>
<thead>
<tr>
<th>CPD LEARNING ACTIVITIES: describes the expressed perceptions regarding different CPD activities</th>
<th>CATEGORY</th>
<th>OPINION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance learning: describes the expressed perceptions regarding distance learning</td>
<td>Whilst distance learning was perceived to be best for theoretical learning and had the advantage of being easy to fit into a busy schedule, some thought that it was difficult to be motivated to do and had the disadvantage of not providing any interaction with other pharmacists.</td>
<td></td>
</tr>
<tr>
<td>Workshops: describes the expressed perceptions regarding workshops</td>
<td>Whilst attending workshops was perceived difficult as they might not fit into a busy schedule, once one did participate that time was dedicated for learning. Additionally, they were perceived to be best for practical learning with hands-on experience and interaction with other pharmacists, facilitating learning.</td>
<td></td>
</tr>
<tr>
<td>Professional journals: describes the expressed perceptions regarding journals</td>
<td>Whilst some perceived that by reading relevant journals can help one to keep up-to-date with professional matters, others thought they had no time or motivation for reading. Some thought that reading journals was not CPD as it had not been planned, and reading could not be monitored and learning was not assessed formally.</td>
<td></td>
</tr>
</tbody>
</table>

Many pharmacists had an opinion of their preferred activity for learning:

"There is a lot of input from various pharmacists [...] I really enjoy myself. I prefer [workshops] to distance learning courses. I have tried doing that before I started to attend these."

1016B, female, intervention group, section 18

"I do prefer to work on my own and do [distance learning] on my own at home where I tend to find if we do things in a group you can end up going areas that are, you don't need necessarily go over."

1004B, female, intervention group, section 3

Some perceived that distance learning would be better for attaining knowledge of more theoretical subjects while attending a workshop would support learning of more practical topics. This perception may be valuable when choosing an appropriate learning activity to match the learning objective when the CPD model recommended by the RPSGB is implemented (2001c):

“But if it was, suppose it was to do with wound management or something like that where you need to have interaction, yeah, with dressings and things a workshop would be better.”

1013B, male, intervention group, section 10
Other forms of learning activities were mentioned by individual pharmacists, for example, relevant literature, shadowing, certificate, diploma, or MSc studies in a relevant field and e-learning:

"And that is where the clinical diploma is coming and it’s helped me to tackle issues and to tackle areas that I have not been happy with before."

1004B, female, intervention group, section 1

"I’m using a few websites myself but it would be nice to actually have it formalised or whatever. Even things like the Cochrane library available to us or whatever, you know, that sort of thing would be very, very useful."

1036B, male, intervention group, section 1

"I have always liked shadowing someone. Like go to a hospital and follow a pharmacists there and compare our ways of working."

1092B, female, non-intervention group, section 2

For the successful implementation of the CPD as proposed by the RPSBG (2004d), pharmacists will have to be made more aware of all options of learning activities open to them and how to best use them. On the other hand, the purpose of CPD is to sustain competence; it should not be important how pharmacists reach the aim but ensure that they do achieve competence and remain competent.

4.5.3.4 Learning Needs and Development

Pharmacists have to identify what they need to achieve in order to become and remain competent (RPSGB 2004d). In hospital pharmacy this may be easier to accomplish than in community pharmacy, and in pharmacy chains easier than in independent pharmacies where performance appraisal and identifying learning needs are routinely incorporated in work (Department of Health 2004b). Many community pharmacists had to rely on their own reflections of their learning needs and to form learning objectives to fulfil (Figure 4.11). Few pharmacists expressed how they assessed their learning needs:

"Actually, it helps me to update myself on certain areas I feel deficient, you know. Let’s say, for example, the, what I did last year was eczema. So, I have been advising the patients on the best creams, you know, [...] on how to use them and when to use them and how to mix the most. So, I guess it’s mainly to improve my service to the patients."

1011B, male, intervention group, section 1
Additionally, most pharmacists did not express a need to plan their learning activities. They might have taken planning for granted and did not mention it. On the other hand, they might have discovered the most suitable method for their own learning and preferred to continue using that method for their CPD. Therefore, they did not have to plan their studies. Few recognised the need for planning, prioritising and setting aims for learning (Figure 4.12).
Figure 4.12. Pharmacists' perceptions of the CPD cycle: planning learning, assessing learning needs, learning and achieving competence.

One pharmacist said he understood which path the RPSGB expected him to follow to achieve competence. This pharmacist considered the path helpful; however, he acknowledged that learning needs would often appear in the course of a working day and would have to be dealt with immediately. There would not be time to assess the learning need or plan the learning in those cases:

"It's a process of sort of trying to identify your needs in terms of education and in terms of development and trying to sort of do something about it and then sort of perhaps looking back and seeing how you have done. That's the ideal thing. But what frequently happens, is you encounter the problem before you even have thought about and then sort of trying to sort of identify the right way of going about addressing that need that there is and then perhaps look at that need that there is and then perhaps looking back on it."

10198, male, intervention group, section 1

Some pharmacists related the need for personal and professional development to their age and experience. Thirteen pharmacists perceived that they had enough experience in community pharmacy or were too old; they did not need to develop. A greater proportion
of pharmacists in the non-intervention group shared this perception. In contrast, two newly qualified pharmacists in the intervention group thought that they were developing:

"I think, I mean I've been qualified about a year or so, so I think that I'm still developing as a pharmacist anyway."
1005B, female, intervention group, section 18

"I can see that I am perhaps five years from retirement. So, therefore, that's not relevant."
1037B, male, intervention group, section 13

"I think I am already well developed. I have been a pharmacist for the last 24 years."
1096B, male, non-intervention group, section 9

Rather than describing their personal development aims, the pharmacists tended to relate their development to professional roles. Five younger pharmacists in the intervention group associated professional development to their career development; contemplating becoming prescribing advisors, pharmacy owners or hospital pharmacists. Whilst they may have perceived that there were career opportunities, twenty-one older pharmacists in both groups tended to perceive development of their role or services in community pharmacy as professional development; perhaps current community pharmacy practice was not satisfactory:

"I would say that developing my clinical side, maybe going into sort of prescribing advising or things like that."
1005B, female, intervention group, section 18

"Professionally specialise in maybe one or two, like aspects of pharmacy. I don't know which ones. I am sure most will say asthma or diabetes and, or whether it be cardiac care, but specialising in one or two lines."
1030B, male, intervention group, section 16

"Well, I would like to do repeat prescribing and supplementary prescribing if they are implemented."
1094B, male, non-intervention group, section 9
4.5.3.5 Responsibility for Continuing Professional Development

Since few pharmacists had plans for their personal development, perhaps unsurprisingly, many perceived that national or local guidance for CPD was necessary. They did not feel that their continued development was their responsibility:

"I think it must be a combination of what local requirement may be rather than if I choose something which is not going to be useful in this particular area, is not going to be beneficial to anyone else but to get me through so that I can practise."

1014B, male, intervention group, section 17

Some perceived that they did not have to or did not want to actively seek this improvement. CPD was something they chose whether to participate in or not. The pharmacists discussed who should have the responsibility for a community pharmacist’s CPD (Table 4.15). Local involvement was seen as entirely advantageous by those who considered it.

Table 4.15. Pharmacists’ perceptions on responsibility for CPD.

<table>
<thead>
<tr>
<th>RESPONSIBILITY FOR CPD: describes the perceptions of who should be responsible for a pharmacist’s CPD</th>
<th>CATEGORY</th>
<th>OPINION</th>
</tr>
</thead>
<tbody>
<tr>
<td>National responsibility: describes the expressed perceptions on national responsibility for CPD</td>
<td>National responsibility: describes the expressed perceptions on national responsibility for CPD</td>
<td>Whilst some perceived that national healthcare bodies were not aware of the reality of community pharmacy and national authorities should not be responsible for deciding pharmacists’ CPD, others thought that national guidelines on CPD should be provided. Others still thought that the decision on pharmacists’ CPD should be national for the consistency of pharmacists’ knowledge and it was suggested that there could be general subjects for all and that some could be compulsory.</td>
</tr>
<tr>
<td>Local responsibility: describes the expressed perceptions on local responsibility for CPD</td>
<td>Local responsibility: describes the expressed perceptions on local responsibility for CPD</td>
<td>It was perceived that local bodies were aware of local healthcare needs and health problems, and had knowledge of pharmacists’ needs. Therefore, their involvement would be considered relevant. Additionally, some thought that there could be general local subjects, some mandatory, others reserved for those who specialised in a condition, for example, diabetes.</td>
</tr>
<tr>
<td>Individual responsibility: describes the expressed perceptions on individual responsibility for CPD</td>
<td>Individual responsibility: describes the expressed perceptions on individual responsibility for CPD</td>
<td>Some perceived that individual pharmacists should not be allowed to decide their CPD as there would not be any standard for knowledge, others thought that CPD should result in personal development. Hence, individual preferences and interests should guide the decision.</td>
</tr>
</tbody>
</table>
Additionally, the pharmacists discussed how decisions should be reached. Professional development was thought to incorporate pharmacists' ability or inability to provide healthcare services to patients. Whilst many perceived that there should be involvement from at least two parties if not from all three in deciding what pharmacists should learn, two in five pharmacists perceived that decisions on CPD should be taken nationally. National guidelines provided by the Department of Health, the NHS, the RPSGB, the National Pharmacy Association (NPA) or the CPPE were considered important. This may be a reflection of the continuing education system the pharmacists were used to, for example, they could choose a subject from a course booklet provided by the CPPE four times a year without having to investigate other options. It was thought that a national decision or a core syllabus would guarantee a consistent level and type of knowledge across the country. Moreover, general subjects, for example, hypertension could be compulsory for every community pharmacist:

"I think it should come centrally from the NHS. The NHS is already looking at the regulatory bodies' commissioning and I think that part of that is national standards would be preferable. The reason I say that is that through my experience of local initiatives is that you do not get uniformity and consistency throughout the country."

10958, male, intervention group, section 13

Some pharmacists, in contrast, perceived that a national decision should not be taken because, for example, the Department of Health would not know the local or individual requirements for professional development:

"The Department of Health are bureaucrats, they don't know about the reality."

1079B, male, non-intervention group, section 6

Twelve interviewees suggested that local bodies, primary care trusts and local pharmaceutical committees, should be responsible for deciding community pharmacists’ on professional development. Additionally, some perceived that some general subjects, maybe compulsory, could be employed to tackle common local health problems:

"It would be better if the local health authorities decided because they know best what the local needs are, they are different for every area."

10958, male, non-intervention group, section 5
Even though a general core of knowledge was considered important for local healthcare needs, it was thought that not every pharmacist could be in good command of all knowledge. Some suggested that pharmacists could become specialists providing certain services which would decrease the number of subjects they would need to follow in order to keep up-to-date. The services and the need for learning could be shared between the local pharmacists:

"It would probably mean sharing things out amongst different pharmacists in the area. So, maybe different pharmacists would look after different conditions, not look after, but maybe specialise in different conditions. So, you can’t do everything because that might be a bit too much for an individual pharmacist who if possible, if there was an agreement between two or three local pharmacists that one would maybe take care of asthmatic patients or review them every so often and one might do hypertension and cardiac, whatever. Just so that a full coverage because I don’t think one person can do everything."

1003B, male, intervention group, section 3

Some pharmacists thought that the type and level of knowledge should be uniform, at least locally, contesting individual choice, others thought that they would choose subjects to study according to their preferences and interests which were governed by local healthcare needs. Some thought CPD was equal to their personal development and, thus an individual pharmacist’s decision was paramount and not bound by local needs:

"I think it should be individual pharmacists because you know the areas that you are lacking in, the areas that you think you need a bit more knowledge than that. I mean everybody’s needs will be different. There as some things I really am very good at and some things that can go ‘I don’t know a lot about that’. Just like homeopathy something I wasn’t trained on it."

1032B, female, intervention group, section 9

4.5.3.6 Evaluating Learning

Few pharmacists perceived a complete cycle for CPD. They not only assessed their learning needs, tried to fulfil their objectives, but evaluated what they had learnt and whether they had learnt enough or if they had identified new learning needs (Figure 4.13):

"Basically, it’s just identifying gaps in your own knowledge and in your own, things that you find working from day to day, er, and then setting out goals to achieve those, sort of like gaps or to fill those gaps and then sort of reassessing what needs to be done after you’ve done it as well. So, it’s like a, more like a cycle and then just looking back and seeing if there’s anything else that you need to do or just reassessing your, what objectives are again and trying to fill those."

1005B, female, intervention group, section 1
Figure 4.13. Pharmacists’ perceptions of the CPD cycle: evaluating learning in the complete cycle.

SUMMARY
* 43 pharmacists in the intervention group and 14 in the non-intervention group were interviewed in-depth on their professional perceptions and satisfactions
* most had only vague idea of CPD and the CPD cycle although the concept had been introduced by RPSGB in 2001
* few expressed how they assessed their learning needs or that they planned their learning; pharmacists seemed to participate when an interesting subject was provided for them, and did not feel responsible for their continued development
* many described different forms of learning activities but thought assessment of their learning was not desirable; however, few evaluated their own learning

4.5.3.7 Motivational Factors for Continuing Professional Development

For any learning activity there has to exist motivation in the learner's mind whether it be personal development for its own sake or becoming more employable for the learning experience to be successful. The perceived motivational factors for CPD emerging from the interviews with the pharmacists are displayed in Table 4.16.
Table 4.16. Pharmacists’ perceptions of motivational factors that influence their participation in CPD.

<table>
<thead>
<tr>
<th>CLUSTER</th>
<th>THEMES</th>
<th>SUB-THEMES</th>
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<tbody>
<tr>
<td>Theme One (\text{PURPOSE OF CPD: describes perceptions of the aim of CPD})</td>
<td>Personal development: describes the desire to develop and improve, and acquire new skills and knowledge</td>
<td>Pharmacists thought they would participate in CPD to improve themselves and for their personal development. Additionally, they perceived they could improve their knowledge, skills or practice through participation. Additionally, if they lacked knowledge or skills, they would participate in CPD to learn more.</td>
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<tr>
<td></td>
<td>Keep up to date: describes the desire to update one’s knowledge</td>
<td>Pharmacists perceived that participation in CPD would help them to keep up-to-date with current treatments and policies.</td>
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<td></td>
<td>Refresh skills and knowledge: describes the desire to revise skills and knowledge once attained or acquired</td>
<td>Pharmacists perceived that they could refresh knowledge or skills that had been forgotten by participating in CPD.</td>
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<tr>
<td>Theme Two (\text{INFLUENCES OF CPD ON WORKING LIFE: describes perceptions of the effects of CPD on working life})</td>
<td>Enhance confidence: describes the feeling of becoming more confident in one’s work</td>
<td>Pharmacists perceived that their confidence at work could be enhanced through increasing knowledge of treatments and drugs, personal improvement, and keeping up-to-date.</td>
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<td></td>
<td>Increase job satisfaction: describes the feeling of CPD contributing to job satisfaction</td>
<td>Pharmacists perceived that their job satisfaction would increase by enhancing their confidence and increasing their knowledge.</td>
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<td>Pleasure and Interaction: describes the feeling of enjoying learning, and the feeling of increased interaction with other community pharmacists</td>
<td>Some pharmacists perceived they enjoyed learning. Others perceived that CPD could provide them with interaction with others which would counteract the feeling of isolation they felt in community pharmacy.</td>
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<tr>
<td>Theme Three (\text{BENEFIT OF CPD FOR WORK: describes perceptions of the use of skills and knowledge attained through CPD})</td>
<td>Relevant to practice: describes the importance of CPD being relevant to one’s work</td>
<td>Pharmacists perceived that CPD they participated in should be relevant to their practice and that they should have an interest in the topic.</td>
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<td></td>
<td>Put into practice: describes the importance of being able to apply attained skills and knowledge in practice</td>
<td>Pharmacists perceived that knowledge and skills they acquired through CPD should be put into practice in their community pharmacy.</td>
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<td></td>
<td>Provision of services: describes the importance of CPD benefiting provision of services and being training new services</td>
<td>Pharmacists perceived that they would participate in CPD for the improvement of their professional service and in order to train to provide new service.</td>
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<tr>
<td>Theme Four (\text{INCENTIVES FOR CPD: describes perceptions of factors related to encouragement and facilitation of CPD})</td>
<td>Support for training: describes the perceived need for support</td>
<td>Pharmacists perceived they needed support and facilitation for CPD.</td>
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<td></td>
<td>Funding of training and services: describes the perceived need for reimbursement and remuneration</td>
<td>Pharmacists perceived there should be funding for courses or participation, for hiring locums and for the services they trained to provide. Some felt disgruntled as they perceived that other healthcare professionals received funding for their CPD whereas pharmacists did not.</td>
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<td></td>
<td>Recognition of training: describes the need for acknowledgement of learning</td>
<td>Pharmacists felt that their input in healthcare should be recognized; training should be formally recognized.</td>
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<td></td>
<td>Regulation of pharmacy: describes the perceived need for changing the laws regulating community pharmacy before services can be provided</td>
<td>Pharmacists wanted to be able to delegate tasks to technicians, otherwise they would not have time to provide services they had trained for. They wanted to be able to prescribe some prescription-only medicines.</td>
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<td></td>
<td>Timing of training: describes the preferred time for learning activities</td>
<td>Some pharmacists perceived that CPD should be integrated in a working day whilst others wanted to be able to study at one’s own time.</td>
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<tr>
<td>Theme Five (\text{FEELING OF BEING COMPelled TO PARTICIPATE IN CPD: describes perceptions of compulsion to participate})</td>
<td>Obligation to participate: describes the perception of professional obligation to continue developing throughout one’s career</td>
<td>Pharmacists felt participation in CPD was essential and a professional obligation.</td>
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<td>CPD becoming mandatory: describes the perception of CPD becoming mandatory guaranteeing participation</td>
<td>Pharmacists perceived that mandatory participation in CPD would guarantee participation and, therefore, standards for everyone’s knowledge and skills.</td>
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<td></td>
<td>Ability to practise as pharmacist: describes the perception of participating in CPD only due to compulsion</td>
<td>Pharmacists perceived that if they wanted to remain as practising pharmacists, they would have to start providing new services and to participate in CPD.</td>
</tr>
</tbody>
</table>
Theme One describes the perceived purpose of CPD; for many the aim was a diffuse concept. CPD would help them to become better pharmacists, to enable them to improve and increase their skills and knowledge and to improve their practice. Others recognised a need to identify specific topics they wanted to know more about:

"Motivates? Well, it's just, I want to do it better for myself that's all, and for people. If I'm going to serve them and that would help them, wouldn't it, if I improve myself I improve my services."

1001B, male, intervention group, section 3

"Er, it means to me looking at the holes in my knowledge in anything I do, really to do with work."

1013B, male, intervention group, section 3

To keep up to date with the changes in the treatment of diseases, new medicines and services after graduating was considered important. Some older pharmacists acknowledged that not everything relevant to community pharmacy practice had been taught at the university. In contrast, younger pharmacists felt they had gained most of their knowledge during their pharmacy degree course; CPD was a means of reminding them:

"Plus when I went to the university in the old days most of the things we use nowadays weren't even available, we didn't, didn't know anything about them, so keeping abreast with new things and new developments I think is essential."

1004B, female, intervention group, section 2

"Mostly, it's like, doing CPD is like refreshing my memory. It's nothing, nothing new, you know, nothing that I haven't already read or done at the uni. It's just, just being, as refreshing my memory basically, so which is good way, as in people, like, you read something, like you read and then you forget. But by doing CDP you just keep on top of, like your knowledge which I think is important."

1033B, female, intervention group, section 6

Some in the intervention group admitted not having participated in CE in the past and thought that their knowledge had deteriorated. Additionally, some older pharmacists thought that they had spent most of their working time dispensing medicines and ensuring the business was profitable and had not become involved further in patient care. Thus, CPD was essential to acquire skills and knowledge they had not learnt or to ensure they did not forget what they had once learnt at the university.
"Er, since I left university all those years ago, my academic side has suffered because I don’t think I have really kept up with current development and the thinking of it... So, things like these courses [training for medicines management service] and etc. is a good way to learn."

1020B, male, intervention group, section 25

"You got to remember the, the way it’s been. We qualified and then it’s like, especially when we get into community or, you know, it’s more depending on where you did your training or where is more commercial and we haven’t been taught commercial in our courses. [...] But there’s only x number of hours in a day so by the time you, you consider the commercial you get, you get too far right I suppose and you lose that professional development side, professional area."

1038B, male, intervention group, section 13

Theme Two describes the perceptions of the influences that CPD would have on working life. CPD was thought to enhance pharmacists’ confidence to advise patients and other HCPs because they improved their skills and knowledge. Pharmacists who did not feel confident enough to give recommendations to GPs hoped that CPD would give them that confidence:

"I think the biggest effect would be, probably be increased confidence in the advice and service that you provide, and the more knowledge you have I think the more you feel that you can give whether it is to the staff or for the customers. And I think in turn that increases your relationship with the customers and the staff and also increases your confidence because you feel, you know what you’re saying is right rather than thinking ‘Well, I’m not quite sure’."

1005B, female, intervention group, section 31

"Some pharmacists are used to giving a lot of advice to doctors. I’m not. I’ve not involved myself in too much of that over the years, although I know the GPs. So, there is always that confidence, sometimes it just needs building up from our side."

1003B, male, intervention group, section 11

Increased knowledge and improved skills would allow pharmacists to provide more services and become more involved in patient care. Therefore, as the work became more varied, they thought that their job satisfaction would increase. Improved confidence was perceived to influence job satisfaction in a similar way:

"I think when you talk to the patient it gives you more confidence. And so, it’s probably part of the job satisfaction what you are doing."

1040B, male, intervention group, section 3
Community pharmacists were isolated from their peers. Many who participated in workshops thought CPD could provide them with interaction with their colleagues. Feeling of belonging was considered important:

“I spent a long time within the four walls of my pharmacy not knowing who the, although I had spoken to the pharmacist nearby, I didn’t know what he or she looked like. [...] And by attending CPPE meetings, it was like a new world to me, it [opened], er, thoroughly and I enjoyed attending it because, also very, it’s like a social evening out.”

1016B, female, intervention group, section 18

Theme Three describes perceptions of how CPD should benefit practice. Pharmacists thought that CPD should be relevant to their work in the community and that there should be an application for the obtained skills and knowledge. There was no sense in learning something that was not useful. Moreover, many wanted to be interested in the topic:

“Yeah, we have been going to CPPE evenings on topics which we, which we have interest or which we feel that are appropriate that we can apply to our daily work.”

1042B, male, intervention group, section 5

“I’ve always wanted to do a diploma or an MSc in, in pharmacy associated with, with the community, not point in doing anything else because I’m not going to use it. This is where I’ll be. And I want to use it here, I don’t want to use it in another setting like a hospital setting.”

1013B, male, intervention group, section 12

Pharmacists wanted anything they would learn to benefit their work, their patients and other HCPs. The service they provided was to be improved. Many expected CPD to equip pharmacists with skills and knowledge in order to be able to embrace new roles and to provide new services that were and would be introduced into community pharmacy. Additionally, with the expected remuneration shift from dispensing towards service provision, it was essential to obtain new skills and knowledge:

“And it also satisfies a desire to be better at what you do. There is an innate drive to know more, to help the people. [...] Also affecting the doctors and the [pharmacists], and the nurses to teamwork with them. So, if those few things benefit then I’ll do it.”

1023B, male, intervention group, section 12

“If there is to be new services then I would, of course, need more training. If we start measuring blood pressure, blood glucose levels or cholesterol I would need to do training.”

1081B, male, non-intervention group, section 3
"But I think the remuneration is going to be more loaded towards the advice in the extended roles, so I think that is probably where... And I think those pharmacists will be valued more and will find it easier to gain employment. So, that's probably where we have to look to continue doing those kind of things and that is why I'm doing the medicines management."

1007B, male, intervention group, section 10

Theme Four describes factors encouraging pharmacists to study. Many required support and facilitation of their CPD. They were uncertain whether what they did was what was expected of them and needed reassurance. Additionally, some suggested that a local CPD pharmacist could facilitate participation:

"I would say, yes, we do need support in terms of monitoring us as how we are doing. [...] I think there should be one CPD pharmacist, well I would say, in health authorities there should be one special CPD pharmacist doing only this job and doing nothing, just to focus on this."

1015B, male, intervention group, sections 2 & 4

Incentives, such as compensation for locums or funding participation in learning activities, would encourage pharmacists to participate and also prompt those who had not participated in CE in the past to begin. Some perceived that CPD should be recognised as work to facilitate all pharmacists' participation, CPD could even be integrated into pharmacists' working day. However, there were others who would rather study on their own time:

"More people would be willing to take it up if there was incentives. You know, I wouldn't think of incentives but if actually we were recognised as doing the work, like perhaps have some time off work. For locums it's hard because, you know, if you take time off work you are not getting paid."

1010B, male, intervention group, section 10

"Now I am in a store where I have got time to stop and reflect. I have time to give, to devote to the patients and there are areas that I need to know more about."

1004B, female, intervention group, section 2

"It is easier for me to take distance learning courses because I can do them on my own time."

1073B, female, non-intervention group, section 2

As many of the pharmacists thought that CPD would help them to improve their services for the community and begin providing new services, it is understandable they would want to be remunerated for the provision of such services. However, recognition for pharmacists'
contribution to healthcare was regarded as important an incentive to take part in CPD as financial rewards for the provision of services:

"There has never been incentives for the pharmacists. I think that is the reason probably, you know, you look and say 'Is it worth it at the end of the day?' Even though you finish the course and everything, are you going to be rewarded? You know, that's the, what you are going to be looking at."

1028B, male, intervention group, section 16

"But there's no recognition for, you know, nobody says that we are doing anything. I'm sure the Government doesn't think we're doing anything."

1030B, male, intervention group, section 8

If community pharmacists were to start providing new services they had been trained for, then the pharmacy legislation should be changed. The requirement of a pharmacist's direct supervision when medicines are dispensed or sold (RPSGB 2001c) would have interfered with provision of many new services, for example, pharmacists could not leave the pharmacy to provide medication reviews at GP surgeries:

"And legislation to change, of course, I mean if I pop out of the pharmacy, it's ludicrous, [the staff] can't sell, er, x, y or z."

1036B, male, intervention group, section 5

The RPSGB has suggested changes to the current legislation to allow more efficient provision of services (RPSGB 2005b). Pharmacists also wished they could provide some prescription only medicines to patients to treat minor ailments. As one such medicine, chloramphenicol eyedrops, has been reclassified as pharmacy medicine by the Medicines and Healthcare products Regulatory Agency (MHRA), pharmacists may feel more empowered in their healthcare role (Anonymous 2005). Pharmacists perceived they would be motivated to participate in appropriate training to provide such a service:

"I would like [to be able to prescribe]. I'd go for training for that and I would like to have that, that authority to prescribe. I would love that, because there are so many times that they [patients] can't get in to the doctor's. [...] I could give chloramphenicol eye drops."

1031B, female, intervention group, section 18
Chapter 4: Results and Analysis

Theme Five describes pharmacists' perceptions of being compelled to participate in learning activities. A minority of pharmacists thought there were not, and should not be, any perceived barriers towards CPD: pharmacists should be self-motivated. Many thought that it was their obligation to continue their professional development throughout their careers. Some believed that CPD should be made mandatory to guarantee everyone's participation:

"No, I don't think so. It's sort of, it's one of those things, it's like the washing and the ironing. It's got to be done so it gets done. Sometimes I leave the ironing and do [CPD] because in my scale of things this comes above the ironing I think. I hate ironing."
1004B, female, intervention group, section 7

"A lot of the pharmacists probably say I don't have the time [to do CPD] but I think that's rubbish really, because I would have probably said that as well."
1019B, male, intervention group, section 4

"Oh, oh no, one's aware of the professional obligation to undertake CPD."
1037B, male, intervention group, section 4

"Otherwise you may think it's not needed, you might not do unless it is needed, so."
1028B, male, intervention group, section 4

It seemed that for a minority of the pharmacists the barriers to participation in learning activities were greater than any incentives. They only participated or would participate in CPD because they would be forced to do so by the introduction of mandatory CPD. Additionally, they expected to be able to provide new services on which their livelihood may depend:

"If the Government wants to make CPD compulsory then it doesn't matter what I think. We have to do it then to keep ourselves in the register."
1086B, male, non-intervention group, section 1

"I think the only reason that a lot of pharmacists are doing it is because if they don't do it, they can't go on to do what's needed [...] when the new contract's coming."
1090B, male, intervention group, section 15

4.5.3.8 Perceived Barriers to Continuing Professional Development

Perceived motivational factors to participate in learning activities have been described. Many pharmacists perceived barriers could prevent them from participating in CPD despite their motivation (Table 4.17).
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<th>CLUSTER</th>
<th>THEMES</th>
<th>SUB-THEMES</th>
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<tbody>
<tr>
<td>Theme One</td>
<td>Work Related Pressures: describes perceptions of difficulties in managing both a high workload and CPD</td>
<td>Limited time for CPD: describes the perception of there being no time for CPD</td>
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<td>Pharmacist perceived they had little time for CPD, studying was perceived to be impossible during the day at work and/or impossible after work.</td>
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<td>High workload: describes the perception of additional work on top of the existing tasks</td>
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<td>Pharmacist perceived CPD as a task that would increase their high workload. They would give priority to other work. Pharmacist thought that having a full-time job made studying difficult. The increase in workload would create stress.</td>
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<td></td>
<td>Frame of mind: describes the perception of not being able to learn anything after a long day at work</td>
<td>Pharmacist perceived that due to work pressures they could not study at their work place, and were tired after work which made them unable to concentrate on studying.</td>
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<tr>
<td>Theme Two</td>
<td>Impact on Social Life: describes perceptions of CPD interfering with social commitments</td>
<td>CPD interferes with commitments: describes the perception of other commitments being more important than CPD</td>
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<td>Pharmacist perceived that they had other commitments than work: they had a family, a spouse, children, and friends.</td>
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<td>CPD interferes with leisure: describes the need for social life and activities outside pharmacy</td>
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<td>Pharmacist perceived that they could not use their free time for work related studies, for a balanced life they needed their leisure.</td>
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<td>Theme Three</td>
<td>Impact of Resources: describes perceptions of lack of resources needed for participation in CPD</td>
<td>Problems with recruiting locums: describes the difficulties in hiring locums to cover for one’s absence due to CPD participation</td>
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<td>Pharmacist perceived that a general shortage of locums and locums not wanting to work in the area would prevent their participation in CPD.</td>
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<td>Participation in CPD incurring costs: describes the perception of participation in CPD incurring financial losses</td>
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<td>Pharmacist perceived that they could not participate in CPD during their working day as they would have to pay for a locum or because they would lose their own wages.</td>
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<td>Lack of remuneration for CPD and services: describes the perception of funding needed for CPD participation and the services</td>
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<td>Pharmacist perceived that their participation would be prevented by not being paid for providing new service they would train for or by not being paid for participation in CPD.</td>
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<td>Theme Four</td>
<td>Lack of Motivation: describes perceptions of no motivation for CPD</td>
<td>Not being motivated to participate: describes the expressed lack of motivation for CPD</td>
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<td>Pharmacist lacked general enthusiasm to study.</td>
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<td>Participation in CPD being waste of time: describes the perception of CPD not resulting in improvement of services, remuneration or learning</td>
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<td>Pharmacist perceived that participation in CPD would not be worthwhile because they would not be able to use the acquired knowledge or skills in practice or to provide a new service.</td>
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<tr>
<td>Theme Five</td>
<td>Age: describes perceptions of difficulties to learn because of getting older or reaching maximum experience</td>
<td>Being too old to learn: describes the perception that learning becomes more difficult with age and has an impact on CPD participation</td>
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<tr>
<td></td>
<td></td>
<td>Pharmacist perceived that studying became more difficult with age.</td>
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<td>Being experienced enough to have to participate in CPD: describes the perception of CPD becoming redundant as one gains experience and/or becomes older</td>
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<td>Pharmacist perceived that they were experienced enough and had reached the top of their development.</td>
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<td>Theme Six</td>
<td>Constraints: describes perceptions of a restrictive CPD system and need for flexibility to allow for individuality</td>
<td>Imposition of learning activities: describes the problems perceived to be associated with different learning activities</td>
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<td>Pharmacist perceived that CPD would enforce them to participate in learning activities they found problematic.</td>
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<td>CPD becoming mandatory: describes the problems perceived to be associated with introduction of mandatory CPD</td>
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<td></td>
<td>Pharmacist perceived implementation of mandatory participation in CPD as intimidation of pharmacists and considered leaving the profession.</td>
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</table>
Theme One describes perceptions of difficulties in managing both daily work and studies. The majority of the pharmacists perceived the lack of time as the most crucial barrier to their participation in CPD. It was difficult for the pharmacists to study during their working day, and after work. Many perceived CPD as additional work that pharmacists were expected to do; workload would increase to accommodate CPD into their busy schedule. Therefore, they expected CPD to create stress. Still, many would prioritise work that had to be done, work they were paid to do:

"Do I have a chance to do anything about it? Do I have the time? I have the best intentions though."
1092B, female, non-intervention group, section 3

"I mean not much time you can give whether it is during the shop hours or whether it is after the shop hours."
1028B, male, intervention group, section 17

"A lot of it comes down to motivation to a large extent, simple reason, the hours we do are very long and in any one day you can only deal with so many problems without your mind blowing out. When you are working a ten-hour day, usually most pharmacists have a quick lunch break if that, you're standing all day and you are dealing with little queries all day. There is just so much you can do."
1003B, male, intervention group, section 15

"We have our patients and we have to keep the GPs and nurses happy and we have to keep up with our deliveries that all has to [be] taken into consideration before we can talk about doing CPD."
1096B, male, non-intervention group, section 6

Because of the workload, long working days and stress, many felt they did not wish to study after work or even be able to concentrate to learn:

"I would imagine I'm not alone thinking that when you, you spend all day in a dispensary like this and do a lot of prescriptions and, you know, that sort of thing when you get home in the evening then 'I've had this enough. I don't need to do this again for a little while, I want to get, you know, do something different'."
1024B, male, intervention group, section 2

"I mean, you know, if they want me to do something, er, and I am going to upscale myself, I have to actually, it has to be done in the time when my brain's active. Er, you know, you read the things at ten o'clock, eleven o'clock at night and it doesn't sink in. It's, you can't, you can't do it."
1036B, male, intervention group, section 6

148
Chapter 4: Results and Analysis

Theme Two describes perceptions of learning activities interfering with social commitments. Many thought that they had long working days and the rest of their time they would want or had to be with their family, not study. Whilst men felt they wanted to spend time with their family when they could, women felt they wanted to, and were required to take care of the family and children:

"Myself, with a young family, I put them first and I value the time that I have to spend with them. And I would not want to spend any more time on further education while I realise that it is important. It is not as important to me as them. I have the job; I can see them growing up once. I don’t want to be like some people that seem to spend their whole life involved in their careers. That’s not for me."

1007B, male, intervention group, section 9

"My little boy always said ‘Why are you going to a meeting again, mummy? Please don’t go.’ When I study it now, when I took CPD, this medicines management, he is saying ‘Why do you have to do this now, mummy?’ I can’t spend time with him. It is very hard for women, I think."

1031B, female, intervention group, section 6

"Family life. You know, after I finish work, you go home and start another shift, you know, that is one obstacle."

1032B, female, intervention group, section 4

Additionally, other engagements were considered as important as participation in CPD, if not more so. Many expressed their resentment towards CPD interfering with leisure activities. As the purpose of CPD was to improve skills and knowledge required at work, pharmacists thought studying should be done during the working day:

"I get a day off in the week and have lots of other things to do. And, you know, maybe even to relax."

1029B, female, intervention group, section 8

"We do have a private life and now we have to allocate some of our spare time for CPD."

1081B, male, non-intervention group, section 8

"The free time is very precious. I mean, I spend [...] six days a week, it leaves very little time for my personal time, my family time, there are other people that depend on my time. So, there is always a struggle to find this extra free time to do the CPD. If there was time set for it which is part of my working day, then obviously I would do more of it."

1042B, male, intervention group, section 6
Chapter 4: Results and Analysis

Theme Three describes perceived lack of resources for CPD participation. A lack of locums was thought to prevent some from attending workshops or meetings, or from studying during the working day. Even if they were able to find locum cover for their absence from the pharmacy, some thought they could not afford to pay for the locum’s services. Additionally, others perceived that they would lose their own salary if they wanted to or had to participate in learning activities during a working day:

“We can’t find locums for half a day, we can’t find locums when we want. There is a shortage out there.”
1003B, male, intervention group, section 6

“You may have to hire a locum and that means a financial loss.”
1099B, male, non-intervention group, section 1

“If they are during the day, you have to get a locum and pay the locum costs and that is expensive. But it’s not only that: there are the financial losses when you are not there working.”
1092B, female, non-intervention group, section 1

Some employees suggested their employer should subsidise their studies, which would benefit them both; the employee would gain new skills and knowledge needed for provision of new services, and the employer might be able to profit from new services:

“I feel the employer should be paying for my time off. […] There’s a course going throughout the year, it’s done by the NHS, ‘learning practical skills’ course. I would like to go there, but if that’s two days off during the week I’m not getting funding for it. So, it looks like that’s another thing that I’m going to miss.”
1039B, male, intervention group, section 10

On the other hand, some in the intervention group were not certain if they would be remunerated appropriately for providing new services. They did not wish to learn something they would be unable to use in practice due to lack of remuneration. Moreover, others wanted to receive financial support for CPD participation:

“I mean, like by doing this medicines management course, I know there is a little bit money but we should be allocated maybe another status in clinical pharmacy whatever and be paid accordingly.”
1029B, female, intervention group, section 24
Chapter 4: Results and Analysis

"Other professions have more resources to help them to concentrate to do CPD, there are practically nil to community pharmacists."

1096B, male, non-intervention group, section 1

Theme Four describes a general lack of motivation for CPD; some felt they did not always feel motivated enough to further their professional development:

"So, yes, I can understand why they wish to do it, it is important and we have to keep up with these things. But finding the time, getting the motivation should be a big factor as well."

1029B, female, intervention group, section 9

"There are more obstacles than there are, is provision of encouragement for us to take part in CPD."

1096B, male, non-intervention group, section 1

Some in the intervention group perceived that skills and knowledge obtained through previous training courses for community pharmacy had not been transformed into services. They felt that their efforts had been futile. The realisation that CE did not always have an application in community pharmacy led others to not participate:

"[The local authorities] do a project and phut it forgotten. You just give to this, to that, it doesn't get implemented. So, it's a waste, you know. Because you can't do it on your own, it has to be done everyone together, the whole health team brought together. And what projects we did, it was just, they were good projects. I mean projects, a few years ago we did an asthma and diabetes, but nothing came out of it. So, that is very demoralising really, puts you down a bit."

1031B, female, intervention group, section 15

"I'm not attending [workshops] because [they weren't] beneficial, I think probably."

1040B, male, intervention group, section 7

Theme Five describes perceptions of learning related to age and experience. Some older pharmacists in the intervention group perceived that studying becomes more difficult with age. Learning takes longer than it did when the pharmacists were younger:

"Mind isn't as absorbent as it used to be. I have to read something three or four times to grasp it and I am hoping it'll stick but I am not too sure about that either. Because three weeks later I may need to read it again."

1003B, male, intervention group, section 22
"But some of them are very taxing, taxing to my brain. Hard work, a lot of hard work I think it's all right if you are younger."

1031B, female, intervention group, section 10

Pharmacists perceived that personal development was bound to time: younger pharmacists could develop and would need to develop but older pharmacists had gained experience during their long careers and could not develop anymore. Years of practice would make pharmacists competent and at some point in their careers they would reach a limit of competence where they could not improve anymore:

"I think, I mean I've been qualified about a year or so, so I think that I'm still developing as a pharmacist anyway."

1005B, female, intervention group, section 18

"I'm not too keen to do it; I'm already 64 years old."

1086B, male, non-intervention group, section 1

The pharmacists may have been thinking the practice of pharmacy they were use to in the community and in which they may have perceived themselves to be competent. However, they did not consider themselves to lack competence or did not feel confident enough to discuss it. The aim of CPD is to reach competence: could pharmacists who had achieved that stop learning or should they continue to strive to excel in their chosen special area or choose another area in which to become competent? Some pharmacists thought that they could stop participating in CPD once they felt competent enough to do so:

"I do smoking cessation clinics, yes. And we get a lot of referrals from GPs for that. [...] And they're quite happy with my competence levels."

1043B, male, intervention group, section 6

Theme Six describes perceptions of a restrictive CPD system and need for flexibility. Different learning activities should be available for pharmacists; however, they should not be required to employ them all. They should be allowed continue with the learning activity they felt comfortable with and that made studying easy for them:
"But where CPPE fails totally, is its inability to meet different people's needs. By that I mean people learn in different ways. Some people are good at using their auditory skills to listen to a lecture and they can assimilate that very easily. Others like visual things and for them movement and colour and stuff like that is quite important. And then there are others who are probably better at kinesthetic senses so for them practising is probably a better way of learning. So, people have different learning styles and we do not at the present time have any CPPE or CPD material which is catering for to the different needs of the population. [...] And I think we have got a long way to go in order to claim that we are meeting pharmacists' needs in CPD."

1034B, male, intervention group, section 8

Some felt intimidated by the introduction of mandatory CPD participation without negotiation. Pharmacists would not be enthusiastic to participate in a programme that was imposed on them. Six male pharmacists in the intervention group were enraged to such an extent with the lack of consultation that they were considering whether it would worthwhile to continue working as a community pharmacist when mandatory CPD was introduced:

"I mean the Society and the NHS have these new demands on us not realising what we can do, they don’t think how all this can be accomplished. We need negotiations. If this is a better way to do more CPD then they should pave the way and make it more structured, not just extra work. We are quite educated people and we don't to be told what we should do. It's intimidating. You can't tell the Gps that they are wrong but you have to explain what is right instead. You don’t want to intimidate them. We have to learn, understand and appreciate CPD."

1097B, male, non-intervention group, section 4

"[CPD participation] isn't, it isn't possible, if it's not possible and I don't like it if they make it mandatory. I might have to get out of the, you know, the profession. There is nothing I can do about it."

1001B, male, intervention group, section 9

4.5.3.9 Current Level of Participation in Learning Activities

The pharmacists’ current levels of participation in learning activities ranged from participation in continuing professional development through participation in continuing education to not wanting to participate in any learning activities (Table 4.18).
Table 4.18. Pharmacists' expressed participation in learning activities.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant in CPD</td>
<td>Those who were participants in CPD were able to identify their own learning objectives which they tried to fulfil.</td>
</tr>
<tr>
<td>Participant in CE</td>
<td>Those who were participants in CE attended workshops and meetings, ordered distance learning material but did not identify learning objectives.</td>
</tr>
<tr>
<td>Non-participant</td>
<td>Those who did not participate in any learning activities had no motivation or time to participate.</td>
</tr>
</tbody>
</table>

One of the thirteen CPD participants was in the non-intervention group. These pharmacists were able to identify learning objectives and planned their learning activities to fulfil their objectives:

"CPD is an assessment of my needs and also help me to plan my continuing education. If there is any lack of knowledge it will help me to repair it. [...] CPD keeps my knowledge up to date."

1092B, female, non-intervention group, section 1

The changes in the RPSGB's policy regarding continuing education and continuing professional development may have influenced the pharmacists (RPSGB 2001b). The pharmacists were not confined to one category but were able to move from one category to another and develop their own perceptions of personal development. One pharmacist was now able to identify learning needs, whereas before the emphasis of the learning activities had been on doing enough work:

"Right. [CPD] means different things now than what [CE] used to mean. It meant several years ago doing enough work and proving it so that you could prove what you had to do, and now it means taking an area that you or perhaps not very, your knowledge isn’t especially good. Maybe an area that you have never done before and try to tackle that, so."

1004B, female, intervention group, section 1

Three pharmacists in the intervention group who in the past had not participated in CE had realised the importance of keeping up to date, and now planned to participate in CPD:

"I've occasionally gone to the evening, I haven't done a lot of distance learning to be honest. I [should], I haven't done as much as I would like of the continuing development. But I think it's shown, the medicines management course has shown us, you know, like what we've been missing out on. There is a lot of information, you know, and it shows that really we should be up to date more, yeah."

1010B, male, intervention group, section 3
Four pharmacists in the intervention group had participated in CE in the past but had for some reason ceased attending workshops or ordering distance learning material. Participation in the training course might prompt them to become participants once again:

"Well, I mean my main interest was clinical skills so I've been through all those work modules that were run from Manchester University. [...] I mean that's what I did initially but then lately I haven't participated in anything, really. [...] Because when we, when I moved into this business six years ago, so I was very keen, I was quite keen then. So, I did ring up the FHSA, you know, there was some sort of clinical scheme going. And I phoned them up and everything but they said I was too late. Deadline, I passed the deadline. Since then I haven't really, sort of drifted away from it I think. Yeah I haven't really participated in any schemes at all. This will be the big one, the one that we're doing at the moment."

10388, male, intervention group, section 3

Four pharmacists, all pharmacy owners in the intervention group, described their disillusionment and lack of motivation to study and another four, three in the non-intervention group, had sporadically been participating in learning activities in the past. However, most pharmacists from both groups actively participated in CE and described their indiscriminate participation in learning activities:

"I mean, we, I do personally attend all the CPPE courses."

10168, female, intervention group, section 9

It seems that ensuring all pharmacists' understanding of personal development, including identifying learning needs, is equally important to achieving competence. It is essential to engage those who have not been motivated to participate in learning activities before for a successful implementation of mandatory CPD participation.

### 4.5.3.10 Perceptions of Need for Mandatory Continuing Professional Development

Pharmacists' perceptions regarding the introduction of mandatory participation in CPD ranged from complete agreement to total disagreement. There were no differences between perceptions of those in the intervention and non-intervention groups (Table 4.19). The pharmacists perceptions are divided into four separate groups, but related to each other.
Table 4.19. Pharmacists’ feelings towards introduction of mandatory CPD.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PERCEPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANDATORY CPD: describes the expressed opinions regarding introduction of mandatory participation in CPD</td>
<td>Pharmacists who supported the introduction of mandatory participation in CPD perceived that they and others would be compelled to study, in fact, many thought that mandatory CPD should have been introduced a long time ago. Additionally, it was perceived that mandatory participation would ensure standards of knowledge for the pharmacy profession and the competence of pharmacists.</td>
</tr>
<tr>
<td>Agreement: describes the expressed support for introduction of mandatory CPD</td>
<td>Pharmacists who accepted the introduction of mandatory participation in CPD were actively participating in CE and, hence, did not mind CPD participation becoming mandatory. Many perceived that whilst they personally would not be affected by the change, introducing mandatory CPD might be the only way to ensure participation of others.</td>
</tr>
<tr>
<td>Acceptance: describes the acceptance of introduction of mandatory CPD</td>
<td>Whilst some perceived that there should be incentives for pharmacists to participate in mandatory CPD, others thought that the CPD system that was introduced should encourage learning not only participation. Others still perceived that the introduction of mandatory participation in CPD should not be seen to be imposed on pharmacists as it might have negative influence on retention of workforce.</td>
</tr>
<tr>
<td>Conditional acceptance: describes the conditional acceptance of introduction of mandatory CPD</td>
<td>Whilst some perceived that CPD needed not to become mandatory because as professionals it was pharmacists duty to keep up-to-date, others thought that participation in CPD should be voluntary. Others still perceived introduction of mandatory participation in CPD as inducing stress; they would leave the pharmacy profession if CPD became mandatory.</td>
</tr>
</tbody>
</table>

Almost two in five pharmacists agreed with, and supported the introduction of mandatory participation in CPD, three in five either accepted the proposed changes in pharmacy or opposed them. Those supporting participation in CPD becoming mandatory perceived that it was necessary in order to guarantee competence of pharmacists. Additionally, the change would ensure theirs and others’ involvement:

“Well, I think it’s a good idea because other than after the pre-reg exams there is no form, a sort of identification to see whether anybody is continuing their sort of, their knowledge.”

1005B, female, intervention group, section 9

“And, I think they’ll, there should be some sort of an element in it that says, you know, you really ought to do this. [...] I think the vast majority of us, and I do include myself, would probably get on with it. Not necessarily in a better frame of mind, but get on with it knowing that it’s essential rather than being left under our own devices. I think, I believe people’s own devices in something like this, it’s going to be, it’s a disaster.”

1024B, male, intervention group, section 2
One in five pharmacists accepted the introduction of mandatory CPD, often because they were already active participants in CE. Whilst many thought that others might find participating in learning activities difficult, it was perceived that CPD participation becoming mandatory might propel others to begin studying:

“It's OK if CPD becomes mandatory because we do it anyway.”  
1018B, male, intervention group, section 1

“Well, if that's the only way they will get people to do it, then... fine.”  
1032B, female, intervention group, section 7

The majority of the pharmacists thought that CPD was essential for continued competence. However, one in five pharmacists were uncertain whether the proposed system for CPD was feasible and felt the system was forced on them without consultation:

“I think it's fair but I'm worried that they might not do it the right way.”  
1084B, male, non-intervention group, section 4

“It is important to learn and incentives from the Society would be welcome. [...] I mean the Society and the NHS have these new demands on us, not realising what we can do; they don't think how all this can be accomplished. We need negotiations. If this is a better way to do more CPD, then they should pave the way and make it more structured, not just extra work. We are quite educated people and we don't want to be told what we should do. It's intimidating.”  
1097B, male, non-intervention group, section 4

Whilst one in five pharmacists disapproved of introduction of mandatory participation in CPD, their motivations were set quite apart. Some perceived that to continue to develop and remain competent throughout their career were professional duties; therefore, there was no need to introduce a mandatory CPD system. Perhaps, alarmingly for retention and recruitment of workforce, there were pharmacists who thought that introduction of mandatory participation in CPD could lead to their or others leaving the profession. These pharmacists may have felt threatened by many changes, for example, mandatory CPD and a new NHS contract, anticipated at the time that compounded the situation:

“I feel that certain things that people, pharmacists or doctors or whatever are doing it irrespectively of whether it's written down on a piece of paper or not, I would, you know.”  
10148, male, intervention group, section 2
"I disagree with [CPD becoming mandatory]. In this area there is a high turnover of staff and it's difficult to recruit and retain them. Once you get them to work for you, they might not be happy to participate in CPD activities and comply with the Society's plans. They might want to go somewhere else to work in the industry or in a different area. It might end up in some of the pharmacists being qualified and some of them not."

1095B, male, intervention group, section 4

Not being content with pharmacy policies may influence pharmacists' satisfaction, which is described in the next section, and ultimately retention of workforce (Tweddell & Wright 2000).

**SUMMARY**

*many felt motivated to develop, but perceived that barriers may prevent them from participating in learning activities*

*pharmacists would participate in relevant learning activities to develop professionally, to keep up to date and to refresh skills and knowledge, and to enhance confidence and job satisfaction*

*work related pressures, impact on social life and resources, and a lack of motivation were perceived as barriers to participation in learning activities*

*pharmacists' level of participation in learning activities ranged from participating in CPD, through participating in CE to not participating at all*

*some pharmacists agreed with introduction of mandatory participation in CPD, others accepted the proposed changes or disagreed with them*

### 4.5.4 Exploring Perceptions of Professional Satisfactions

This section presents the results and the analysis taken to explore the pharmacists' professional satisfactions, including the level of satisfaction, and sources of satisfaction and causes of dissatisfaction (Figure 4.14).

![Figure 4.14. The analysis strategy for exploring the emergent themes of professional satisfactions.](image-url)
4.5.4.1 Perceived Level of Satisfaction

The pharmacists expressed their satisfaction or dissatisfaction with a number of issues concerning community pharmacy; some issues may be attributed to job satisfaction, others to career satisfaction. Pharmacists also expressed their general level of satisfaction, conditional satisfaction or dissatisfaction with their work (Table 4.20). Some did not express any feeling of satisfaction towards their job, only disillusionment. The finding of dissatisfaction amongst community pharmacists and proposed improvements to community pharmacy are corroborated by earlier research (Boardman et al. 1999; Tweddell & Wright 2000; Boardman et al. 2001). Pharmacists perceived that they themselves were not, or perhaps could not be, responsible for improving quality of their working lives.

Table 4.20. Pharmacists’ expressed satisfaction or dissatisfaction with work.

<table>
<thead>
<tr>
<th>LEVEL OF SATISFACTION: describes the expressed satisfaction or dissatisfaction</th>
<th>CATEGORY</th>
<th>PERCEPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with work in community pharmacy</td>
<td>Some pharmacists felt satisfied, saw a future in community pharmacy, and would have chosen pharmacy career again.</td>
<td></td>
</tr>
<tr>
<td>Conditional satisfaction with work in community pharmacy</td>
<td>Some pharmacists perceived that they would feel more satisfied: *if there was more variation in work; *if they were able to provide new services; *if they had more clinical involvement; and *as they gained new skills and knowledge.</td>
<td></td>
</tr>
<tr>
<td>Dissatisfaction with work in community pharmacy</td>
<td>Some pharmacists were not satisfied at all, they wanted to leave pharmacy or community pharmacy or to retire, and they would not have chosen pharmacy career again.</td>
<td></td>
</tr>
</tbody>
</table>

Only one in five were satisfied with their jobs and wanted to continue working in the community. Similarly, only eight respondents were satisfied with their careers and were enthusiastic about working in community pharmacy:

"I get pleasure from working with people and I did like medicines when I started. I enjoy my work."

1073B, female, non-intervention group, section 11
"No, I'm quite happy working in the community I think. I think, like I said to the only other thing that I possibly could see myself doing is something like a pharmaceutical advisor or prescribing advisor, that sort of thing. But I would still want to work in the community as a pharmacist. I can't really see myself working in industry. Hospital possibly, but I don't think it is really likely."

1005B, female, intervention group, section 33

However, two in five conveyed their perception that changes, such as increased clinical involvement in patient care, in the community pharmacy could increase job satisfaction. One in three thought that changes would also improve their career satisfaction:

"If we can somehow delegate a lot of the dispensing work to other staff and be more professional and see less people, patients but be a bit more proactive then I think our quality of life would improve and I'm pretty sure that the patient outcome would improve."

1003B, male, intervention group, section 15

"Well, I guess I stay in the community pharmacy. I'm hoping that, you know, that there is some sort of development whereby pharmacists can actually deal with the sort of illnesses presented to us. [...] So, what I'm saying is the core role of the pharmacists has to change so that the community can be served better."

1027B, male, intervention group, section 9

Whilst two in five of the pharmacists felt dissatisfied with their jobs, half of the pharmacists were dissatisfied with their careers. Overall one in three thought they would continue as community pharmacists till they retired, five wanted to move to another branch of pharmacy, and seven wished they had not become pharmacists and wanted to leave the profession:

"Nothing makes me satisfied in my work. It's boring. It's become monotonous, I just do the same thing day in day out."

1084B, male, non-intervention group, section 11

"As a pharmacist, to be honest, well, when I qualified and at that time I was, at that time my mind was saying to me 'Just go in community and, you know, get some experience, open your own shop, and do these chains and this and that'. But now, to be honest, I'm changing my views now, I don't know, to be honest I'm uncertain, I'm not sure what I'm going to do. [...] I might not go in my business now. I don't know. But in 3, 4 years' time I might, probably I'll go to hospital or something."

1015B, male, intervention group, section 10

"For that reason myself and a lot of other pharmacists in my position, of my age have simply run their pharmacies as a business rather than a profession, right. Now, to go back all these years is not easy, right. At the moment I'm doing it simply because I want to keep one step in pharmacy. If I need to pursue this career, right, whether I will or not I don't know yet, but if there was something which came up and interested me then I would leave the profession, yes."

1017B, male, intervention group, section 2
The sources of satisfaction and the causes of dissatisfaction influence the level of satisfaction felt by the pharmacists. While one pharmacist in the intervention group claimed not to know what would make him feel satisfied, others described events and things that made them feel satisfied. The sources of satisfaction emerging from the interviews with pharmacists are displayed in Table 4.21.

### Table 4.21. Pharmacists’ perceptions of sources of satisfaction at work.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Themes</th>
<th>Sub-themes: Pharmacists felt satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme One</strong>&lt;br&gt;APPRECIATION: describes the feeling of pharmacists being appreciated</td>
<td>Patients’ appreciation: describes being appreciated by patients</td>
<td>if patients showed trust and appreciation for pharmacists’ advice, and respect and loyalty for pharmacists. They enjoyed having a good, interactive patient relationship.</td>
</tr>
<tr>
<td></td>
<td>Other healthcare professionals’ appreciation: describes being appreciated by other HCPs</td>
<td>if other HCPs showed trust and respect for their advice, which made them feel they were being taken seriously, and they were able to influence other HCPs. They enjoyed having a good, interactive, co-operative relationship with other HCPs.</td>
</tr>
<tr>
<td><strong>Theme Two</strong>&lt;br&gt;BEING ABLE TO HELP: describes satisfaction related to fulfilling one’s role as a healthcare professional</td>
<td>Helping patients: describes satisfaction related to being able to advise patients and improve their lives</td>
<td>when they were able to make a difference for patients, and able to provide good services.</td>
</tr>
<tr>
<td></td>
<td>Supporting other healthcare professionals: describes satisfaction related to being able to advise other HCPs</td>
<td>when they were able to advise other HCPs.</td>
</tr>
<tr>
<td></td>
<td>Supporting other community pharmacists: describes satisfaction related to being able to advise other pharmacists</td>
<td>when they were able to teach and train colleagues or staff.</td>
</tr>
<tr>
<td><strong>Theme Three</strong>&lt;br&gt;WORK: describes satisfaction related to community pharmacy</td>
<td>Rewarding profession: describes satisfaction related to having an interesting job</td>
<td>because they perceived community pharmacy offered something new every day. Some were satisfied with the then main role: dispensing. Others were satisfied due to a variation of roles. Some thought that learning, and using skills and knowledge, made them satisfied.</td>
</tr>
<tr>
<td></td>
<td>Sharing work in the dispensary: describes satisfaction related to work environment</td>
<td>because they could share the work with another pharmacist or were able to delegate dispensing to staff, or because work in the dispensary ran well.</td>
</tr>
<tr>
<td></td>
<td>Financial situation: describes satisfaction related to income</td>
<td>because they were earning a living.</td>
</tr>
</tbody>
</table>
As described in Chapter 1, Maslow (1954) suggested that there is a hierarchy of needs through which an individual progresses to fulfill these needs. According to that approach, pharmacists in this study have progressed through the deficiency needs and are motivated in their behavior by higher order needs, that is, self-esteem and self-actualisation needs. Theme One describes the feeling of being appreciated: pharmacists wanted to feel appreciated in their profession by others and were looking for credit and recognition. If the pharmacists thought patients appreciated their expertise and efforts to help, they felt satisfied. Additionally, feeling appreciated by other HCPs was as important as being appreciated by patients to the community pharmacists; their expertise was relied upon:

"It gives me, I mean, [I am] immensely satisfied by the way people talk to me. I am respected. I help them a lot. They give me, they give me enough, they keep me going really."
1001B, male, intervention group, section 18

"What makes me satisfied is doctors who are referring people to the pharmacist. That means innately that they have confidence in the pharmacists and that means there is a value and that is what makes me satisfied."
1023B, male, intervention, section 15

"It's getting better to work with the doctors. They are more willing to accept our opinions. When they don't have the time, accessibility or knowledge, pharmacists can help."
1083B, male, non-intervention, section 11

Pharmacists regarded interaction and good relationships with patients and other HCPs as sources of their job satisfaction:

"I think the interaction with patients is very satisfying, I think the dedication and commitment which people have [...] are very, very satisfying."
1025B, male, intervention group, section 21

"I think it's, one is very important that you work, communicate with other primary care professions. I have good relationships with the doctors. I have good relationships with all the nurses, practice nurses, community nurses and that is satisfying."
1027B, male, intervention group, section 13

Theme Two describes satisfaction related to fulfilling one's role as a HCP. Both patients' and other HCPs' appreciations of pharmacists were the most frequently expressed sources of satisfaction. Most pharmacists also felt satisfied if they were able to help patients who had come to seek advice. Often pharmacists perceived that they helped patients directly rather
than advised other HCPs who in their turn helped patients. Nevertheless, being able to advise them made the pharmacists feel satisfied:

"Really it is the caring attitude that we show towards the patients and are able to help them, their treatments to get better. That is the most satisfying element of my job and that is what I aim to do every day."

1042B, male, intervention group, section 20

"To be able to answer patients' questions that makes me satisfied. Like if they are confused or if they want to know more about their medication and I give them advice that makes them happy."

1094B, male, non-intervention group, section 11

"Making a recommendation to either to the GP or the nurse to maybe, for example, call somebody in for an asthma review we think might be overusing the salbutamol or something like that. And then a couple of days later you get a prescription with a steroid or long-acting salmeterol added in it or whatever."

1007B, male, intervention group, section 14

Two pharmacists, both working for a national pharmacy chain, in the intervention group perceived that because they could advise and train other pharmacists or staff they felt satisfied:

"I'd probably say other things would be things like sort of training other members of staff as well. So that they can give something as well. [...] And just, I suppose using the knowledge that you have to help other people whether it's the staff or the customers."

1005B, female, intervention group, section 20

Feeling appreciated and being able to fulfil one's role as a healthcare professional were sources of satisfaction for most pharmacists. Theme Three describes satisfaction related to community pharmacy. Some perceived their work to offer something new every day; their work was interesting and they felt content. Others perceived that pharmacists could expand their role in the community from dispensing prescriptions and giving advice into more clinical involvement in patient care. The new, varied roles brought satisfaction, others were still content with their current role:

"[...] but pharmacy is a very interesting profession, every new patient gives you a new problem to be solved and that gives you satisfaction."

1096B, male, non-intervention group, section 10
"We can do smoking cessation and emergency contraception. We have these new roles we can enjoy."

1083B, male, non-intervention group, section 11

"I prefer to stick to sort of what we know best and what we know that rather than trying to do things that would probably take us further away from that in the long run."

1004B, female, intervention group, section 15

Some felt that they needed the help of technicians or a second pharmacist to take the responsibility for dispensing in order to be able to spend time giving advice or providing other services than dispensing:

"So, I think I am quite lucky in the fact that I work with another pharmacist and we can cover for each other in that sense whereas I suppose a pharmacist that works on their own doesn't have that flexibility as much, so."

1005B, female, intervention , section 30

"And the difficult things as well is, is having the time, because it's so busy here, for example, I don't know how other shops are like but I want the assistants to be qualified as technicians and they want to do the point [check]. [...] So, hopefully the next sort of three to six months, too, the girls will be qualified as point check dispensers. So, in doing that, then that releases me to go and do other things."

1019B, male, intervention group, section 4

It was not only important for the pharmacists to be able to enjoy what they were doing but they felt satisfied if they were able to make a good living:

"I've got a very good business, dispensing business here which takes most of my time just here, you know, I don't even go much out there [out of the dispensary], so."

1014B, male, intervention group, section 5

4.5.4.3 Causes of Dissatisfaction

If pharmacists perceived a lack of a source of satisfaction they may have felt dissatisfied. The causes of dissatisfaction emerging from the interviews with community pharmacists are displayed in Table 4.22.
Table 4.22. Pharmacists' perceptions of causes of dissatisfaction at work.

<table>
<thead>
<tr>
<th>CLUSTER</th>
<th>THEMES</th>
<th>SUB-THEMES: Pharmacists felt dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme One ATITUDES:</td>
<td>Lack of customers' appreciation: describes not being appreciated by customers</td>
<td>if patients did not show appreciation for pharmacists' work, or behaved badly.</td>
</tr>
<tr>
<td></td>
<td>Lack of other healthcare professionals' appreciation: describes not being appreciated by other HCPs</td>
<td>if other HCPs did not show appreciation for pharmacists' work, and if there were difficulties in communication.</td>
</tr>
<tr>
<td></td>
<td>Lack of authorities' appreciation: describes not being appreciated by the authorities</td>
<td>if authorities did not show appreciation for pharmacists' work.</td>
</tr>
<tr>
<td>Theme Two POLICIES:</td>
<td>Demands imposed on pharmacists: describes dissatisfaction related to imposed changes in community pharmacy</td>
<td>because they felt that too much was expected of them, and changes were imposed on them.</td>
</tr>
<tr>
<td></td>
<td>Obsolete remuneration system: describes dissatisfaction related to the remuneration system</td>
<td>because the then current remuneration system was thought to be outdated, and it was perceived that they were not paid enough.</td>
</tr>
<tr>
<td></td>
<td>Prohibitive legislation: describes dissatisfaction related to the prohibitive effect of the current legislation on pharmacy services</td>
<td>because they could not leave the pharmacy to provide services, and they could not always help patients but had to refer them to other HCPs.</td>
</tr>
<tr>
<td>Theme Three WORK:</td>
<td>High workload: describes dissatisfaction related to high workload</td>
<td>because their workload was too high, the hours they worked were too long and inflexible, work created stress.</td>
</tr>
<tr>
<td></td>
<td>Lack of professionalism in community pharmacy: describes dissatisfaction related to not being able to apply all the acquired skills and knowledge</td>
<td>because they felt unfulfilled professionally, were not able to use skills and knowledge they had achieved, work was monotonous, they had to be business minded.</td>
</tr>
<tr>
<td></td>
<td>Professional isolation: describes dissatisfaction related to being isolated from peers and other HCPs</td>
<td>because they felt isolated from their colleagues and other HCPs.</td>
</tr>
<tr>
<td>Theme Four FUTURE:</td>
<td>Uncertain future of community pharmacy: describes dissatisfaction related to uncertainty of the future development of community pharmacy</td>
<td>because they felt uncertain of changes in community pharmacy and they perceived there was competition.</td>
</tr>
<tr>
<td></td>
<td>Unstable financial situation: describes dissatisfaction related to uncertainty of obtaining a sufficient income</td>
<td>because there was no guarantee of income.</td>
</tr>
</tbody>
</table>

Theme One describes feeling of pharmacists not being valued; pharmacists were satisfied if patients showed their appreciation, and dissatisfied if patients did not appreciate efforts to help them. Unfortunately, some patients or customers also behaved badly which caused dissatisfaction amongst pharmacists.
“Stop what you’re doing. You’ve got to be there because the perception is, that the perception [...] that a quick dispensing service is a good one and that’s the perception. That’s the only criteria the patients have. They don’t know that errors or mistakes or inaccuracies or lack of support for interactions and things. They haven’t got a way of measuring that; they’ve only have the time waiting.”

1035B, male, intervention group, section 19

“Some of them can be unruly which is expected really, some customers can be unruly but that’s, that is very, that is not very common.”

1008B, male, intervention group, section 17

“Customers make me dissatisfied. I mean we do get an awkward customer once in a while. The crime pattern has changed over the years.”

1086, male, non-intervention group, section 11

General practitioners’ lack of appreciation for community pharmacists’ knowledge and skills caused dissatisfaction. Some GPs may think they and pharmacists are not equal and do not perceive that co-operation could benefit patients. Additionally, authorities were not perceived to value community pharmacists. The situation of pharmacists was compared with the one of other HCPs, particularly that of GPs; some felt bitter:

“Doctors sometimes think, they’re, ‘Oh, you are a pharmacist, I’m the doctor. I am in charge.’”

1010B, male, intervention group, section 20

“But I, I feel that certain doctors, you don’t actually communicate with the doctor, you communicate with the receptionist and it’s just the way they work, you know. Er, so it’s really difficult to know sometimes the feeling of the doctor, you know, what they feel about certain things. So, I mean across the road, er, I’m not sure, I, I, they will phone me for things to do with whether it’s something is in the stock or not. They won’t phone me for, for, you know, what the best treatment is for this product, er, for this condition. I feel it’s what we should be doing. So, it’s good, the relationship is good but it’s, in terms of professional relationship I don’t think they really pay much attention to us in general.”

1013B, male, intervention group, section 14

“One of the GPs wrote a letter after I, in context had told him what exactly I felt, and all of it, a patient. He came back with a letter. [...] ‘I am a GP. You are a pharmacist. I prescribe. You dispense and it is none of your business’.”

1041B, male, intervention section 11

“We do not get any appreciation - think about it - in the White Papers the doctors are on top, then nurses, chiropodists even. Where are pharmacists? Nowhere: we are not even mentioned. It is very frustrating.

1022B, male, intervention group, section 18
Theme Two describes dissatisfaction related to community pharmacy policies. Some pharmacists perceived that demands and changes in community pharmacy were imposed on them and they felt dissatisfied:

"Rather than you imposing you on me that is what is happening at the moment. It is imposition on the pharmacist. You are there to do this, but we're not going to help you anyway."

1041B, male, intervention group, section 9

"I don't like that we are forced into issues."

1097B, male, non-intervention group, section 11

Many felt that the remuneration system should be changed to accommodate the new structure in community pharmacy. Pharmacists should be paid for the services they provide, not only for the medicines they dispense. These pharmacists may feel more satisfied now that the remuneration system has, indeed, been changed with the new NHS contract for community pharmacy services (Department of Health 2004a) However, at the time many felt the remuneration was not equal to the amount of work:

"Again we’re doing all this for no extra charge, all we’re getting is a dispensing fee if we dispense an item. All the rest of it, there is no payment for. Any advice we give, if we make a sale again fine we might make a bit profit on that. But there is no payment for anything else."

1003B, male, intervention group, section 21

"We work very, very hard for the patients but the Government doesn’t see that and it reflects the way they remunerate us. And our expenses are constantly on the increase and our income is constantly on the decrease - it is a conflict."

1043B, male, intervention group, section 14

Some felt that the current legislation and regulations hampered their pursuit of helping and providing more services to patients and wanted change (section 4.5.3.7). Since the interviews the RPSGB has suggested changes to direct supervision of dispensing and selling medicines, and one prescription only medicine has become available for pharmacists to recommend for patients when appropriate. These pharmacists may feel more satisfied in their work.
Chapter 4: Results and Analysis

“There are many problems that come in the way actually, when helping patients in the best way I can, I mean, I try. But sometimes there are things preventing it, you know, if a patient comes in. Like I noticed there is a problem, there is a limited amount I can do for them. If I ask them to get further advice, they are not able to see their doctor for three or four days, in that time the problem develops, I can’t help them. The products that we sell, for example, somebody came in with an ear infection two days ago. They are flying abroad, they need to see the GP within three or four days. [...] They couldn’t see the doctor for more than a week and they were flying away within that period. So, that patient is not going to get treated, that is very [dissatisfying] element of my job.”

1049B, male, intervention group, section 21

“At the moment I can’t leave the shop to do these things because of the law.”

1092B, female, non-intervention group, section 11

Theme Three describes dissatisfaction related to community pharmacy as a profession. Many perceived their workload was too high and the hours they worked were too long and inflexible. Additionally, high workload created stress:

“I would say probably the time factor again, not having the time to do things, possibly as thoroughly as I would like as, for example, counselling patients. A lot of the time I would give the prescriptions out and say ‘Antibiotics, complete the course’ and then possibly I could tell them a bit more whether it be, you know, about antibiotics or anything else. [...] So, I would say, I think that annoys me a little bit.”

1005B, female, intervention group, section 25

“As it comes, it is every minute stressed, you come, from the morning to evening you just do it as it comes. I have no time to go through this paperwork that comes in or reading material that comes.”

1031B, female, intervention group, sections 97

“Dissatisfaction? At the moment there is too much work and too little time.”

1094B, male, non-intervention group, section 11

Some in the intervention group lamented that it is not possible to use all the attained knowledge and skills in community pharmacy. Some younger pharmacists felt they had not been able to fulfil their potential, whilst older pharmacists felt similarly dissatisfied but had devised other ways of working. Work in community pharmacy had become boring for some; there was no perceived variation in duties:
Chapter 4: Results and Analysis

"The only thing dissatisfied me, major thing, major dissatisfaction is, aside, I'm not using my skills. What I've got to be trained, you know, training was different at my uni. [...] You need only one of your training to be honest: all you need to know is how to make the labels. And you need to know what is the generic and brand name difference, and this and that to be honest. You're not using your skills, what you got trained to know or really make an impact."

1015B, male, intervention group, section 14

"Not here. Well, I've been here about. When I used to work for [a pharmacy chain] I was often in the city, right, and I felt like I was just like a sales assistant. A well paid sales assistant. [...] I didn't feel like I was practising pharmacy."

1033B, female, intervention group, section 3

"All these years of, we haven't used the knowledge that we have acquired, right, simply because other professionals have not been interested in pharmacy, right. For that reason myself and a lot of other pharmacists in my position, of my age have simply run their pharmacies as a business rather than a profession, right."

1017B, male, intervention group, section 2

"Nothing makes me satisfied in my work. It's boring, it's become monotonous, I just do the same thing day in, day out."

1084B, male, non-intervention group, section 11

Acknowledging that community pharmacy is a business, some did not like the commercial side of community pharmacy and wished they could do without it. Others felt that isolation from other pharmacists and healthcare professionals inherent to community pharmacy caused dissatisfaction:

"Community pharmacy to me is, I think the fact that, it is more of a business thing that professional. There's professional aspects to it, there are business aspects to it and you have to rethink to break even. So, that kind of puts you professional knowledge at the backseat sometimes, you know."

1008B, male, intervention group, section 19

"And I wouldn't like to have to sell perfumes and Pampers but you have to."

1099B, male, non-intervention group, section 11

"They [workshops] are helpful, plus there is also a get-together for all the professional colleagues because a very isolated profession, retail pharmacy. For years I never did anything for years and years because of children, family and new business."

1031B, female, intervention group, section 3

"At the moment we are all working in little boxes. Isolated in little boxes, you know. The only time when you speak to the GP when he's done something wrong, or the patient hasn't got his tablets. But if there is more communication it breaks the barriers down."

1038B, male, intervention group, section 20
Chapter 4: Results and Analysis

Theme Four describes dissatisfaction related to the uncertainty of the future. Many felt uncertain of the future and did not know whether potential changes would be positive or negative. Some perceived that competition from the national pharmacy chains could threaten independent community pharmacies; there was no guarantee for income:

“I don’t really know at the moment, no, because there are so many changes coming, until everything is put in place, you know, you don’t really know whether it’s for the good or for the bad until you come across. Only then you’ll find out.”
1028B, male, intervention group, section 10

“The main problem, we don’t have stability, the independents can’t see, you need to see a ten year goal, that, yeah, you’re stable. [...] That’s the thing. I mean what I want, what the Government or the FHSA [Family Health and Social Authority] they have in mind, we don’t know. Once we know what’s in their minds and do turn around and say ‘Yeah, we do want the independents to be there in fifteen years’, then you can say ‘Let’s develop yourself, let’s go for it’. But at the moment you do not know what they want.”
1030B, male, intervention group, sections 14 and 18

“The prospects of independent pharmacies do not seem to be good. [...] The big stores are taking up our customers.”
1073B, female, non-intervention group, section 10

“Er, I’d like to be able to do something whereby I’m guaranteed, if you like, a wage, you know. I think retail pharmacists are such whereby we are not guaranteed that. So, as I say I’d like to be in a situation whereby [...] the future is stable.”
1021B, male, intervention group, section 18

“The way the remuneration is going with the NHS we don’t seem to have a long term future.”
1095, male, non-intervention group, section 10

Some, mainly owners, perceived that low profits could result in pharmacists not being able to afford staff, locums or holidays; or even in closure:

“Everybody wants me to do all this extra work but I can’t see anybody mentioning me getting any benefits of any sort. When we get a wage settlement, do they take into consideration the new laws where it says we have a four weeks’ holiday? I don’t think so. I don’t get a four weeks’ holiday here. I couldn’t afford the locum fees.”
1003B, male, intervention group, section 21

“You know, the Government wants to cut and make cuts whatever, you know. Your livelihood is, if they keep doing that, I don’t think there is going to be many independents the end of the day I think, you see, the future as well.”
1028B, male, intervention group, section 14
SUMMARY
* Few were satisfied with their jobs and careers in community pharmacy.
* Pharmacists were satisfied if they felt they and their services were appreciated by patients and other HCPs; conversely, they were dissatisfied if they felt they were not valued.
* Being able to help patients and advise other HCPs were sources of satisfaction; however, many felt that community pharmacy policies hampered their attempts to improve their services.
* Whilst the profession was perceived rewarding, a lack of professionalism in community pharmacy caused dissatisfaction.
* Many were uncertain of the future of community pharmacy.
This section presents the evaluation of influences between training and participation in a service development and the pharmacists' perceptions and satisfactions by interfacing the quantitative and qualitative data. An attribute was compared with the associated satisfaction or perception scores and quotes from the interviews to explore satisfactions and perceptions in-depth. These influences are discussed in section 4.7.

Pharmacists who achieved a total training result above the mean expressed more dissatisfaction (section 4.4.7.1). They may have been dissatisfied with their then current role in primary care and practice of community pharmacy and seemed to want to ensure that they would be able to provide the medication review service. They may have felt that changing their role was their responsibility. Additionally they seemed to want to ensure they became more competent in providing services (Table 4.23). In contrast, pharmacists who were more satisfied with the then current practice of community pharmacy may not have been inclined to excel in the training or may not have felt changing their role as their responsibility.

<table>
<thead>
<tr>
<th>Training result</th>
<th>Mean score</th>
<th>Quote: Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean</td>
<td>11.00</td>
<td>&quot;So, I'm always dissatisfied with the status quo. I want to make myself better and [...] it has to be a cycle of improvement. Getting further basically [...] I'm never really satisfied about where I am. I always want to do that much better in whatever I do.&quot;</td>
</tr>
<tr>
<td></td>
<td>CI 95%: 9.13-12.87</td>
<td>10138, male, section 1</td>
</tr>
<tr>
<td>Below mean</td>
<td>14.11</td>
<td>&quot;I have enjoyed what I have read and I have learnt quite a bit. [But if I don’t complete the training successfully] I wouldn’t necessarily feel that I am losing out. I’ve got a very good business, dispensing business [...] which takes most of my time just [in the dispensary].&quot;</td>
</tr>
<tr>
<td></td>
<td>CI 95%: 12.17-16.05</td>
<td>10148, male, section 5</td>
</tr>
</tbody>
</table>
Career satisfaction did not seem to influence striving for a better training result; despite the result achieved in training pharmacists were equally dissatisfied (section 4.4.7.2). However, pharmacists appeared to perceive that participating in the Medicines Management project could enhance their career satisfaction in community pharmacy by introducing a new service, breaking the routine, and ultimately by changing their role and the practice of community pharmacy (Table 4.24).

Table 4.24. Influences between training performance and career satisfaction.

<table>
<thead>
<tr>
<th>Training result</th>
<th>Mean score</th>
<th>Quote: Future in community pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean</td>
<td>10.00</td>
<td>&quot;In the future I would like to be, well this [training course for the Medicines Management project] I would like to be involved more clinically. With the doctors as well because I think that's something that could be improved as well.&quot;</td>
</tr>
<tr>
<td></td>
<td>CI 95% 7.17-12.83</td>
<td>1002B, female, section 9</td>
</tr>
<tr>
<td>Below mean</td>
<td>11.72</td>
<td>&quot;The improvement on the quality of the service may encourage me to stay longer in the community than before. So, it is that service that is really [...] my motivation now [rather] than just dispensing.&quot;</td>
</tr>
<tr>
<td></td>
<td>CI 95% 9.28-14.16</td>
<td>1011B, male, section 17</td>
</tr>
</tbody>
</table>

Pharmacists who attained a total training result above the mean seemed less encouraged to further their professional development (C70, section 4.4.9.1, Table 4.25). As the Medicines Management project offered them this opportunity, they may have tried to perform well in order to change their role in primary care while, perhaps, realising that the change may not be permanent. Both groups perceived that they did not need any more training for their current practice; at the time they were competent enough (C77, Table 4.25). This perception may have contributed to lack of encouragement to study; further qualifications may have seemed irrelevant.
Table 4.25. Influences between training performance and perceptions of professional development.

<table>
<thead>
<tr>
<th>Training result</th>
<th>Median response</th>
<th>Quote: Encouragement for professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean</td>
<td>Uncertain</td>
<td>&quot;Personally I think, [] do everything in my own way which I'm happy about and which I think customers are happy with [...] as well. So, I'm not sure whether I can improve in that respect.&quot; 1029B, female, section 18</td>
</tr>
<tr>
<td>Below mean</td>
<td>Disagree</td>
<td>&quot;With the Medicines Management [project] happening, if it goes into reality, [for] which we've already started training now, so by the time we start [providing the service] it will make the job more interesting. Then there's a lot more we can do for the community because I don't think we're used to the extent that our skills [would allow] at the moment. So that would be one thing to look forward to&quot; 1032B, female, section 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training result</th>
<th>Median response</th>
<th>Quote: Need for professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean</td>
<td>Agree</td>
<td>&quot;Personally, I think I have achieved my 100 %. I think I'm doing well as a pharmacist. I don't think there is much room [to develop].&quot; 1016B, female, section 19</td>
</tr>
<tr>
<td>Below mean</td>
<td>Agree</td>
<td>&quot;I think I have developed a lot over the years. I'm getting on. [...] I think my basic role is in sort of things that I'm currently doing and parting on expertise and knowledge to others and trying to advise and help and develop the new pharmacists coming along.&quot; 10048, female, section 16</td>
</tr>
</tbody>
</table>

Pharmacists who did less well in the training were more uncertain identifying their learning needs (D72, Table 4.26). The others included the training in the Medicines Management project in their learning plan; they seemed more motivated to do well in the training in order to become service providers. Both groups reported reflecting on what they learnt in the survey (D75); however, they did not express any reflection as part of the CPD cycle in the interviews. This may have been because they had no reflections on it being part of CPD or because they were not specifically asked about it. In order to explore pharmacists’ perceptions of evaluating their learning, a question was added to the phase three interview schedule (section 6.2.4.1).
Table 4.26. Influences between training performance and perceptions of identifying learning needs.

<table>
<thead>
<tr>
<th>Training result</th>
<th>Median response</th>
<th>Quote: Identifying learning needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean</td>
<td>Agree</td>
<td>“I do [plan my training], this year’s learning objective is doing the Medicines Management training. I also do identify my activities. [...] This year, I mean, if I hadn’t done this [training] it would have been distance learning.” 1013B, male, section 10</td>
</tr>
<tr>
<td>Below mean</td>
<td>Uncertain</td>
<td>“I am personally going to make more of an effort [...] to keep up with [personal development]. I have been qualified since 1985 and the only things I have been doing have been reading articles in magazines and going to the local evening courses whenever there are a few meetings [without identifying my learning needs].” 1030B, male, section 13</td>
</tr>
</tbody>
</table>

Deciding to participate in the Medicines Management project did not seem to influence job satisfaction; both intervention and non-intervention groups expressed low satisfaction (section 4.4.7.1). Given the chance to participate, those interviewed in the non-intervention group might have decided to take part: both groups perceived that new roles and services in community pharmacy would enhance their satisfaction (Table 4.27). In the intervention group, the service development may have given these new roles a more concrete application. Both groups were dissatisfied with their careers (section 4.4.7.2) and many contemplated leaving community pharmacy (Table 4.28). The intervention group did not seem to perceive that the opportunity to participate in a service development would influence their long term satisfaction with community pharmacy.
Table 4.27. Influences between participation in a service development and job satisfaction.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Mean score</th>
<th>Quote: Job satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group</td>
<td>12.84</td>
<td>“Before the Medicines Management came about [...] it seemed there was not a lot of things happens but now because we’ve got that, and then they’re looking at areas of how pharmacists can be utilised a lot more, it makes your job a bit more [...] it’s coming up to what you expected to do. [...] It will make the job more interesting [and satisfying] and then there’s a lot more we can do for the community.” 10338, female, section 12</td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>12.00</td>
<td>“Patient contact makes me satisfied. That I have a part to play in healthcare and now we can participate in new areas which we were unable to do before, like managing patients’ monthly medicines. It’s getting better to work with the doctors. They are more willing to accept our opinions. When they don’t have the time, accessibility of knowledge pharmacists can help. We can do smoking cessation and emergency contraception. We have these new roles we can enjoy.” 10838, male, section 11</td>
</tr>
</tbody>
</table>

Table 4.28. Influences between participation in a service development and career satisfaction.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Mean score</th>
<th>Quote: Future in community pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group</td>
<td>10.84</td>
<td>“I said this five years ago that I don’t see myself as a community pharmacist but I’m still here. Whereas the time goes on your drive for other options, you don’t tend to sort of take them [...] seriously. [...] In this moment in time I am here as a community pharmacist. But ten years down the line [...] I hope I’m not working in community pharmacy.” 10388, male, section 16</td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>9.27</td>
<td>“No, I don’t see myself as a community pharmacist. The way the remuneration is going with the NHS, we don’t seem to have a long term future.” 10958, male, section 10</td>
</tr>
</tbody>
</table>

The intervention group was inclined to further their development as a whole (C70, section 4.4.9.2, Table 4.29) to gain new roles provided that community pharmacy practice changes. However, the non-intervention group seemed not to perceive that the contract for community pharmacy services could change and their role with it and were not encouraged to study. However, both groups were confident that they were competent enough to work in community pharmacy (C77, Table 4.30).
Table 4.29. Influences between participation in a service development and being encouraged to develop.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Median response</th>
<th>Quote: Encouragement for professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group</td>
<td>Disagree</td>
<td>&quot;[I would like to be able to prescribe] for certain areas. I mean ear infection, eye infections, boils, rashes and things like that. They may be called minor [ailments] but again I would have to have professional training for diagnoses. [...] With [diagnosis] training built into my training then, yes, I would love to do that.&quot; 1042B, male, section 2</td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>Agree</td>
<td>&quot;At the moment the contract is about how much you can put in and how many prescriptions you can process. If there was a guarantee that you would get [compensation] in any case then that would motivate you to [provide services] and participate [in training] and get rewards from that.&quot; 1082B, male, section 9</td>
</tr>
</tbody>
</table>

Table 4.30. Influences between participation in a service development and perceived need to develop.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Median response</th>
<th>Quote: Need for professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group</td>
<td>Agree</td>
<td>&quot;Personally, I think I have achieved my 100%. I think I'm doing well as a pharmacist. I don't think there is much room [to develop].&quot; 1016B, female, section 19</td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>Agree</td>
<td>&quot;I think my skills are adequate at the moment but if there are new courses in the future I could revise.&quot; 1079B, male, section 10</td>
</tr>
</tbody>
</table>

The intervention group felt more certain about identifying their own learning needs (D72, Table 4.31). They may have been aware of their learning needs as they decided to include the training in their plans or they may have become aware of their needs during the training. Both groups reported that they reflected on their learning (D75) but did not express any reflections in the interviews; as described in section 6.2.4.1. A question on evaluating learning was added in the interview schedule for phase three.
Table 4.31. Influences between participation in a service development and perceptions of identifying learning needs.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Median response</th>
<th>Quote: Identifying learning needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group</td>
<td>Agree</td>
<td>&quot;I think some people maybe do need some support in knowing where to start just at the beginning as how to identify what their need are. [...] After all we've been at the university and we've been responsible for our own learning for so many years anyway.&quot; 1005B, female, section 14</td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>Uncertain</td>
<td>&quot;It is difficult to say [what my learning needs are]. If someone from the outside came and told me what is lacking, then I could do something about it.&quot; 1095B, male, section 9</td>
</tr>
</tbody>
</table>

**SUMMARY**
- Pharmacists achieving better total training results were more dissatisfied with their jobs.
- Pharmacists performing better in the training course were less encouraged to work towards further qualifications; however, they seemed more certain of identifying their own learning needs.
- Both the intervention and non-intervention groups were dissatisfied with their jobs and careers.
- The intervention group was as a whole encouraged to further their development and seemed more certain about identifying their own learning needs.
4.7 DISCUSSION OF INFLUENCES BETWEEN TRAINING AND A SERVICE DEVELOPMENT, AND PERCEPTIONS AND SATISFACTIONS

This section discusses the findings presented in section 4.6; the findings and the limitations of the whole study are further discussed in Chapter 7.

Few pharmacists felt satisfied with their jobs and careers in community pharmacy at this phase with the intervention and non-intervention groups showing similar scores to ‘job and career satisfaction’ scales while the intervention group was participating in the training. Dissatisfaction with jobs and careers amongst community pharmacists seems to be deep-rooted with little improvement occurring during the last decade (Willett & Cooper 1996; Thomas et al. 1996a; Thomas et al. 1996b; Boardman et al. 1999; Tweedled & Wright 2000; Boardman et al. 2001). The consequences may be dire; the risk to patients through dispensing errors may increase with decreasing professional satisfaction (Bond & Raehl 2001). The quality of patient care may decline in community pharmacy unless pharmacists feel satisfied and motivated in their work.

Neuhauser et al. (2004) suggested that wanting to improve satisfaction influenced undertaking a new role. Conversely, O'Loughlin et al. (1999) reported that being already satisfied had an effect on providing a service. In this study, both intervention and non-intervention groups perceived that new roles and services in community pharmacy would enhance their job satisfaction. However, pharmacists who performed better in the training were more dissatisfied; maybe more dissatisfied with the traditional role of community pharmacists. The medication review service offered them an opportunity to attain a new role, and performing well in the training ensured their accreditation. On the other hand, they may have been good at studying and dissatisfied because they were uncertain of the future of the service for which they were training.

In this sample, pharmacists seemed dissatisfied with their careers which led some to contemplate on leaving community pharmacy. Pharmacists have reported that seeking greater satisfaction has led to wanting to leave or leaving community pharmacy (Boardman et al. 1999; Tweedled & Wright 2000; Boardman et al. 2000), suggesting that changes in community pharmacy practice seem to be necessary to enhance their professional satisfactions and to
recruit pharmacists to, and to retain them in, community pharmacy. While hospital pharmacists’
career commitment’ was not influenced by studying for, or possessing a postgraduate
qualification (Hussain & Bates 2002), some in the intervention group appeared to perceive that
participating in the Medicines Management project could enhance their career satisfaction in
community pharmacy. Perhaps, training alone is not sufficient to improve career satisfaction, but
if combined with a tangible new role it may have an impact.

In fact, as also observed by Bell et al. (2002), Mottram et al. (2002) and Attewell et al. (2005),
most perceived that they had sufficient training to work in community pharmacy, dispensing of
medicines was still their main role. In the non-intervention group the perception of being
competent enough may have contributed to not feeling encouraged to study. Further
qualifications may seem irrelevant, especially if these qualifications do not change anything in
practice.

Other studies have reported that most pharmacists do not regularly identify their training needs
irrespective of in which branch of pharmacy they worked (Mottram et al. 2002; Bell et al.
2009), suggesting that pharmacists may need help to identify competency gaps. In this sample,
those who did well in the training were more certain about identifying learning needs and
planning their studies. The training for providing medication reviews may have been one of their
learning objectives or they may have become aware of their needs during the training. Few
pharmacists have been reported to evaluate their learning (Bell et al. 2002), here most reported
thinking about their learning but not evaluating their learning, suggesting that they may have been
uncertain what type of evaluation was expected of them (Attewell et al. 2005).
Chapter 5

PHASE TWO

EXPLORING PROFESSIONAL PERFORMANCE,
PERCEPTIONS AND SATISFACTIONS
Chapter 5: Aims, Objectives

5.1 INTRODUCTION

This chapter describes the aims and the objectives, the methods and materials, the results and analysis, and discussion of the second part of the study at phase two ($t_2$).

5.1.1 Aims

The aims of this part of the study were to evaluate the professional perceptions of community pharmacists; to evaluate whether participating in a service development scheme and providing medication reviews influenced their perceptions and satisfactions.

5.1.2 Objectives

In order to meet the aims, the following objectives were operationalised:

i) To assess the performance in providing medication reviews in the intervention group;

ii) To explore the effect of the performance in training on the performance in medication reviews in the intervention group;

iii) To measure community pharmacists’ professional satisfactions, and perceptions of their personal development needs and behaviour;

iv) To investigate recording of CPD in the intervention group; and

v) To evaluate effects of performance in providing medication reviews and participation in a Medicines Management project on pharmacists’ perceptions and satisfactions.
5.2 METHODS
5.2.1 Study Design

A description of the whole study design is given in Chapter 3; a concise description of the study design at phase two ($t_2$) is given here. A survey with pharmacists in both intervention and non-intervention groups was undertaken to explore whether both completion of clinical training at phase one ($t_1$) and starting to provide medication reviews at phase two influenced community pharmacists' professional satisfactions and perceptions (Figure 5.1). In order to explore the influence of pharmacists' performances on self-assessed competence at phase three ($t_3$), their medication review performance was evaluated. Additionally, the intervention group were encouraged to keep CPD diaries in order to explore their recording of CPD. The study area and the recruitment of pharmacists to the intervention and non-intervention groups are described in section 3.9.

Figure 5.1. Flowchart showing the time line of the project: the phase two is in bold.
5.2.2 Medication Review Performance

Pharmaceutical care plans and referrals written for patients in the intervention and non-intervention groups by the community pharmacists were compared with those written for the same patients by an experienced clinical pharmacist to assess the effect of training and providing medication reviews on the intervention group (Figure 5.2). The medication review process is described in Appendix 1.

![Flowchart showing the time line of evaluation of performance and competence: phase two is in bold.](image)

5.2.2.1 Assessing the Medication Review Performance

The patient referrals (including the pharmaceutical care plans) written by the trained community pharmacists were reviewed by the clinical pharmacist to ensure that they had not missed any drug related problems (DRPs) patients were experiencing, or failed to suggest actions to solve them. For this review the clinical pharmacist also accessed the summaries of the patients' medical notes, and the interview notes. If needed, the clinical pharmacist revised the patient referrals before they were sent to GPs. Pharmacists who reviewed intervention patients' medications received feedback on their performance from the clinical pharmacist.
The referrals written by the clinical pharmacist were taken as "gold standard" and assumed to be accurate. The summaries of medical notes and the interview notes were unavailable to the researcher after completed medication reviews. Hence, it was neither possible to assess the accuracy of the referrals written by the clinical pharmacist, the clinical severity of the DRPs, nor the importance of the actions suggested to solve identified DRPs. The researcher assessed the accuracy of identified DRPs and actions suggested to solve these by the trained community pharmacists by comparing them with referrals written by the clinical pharmacist (Appendix 7).

An observation of a DRP or a proposed action to solve a DRP were deemed incomplete if any refinement was necessary. An observation or a proposal were regarded as incorrect, if a pharmacist had drawn a wrong conclusion on an identified problem or suggested an incorrect action. Additionally, the pharmacists had identified DRPs and suggested actions to solve these that the clinical pharmacist had not included in the referrals. These DRPs and suggested actions were categorised as having low priority; due to unavailability of essential information it was not possible to regard them as either incorrect, or indeed correct.

Although the patient referrals written by the pharmacists may have sometimes been incomplete, the pharmacists could provide more information to the GP when they discussed the care of patients. Therefore, patients were felt to benefit from the services, if the trained pharmacists had either accurately or incompletely identified a DRP or suggested actions to solve one: a favourable performance. All other discrepancies between the community pharmacists' and the clinical pharmacist's patient referrals, including pharmacists not observing DRPs or failing to suggest actions to solve them, were regarded to be a potential risk for a patient's care: an unfavourable performance.

A second pharmacist compared a randomly selected sample of 10% of patient referrals written by the community pharmacists and the clinical pharmacist to ensure the reliability of the performance assessment. After correcting for chance, the intercoder agreement between the researcher and the second pharmacist or $k$ statistic for DRP identifications or actions suggested to solve DRPs was very good, 0.93 and 0.99, respectively ($p < 0.0005$), indicating 93% and 99% agreement (section 3.7.2.3). The comparisons may, therefore, be assumed reliable and were used as measures of performance.
5.2.2.2 Data Collection, Handling and Analysis

The patient referrals written by the community pharmacists and by the clinical pharmacist were received from the Robert Gordon University. Data handling procedures have been described in section 4.2.4.1. Appropriate descriptive and inferential analyses were conducted to analyse the data (Bryman & Cramer 1997).

5.2.3 Professional Perceptions Survey

The questionnaire developed at phase one was employed to measure community pharmacists’ professional perceptions and satisfactions at phase two (Figure 5.3).

![Flowchart showing the time line of the professional perceptions and satisfactions surveys: the phase two is in bold.]

5.2.3.1 Administarting the Questionnaire

As in phase one, the survey questionnaire was posted to the pharmacists in both groups with a cover letter and a pre-paid self-addressed return envelope (sections 3.9 and 4.2.3.3). To ensure the highest possible response rate, three reminders were sent to non-respondents at two, four and six week intervals. An additional reminder was sent due to anticipated attrition in a longitudinal survey (Bowling 1997). As previously, the questionnaires were coded (section 4.2.3.3).
5.2.3.2 Data Handling and Analysis

The data handling procedures have been described in section 4.2.4.1. Appropriate descriptive and inferential tests were employed to analyse the data (Bryman & Cramer 1997).

5.2.4 Continuing Professional Development Diaries

In order to explore recording of CPD in the intervention group, pharmacists were encouraged to reflect on their learning and keep CPD diaries. The recorded learning experiences of the clinical training and other CPD, and reflection of learning needs and competence provided a link to triangulate data between the interviews at phases one and three (Figure 5.4).

![Figure 5.4. Flowchart showing the timeline of the qualitative research on professional perceptions and satisfactions: CPD diaries at phase two are in bold.]

5.2.4.1 Designing the Diary

Whilst the intervention group had been encouraged to keep a diary on their learning during the clinical training at phase one, they either declined to keep one or asked for help with the format of a diary. A diary was designed to facilitate the pharmacists’ recording of their learning. The Tower Hamlets PCT was approached to obtain the personal development record used by its employees, which was modified for the use of community pharmacists. Two diaries were designed for phases one and two (Appendix 8). The phase one diary comprised a section for
learning experiences during the clinical training. Both diaries comprised sections for a personal development plan, key learning experiences and reflection.

5.2.4.2  **Administrating the Diaries**

The phase one diaries were given to pharmacists as they attended the training event (Appendix 1). Pharmacists were encouraged to record their learning during the clinical training in retrospect and any other learning till the end of the year. The phase two diaries were posted to the pharmacists for further recording of their learning with a cover letter.

5.2.4.3  **Diary Collection and Analysis**

A letter with a freepost return envelope was sent to the pharmacists and they were contacted by the telephone to remind them to return the diaries. Content analysis was chosen to explore the pharmacists’ learning experiences described in their diaries.
5.3 ASSESSMENT OF PERFORMANCE: RESULTS AND ANALYSIS

This section presents the results and the analysis undertaken to assess the effect of providing medication reviews on the intervention group and to explore the effect of the training on medication review performance.

5.3.1 Sample

5.3.1.1 Community Pharmacists

Thirty-five pharmacists proceeded to provide medication reviews. However, nine pharmacists were not able to provide medication reviews for various reasons (section 6.5.5.1). Characteristics were obtained from the respondents of the professional perceptions survey. Pharmacists who reviewed medicines of the intervention patients received feedback limited to revisions of the patient referrals from the clinical pharmacist.

5.3.1.2 General Practitioners, Surgeries and Patients

Nineteen general practitioner surgeries and forty-one general practitioners (GPs) participated in the Medicines Management project (section 3.9). The number of GPs working in the GP surgeries ranged from one to six. Eight surgeries were single-handed where one GP was responsible for the medical treatment of all patients.

While 672 patients had been recruited (section 3.9), 461 patients were interviewed at phase two; the reasons for patient withdrawal are unknown to this study. The intervention group were assigned 216 patients and the non-intervention group 245 patients (Appendix 1). While the medications of the patients in both groups were reviewed by the community pharmacists at phase two, the referrals of the non-intervention group were withheld until the end of phase three and were sent to the GPs after the second medication review.
5.3.2 Analysing Patient Referrals

The pharmacists had been expected to interview circa 20 patients each at phase two (Appendix 1). Overall pharmacists reviewed the medications of a median of 14.5 patients. However, the number of reviews ranged between 2 and 69 and pharmacists' experiences of providing medication reviews varied greatly. Those who reviewed only a few patients' medicines may not have felt confident and may have needed more support, or may have had other reasons for not reviewing all the allocated 20 patients' medicines (section 6.5.5.1).

The assessment of pharmacists' medication review performance is based on the 244 patient referrals 20 community pharmacists (CPs) completed, reviewed by the experienced clinical pharmacist (EP). These referrals summarised medication reviews of 173 intervention and 71 non-intervention patients. The number of reviewed patient referrals per pharmacist ranged from 2 to 37, the median was 9.5. Pharmacists who had an additional appointment were more likely to write more referrals (Mann-Whitney z = -2.454, p = 0.008), perhaps, meeting colleagues through their appointment contributed to being motivated to complete more medication reviews.

5.3.2.1 Analysing Identification of Drug Related Problems

The clinical pharmacist identified 906 DRPs, divided into 16 categories (Mackie et al. 1999), comprising 756 clinical and 150 clerical problems, and two problems that did not fall into any of the categories (Table 5.1, grand total 908 DRPs). Patients experienced a median of 3.5 DRPs, two patients did not experience any DRPs. A lack of routine monitoring, for example blood pressure or cholesterol, potentially leading to sub-optimal treatment, was the most frequent DRP. Two other common DRPs included not being treated for a condition, for example not being prescribed aspirin for the primary prevention of vascular events, and ineffective treatment, for example not being prescribed optimal medication for diabetes mellitus. Despite, or perhaps due to completing the training by distance learning the community pharmacists identified 681 DRPs (75 %), leaving one in four DRPs unidentified or incorrectly identified. Additionally, they identified 195 DRPs that the clinical pharmacist judged as incorrect or low priority DRPs.
### Table 5.1. Identified drug related problems.

<table>
<thead>
<tr>
<th>Type of DRP</th>
<th>DRP</th>
<th>Identified DRPs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Standard</td>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Clinical DRP</td>
<td>Monitoring</td>
<td>131</td>
<td>11.9</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Untreated indication</td>
<td>129</td>
<td>11.7</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Ineffective therapy</td>
<td>113</td>
<td>10.2</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Adverse drug reaction</td>
<td>96</td>
<td>8.7</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>No indication</td>
<td>81</td>
<td>7.3</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Inappropriate choice of therapy</td>
<td>55</td>
<td>5.0</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Non-compliance</td>
<td>42</td>
<td>3.8</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Unnecessary therapy</td>
<td>37</td>
<td>3.3</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
<td>24</td>
<td>2.2</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Inappropriate dose or dosing schedule</td>
<td>21</td>
<td>1.9</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Inappropriate formulation or delivery</td>
<td>15</td>
<td>1.4</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>6</td>
<td>0.5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Contra-indication</td>
<td>6</td>
<td>0.5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Clinical total</td>
<td>756</td>
<td>83.3</td>
<td>561</td>
</tr>
<tr>
<td>Clerical DRP</td>
<td>Delete from repeat prescription</td>
<td>83</td>
<td>7.5</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Change repeat prescription or medical notes</td>
<td>40</td>
<td>3.6</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Add to repeat prescription or medical notes</td>
<td>27</td>
<td>2.4</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Clerical total</td>
<td>150</td>
<td>16.5</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>908</td>
<td>100</td>
<td>681</td>
</tr>
</tbody>
</table>

Footnote: The clinical pharmacist identified the DRPs in the standard column. The percentages in this column are derived from the total number of DRPs (N/total). The community pharmacists identified the DRPs in the performance column. The percentages in this column are calculated from DRPs identified by the clinical pharmacist (n/N).

The community pharmacists were more likely to identify certain DRPs than others. Need for counselling; inappropriate formulation or delivery; adverse drug reactions; need for changes in repeat prescription or medical notes; and need for monitoring were identified more often than interactions; need for an addition in repeat prescription or medical notes; unnecessary therapy; and medicines without indication ($\chi^2 = 37.807$, df = 13, $p < 0.0005$). Despite the
training it seems that pharmacists were more likely to identify or intervene with DRPs that they were familiar with through their traditional dispensing duties (Hulls & Emmerton 1996). They may have also lacked the confidence to question GPs’ prescribing decisions (section 6.5.5.3), especially clinically significant interactions or prescribing of medicines without indication. Additionally, they were more likely to identify clerical DRPs correctly, and clinical DRPs incompletely ($\chi^2 = 69.280$, df = 2, $p < 0.0005$). However, both correct and incomplete identification would have benefited the patients and identification of neither type of DRP was associated with potential increased risk to the patient.

Pharmacists who received limited feedback on their patient referrals from the clinical pharmacist learnt how to formulate their messages to the GPs and were more likely to have identified DRPs correctly and to have included less low priority or potentially incorrect DRPs ($\chi^2 = 35.047$, df = 3, $p < 0.0005$). However, the feedback did not influence them not identifying or incorrectly identifying DRPs. Due to the small sample of patients it was not possible to explore whether pharmacists’ performance became better over time. In general, the pharmacists need more support and feedback to put their knowledge into practice, become competent and build confidence. The support offered for pharmacists in the future may have to include performance appraisals as recommended for all NHS staff by the Department of Health (2005b).

5.3.2.2 Analysing Suggested Actions to Solve Drug Related Problems

The clinical pharmacist suggested 1474 actions to solve the identified DRPs, divided into 11 categories with three different actions to solve any DRP, and 15 other actions that did not fall into any of the categories (Table 5.2, grand total 1489 actions). A median of 6.0 actions were suggested for each patient, with a median of 1.0 action suggested to solve each DRP. The most common suggested actions were need for monitoring (32.2%), initiating (17.5%) and stopping therapy (14.4%). The community pharmacists suggested 865 actions (58.1 %), leaving two in five actions not suggested or incorrectly suggested. They were less likely to suggest a second and third action to solve a DRP, perhaps indicating that they assumed the responsible GP would take any necessary action, lacked confidence to suggest more than one action or may not have not thought more than one action was necessary. They also suggested 195 actions to solve the DRPs that either had low priority or were potentially incorrect (section 5.3.2.1).
Table 5.2. Suggested actions to solve drug related problems.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring</td>
<td>285 (25.8)</td>
<td>181 (63.5)</td>
<td>160 (36.3)</td>
<td>68 (42.5)</td>
<td>35 (25.0)</td>
<td>19 (54.3)</td>
<td>480 (32.2)</td>
<td></td>
<td>160 (63.5)</td>
<td>68 (42.5)</td>
<td>35 (25.0)</td>
<td>19 (54.3)</td>
<td>480</td>
<td>32.2</td>
</tr>
<tr>
<td>Initiate therapy</td>
<td>89 (8.1)</td>
<td>49 (55.1)</td>
<td>129 (99.3)</td>
<td>83 (64.3)</td>
<td>42 (30.0)</td>
<td>24 (57.1)</td>
<td>260 (17.5)</td>
<td></td>
<td>129 (99.3)</td>
<td>83 (64.3)</td>
<td>42 (30.0)</td>
<td>24 (57.1)</td>
<td>260</td>
<td>17.5</td>
</tr>
<tr>
<td>Stop drug</td>
<td>179 (16.2)</td>
<td>110 (61.5)</td>
<td>26 (5.9)</td>
<td>9 (34.6)</td>
<td>9 (6.4)</td>
<td>4 (4.4)</td>
<td>214 (14.4)</td>
<td></td>
<td>26 (5.9)</td>
<td>9 (34.6)</td>
<td>9 (6.4)</td>
<td>4 (4.4)</td>
<td>214</td>
<td>14.4</td>
</tr>
<tr>
<td>Change dose or directions</td>
<td>77 (7.0)</td>
<td>51 (66.2)</td>
<td>47 (10.7)</td>
<td>24 (51.1)</td>
<td>18 (12.9)</td>
<td>4 (22.2)</td>
<td>142 (9.5)</td>
<td></td>
<td>47 (10.7)</td>
<td>24 (51.1)</td>
<td>18 (12.9)</td>
<td>4 (22.2)</td>
<td>142</td>
<td>9.5</td>
</tr>
<tr>
<td>Counselling</td>
<td>44 (4.0)</td>
<td>23 (52.3)</td>
<td>43 (9.8)</td>
<td>24 (55.8)</td>
<td>22 (15.7)</td>
<td>7 (31.8)</td>
<td>109 (7.3)</td>
<td></td>
<td>43 (9.8)</td>
<td>24 (55.8)</td>
<td>22 (15.7)</td>
<td>7 (31.8)</td>
<td>109</td>
<td>7.3</td>
</tr>
<tr>
<td>Change drug or formulation within the same BNF subsection</td>
<td>33 (3.0)</td>
<td>18 (54.5)</td>
<td>16 (3.6)</td>
<td>11 (68.8)</td>
<td>4 (2.9)</td>
<td>1 (25.0)</td>
<td>53 (3.6)</td>
<td></td>
<td>11 (68.8)</td>
<td>4 (2.9)</td>
<td>1 (25.0)</td>
<td></td>
<td>53</td>
<td>3.6</td>
</tr>
<tr>
<td>Change to new BNF subsection</td>
<td>27 (3.4)</td>
<td>13 (48.1)</td>
<td>9 (0.5)</td>
<td>-</td>
<td>-</td>
<td>7 (5.0)</td>
<td>36 (2.4)</td>
<td></td>
<td>9 (0.5)</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Confirm indication</td>
<td>24 (2.2)</td>
<td>12 (50.0)</td>
<td>6 (1.4)</td>
<td>9 (33.3)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>31 (2.1)</td>
<td></td>
<td>6 (1.4)</td>
<td>9 (33.3)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Clinical total</td>
<td>758 (83.5)</td>
<td>457 (60.3)</td>
<td>499 (97.3)</td>
<td>991 (51.5)</td>
<td>138 (98.6)</td>
<td>61 (44.2)</td>
<td>1395 (89.0)</td>
<td></td>
<td>499 (97.3)</td>
<td>991 (51.5)</td>
<td>138 (98.6)</td>
<td>61 (44.2)</td>
<td>1395</td>
<td>89.0</td>
</tr>
<tr>
<td>Delete from repeat prescription</td>
<td>85 (7.7)</td>
<td>68 (80.0)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>85 (5.7)</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Change repeat prescription or medical notes</td>
<td>29 (2.6)</td>
<td>25 (86.2)</td>
<td>2 (0.5)</td>
<td>9 (100)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>32 (2.1)</td>
<td></td>
<td>2 (0.5)</td>
<td>9 (100)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Add to repeat prescription or medical notes</td>
<td>27 (2.4)</td>
<td>16 (59.3)</td>
<td>5 (1.1)</td>
<td>4 (80.0)</td>
<td>-</td>
<td>-</td>
<td>32 (2.1)</td>
<td></td>
<td>5 (1.1)</td>
<td>4 (80.0)</td>
<td>-</td>
<td>-</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Clerical total</td>
<td>141 (15.5)</td>
<td>109 (77.3)</td>
<td>7 (1.6)</td>
<td>6 (85.7)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>149 (10.0)</td>
<td></td>
<td>7 (1.6)</td>
<td>6 (85.7)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>9 (1.0)</td>
<td>9 (100)</td>
<td>5 (1.1)</td>
<td>9 (40.0)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>15 (1.0)</td>
<td></td>
<td>5 (1.1)</td>
<td>9 (40.0)</td>
<td>1 (0.7)</td>
<td>-</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

Total                                      | 908 (100)         | 575 (63.3)           | 441 (100)         | 299 (51.9)           | 140 (100)         | 61 (43.6)           | 1489 (100)               |                      | 441 (100)          | 299 (51.9)           | 140 (100)         | 61 (43.6)          | 1489 | 100 |

Footnote: The clinical pharmacist suggested the actions in the standard columns and the percentages in these are derived from the total number of actions in the column (N/total). The community pharmacists suggested the actions in the performance columns and the percentages in these are calculated from the actions suggested by the clinical pharmacist in that column (n/N).
Overall the community pharmacists were more likely to suggest certain actions than others. Changes, deletions or additions to repeat prescriptions or medical notes, or initiating therapy were suggested more often whereas changing medication to a new British National Formulary (BNF) category, confirming indication for therapy or counselling patients often remained not suggested ($\chi^2 = 37.960$, df = 11, $p < 0.0005$). The pharmacists were more likely to suggest correct actions to clerical DRPs, reflecting their traditional role rather than the training ($\chi^2 = 128.240$, df = 3, $p < 0.0005$). Indeed, suggesting incomplete or incorrect solutions were associated with clinical DRPs. Pharmacists who received limited feedback were more likely to suggest correct actions to solve DRPs and to have included less low priority or potentially incorrect actions ($\chi^2 = 48.700$, df = 4, $p < 0.0005$), but again feedback did not have an effect on not suggesting solutions or suggesting incorrect solutions. It was again not possible to evaluate whether pharmacists’ performances became better over time due to the low sample size. Despite, or due to the training completed by distance learning and the limited feedback, the pharmacists suggested three in five actions to solve DRPs.

5.3.3 Comparing Training and Medication Review Performances

Measures of beneficial performance were derived from favourable ‘identifications of DRPs’ and the ‘actions suggested to solve them’ to explore the effect of the training on community pharmacists’ performance in medication reviews. The measures were expressed in percentages of all DRPs identified and all actions suggested by the moderating clinical pharmacist. The community pharmacists identified 27% to 83% of the DRPs identified by the clinical pharmacist, the average was 60%. They suggested 17% to 74% of the actions suggested by the clinical pharmacist, the average was 49%. Percentages of both identification and actions were approximately normally distributed. Pharmacists who did well in identifying DRPs were also likely to suggest beneficial actions to solve them (Spearman’s $p = 0.836$, $p < 0.0005$; Figure 5.5). The number of conducted medication reviews and number of written patient referrals were other performance measures.
In this sample, pharmacists’ characteristics and their mean training result were not related with the performance measures. However, pharmacists who did well in Pharmaceutical care planning may have gained confidence to conduct a greater number of reviews and to write a greater number of referrals (Spearman’s $\rho = 0.427, p = 0.042$; Spearman’s $\rho = 0.435, p = 0.034$), when outliers were excluded (Figures 5.6 and 5.7). Experience of conducting more medication reviews and writing more referrals, or receiving limited feedback did not lead to more favourable performance in identifying DRPs or suggesting actions to solve them.
Relationships seemed to exist between performance in Pharmaceutical care planning, comprising training on identifying and solving DRPs and on writing patient referrals, and performances in 'identifying DRPs' and 'suggesting beneficial actions to solve them' (Figure 5.8 and 5.9). However, these were not statistically significant. To identify potential cases that may have undue influence on these relationships in regression analysis, differences between b-coefficients when a parameter \( y = b_0 + b_1x \) is estimated using all cases and is estimated when one case at a time is excluded were calculated (Field, 2000). The differences between b-coefficients calculated for each of the cases are called DfBeta values. Standardised DfBeta values may be used to identify influential cases; values greater than \( 2/\sqrt{n} \), where \( n \) is the number of cases, indicate cases that may have an undue effect on a parameter in a regression model (Pardo Merino & Ruiz Diaz, 2002). Figures 5.10 and 5.11 show the influential cases, greater than 0.45 (\( n = 20 \)), which were excluded from the subsequent regression analysis. Figures 5.12 and 5.13 show the relationships between performance in Pharmaceutical care planning and performances in 'identifying DRPs' and 'suggesting beneficial actions to solve them' after removing the influential cases.

Figure 5.8. Scatterplot of percentages of pharmaceutical care planning results and 'identified DRPs'.

Figure 5.9. Scatterplot of percentages of pharmaceutical care planning results and 'beneficial actions suggested to solve DRPs'.
The performance in Pharmaceutical care planning was entered into regression analysis together with the performance measures of 'identifying DRPs' and 'suggesting beneficial actions to solve them'. While removing three influential cases improved the regression model for 'identifying DRPs', it was not statistically significant (ANOVA, \( F = 4.005, p = 0.064 \)). A linear relationship
was found between training results and performance in 'suggesting actions to solve DRPs'. The regression model was a better prediction of performance than the mean value for 'suggesting actions to solve DRPs' (ANOVA, F = 9.182, p = 0.008). In this sample, the Pharmaceutical care planning result shared 36.5% of the variance with 'suggesting beneficial actions to solve DRPs' ($R^2 = 0.365$, adjusted $R^2 = 0.325$), indicating that whilst training performance had an effect on performance in 'suggesting beneficial actions to solve DRPs', other variables also influence it. The regression equation for beneficial performance was:

\[
('Suggesting actions to solve DRPs') = 1.213 + 0.642(Pharmaceutical care planning) \quad t = 3.030, \quad p = 0.008, \quad R = 0.604
\]

Favourable performance in 'suggesting beneficial actions to solve DRPs' may be predicted in a sample of pharmacists who achieved a result of 44-94% in the Pharmaceutical care planning module. However, performance in 'identifying DRPs' seemed not to be influenced by performance in Pharmaceutical care planning. Whilst conducting more reviews and writing more referrals did not influence pharmacists' performance in medication reviews, it was not possible to explore whether these performances had improved over time. Some pharmacists thought that their performance had improved with experience (section 6.5.5.3). Pharmacists may need more support than could be offered during this Medicines Management project to improve medication review performance. This could inform training and support for future service development programmes.

**SUMMARY**

*26 pharmacists reviewed medications of 461 patients; the number of reviews ranged between 2 and 69 per pharmacist, the median was 14.5
*the assessment of pharmacists’ medication review performance was based on 244 patient referrals 20 pharmacists completed, reviewed by an experienced clinical pharmacist
*the pharmacists identified 75% of the DRPs and suggested 58% of potential beneficial actions
*measures of beneficial performance in medication reviews were derived from favourable identifications of DRPs and the actions suggested to solve them
*a regression model based on performance in the training was formed for favourable performance, the model may be used to predict performance in ‘suggesting beneficial actions to solve DRPs’
Chapter 5: Results and Analysis

5.4 SURVEY OF PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS

This section presents the results and the analysis undertaken to assess pharmacists' professional satisfactions and perceptions of their personal development needs and behaviours.

5.4.1 Sample

The postal questionnaire was sent to 70 community pharmacists, 13 (18.6%) of whom were women. In total 56 responses were received, a response rate of 80% for this part of the longitudinal survey, and 57% of the total sample. Thirty pharmacists in the intervention group returned the questionnaire. Whilst twenty-six pharmacists in the non-intervention group returned the questionnaire, two had not been completed by the same person as at phase one. Therefore, they were analysed as new respondents (1149 and 1185).

5.4.1.1 Non-respondents

Fourteen pharmacists did not respond to the postal questionnaire at phase two, as previously, most were male (13/14). Although most non-respondents were in the non-intervention group, the difference was not statistically significant (binomial test, test proportions 0.53:0.47, \( p > 0.05 \)).

5.4.2 Demographics

A summary of respondents' characteristics is displayed in Table 5.3. Female pharmacists continued to be in the minority; the proportion of owners was greater than employees in this sample. The majority of pharmacists had a permanent contract, whereas two pharmacists worked part-time and almost half of the pharmacists had a consultation area in their pharmacy. Almost a third had a postgraduate or additional qualification, ranging from a Certificate to a Masters at phase two. Whilst a fifth of pharmacists in the intervention group had an additional personal appointment, only one in the non-intervention group had an appointment with THPCT.
On average the pharmacists had graduated twenty-one years previously and had been working in their current post for almost fourteen years. Both time since graduation and length of tenure were approximately normally distributed.

Table 5.3. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase two.

<table>
<thead>
<tr>
<th></th>
<th>All % (n)</th>
<th>Intervention % (n)</th>
<th>Non-intervention % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>20 (11/56)</td>
<td>23 (7/30)</td>
<td>15 (4/26)</td>
</tr>
<tr>
<td>Male</td>
<td>80 (45/56)</td>
<td>77 (23/30)</td>
<td>85 (22/26)</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>58 (32/55)</td>
<td>62 (18/29)</td>
<td>54 (14/26)</td>
</tr>
<tr>
<td>Employee</td>
<td>42 (23/55)</td>
<td>38 (11/29)</td>
<td>46 (12/26)</td>
</tr>
<tr>
<td><strong>Job security</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>94 (50/53)</td>
<td>96 (27/28)</td>
<td>92 (23/25)</td>
</tr>
<tr>
<td>Fixed term contract</td>
<td>6 (3/53)</td>
<td>4 (1/28)</td>
<td>8 (2/25)</td>
</tr>
<tr>
<td><strong>Consultation area in the pharmacy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation area</td>
<td>49 (27/56)</td>
<td>52 (15/30)</td>
<td>46 (12/26)</td>
</tr>
<tr>
<td>None</td>
<td>51 (28/56)</td>
<td>48 (14/30)</td>
<td>54 (14/26)</td>
</tr>
<tr>
<td><strong>Postgraduate or additional qualification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>73 (41/56)</td>
<td>67 (20/30)</td>
<td>81 (21/26)</td>
</tr>
<tr>
<td>Qualification</td>
<td>27 (15/56)</td>
<td>33 (10/30)</td>
<td>19 (5/26)</td>
</tr>
<tr>
<td><strong>Additional appointment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>87 (49/56)</td>
<td>80 (24/30)</td>
<td>96 (25/26)</td>
</tr>
<tr>
<td>Appointment</td>
<td>13 (7/56)</td>
<td>20 (6/30)</td>
<td>4 (1/26)</td>
</tr>
</tbody>
</table>

5.4.3 Exploring Demographics

Apart from the intervention, there were no statistically significant differences between the characteristics of the pharmacists working within the three different PCTs, as at phase one. The number of years after graduation and the number of years in current post correlated positively (Pearson's r = 0.803, p < 0.0005), 64% of the variance of length of tenure was accounted for by time since graduation. Pharmacists who had remained in the same pharmacy for longer were likely to be owners (t test, t = 3.171, p = 0.003). Additionally, owners graduated earlier...
(t test, t = 2.331, p = 0.024). These relationships were observed at phase one. Employees seemed to move from one job to another, perhaps finally became owners and then settled down. Employees were more likely to have a postgraduate degree or an additional qualification ($\chi^2 = 6.768$, df = 1, p = 0.013), which was not observed at phase one. Pharmacists who had an additional appointment were more likely to have an additional qualification ($\chi^2 = 8.130$, df = 1, p = 0.012), but the expected count was less than five in one of the cross-tabulation cells, implying that this observed difference should be interpreted cautiously (section 3.6.1.1). This finding indicates the difference between characteristics, also observed at phase one.

5.4.3.1 Comparing Demographics at Phases One and Two

The characteristics of the pharmacists who had responded at phases one and two were explored. During that time three more pharmacists built a consultation area in their pharmacy, another three gained a postgraduate or an additional degree and one gained an additional appointment, showing that changes occur over time and validating the longitudinal design. However, the changes in frequencies of the categorical variables (consultation area in the pharmacy, having an additional appointment or having a postgraduate or additional appointment) were not significant over time (McNemar -tests, p > 0.05). Additionally, there was no change in the employment status of the pharmacists (McNemar -test, p > 0.05).

The phase two postal survey was administered a year after the phase one survey. The mean time after graduation had indeed increased over a year (related samples t -test, t = -3.776, p < 0.0005). Perhaps surprisingly, there was no statistically significant difference between the length of tenure at phase one and two (related samples t -test, p > 0.05). This may be explained by job changes during the study or it may be more difficult to remember when one had started at a job than when one had graduated.

5.4.4 Responses to the Survey Items

Before further analysis on the items was undertaken, the data were checked for validity as before (section 4.4.4). The frequency of responses to each item was reviewed (Table 5.4);
they varied from strongly disagree to strongly agree for 22 items. Item F36 was deficient of any strongly agree responses at phases one and two. Responses to two items in the 'perceived appreciation by patients' factor continued to show poor distribution of responses. One respondent (1.8 %) disagreed with item E38; three pharmacists (5.4 %) disagreed with item E40; five respondents (8.9 %) disagreed with item E43. Item G34 was retained in its factor 'degree of autonomy at job', despite only five (8.9 %) disagreeing; it had been analysed as part of the factor at phase one.

Table 5.4. Distribution of responses to professional perceptions and satisfactions items at phase two.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>A61</td>
<td>5.4</td>
<td>3</td>
<td>17.9</td>
<td>10</td>
<td>10.7</td>
</tr>
<tr>
<td>A62</td>
<td>16.1</td>
<td>9</td>
<td>26.8</td>
<td>15</td>
<td>19.6</td>
</tr>
<tr>
<td>A63</td>
<td>16.1</td>
<td>9</td>
<td>33.9</td>
<td>19</td>
<td>25.0</td>
</tr>
<tr>
<td>A64</td>
<td>8.9</td>
<td>5</td>
<td>48.2</td>
<td>27</td>
<td>10.7</td>
</tr>
<tr>
<td>B65</td>
<td>9.1</td>
<td>5</td>
<td>16.4</td>
<td>9</td>
<td>21.8</td>
</tr>
<tr>
<td>B66</td>
<td>36.4</td>
<td>20</td>
<td>18.2</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td>B67</td>
<td>26.8</td>
<td>15</td>
<td>14.3</td>
<td>8</td>
<td>16.1</td>
</tr>
<tr>
<td>B68</td>
<td>23.2</td>
<td>13</td>
<td>16.1</td>
<td>9</td>
<td>23.2</td>
</tr>
<tr>
<td>C70</td>
<td>5.4</td>
<td>3</td>
<td>39.6</td>
<td>22</td>
<td>10.7</td>
</tr>
<tr>
<td>C77</td>
<td>3.6</td>
<td>2</td>
<td>10.7</td>
<td>6</td>
<td>10.7</td>
</tr>
<tr>
<td>D72</td>
<td>3.6</td>
<td>2</td>
<td>21.8</td>
<td>12</td>
<td>29.1</td>
</tr>
<tr>
<td>D75</td>
<td>3.6</td>
<td>2</td>
<td>8.9</td>
<td>5</td>
<td>19.6</td>
</tr>
<tr>
<td>E38</td>
<td>1.8</td>
<td>-</td>
<td>1.8</td>
<td>-</td>
<td>12.5</td>
</tr>
<tr>
<td>E39</td>
<td>5.4</td>
<td>3</td>
<td>33.9</td>
<td>19</td>
<td>7.1</td>
</tr>
<tr>
<td>E40</td>
<td>1.8</td>
<td>1</td>
<td>3.6</td>
<td>2</td>
<td>5.4</td>
</tr>
<tr>
<td>E43</td>
<td>1.8</td>
<td>1</td>
<td>7.1</td>
<td>4</td>
<td>7.1</td>
</tr>
<tr>
<td>F30</td>
<td>17.9</td>
<td>10</td>
<td>37.5</td>
<td>21</td>
<td>23.2</td>
</tr>
<tr>
<td>F35</td>
<td>-</td>
<td>-</td>
<td>28.6</td>
<td>16</td>
<td>21.4</td>
</tr>
<tr>
<td>F36</td>
<td>18.2</td>
<td>10</td>
<td>45.5</td>
<td>25</td>
<td>21.8</td>
</tr>
<tr>
<td>F56</td>
<td>5.4</td>
<td>3</td>
<td>25.0</td>
<td>14</td>
<td>17.9</td>
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<tr>
<td>F60</td>
<td>3.6</td>
<td>2</td>
<td>16.1</td>
<td>9</td>
<td>14.3</td>
</tr>
<tr>
<td>G8</td>
<td>1.8</td>
<td>1</td>
<td>14.3</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td>G92</td>
<td>14.3</td>
<td>8</td>
<td>26.8</td>
<td>15</td>
<td>7.1</td>
</tr>
<tr>
<td>G34</td>
<td>1.8</td>
<td>1</td>
<td>7.1</td>
<td>4</td>
<td>23.2</td>
</tr>
<tr>
<td>G55</td>
<td>18.2</td>
<td>10</td>
<td>38.2</td>
<td>21</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Footnote: Poorly performing items are displayed in bold in the item column.
5.4.4.1 Handling Missing Values

Five pharmacists did not respond to one item each: B65 (1024); B66 (1037); F36 (1017); G55 (1027); and D72 (1086). One respondent to the pilot survey had commented on item G55 (section 4.2.5.2); this item had been extracted without modification from the validated hospital pharmacy survey and was retained (Rajah et al. 2001). Median values of the overall responses to each of these items have been used in the analysis as before (section 4.4.4.1).

5.4.5 Internal Reliability of the Factors

The internal reliability of the scales was tested (Table 5.5). Internal reliability for 'job satisfaction' (A) continued to be good and for 'career satisfaction' (B) very good, $\alpha = 0.74$ and $\alpha = 0.88$ respectively. Internal reliability for 'satisfaction with duties' (F) was acceptable $\alpha = 0.49$, whilst the correlation of four items with the others was poor ($< 0.30$). Internal reliability for 'degree of autonomy at job' (G) was good $\alpha = 0.63$.

Table 5.5. Internal reliability of factors at phase two.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Corrected item total correlation</th>
<th>$\alpha$ if item removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction (A)</td>
<td>A61</td>
<td>0.71</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>A62</td>
<td>0.51</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>A63</td>
<td>0.70</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>A64</td>
<td>0.97</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>$\alpha = 0.74$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career satisfaction (B)</td>
<td>B65</td>
<td>0.81</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>B66</td>
<td>0.82</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>B67</td>
<td>0.70</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>B68</td>
<td>0.66</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>$\alpha = 0.88$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with duties (F)</td>
<td>F30</td>
<td>0.36</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>F35</td>
<td>0.24</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>F36</td>
<td>0.26</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>F56</td>
<td>0.18</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>F60</td>
<td>0.29</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>$\alpha = 0.49$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of autonomy at job (G)</td>
<td>G8</td>
<td>0.38</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>G22</td>
<td>0.56</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>G34</td>
<td>0.39</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>G55</td>
<td>0.32</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>$\alpha = 0.63$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.4.6 Scores of the Factors

The mean and median factor scores from the respondents (n = 56) are displayed in Table 5.6. As at phase one, the mean scores to 'job satisfaction', 'satisfaction with duties', and 'degree of autonomy at job' were above the mid-point, indicating general satisfaction with these factors. In contrast, the mean score to 'career satisfaction' was below the mid-point, indicating a level of dissatisfaction. Lower 'career satisfaction' scores compared with 'job satisfaction' may be an indication of non-existing career path in community pharmacy at the time of the study.

Table 5.6. The factor scores at phase two.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>12.6</td>
<td>3.4</td>
<td>13.0</td>
<td>4 - 19</td>
</tr>
<tr>
<td>Career satisfaction</td>
<td>10.6</td>
<td>4.5</td>
<td>10.0</td>
<td>4 - 20</td>
</tr>
<tr>
<td>Satisfaction with duties</td>
<td>16.6</td>
<td>2.9</td>
<td>17.0</td>
<td>11 - 23</td>
</tr>
<tr>
<td>Degree of autonomy at job</td>
<td>13.3</td>
<td>3.1</td>
<td>13.0</td>
<td>6 - 20</td>
</tr>
</tbody>
</table>

5.4.7 Exploring the Factors

In order to explore community pharmacists' professional satisfactions, inferential analyses were conducted.

5.4.7.1 Analysing Job Satisfaction

No statistically significant differences or relationships were found between pharmacists' characteristics and 'job satisfaction'. The intervention group seemed to be as satisfied with their jobs (mean = 13.03, 95% CI 11.88-14.19) as the non-intervention group (mean = 12.19, 95% CI 10.66-13.73).
5.4.7.2 Analysing Career Satisfaction

No statistically significant differences or relationships between characteristics were observed with 'career satisfaction'. The intervention group seemed to have similar career satisfaction (mean = 11.23, 95% CI 9.59-12.88) as the non-intervention group (mean = 9.81, 95% CI 7.95-11.66).

5.4.7.3 Analysing Satisfaction with Duties

No statistically significant differences or relationships were found between 'satisfaction with duties' and characteristics. The intervention group was equally satisfied with their duties (mean = 16.77, 95% CI 15.67-17.86) as the non-intervention group (mean = 16.31, 95% CI 15.16-17.46).

5.4.7.4 Analysing Degree of Autonomy at Job

In the intervention group the proportion of 'beneficial actions suggested to solve DRPs' correlated positively with perceived degree of autonomy (Spearman's $p = 0.457$, $p = 0.043$). Having greater autonomy may have been affected by, or contributed to spending more time reviewing patients' medications and suggesting more beneficial actions to solve DRPs. No other statistically significant differences or relationships between characteristics were observed. Respondents' perceived degree of autonomy at job in the intervention group (mean = 13.10, 95% CI 12.16-14.04) and non-intervention group (mean = 13.42, 95% CI 11.97-14.88) were similar.

5.4.7.5 Relationships between Factor Scores

As before, Pearson's correlation coefficient was used to test the strength of the relationship between the factors (Table 5.7). The scores to three factors continued to show positive correlations; not surprisingly, scores to 'job satisfaction' correlated with scores to 'career satisfaction', accounting again for 38% of the variance between the factors. The correlation between scores to 'degree of autonomy at job', 'job satisfaction' and 'satisfaction with duties'
was weak and the correlation between scores to 'degree of autonomy at job' and 'career satisfaction' was not statistically significant, indicating multiple influences on these factors.

At this phase, 'satisfaction with duties' had an effect on the relationship between 'job satisfaction' and 'career satisfaction'. When 'satisfaction with duties' was held constant the partial correlation coefficient between 'job satisfaction' and 'career satisfaction' was lower (0.382, p = 0.004) than Pearson's correlation coefficient, suggesting that 'satisfaction with duties' partially explained the relationship between 'job satisfaction' and 'career satisfaction'.

Table 5.7. Pearson's correlation coefficients between the factors at phase two.

<table>
<thead>
<tr>
<th></th>
<th>Job satisfaction</th>
<th>Career satisfaction</th>
<th>Satisfaction with duties</th>
<th>Degree of autonomy at job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>-</td>
<td>0.616</td>
<td>0.611</td>
<td>0.350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; 0.0005</td>
<td>p &lt; 0.0005</td>
<td>p = 0.008</td>
</tr>
<tr>
<td>Career satisfaction</td>
<td>0.616</td>
<td>-</td>
<td>0.620</td>
<td>0.193</td>
</tr>
<tr>
<td></td>
<td>p &lt; 0.0005</td>
<td></td>
<td>p &lt; 0.0005</td>
<td>p &gt; 0.05</td>
</tr>
<tr>
<td>Satisfaction with</td>
<td>0.611</td>
<td>0.620</td>
<td>-</td>
<td>0.314</td>
</tr>
<tr>
<td>duties</td>
<td>p &lt; 0.0005</td>
<td>p &lt; 0.0005</td>
<td></td>
<td>p = 0.019</td>
</tr>
<tr>
<td>Degree of autonomy at</td>
<td>0.350</td>
<td>0.193</td>
<td>0.314</td>
<td>-</td>
</tr>
<tr>
<td>job</td>
<td>p = 0.008</td>
<td>p &gt; 0.05</td>
<td>p = 0.019</td>
<td></td>
</tr>
</tbody>
</table>

5.4.8 Comparing Factor Scores at Phases One and Two

In order to explore whether community pharmacists' professional satisfactions had changed over time (t₀ and t₄) general linear model analyses were undertaken. These tests allow comparisons of scores between demographic groups and within a demographic group at the same time. The results are reported as a comparison of scores at all three phases in section 6.4.8.
5.4.9 Responses to the Personal Development and Perceived Appreciation Items

The pharmacists’ responses to the individual items have been shown in Table 5.4. As before, two in five pharmacists perceived that they were not encouraged to work towards further qualifications relevant to their job (C70) and most respondents thought that they had sufficient training to do their work effectively (C77). One in four perceived that they did not plan their training and development needs regularly (D72), however, the majority of respondents reported attendance of CPD events and reflected on what they had learned (D75). Whilst most respondents felt valued by patients and customers and perceived that their services were appreciated (E40 and E43), half thought that patients were only concerned about a speedy service (E39). However, four in five respondents perceived that patients attempted to comply with the directions and advice they gave patients (E38).

5.4.10 Exploring the Personal Development and Perceived Appreciation Items

In order to explore community pharmacists’ satisfactions and perceptions of their personal development needs and behaviours, inferential analyses were undertaken. The coding of negative statements was reversed as before (section 4.4.9).

5.4.10.1 Analysins Opportunities for Training and Education

The intervention group was more likely to perceive that they were encouraged to study towards further qualifications (C70, Table 5.8). No other statistically significant differences or relationships were found between characteristics and responses to item C70.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>C70 &quot;I do not get encouraged to work towards further qualifications relevant to my job&quot;</td>
<td>intervention group</td>
<td>30</td>
<td>3.23</td>
<td>4.00</td>
<td>32.63</td>
<td>-2.139</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>26</td>
<td>2.54</td>
<td>2.00</td>
<td>23.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
No significant differences or relationships were found between responses to item C77 and characteristics. While the intervention group was less certain about having sufficient training, perhaps influenced by providing medication reviews, the difference was not statistically significant.

5.4.10.2 Analysing Personal Planning of Training and Education

No significant differences or relationships were found between characteristics and responses to item D72. The intervention group reported planning training and development as regularly as the non-intervention group. However, female pharmacists were more likely to reflect on their learning after attending CPD events (D75, Table 5.9). In the intervention group, pharmacists who had identified a greater proportion of DRPs or suggested beneficial actions to solve them were less likely to reflect on their learning (Spearman's $\rho = -0.507$, $p = 0.093$; Spearman's $\rho = -0.577$, $p = 0.008$, respectively). It seems that reflection did not improve performance, or perhaps that pharmacists who performed well did not have time to reflect on their learning. Pharmacists may need more support with reflecting on their learning for it to have an effect on performance. No other significant differences or relationships were found in responses to item D75. Pharmacists' responses were similar to the item for the intervention and the non-intervention groups.

Table 5.9. Exploration of item D75: Mann-Whitney U test at phase two.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D75 &quot;After I have attended CPD events, I reflect on what I have learned&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>11</td>
<td>4.09</td>
<td>4.00</td>
<td>37.73</td>
<td>-2.421</td>
<td>0.016</td>
</tr>
<tr>
<td>male</td>
<td>45</td>
<td>3.44</td>
<td>4.00</td>
<td>26.24</td>
<td>-2.421</td>
<td>0.016</td>
</tr>
</tbody>
</table>

5.4.10.3 Analysing Perceived Appreciation by Patients

Interestingly, in the intervention group, pharmacists who suggested a greater proportion of beneficial actions to solve DRPs were more inclined to think that patients would not follow their advice (Spearman's $\rho = -0.566$, $p = 0.009$). These pharmacists may have felt frustrated,
thinking their beneficial advice is not implemented. No other significant differences or relationships were observed in responses to item E38; the intervention group held similar views as the non-intervention group. As before, the intervention group was more likely to perceive that patients were not only concerned about the speed of the service (E39, Table 5.10). No other significant differences or relationships were found between responses to item E39 and characteristics. Female pharmacists and those who held an additional appointment did not have a more positive perception about patients, in contrast to phase one.

The intervention group was more likely to perceive that patients treated them politely (E40, Table 5.10). Additionally, the longer a pharmacist had been in the same post or had known the patients, the more positively they viewed patients (Spearman’s $p = 0.316, p = 0.027$). No other significant differences or relationships were found between characteristics and responses to item E40. There was no difference between pharmacists who did not have a consultation area and those who had, in contrast to phase one.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>E39 &quot;Patients are only concerned about getting their medication as quickly as possible so that they can leave as quickly as possible&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>30</td>
<td>3.07</td>
<td>3.50</td>
<td>32.75</td>
<td>-2.191</td>
<td>0.029</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>26</td>
<td>2.31</td>
<td>2.00</td>
<td>23.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E40 &quot;Patients and customers treat me courteously&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>30</td>
<td>4.17</td>
<td>4.00</td>
<td>32.13</td>
<td>-2.295</td>
<td>0.023</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>26</td>
<td>3.77</td>
<td>4.00</td>
<td>24.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the intervention group those who had suggested a greater proportion of beneficial solutions to DRPs were more likely to perceive that their services were not appreciated (Spearman’s $p = -0.458, p = 0.042$). This combined with the perception that patients would not follow a pharmacist’s advice does not bode well for implementation of a medication review service, or other advanced or enhanced services. It may not be only pharmacists who need support to perform well but patients who need to adjust their perceptions of community pharmacists and their roles. However, the earlier pharmacists had graduated, the more they felt appreciated.
by patients (Spearman's ρ = 0.314, p = 0.019). No other significant differences or relationships were found in responses to item E43. The intervention group and the non-intervention group held similar views.

5.4.10.4 Comparing Responses to the Personal Development and Perceived Appreciation Items at Phases One and Two

In order to determine any differences in responses from the fifty-two respondents at phase two and at phase one, a Wilcoxon matched-pairs signed-ranks test was used. There were no statistically significant changes in the responses to the individual items (Wilcoxon tests, p > 0.05). These perceptions seem to be consistent and may reflect the perceptions of other community pharmacists.

**SUMMARY**

*56 pharmacists completed the postal survey on professional perceptions and satisfactions
*scales measuring professional satisfactions continued to be internally reliable
*mean job and career satisfaction scores in the intervention group had increased, whereas those of the non-intervention group seemed to remain lower; no statistically significant difference
*in the intervention group, pharmacists who suggested a greater proportion of beneficial actions to solve DRPs felt greater autonomy at job
*‘satisfaction with duties’ contributed to the relationship between ‘job satisfaction’ and ‘career satisfaction’
*the intervention group continued to feel more encouraged to work towards further qualifications relevant to their work and tended to perceive that patients appreciated their services
*in the intervention group, pharmacists who showed more positive performance in medication reviews were less likely to reflect on their learning
*in the intervention group, pharmacists who suggested a greater proportion of beneficial actions to solve DRPs were more inclined to feel that patients would not follow their advice and did not appreciate services offered to them
5.5 RECORDING CONTINUING PROFESSIONAL DEVELOPMENT: RESULTS

This section presents the results and the analysis taken to explore recording of CPD in the intervention group.

5.5.1 Sample

The phase one retrospective CPD diaries were given to the 37 pharmacists who successfully completed the training. Two male pharmacists withdrew; the phase two prospective CPD diaries were sent to the remaining 35 pharmacists. Whilst five pharmacists had kept records on their participation in learning activities, none of the pharmacists who continued to participate in the Medicines Management project had used the diaries provided to them.

5.5.2 Exploring Recording of Continuing Professional Development

A content analysis was to be performed to explore the pharmacists' recorded learning experiences. However, this was not possible since the pharmacists had not kept their CPD diary. Many pharmacists said that they had intended to record their learning experiences and apologised for not having kept the diary. Lack of time was given as a reason for not recording CPD; lack of time had been a barrier to CPD participation (section 4.5.3.8). Whilst this excuse is regrettable but acceptable in a research project that required full commitment to train and provide medication reviews over a long period of time, this finding implies that pharmacists may struggle to meet their responsibilities when CPD participation becomes mandatory in 2006 (RPSGB 2005c). The new contract for provision of NHS services in community pharmacy has already changed the role of community pharmacists by introducing new services, such as medicines use review (Department of Health 2004a). Pharmacists are expected to prove their competence to provide advanced services, provide them and develop professionally and record their learning. In order to embrace the challenge the pharmacists may need to be supported.

**SUMMARY**

*none of the pharmacists in the intervention group recorded their learning experiences in the CPD diaries provided, suggesting challenges for mandatory recording of CPD*
5.6 EVALUATING INFLUENCES BETWEEN PERFORMANCE AND A SERVICE DEVELOPMENT, AND PERCEPTIONS AND SATISFACTIONS

This section presents the results and analysis of the effects of medication review performance and participation in a Medicines Management project on pharmacists’ perceptions and satisfactions. An attribute is compared with associated satisfaction or perception scores. Interfacing quantitative and qualitative data, as originally planned, was not possible as the intervention group failed to use the CPD diaries provided to them. The influences are discussed in the section 5.7.

Pharmacists performing more positively in ‘identifying DRPs’ and ‘suggesting actions to resolve them’ seemed less satisfied with their jobs. Training performance influenced ‘suggesting actions to solve DRPs’; pharmacists performing better in the training had seemed also less satisfied (section 4.6). These pharmacists may have been more dissatisfied with their then current role in primary care and may have been eager to do their utmost to change the situation to become more satisfied. Additionally, these pharmacists seemed more dissatisfied with their careers in community pharmacy. While career satisfaction had not influenced training performance, these pharmacists may have realised that their newly acquired skills and knowledge could help them to change their career and, hence, improve their career satisfaction as they started to provide the service.

Pharmacists performing more positively in ‘identifying DRPs’ seemed less certain about being encouraged to further their professional development (C70). Perception of being competent enough to do their job effectively was widespread (C77), perhaps they thought they were competent to provide medication reviews. Pharmacists performing more positively ‘identifying DRPs’ seemed uncertain whether they planned their training regularly (D72). Performing more positively in medication reviews was associated with reported reflecting on learning (D75, section 5.4.10.2). These pharmacists may have been more truthful than the others: none of the participants had recorded their reflections in the CPD diary provided to them (section 5.5). Of course, it is possible to reflect without recording one’s thoughts; in phase three interviews pharmacists were asked specifically about how they evaluated their learning (section 6.2.4.1). This all calls to question the usefulness of keeping a CPD diary.
By phase two the intervention group seemed to have become more satisfied with their jobs and careers; however, the difference was not statistically significant. Participation in the Medicines Management project and, perhaps better perceived prospects in the future may have contributed to their satisfactions (section 6.5.4). The intervention group continued to feel more encouraged to work towards further qualifications (C70, section 5.4.10.1). However, both groups similarly continued to think that they were competent enough to do their job effectively (C77). As previously, the non-intervention group felt less certain about planning their development (D72) and both groups reported that they reflected on their learning (D75).

**SUMMARY**

* there was a suggestion that pharmacists showing more positive performance in medication reviews tended to be less satisfied with their jobs and careers; they might have used this opportunity to try to improve their professional satisfactions
* pharmacists performing more positively in medication reviews reported reflecting less on their learning
* there was a suggestion that pharmacists identifying a greater proportion of DRPs seemed less certain about being encouraged to further their professional development and planning their training
* there was a suggestion that the intervention group seemed more satisfied with their jobs and careers at this phase
* the intervention group continued to feel more encouraged to work towards further qualifications
DISCUSSION OF INFLUENCES BETWEEN PERFORMANCE IN MEDICATION REVIEWS AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS

This section discusses the findings presented in section 5.6; the limitations and the findings of the whole study are further discussed in Chapter 7.

The 'job and career satisfaction' scores of the intervention group increased whilst scores of the non-intervention group remained unchanged. The training and providing medication reviews may have influenced these satisfactions and the intervention group may have perceived the prospects of changing their role in community pharmacy had become better. The difference in the scores between the two groups was not statistically significant by this phase, suggesting that more long-term changes in pharmacy practice may be needed before they have a permanent effect on professional satisfactions. However, pharmacists trained to provide immunisations in a study were as satisfied with their jobs as those not providing the service (Neuhauser et al. 2004), suggesting that provision of one service alone may not improve professional satisfactions.

Perhaps alarmingly, pharmacists performing more positively in medication reviews, who also had performed better in the training, seemed not to be more satisfied with their jobs and careers. The intervention did not seem to have an effect on their professional satisfactions. In contrast, as they were dissatisfied, performing well may have been a guarantee for change in their jobs and careers and becoming more satisfied, or they may have been less satisfied as they realised that the service development may not become a permanent service.

Most continued to perceive that they were competent enough to do their job; there had not been any changes to the NHS contract. The intervention group may have thought that the training enabled them to provide the medication reviews and continued to feel more encouraged to further their development and were more certain about planning their development, suggesting a gap between the groups of pharmacists. Pharmacists unsure of their learning needs may require more facilitation. Most continued to report that they reflected on their learning. However, the intervention group failed to record their reflections in the CPD.
diaries, suggesting that reflecting on learning and recording it may be the most difficult step for the pharmacists to take in the future (Attewell et al. 2005), and that the CPD diaries may not be useful.
Chapter 6

PHASE THREE

EXPLORING SELF-ASSESSED COMPETENCE AND CHANGES IN PROFESSIONAL PERCEPTIONS AND SATISFACTIONS
Chapter 6: Aims, Objectives

6.1 INTRODUCTION

This chapter comprises the aims and the objectives, the methods and materials, the results and analysis, and discussion of the third part of the study, phase three (t₁).

6.1.1 Aims

The aims of this part of the study were to evaluate self-assessed competence and professional perceptions of community pharmacists, to evaluate whether participating in a service development scheme and providing medication reviews influenced pharmacists' perceptions and satisfactions.

6.1.2 Objectives

In order to meet the aims, the following objectives were operationalised:

i) To measure community pharmacists' self-assessed competence;

ii) To explore the influence of the training and medication review performances on self-assessed competence in the intervention group;

iii) To measure pharmacists' professional satisfactions, and perceptions of their personal development needs and behaviour;

iv) To explore whether community pharmacists' perceptions of CPD, and professional satisfactions have changed over time, using different data collection methods;

v) To explore perceptions of the intervention group of their performance in medication reviews and the Medicines Management project; and

vi) To evaluate effects of self-assessed competence and participation in a Medicines Management project on pharmacists' perceptions and satisfactions.
6.2 METHODS

6.2.1 Study Design

A description of the whole study design has been given in Chapter 3; the study design at phase three (tₚ) is described here. In order to explore whether completion of clinical training at phase one (tₒ), providing medication reviews at phase two (tᵢ) and continuing to provide medication reviews at phase three influenced community pharmacists' professional satisfactions and perceptions, a survey and in-depth interviews with pharmacists in both intervention and non-intervention groups was undertaken (Figure 6.1). A survey was undertaken to explore the influence of completing clinical training and providing medication reviews on self-assessed competence. The study area and the recruitment of pharmacists to the intervention and non-intervention groups are described in section 3.9.

Figure 6.1. Flowchart showing the timeline of the project; the phase three is in bold.
6.2.2 Self-Assessed Competence Survey

As described before, a survey was undertaken to explore the effect of clinical training and providing medication reviews on pharmacists' self-assessed competence (Figure 6.2).

![Flowchart showing the timeline of evaluation of performance and competence](image)

**Figure 6.2. Flowchart showing the time line of evaluation of performance and competence: phase three is in bold.**

6.2.2.1 Designing the Questionnaire

A questionnaire was designed in collaboration with another researcher based on a previously developed survey tool comprising behavioural statements in order to measure self-assessed competence (Mills et al. 2003). The statements measuring competency had been adapted from the General Level Competency Framework developed by McRobbie et al. (2001) and Antoniou et al. (2004). The questionnaire comprised two sections: pharmacists' demographics and a set of eighty-one behavioural statements (Appendix 9). The behavioural statements formed twenty-eight competencies which in turn were grouped into four competency clusters: 'delivery of patient care'; 'personal'; 'problem solving'; and 'management and organisation'. A four-point ordinal scale, ranging from always (4), usually (3), sometimes (2) to never (1), measured how often the respondents perceived they showed a behaviour in any one statement. The total competency score for each competency and competency cluster was calculated as the mean of the responses to the behavioural statements within a competency,
or a competency cluster. The questionnaire was reviewed for its face validity by two other researchers.

6.2.2.2 Administering the Questionnaire

The questionnaire had previously been piloted amongst community pharmacists (Mills et al. 2003) and behavioural statements had been clarified for validity. The questionnaire was posted to pharmacists in both groups (section 3.9) with a cover letter (Appendix 9) and a pre-paid self-addressed return envelope. Two follow-up questionnaires were administered to non-respondents at two and four week intervals to maximise response. The questionnaires were coded to identify the intervention and non-intervention groups and to keep track of non-respondents.

6.2.2.3 Data Handling and Analysis

Data handling procedures have been previously described in section 4.2.4.1. Appropriate descriptive and inferential analyses were employed (Bryman & Cramer 1997; Kinnear & Gray 2004).

6.2.3 Professional Perceptions Survey

The questionnaire developed at phase one was used to measure community pharmacists' professional perceptions and satisfactions at phase three and to explore potential changes in these (Figure 6.3).

![Diagram showing the timeline of professional perceptions and satisfactions surveys](image-url)

Figure 6.3. Flowchart showing the time line of the professional perceptions and satisfactions surveys: the phase three is in bold.
6.2.3.1 Administrating the Questionnaire, Data Handling and Analysis

The administration of the questionnaire has been described in section 5.2.4.1 (Appendix 4) and the data handling procedures in section 4.2.4.1. Appropriate descriptive and inferential analyses were conducted to analyse the data (Bryman & Cramer 1997).

6.2.4 In-Depth Interviews

In addition to comparing measurements of professional perceptions and satisfactions of community pharmacists from all three phases (section 6.2.4), interviews were conducted in order to explore and compare in-depth perceptions and satisfactions at phases one and three (Figure 6.4).

![Flowchart showing the timeline of the qualitative research on professional perceptions and satisfactions: interviews at phase three are in bold.](image)

6.2.4.1 Reviewing the Interview Guide

The phase one interview guide was reviewed in the light of the qualitative analysis and an interview schedule was developed for phase three to explore potential changes in professional perceptions and satisfactions over time (Appendix 10). The context of each question for the study is explained in Appendix 6. Five questions remained essentially the same in order to explore potential changes in pharmacists' perceptions, a further five were modified, and two prompts added. Five questions were omitted as they were no longer within the scope of this study. Six questions were formulated for the intervention group to explore the pharmacists'
perceptions of their medication review performance and participation in the Medicines Management project. The schedule was reviewed for its face validity by two other researchers.

6.2.4.2 Interviews

Telephone interviews were found to be useful during phase one and were conducted with all the pharmacists by the principal researcher. Having sent the questionnaire on professional perceptions, appointments were arranged with the intervention group for interviews (section 6.2.3). Pharmacists in the non-intervention group were contacted for an interview following the completion of the above questionnaire. All pharmacists consented for audiotaping of the interviews that were transcribed verbatim.

6.2.4.3 Data Handling and Analytical Procedures

As previously, all collected data were anonymised and entered onto a database using NVivo software (section 4.2.4.4). The process of the qualitative interview analysis is presented in Figure 6.5, as before, a grounded approach was employed.

Figure 6.5. Flowchart of the processes involved in analysing the interviews at phase three.
A preliminary coding frame was constructed based on the interview schedule, the interviews and the phase one interview analysis. As before, the coding frame subsequently included codes emerging from the interviews. An iterative process was applied: transcripts stored in the database were coded for meaning; and reports comprising labelled passages generated with the software were coded by describing what was being said in the passages. The credibility of coding of the interviews was ensured by another researcher. As before, patterns of labels were grouped into themes; the perceptions of the intervention group were compared with the non-intervention group. The themes emerging from the phase three interviews were compared with the themes emerging from those in phase one to assess changes. This longitudinal qualitative study explores community pharmacists’ professional perceptions and satisfactions in-depth. In order to enhance the credibility of the findings and to evaluate the influences of the intervention and the perceptions and satisfactions, the qualitative data were interfaced with quantitative data (section 6.6).
Chapter 6: Results and Analysis

6.3 SURVEY OF SELF-ASSESSED COMPETENCE: RESULTS AND ANALYSIS

This section presents the results and the analysis taken to measure self-assessed competence of community pharmacists and to explore the effects of training and medication review performance on self-assessed competence.

6.3.1 Sample

The postal survey questionnaire was sent to 179 pharmacists. Altogether 90 pharmacists responded, a response rate of 50%. For the individual PCTs the response rates were: BDPCT 86%; HPCT 51%; THPCT 26%; and CHPCT 47%. Another postal questionnaire was circulated amongst community pharmacists in THPCT at the time which may have lowered the response rate, as it is widely accepted that respondent fatigue may influence response.

6.3.1.1 Non-respondents

Whilst 89 pharmacists did not respond to the self-assessed competence survey, most of the non-respondents were in the non-intervention group (binomial test, test proportions 0.20:0.80, \( p < 0.0005 \)). These pharmacists may have felt less obliged to respond or felt less ownership over the project by this phase.

6.3.2 Demographics

Twenty-nine of the respondents were in the intervention group and sixty-one respondents in the non-intervention group. A summary of the demographics is presented in Table 6.1.
Table 6.1. Demographics of the pharmacists in the self-assessed competence survey at phase three.

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Intervention</th>
<th>Non-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>27 (24/90)</td>
<td>24 (7/69)</td>
<td>28 (17/61)</td>
</tr>
<tr>
<td>Male</td>
<td>73 (66/90)</td>
<td>76 (22/29)</td>
<td>72 (44/61)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>45 (40/89)</td>
<td>55 (16/29)</td>
<td>40 (24/60)</td>
</tr>
<tr>
<td>Employee</td>
<td>55 (49/89)</td>
<td>45 (13/29)</td>
<td>60 (36/60)</td>
</tr>
<tr>
<td>Type of pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>63 (55/88)</td>
<td>79 (22/28)</td>
<td>55 (33/60)</td>
</tr>
<tr>
<td>Chain</td>
<td>37 (33/88)</td>
<td>21 (6/28)</td>
<td>45 (27/60)</td>
</tr>
<tr>
<td>Consultation area in the pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>35 (31/88)</td>
<td>21 (6/28)</td>
<td>42 (25/60)</td>
</tr>
<tr>
<td>Planned for future</td>
<td>36 (32/88)</td>
<td>36 (10/28)</td>
<td>37 (22/60)</td>
</tr>
<tr>
<td>Yes</td>
<td>28 (25/88)</td>
<td>43 (12/28)</td>
<td>22 (13/60)</td>
</tr>
<tr>
<td>Postgraduate or additional qualification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>66 (50/76)</td>
<td>58 (15/26)</td>
<td>70 (35/50)</td>
</tr>
<tr>
<td>Held or currently studying</td>
<td>34 (26/76)</td>
<td>42 (11/26)</td>
<td>30 (15/50)</td>
</tr>
<tr>
<td>Additional appointment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>82 (71/87)</td>
<td>72 (21/29)</td>
<td>86 (50/58)</td>
</tr>
<tr>
<td>Appointment</td>
<td>18 (16/87)</td>
<td>28 (8/29)</td>
<td>14 (8/58)</td>
</tr>
<tr>
<td>CPD logbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not kept</td>
<td>60 (52/87)</td>
<td>76 (22/59)</td>
<td>52 (30/58)</td>
</tr>
<tr>
<td>Kept</td>
<td>40 (35/87)</td>
<td>24 (7/29)</td>
<td>48 (28/58)</td>
</tr>
</tbody>
</table>

Apart from the intervention itself there were no statistically significant differences between the characteristics of the pharmacists working within the four different PCTs. A large majority of the respondents were men, despite a workforce census in 2002 finding that almost equal numbers of women and men worked in community pharmacy (Hassell 2003). More than half of the pharmacists were employees, 33 were pharmacy managers, seven were second pharmacists and nine were locum pharmacists. Most of the respondents worked in independent pharmacies, 12 worked in a non-national chain pharmacy with more than five pharmacies in a chain and 21 in large national chain pharmacies. For further analysis the non-national chain pharmacies were included with the large national chain pharmacies in the same category. The 2003 pharmacy workforce census found that 10.5% of community pharmacists were owners.
(Hassell 2004); however, in this current study 45% were owners. Additionally, the majority of respondents worked in independent pharmacies; it may be that there are proportionally more independent pharmacies in these areas of London than nationally. Most pharmacists had a consultation area in their pharmacy or were planning to build one. Personal additional appointments ranged from memberships in PCT Board through Local Pharmaceutical Committee to Pharmacy Forum. A quarter of the respondents held a post-graduate qualification, most in a pharmacy related field. Another seven pharmacists were currently studying for a postgraduate qualification, half in a pharmacy related field.

At this phase the age of the respondents ranged from 23 to 67 years and the median was 42 years. The year for registration as a pharmacist ranged between 1959 and 2004, the median was 1987. The length of tenure ranged from 1 month to 45 years, the median was 7.3 years. The age, the year for registration and length of tenure were approximately normally distributed; however, the distribution of length of tenure was positively skewed with a mean of 10.2 years. The median length of tenure in the intervention group was 14.5 years, whereas in the non-intervention group it was 4.3 years.

The number of services was approximately normally distributed. Whilst the pharmacists provided a median of two additional services, 10 pharmacists claimed that they did not provide any additional services. The pharmacists reported provision of eight different services that are included in the new NHS contract as national advanced or local enhanced services (Department of Health 2004a). The PCTs had provided the training for most of these services. By phase three most pharmacists (79%; 70/89) were qualified smoking cessation counsellors, many participated in minor ailments schemes (36%; 32/89), some provided supervised consumption of methadone (33%, 29/89) and undertook medication reviews (28%, 25/89). Both groups provided primary care or general practitioner led medication reviews. The questionnaire did not differentiate between clinical medication reviews (enhanced service), or medicines use review and prescription interventions (advanced services), as the two latter terms had not yet been introduced. What level of medication reviews the non-intervention group provided is not known. Interestingly, some in the intervention group (38%; 11/29) did not mention that they provided medication reviews. They may not have proceeded to provide medication reviews at all (section 6.5.5.1) or were not providing them at the time the
questionnaire was circulated. Other services included, needle exchange, screening and monitoring, and weight management.

The respondents reported their participation in ten different learning activities. They had undertaken a median of four learning activities in the past two years; however, three had not participated in any activities. The number of learning activities was approximately normally distributed. The majority of pharmacists (74%; 66/89) had participated in between one to four learning activities during the last two years. The most popular learning activity was to read relevant journals; 82% (73/89) of the respondents kept up-to-date this way. Many had also completed CPPE led distance learning (63%; 56/89), and attended either local workshops or training (62%; 55/89), or CPPE workshops (58%; 52/89). Other studies in the USA and the UK found pharmacists’ most common learning activities were communicating with their peers (hospital pharmacists more often than community pharmacists), reading a journal, book or another reference source, completing distance learning or attending workshops (Hanson & DeMuth 1991; Krska & Veitch 2001; Mottram et al. 2002). While less than half of the respondents kept a CPD logbook, most respondents in the longitudinal survey reported planning their training and development needs regularly and reflecting on what they learnt (sections 4.4.8, 5.4.9 and 6.4.9). They may not have perceived recording of plans and reflections necessary.

6.3.3 Exploring Demographics

Age and year of registration as a pharmacist were correlated, the younger the pharmacist the more recently (s)he had qualified (Pearson’s r = -0.945, p < 0.0005), accounting for 89 % of the variance between time since graduation and age. Moreover, age and length of tenure were correlated (Pearson’s r = 0.749, p < 0.0005) as were year of registration and length of tenure (Pearson’s r = -0.801, p < 0.0005). When the year of registration was held constant the partial correlation coefficient between the age and length of tenure approached zero (-0.035, p < 0.05): the relationship between age and length of tenure was explained by year of registration. It seemed that pharmacists tended not to change jobs. Older pharmacists had been working longer in their current post.
Employees were younger (t test, \( t = -4.833, p < 0.0005 \)), had registered in the UK more recently (t test, \( t = 5.194, p < 0.0005 \)), and had been working in their current post for a shorter time (t test, \( t = -5.947, p < 0.0005 \)). Pharmacists who worked in independent pharmacies, as an employee or owner, were older (t test, \( t = 3.579, p = 0.001 \)), had registered earlier (t test, \( t = -3.314, p = 0.002 \)), and had been working in their current post longer (t test, \( t = 6.869, p < 0.0005 \)) than those who worked in chain pharmacies. These findings indicate that community pharmacists began their career as employees, often in chain pharmacies, and continued with work in an independent pharmacy and ended up owning a pharmacy. The findings in the longitudinal survey were similar (sections 4.4.3, 5.4.3 and 6.4.3).

Female pharmacists were younger (t test, \( t = 3.531, p = 0.001 \)), had registered more recently (t test, \( t = -2.747, p = 0.007 \)), and had been working in their current job for a shorter time (t test, \( t = 3.103, p = 0.003 \)). Hence, it is not surprising that male pharmacists were more likely to work in independent pharmacies (\( \chi^2 = 11.978, df = 1, p = 0.001 \)); male pharmacists were also more likely to be owners (\( \chi^2 = 5.282, df = 1, p = 0.030 \)). These findings are corroborated by the 2002 workforce census: pharmacy owners were more likely to be men with more women in the younger age groups (Hassell 2003).

A higher proportion of pharmacists in the intervention group (28%) had participated in five to eight learning activities than those in the non-intervention group (20%), the difference was not statistically significant. One of learning activities in the intervention group could have been the training in the Medicines Management project. Pharmacists who possessed or were currently studying for a postgraduate or additional qualification were more likely to report participation in a greater number of learning activities, one of which may have been the additional qualification (\( \chi^2 = 5.664, df = 1, p = 0.023 \)). Respondents who held an additional personal appointment were more likely to report participation in a greater number of learning activities one of which could have been attending meetings (\( \chi^2 = 13.600, df = 1, p = 0.001 \)). However, the expected count was less than five in one of the cross-tabulation cells, suggesting caution when interpreting this finding (section 3.6.1.1). Whilst pharmacists who participated in more learning activities tended to keep a CPD record, this was not statistically significant. They may perceive that it is easier to remember participation in all the learning activities if they keep a record. Additionally, due to their participation learning activities they may have become aware of the implementation of mandatory CPD. All but three pharmacists reported undertaking up
to eight different types of learning activities in the last two years, yet the majority did not keep a CPD diary. This is noteworthy since at the time of the administration of the postal survey the expected implementation of mandatory CPD recording was only half a year away. The question arises: who will need support in their personal development and recording of participation in learning activities?

Male pharmacists, owners and those working in independent pharmacies were less likely to record their CPD activities and may have needed more support ($\chi^2 = 4.517$, df = 1, $p = 0.05$; $\chi^2 = 7.142$, df = 1, $p = 0.009$; $\chi^2 = 13.121$, df = 1, $p = 0.001$, respectively). Additionally, older pharmacists and those who had registered earlier were less likely to have a CPD diary ($t$ test, $t = -2.000$, $p = 0.050$; $t$ test, $t = 1.997$, $p = 0.049$, respectively). Younger pharmacists may have been keeping a CPD diary whilst studying at the universities and continued this habit. Pharmacists registered after 1990 have been reported to be likely to participate in CPD whereas those registered before 1990 were less likely to see the value of CPD for updating professional knowledge and skills (Bell et al. 2002). Additionally, young pharmacists were likely to be working in chain pharmacies where it may be company policy to require employees to record their learning. Female pharmacists and those working for chains have, indeed, been reported to be more likely to regard CPD participation beneficial (Bell et al. 2002). It seems that male pharmacists, those who are older and owners may need more support with CPD. Perhaps surprisingly, the intervention group who had completed the clinical training were less likely to keep a CPD diary ($\chi^2 = 4.685$, df = 1, $p = 0.038$). On the other hand, despite encouragement, pharmacists in the intervention group had not recorded their learning in a CPD diary in phases one and two (section 5.5.1); maybe perceiving they had no time for recording their CPD (sections 4.5.3.8, 5.5.2 and 6.5.3.7). Additionally, holding a postgraduate qualification was not a guarantee for keeping a CPD diary.

Most pharmacists provided up to six additional services in their pharmacies. Pharmacists who provided a greater number of services were more likely to report participation in a greater number of learning activities ($\chi^2 = 9.451$, df = 1, $p = 0.003$) and to hold an additional qualification ($\chi^2 = 4.638$, df = 1, $p = 0.045$). Because pharmacists provided so many services they had to maintain their competence in a greater number of areas, and participate in learning activities in a greater number of subjects. On the other hand, they may have participated in
these learning activities in order to achieve competence in providing these services. The
majority in the intervention group provided three to six services one of which could have been
medication reviews, whereas the majority in the non-intervention group provided one to two
services (\(\chi^2 = 6.899, \text{df} = 1, p = 0.011\)).

Whilst a study in Scotland found that two fifths of community pharmacists had access to a
consultation area that could be anything between a separate room or a quiet end of shop
counter (Krska & Veitch 2001), almost a third of the pharmacists had a consultation area and
a further third were planning to build one in the future. This may be due to the new NHS
contract for community pharmacy services, which places more emphasis on the additional
services the pharmacy offers rather than dispensing (Department of Health 2004a). Both the
pharmacy, a consultation area, and the pharmacist providing advanced services will have to be
accredited. The intervention group was more likely to have a consultation area which could
have been used for providing medication reviews in their pharmacy (\(\chi^2 = 4.125, \text{df} = 1, p =
0.047\)). Pharmacists who provided a greater number of services were also more likely to have
(or planning) a consultation area in their pharmacy (\(\chi^2 = 8.881, \text{df} = 2, p = 0.012\)).
Independent pharmacies were more likely to provide a greater number of additional services,
perhaps out of financial necessity or to better serve the local community (\(\chi^2 = 5.238, \text{df} = 1,
p = 0.038\)). Perhaps, in order to provide these services they were also more likely to have or
to be planning to build a consultation area (\(\chi^2 = 8.690, \text{df} = 2, p = 0.013\)). Employees,
regardless in which type of pharmacy they worked, were less likely to have, or to have plans
for building a consultation area in their pharmacy (\(\chi^2 = 8.562, \text{df} = 2, p = 0.014\)).

6.3.4 Scores of the Competency Clusters

The mean competency cluster scores for the intervention group and the non-intervention group
are presented in Figure 6.6 (section 6.2.2.1). Overall, respondents in this study assessed
themselves to be more competent in the 'personal' competency cluster than in others.
However, the mean cluster scores were all within the usually response, indicating that they
were mostly competent but had some learning needs.
Figure 6.6. Mean competency cluster scores in the intervention and non-intervention groups.

6.3.5 Exploring the Competency Clusters

Age, postgraduate or additional qualification, gender, employment status and type of company influenced self-assessed competence (sections 6.3.5.1 to 6.3.5.4). Despite having participated in additional training and providing medication reviews, the intervention group did not assess themselves to be more competent in any of the competency clusters (Mann-Whitney U-tests, p > 0.05). The assessments of individual competencies did not differ between the intervention and non-intervention groups. The training and providing medication reviews may have made the intervention group think more about their learning needs and competence gaps and may have assessed their competence to be lower (section 6.5.5.2), or they may have needed more support to put their knowledge into practice within the Medicines Management project. Both groups thought that they had sufficient training to do their job effectively (sections 4.4.9.1, 5.4.9.1 and 6.4.10.1).
The competencies within ‘delivery of patient care’ cluster are essential for providing advanced and enhanced services in the new NHS contract. Within this competency cluster the respondents assessed themselves to be more competent in the ‘provision of drug product’, ‘drug specific issues’ and ‘selection of drug’ competencies than ‘monitoring drug therapy’, ‘need for the drug’ and ‘evaluation of outcomes’ competencies. This may not be surprising since community pharmacy has traditionally focussed on dispensing rather than monitoring patient therapy. Pharmacists may gain competency in these areas of ‘delivery of patient care’ as monitoring patient care becomes part of daily work. Neither clinical training or providing medication reviews seemed to influence the self-assessments of the intervention group with their ‘need for the drug’, ‘monitoring drug therapy’, ‘medicines information’ and ‘patient consultation’ competencies within the ‘delivery of patient care’ cluster (Figure 6.7). Intervention group assessed themselves to be more competent only in the ‘need for the drug’ competency. However, the intervention group may have underestimated their competence due to the effect of the training and service provision or simply known what they do not know, or the non-intervention group may have overestimated their competence.
6.3.5.1 **Analysing Delivery of Patient Care Competencies**

Gender had the most pronounced effect on self-assessed competency in the 'delivery of patient care' cluster. Female pharmacists assessed themselves to be more competent in four individual competencies: 'medicines information' (Mann-Whitney $z = -3.539, p < 0.0005$); 'selection of drug' (Mann-Whitney $z = -2.789, p = 0.005$); 'drug specific issues' (Mann-Whitney $z = -2.638, p = 0.008$); and 'monitoring drug therapy' (Mann-Whitney $z = -2.942, p = 0.003$). What's more, female pharmacists assessed themselves to be more competent overall in the 'delivery of patient care' cluster (Mann-Whitney $z = -2.966, p = 0.003$). Younger pharmacists assessed themselves to be more competent in 'selection of drug' (Spearman's $p = -0.331, p = 0.002$) and 'medicines information' (Spearman's $p = -0.341, p = 0.002$). However, age of pharmacists did not influence self-assessment of competency in this cluster. Female pharmacists and those registered more recently were reported to be more likely to perceive that CPD ensures improved patient care through updating professional knowledge and
skills (Bell et al. 2002). Younger pharmacists may have greater confidence in their competence, or older pharmacists may be more cautious in their self-assessments. The clinical training pharmacists in the intervention group had completed at phase one was on certificate level and, thus part of a postgraduate qualification. Indeed, pharmacists who held a postgraduate qualification assessed themselves to be more competent in 'patient consultation' (Mann-Whitney z = -1.972, p = 0.049) and 'evaluation of outcomes' (Mann-Whitney z = -2.307, p = 0.020). These two competencies are essential for providing clinical medication reviews and medicines use review so performance needs to be improved (Department of Health 2004a).

6.3.5.2 Analysing Personal Competencies

Whilst employment status and type of pharmacy influenced self-assessment of overall competency in 'personal competency' cluster, gender again had the most pronounced effect. Female pharmacists assessed themselves to be more competent in all individual competencies in this cluster: ‘teamwork’ (Mann-Whitney z = -3.357, p = 0.001); ‘professionalism’ (Mann-Whitney z = -2.743, p = 0.006); ‘communication’ (Mann-Whitney z = -2.556, p = 0.009); and ‘organisation’ (Mann-Whitney z = -2.080, p = 0.037). Therefore, female pharmacists' self-assessment of their competence overall in this cluster was more positive (Mann-Whitney z = -2.880, p = 0.003). Employees, irrespective of their place of employment, assessed themselves to be more competent overall in 'personal' competency cluster (Mann-Whitney z = -2.319, p = 0.020) and in 'professionalism competency' (Mann-Whitney z = -2.374, p = 0.017). Additionally, respondents working in chain pharmacies assessed themselves to be more competent overall in this cluster (Mann-Whitney z = -1.993, p = 0.046) and in 'professionalism competency'(Mann-Whitney z = -3.209, p = 0.001). Company policies in chain pharmacies may have influenced these self-assessments, for example, the 'professionalism competency' comprises behavioural statements regarding CPD. Employees, especially in chains, may be required record their CPD and may have regular appraisals of their learning needs with their managers (section 6.3.3). In contrast, holding a postgraduate qualification did not have an effect on self-assessing 'personal competencies' comprising 'gathering information', 'knowledge' and 'analysing information' which may reflect maturity of thinking or learnt practice.
6.3.5.3 Analysing Problem Solving Competencies

Employment status and type of company influenced self-assessment of competencies within 'problem solving' cluster. Employees, disregarding type of company, assessed themselves to be more competent overall in this cluster (Mann-Whitney z = -2.329, p = 0.019) and in 'knowledge competency' (Mann-Whitney z = -2.717, p = 0.006). Those working in chain pharmacies assessed themselves to be more competent overall in 'problem solving' (Mann-Whitney z = -2.067, p = 0.038) and in 'knowledge competency' (Mann-Whitney z = -2.609, p = 0.009). Female pharmacists assessed themselves to be more competent in 'follow-up competency' (Mann-Whitney z = -3.408, p = 0.001). Additionally, pharmacists who had been in their current posts for a shorter time assessed themselves highly in 'knowledge competency' (Spearman's p = -0.431, p < 0.0005). Employees were younger and had registered more recently; the knowledge they attained during the undergraduate pharmacy course is more recent (section 6.3.3). Owners might have focussed on running a successful business instead of keeping up-to-date with clinical knowledge (section 4.5.3.7).

6.3.5.4 Analysing Management and Organisation Competencies

None of the pharmacists' characteristics had a significant effect on the overall self-assessment of competency in 'management and organisation' cluster. However, respondents working for chain pharmacies assessed themselves to be more competent at 'clinical governance' (Mann-Whitney z = -2.029, p = 0.042) and 'staff management' (Mann-Whitney z = -2.286, p = 0.022). The chains may have supported the pharmacists in these issues. Female pharmacists assessed themselves to be more competent in 'clinical governance' (Mann-Whitney z = -3.131, p = 0.001), 'staff management' (Mann-Whitney z = -3.451, p < 0.0005) and 'service provision' (Mann-Whitney z = -2.483, p = 0.012). Interestingly, female pharmacists assessed themselves to be more competent in 'service provision', while male pharmacists were more likely to be owners or work for independent pharmacies which provided more additional services (section 6.3.3). Perhaps these female pharmacists felt confident in managing staff and providing services.
6.3.6 Comparing Training and Medication Review Performances with Self-Assessed Competence

In general, better performance in training or medication reviews was related to poorer self-assessed competence. Overall training results correlated with 'personal' competency cluster scores, comprising statements on communication with other HCPs and taking responsibility for patient care (Spearman's \( p = -0.404, p = 0.050 \)). Pharmacists performing poorly in training may have participated in other learning activities and increased their knowledge between phases one and three. However, this seems unlikely as medication review performance, 'identifying DRPs' negatively correlated with 'management and organisation' competency cluster scores (Spearman's \( p = -0.686, p = 0.041 \)). 'Suggesting beneficial actions to solve DRPs' correlated with 'personal', 'problem solving' and 'management and organisation' competency cluster scores (Spearman's \( p = -0.510, p = 0.044 \); Spearman's \( p = -0.674, p = 0.003 \); Spearman's \( p = -0.912, p = 0.001 \), respectively).

Relationships seemed to exist between performances in 'identifying DRPs' and 'suggesting beneficial actions to solve them', and self-assessed competence in 'delivery of patient care' (Figure 6.8 and 6.9). However, these were not statistically significant. To identify potential cases that may have undue influence on these relationships DfBeta was again used (Field, 2000). Figures 6.10 and 6.11 show the influential cases, greater than 0.53 (\( 2/\sqrt{n}, n = 14 \)), which were excluded from the subsequent regression analysis (Pardo Merino & Ruiz Díaz, 2002). Figures 6.12 and 6.13 show the relationships between performances in 'identifying DRPs' and 'suggesting beneficial actions to solve them', and 'delivery of patient care' scores after removing the influential cases.
Figure 6.8. Scatterplot of percentages of 'identified DRPs' and 'delivery of patient care' scores.

Figure 6.9. Scatterplot of percentages of 'beneficial actions suggested to solve DRPs' and 'delivery of patient care' scores.

Figure 6.10. Scatterplot of community pharmacists and standardised DfBetas for 'identified DRPs' and 'delivery of patient care' scores. Influential cases are shown in boxes.

Figure 6.11. Scatterplot of community pharmacists and standardised DfBetas for 'actions suggested to solve DRPs' and 'delivery of patient care' scores. Influential cases are shown in boxes.
Both the medication review performance measures were entered into multiple regression analysis with self-assessed 'delivery of patient care' cluster scores using stepwise entry. A linear relationship was found between 'suggesting beneficial solutions to DRPs' and 'delivery of patient care competencies'. 'Identifying DRPs' did not fit the model; 'suggesting beneficial actions to DRPs' contributed more to self-assessed 'delivery of patient care competencies'. The regression model was a better prediction of self-assessed 'delivery of patient care' competency scores than the mean values (ANOVA, F = 11.953, p = 0.006). In this sample, self-assessed 'delivery of patient care' competency cluster scores shared 54% of the variance with 'suggesting beneficial actions to solve DRPs' (R² = 0.544, adjusted R² = 0.499). The regression equation for self-assessed 'delivery of patient care' competency cluster score was:

\[
\text{('Delivery of patient care competencies')} = 4.164 - 0.016\text{('Suggesting actions to solve DRPs')}
\]

The better pharmacists performed in medication reviews the more aware they may have been of their competence gaps. In similar conditions to this study beneficial performance in 'suggesting actions to solve DRPs' ranging from 32 to 74% may be used to predict self-assessed
Chapter 6: Results and Analysis

'delivery of patient care competency' score. What's more, the correlations between medication review performance measures and other competency cluster scores suggest that behaviours in more than one competency cluster were involved with beneficial performance in medication reviews or that self-assessing competence may be complex.

Most respondents in the longitudinal study consistently thought they had sufficient training to do their work efficiently, reflected on their learning (sections 4.4.8, 5.4.9 and 6.4.10) and were able to self-assess their learning (sections 4.5.3.2 and 6.5.3.2). While few had plans for their future learning and development (sections 4.5.3.4 and 6.5.3.4), the perception of having enough experience led to the belief of not having to continue developing (section 4.5.3.8). However, pharmacists' self-assessed competencies did not seem to reflect performance. General practitioners have also been found not to be able to reliably self-assess their knowledge (Tracey et al. 1997). The intervention group may have increased their clinical knowledge through training, but they seemed to have little close support putting this learning into practice and become aware of their performance (sections 5.3.1.1 and 6.5.5.3). Often community pharmacists have no system of mentorship to provide feedback on performance in independent pharmacies in particular, as they work in professional isolation (Krska & Veitch 2001). Community pharmacists will need support to assess learning needs for personal development (sections 4.5.3.4 and 6.5.3.4); the General Level Competency Framework has been shown to support improvement of competence in secondary care when used for performance feedback by supervisors (Antoniou et al. 2004).

SUMMARY

* 90 pharmacists responded to the postal survey on self-assessed competence
* On average pharmacists self-assessed their competency to be in the usually category, indicating they were mostly competent but had some learning needs
* Despite the training and providing medication reviews the intervention group did not perceive themselves to be more competent than the non-intervention group; more support may be needed for development of competence and confidence
* Main influences on self-assessed competence were gender, employment and type of company
* In general, better performance in training and in medication reviews were related to poorer self-assessed competence, perhaps the more competent pharmacists had become the more they were able to identify the skills or knowledge they lacked
* A regression model based on 'beneficial performance in suggesting actions to solve DRPs' was formed for self-assessed competence in 'delivery of patient care', the model may be used to predict self-assessed competence
6.4 SURVEY OF PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS

This section presents the results of the measurements of community pharmacists' professional satisfactions and perceptions of their personal development needs and behaviour and whether these satisfactions and perceptions changed over time.

6.4.1 Sample

The postal questionnaire was sent to 69 community pharmacists, 12 of whom were women. Response rate was 71% in this part of the longitudinal study, and 50% overall; 49 responses were received. Twenty-nine pharmacists in the intervention group completed the questionnaire. Whilst 20 pharmacists in the non-intervention group returned the questionnaire, one had not been completed by the same person as at phase one, so, was analysed as a new respondent.

6.4.1.1 Non-respondents

Twenty pharmacists did not respond to the postal questionnaire. As before, the majority of non-respondents were male (16/20), most non-respondents were in the non-intervention group (binomial test, test proportions 0.51:0.49, p = 0.048). However, the phase three survey was sent to all phase one respondents in the non-intervention group who may not have responded to the phase two survey.

6.4.2 Demographics

A summary of demographics of the respondents is displayed in Table 6.2. As expected female pharmacists continued to be less represented in this sample and there were as many owners as there were employees. The majority of pharmacists had a permanent contract, two pharmacists worked part-time. As at phase two almost half of the pharmacists had a consultation area in their pharmacy. One in three respondents had a post-graduate or
additional qualification; ranging from a Certificate to a Masters at phase three. Whilst a third of the intervention group had a personal appointment, as before, only one in the non-intervention group had an appointment with THPCT. The pharmacists graduated an average of 21 years previously and had been working in their current post for about 13 years. Both time since graduation and length of tenure were approximately normally distributed.

Table 6.2. Demographics of the pharmacists in the professional perceptions and satisfactions survey at phase three.

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Intervention</th>
<th>Non-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (%n)</td>
<td>% (%n)</td>
<td>% (%n)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18 (9/49)</td>
<td>17 (5/29)</td>
<td>20 (4/20)</td>
</tr>
<tr>
<td>Male</td>
<td>82 (40/49)</td>
<td>83 (24/29)</td>
<td>80 (16/20)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>50 (24/48)</td>
<td>52 (15/29)</td>
<td>47 (9/19)</td>
</tr>
<tr>
<td>Employee</td>
<td>50 (24/48)</td>
<td>48 (14/29)</td>
<td>53 (10/19)</td>
</tr>
<tr>
<td>Job security</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>87 (33/38)</td>
<td>82 (18/22)</td>
<td>94 (15/16)</td>
</tr>
<tr>
<td>Fixed term contract</td>
<td>13 (5/38)</td>
<td>18 (4/22)</td>
<td>6 (1/16)</td>
</tr>
<tr>
<td>Consultation area in the pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation area</td>
<td>47 (22/47)</td>
<td>48 (13/27)</td>
<td>45 (9/20)</td>
</tr>
<tr>
<td>None</td>
<td>53 (25/47)</td>
<td>52 (14/27)</td>
<td>55 (11/20)</td>
</tr>
<tr>
<td>Postgraduate or additional qualification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>69 (34/49)</td>
<td>62 (18/29)</td>
<td>80 (16/20)</td>
</tr>
<tr>
<td>Qualification</td>
<td>31 (15/49)</td>
<td>38 (11/29)</td>
<td>20 (4/20)</td>
</tr>
<tr>
<td>Additional appointment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>78 (38/49)</td>
<td>66 (19/29)</td>
<td>95 (19/20)</td>
</tr>
<tr>
<td>Appointment</td>
<td>22 (11/49)</td>
<td>34 (10/29)</td>
<td>5 (1/20)</td>
</tr>
</tbody>
</table>

### 6.4.3 Exploring Demographics

As before, there were no statistically significant differences between the characteristics of the pharmacists working within the three different PCTs apart from the intervention itself. The number of years after graduation and the number of years in their current post again correlated with each other (Pearson’s r = 0.607, p < 0.0005). Thirty-seven percent of the variance was
shared between length of tenure and time since graduation. Pharmacists who had remained in the same pharmacy for longer were likely to be owners (t test, \( t = 3.781 \), \( p < 0.0005 \)), two outlying values were excluded from the analysis. Whilst owners continued to show a tendency for graduating earlier, this difference was not statistically significant (t-test, \( p > 0.05 \)). Not surprisingly, employees had a shorter length of tenure than owners at all phases. Becoming an owner seems to imply settling down as they were not likely to change jobs. Employees were more likely to have an additional degree (\( \chi^2 = 7.855 \), df = 1, \( p = 0.011 \)). This difference had been observed at phase two but not at phase one.

Pharmacists who held an additional appointment were more likely to have graduated earlier (t test, \( t = -2.582 \), \( p = 0.014 \)), not observed at the previous phases. Pharmacists in the intervention group were more likely to hold an additional appointment (\( \chi^2 = 5.910 \), df = 1, \( p = 0.033 \)). However, the expected count was less than five in one cell in cross-tabulation, suggesting that caution is required to interpret this difference (section 3.6.1.1). Additionally, pharmacists who held an additional appointment were more likely to have an additional qualification (\( \chi^2 = 11.844 \), df = 1, \( p = 0.001 \)), but the expected count was less than five in one of the cross-tabulation cells. However, these results continue to evaluate the differences between characteristics.

### 6.4.3.1 Comparing Demographics at Phases One, Two and Three

The characteristics of the pharmacists who responded to the postal survey at all three phases were explored. During the course of the study four more pharmacists installed a consultation area in their pharmacy, another three gained a postgraduate or an additional degree and five an additional appointment. However, the frequencies of the categorical variables (consultation area in the pharmacy, having an additional appointment or having a postgraduate or additional appointment) did not change over time (Cochran Q-tests, \( p > 0.05 \)). The phase three postal survey was administered one and two years after the phase one and two surveys. The mean time after graduation had indeed increased over the two years (repeated measures test, \( F = 30.281 \), \( p < 0.0005 \)). As before, there was no statistically significant difference between the length of tenure at the three phases (repeated measures test, \( p > 0.05 \)). This again may be due
to job changes in the meantime or it may have been more difficult to remember when one had started a job than when one had graduated.

6.4.4 Responses to the Survey Items

As before, before further analysis on the items was undertaken, the data were checked for validity (section 4.4.4). The frequency of responses to each item was reviewed (Table 6.3), they varied from strongly disagree to strongly agree for 19 items, one item was devoid of uncertain responses and another was deficient of any strongly agree responses. Two respondents (4.3%) disagreed with the item D75. Responses to one item in ‘perceived appreciation by patients’ factor showed poor distribution of responses throughout the study; four respondents (8.2%) disagreed with item E38. Two pharmacists (4.0%) disagreed with to item E43. Item G34 was again retained in its ‘degree of autonomy at job’ factor, although only four (8.2%) disagreed. It had been analysed as part of the factor at phase one.
### Table 6.3: Distribution of responses to professional perceptions and satisfactions items at phase three.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>A61</td>
<td>2.1</td>
<td>1</td>
<td>14.6</td>
<td>7</td>
<td>10.4</td>
</tr>
<tr>
<td>A62</td>
<td>16.3</td>
<td>8</td>
<td>26.5</td>
<td>13</td>
<td>22.4</td>
</tr>
<tr>
<td>A63</td>
<td>12.2</td>
<td>6</td>
<td>40.8</td>
<td>20</td>
<td>24.5</td>
</tr>
<tr>
<td>A64</td>
<td>12.2</td>
<td>6</td>
<td>32.7</td>
<td>16</td>
<td>22.4</td>
</tr>
<tr>
<td>B65</td>
<td>8.3</td>
<td>4</td>
<td>22.9</td>
<td>11</td>
<td>20.8</td>
</tr>
<tr>
<td>B66</td>
<td>20.8</td>
<td>10</td>
<td>18.8</td>
<td>9</td>
<td>31.3</td>
</tr>
<tr>
<td>B67</td>
<td>12.5</td>
<td>6</td>
<td>20.8</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>B68</td>
<td>22.4</td>
<td>11</td>
<td>12.2</td>
<td>6</td>
<td>30.6</td>
</tr>
<tr>
<td>C70</td>
<td>14.6</td>
<td>7</td>
<td>39.6</td>
<td>19</td>
<td>20.8</td>
</tr>
<tr>
<td>C77</td>
<td>2.0</td>
<td>1</td>
<td>8.2</td>
<td>4</td>
<td>12.2</td>
</tr>
<tr>
<td>D72</td>
<td>-</td>
<td>-</td>
<td>20.4</td>
<td>10</td>
<td>26.5</td>
</tr>
<tr>
<td>D75</td>
<td>-</td>
<td>-</td>
<td>4.3</td>
<td>2</td>
<td>14.9</td>
</tr>
<tr>
<td>E38</td>
<td>-</td>
<td>-</td>
<td>8.2</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>E39</td>
<td>8.3</td>
<td>4</td>
<td>29.2</td>
<td>14</td>
<td>16.7</td>
</tr>
<tr>
<td>E40</td>
<td>2.0</td>
<td>1</td>
<td>8.2</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>E43</td>
<td>2.0</td>
<td>1</td>
<td>2.0</td>
<td>1</td>
<td>16.3</td>
</tr>
<tr>
<td>F30</td>
<td>6.1</td>
<td>3</td>
<td>57.1</td>
<td>28</td>
<td>18.4</td>
</tr>
<tr>
<td>F35</td>
<td>-</td>
<td>-</td>
<td>37.5</td>
<td>18</td>
<td>16.7</td>
</tr>
<tr>
<td>F36</td>
<td>24.5</td>
<td>12</td>
<td>53.1</td>
<td>26</td>
<td>10.2</td>
</tr>
<tr>
<td>F56</td>
<td>2.0</td>
<td>1</td>
<td>16.3</td>
<td>8</td>
<td>14.3</td>
</tr>
<tr>
<td>F60</td>
<td>-</td>
<td>-</td>
<td>16.3</td>
<td>8</td>
<td>12.2</td>
</tr>
<tr>
<td>G8</td>
<td>2.0</td>
<td>1</td>
<td>8.2</td>
<td>4</td>
<td>6.1</td>
</tr>
<tr>
<td>G92</td>
<td>8.2</td>
<td>4</td>
<td>28.6</td>
<td>14</td>
<td>8.2</td>
</tr>
<tr>
<td>G34</td>
<td>-</td>
<td>-</td>
<td>8.2</td>
<td>4</td>
<td>22.4</td>
</tr>
<tr>
<td>G55</td>
<td>18.4</td>
<td>9</td>
<td>28.6</td>
<td>14</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Footnote: Poorly performing items are displayed in bold in the item column.

#### 6.4.4.1 Handling Missing Values

Three pharmacists did not respond to one item each: B65 (1024); and D75 (1014 and 1162). Three others had not responded to two items each: A61 and C70 (1019); F35 and E39 (1041); and B66 and B67 (1086). As before, median values of the overall response to each of these items have been used in the analysis (sections 4.4.4.1 and 5.4.4.1).
6.4.5 Internal Reliability of the Factors

The internal reliability of the scales was tested (Table 6.4). Internal reliability for 'job satisfaction' (A) and for 'career satisfaction' (B) was very good, $\alpha = 0.83$ and $\alpha = 0.85$, respectively. Whilst the correlation of two items with the other four was poor (< 0.30) in 'satisfaction with duties' (F), internal reliability was good, $\alpha = 0.61$. Internal reliability for 'degree of autonomy at job' (G) was acceptable, $\alpha = 0.53$, while the correlation of two items with the other three was poor. Overall the factors measuring 'job satisfaction' and 'career satisfaction' seem to be more internally reliable than those measuring more specific satisfactions (sections 4.4.5 and 5.4.5). These four scales may be utilised to measure community pharmacists' satisfactions.

Table 6.4. Internal reliability of factors at phase three.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Corrected item total correlation</th>
<th>$\alpha$ if item removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction (A)</td>
<td>A61</td>
<td>0.73</td>
<td>0.75</td>
</tr>
<tr>
<td>A62</td>
<td>0.72</td>
<td></td>
<td>0.75</td>
</tr>
<tr>
<td>A63</td>
<td>0.76</td>
<td></td>
<td>0.72</td>
</tr>
<tr>
<td>A64</td>
<td>0.44</td>
<td></td>
<td>0.86</td>
</tr>
<tr>
<td>Career satisfaction (B)</td>
<td>B65</td>
<td>0.65</td>
<td>0.82</td>
</tr>
<tr>
<td>B66</td>
<td>0.79</td>
<td></td>
<td>0.76</td>
</tr>
<tr>
<td>B67</td>
<td>0.59</td>
<td></td>
<td>0.84</td>
</tr>
<tr>
<td>B68</td>
<td>0.70</td>
<td></td>
<td>0.79</td>
</tr>
<tr>
<td>Satisfaction with duties (F)</td>
<td>F30</td>
<td>0.26</td>
<td>0.60</td>
</tr>
<tr>
<td>F35</td>
<td>0.39</td>
<td></td>
<td>0.53</td>
</tr>
<tr>
<td>F36</td>
<td>0.28</td>
<td></td>
<td>0.59</td>
</tr>
<tr>
<td>F56</td>
<td>0.37</td>
<td></td>
<td>0.54</td>
</tr>
<tr>
<td>F60</td>
<td>0.53</td>
<td></td>
<td>0.47</td>
</tr>
<tr>
<td>Degree of autonomy at job (G)</td>
<td>G8</td>
<td>0.24</td>
<td>0.57</td>
</tr>
<tr>
<td>G22</td>
<td>0.51</td>
<td></td>
<td>0.33</td>
</tr>
<tr>
<td>G34</td>
<td>0.15</td>
<td></td>
<td>0.62</td>
</tr>
<tr>
<td>G55</td>
<td>0.52</td>
<td></td>
<td>0.32</td>
</tr>
</tbody>
</table>

6.4.6 Scores of the Factors

The mean and median factor scores of the respondents ($n = 49$) are displayed in Table 6.5. One extreme 'job satisfaction' score was excluded ($n = 48$).
Chapter 6: Results and Analysis

Table 6.5. The factor scores at phase three.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>12.9</td>
<td>3.5</td>
<td>14.0</td>
<td>6 - 19</td>
</tr>
<tr>
<td>Career satisfaction</td>
<td>11.4</td>
<td>4.1</td>
<td>12.0</td>
<td>4 - 20</td>
</tr>
<tr>
<td>Satisfaction with duties</td>
<td>17.4</td>
<td>3.0</td>
<td>18.0</td>
<td>11 - 24</td>
</tr>
<tr>
<td>Degree of autonomy at job</td>
<td>13.8</td>
<td>2.8</td>
<td>14.0</td>
<td>7 - 20</td>
</tr>
</tbody>
</table>

At all the three phases the mean 'job satisfaction', 'satisfaction with duties', and 'degree of autonomy at job' scores were above the mid-point, indicating pharmacists to be slightly more satisfied. In contrast, the mean 'career satisfaction' score continued to be below the mid-point, indicating dissatisfaction. Lower career satisfaction than job satisfaction may be an indication of non-existing career path in community pharmacy at the time of the study. On the other hand, it may be more difficult to assess satisfaction related to more elusive career than satisfaction related to everyday job, duties and autonomy. Whilst the scores to the 'job satisfaction', 'satisfaction with duties', and 'degree of autonomy at job' scales were approximately normally distributed, the scores of the 'career satisfaction' scale were uniformly distributed.

6.4.7 Exploring the Factors

In order to explore community pharmacists' professional satisfactions, inferential analyses were conducted.

6.4.7.1 Analysing Job Satisfaction

The intervention group seemed more satisfied with their jobs than the non-intervention group (Table 6.6). In the intervention group, pharmacists with a higher self-assessed competency score in 'personal competencies' seemed more satisfied; however the relationship was not statistically significant (Spearman's \( p \), \( p > 0.05 \)). A minority in the intervention group was not able to provide medication reviews for various reasons (section 6.5.5.1). Their mean job
satisfaction score was lower (mean = 12.33, 95% CI 9.32-15.35) than that of pharmacists who were able to provide the service (mean = 14.45, 95% CI 13.12-15.79). However, the group was small, the scores dispersed, and the difference was not statistically significant. No other statistically significant differences or relationships were found.

Table 6.6. Exploration of 'job satisfaction': t-test at phase three.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>95% CI</th>
<th>t</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>intervention group</td>
<td>28</td>
<td>14.00</td>
<td>3.06</td>
<td>12.82-15.18</td>
<td>2.364</td>
<td>0.022</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>20</td>
<td>11.70</td>
<td>3.67</td>
<td>9.98-13.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.4.7.2 Analysing Career Satisfaction

Generally, the intervention group seemed more satisfied with their careers than the non-intervention group (Table 6.7). 'Career satisfaction' correlated with self-assessed 'personal' competency cluster scores in the intervention group (Spearman's $p = 0.571$, $p = 0.005$). However, in general poorer training and medication review performances correlated with better self-assessed competence scores (section 6.3.5). Better self-image may enhance satisfaction, whereas lower career satisfaction may result in striving to perform better in order to be able to provide medication reviews or to change one's career (section 6.5.4). Whether the pharmacists in the intervention group had been able to provide the service or not did not seem to influence their career satisfaction (mean = 12.43, 95% CI 10.92-13.95; mean = 12.33, 95% CI 8.00-16.67, respectively). Realising the opportunity of being able to provide medication reviews, and perhaps seeing other opportunities, seemed to matter more in the long term than actually having provided the service. No other statistically significant differences or relationships between characteristics were found.

Table 6.7. Exploration of 'career satisfaction': t test at phase three.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>95% CI</th>
<th>t</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>intervention group</td>
<td>29</td>
<td>12.41</td>
<td>3.57</td>
<td>11.06-13.77</td>
<td>2.487</td>
<td>0.029</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>20</td>
<td>9.85</td>
<td>4.39</td>
<td>7.79-11.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.4.7.3 Analysing Satisfaction with Duties

'Satisfaction with duties', drawing from the balance between clinical, managerial and dispensing duties, correlated with self-assessed 'delivery of patient care' competency cluster in the intervention group (Spearman’s $p = 0.752$, $p = 0.001$). Pharmacists in the intervention group who had been able to review patients' medications seemed more satisfied with their duties (mean = 18.30, 95% CI 17.12-19.49) than those who had not been able to complete medication reviews (mean = 15.33, 95% CI 12.17-18.49). Despite their workload and other commitments and perceived problems with the Medicines Management project (section 6.5.5.1), they were able to find the time for the patient interviews. However, the difference was not statistically significant. No other statistically significant differences or relationships were found. 'Satisfaction with duties' in the intervention group (mean = 17.69, 95% CI 16.55-18.83) and non-intervention group (mean = 16.95, 95% CI 15.55-18.35) were similar.

6.4.7.4 Analysing Degree of Autonomy at Job

No statistically significant differences or relationships were found in perception of degree of autonomy at job. Pharmacists' perceptions of 'degree of autonomy at job' in the intervention group (mean = 13.72, 95% CI 12.69-14.76) and non-intervention group (mean = 13.90, 95% CI 12.46-15.34) were similar. Whether the pharmacists in the intervention group had been able to provide the medicines management service did not seem to influence their perception of 'degree of autonomy at job' (mean = 13.91, 95% CI 12.83-15.00) or not (mean = 13.00, 95% CI 9.25-16.75).

6.4.7.5 Relationships between Factor Scores

As before, Pearson's correlation coefficient was used to test the strength of the relationship between the factors (Table 6.8). The correlations between scores were again positive (Bryman & Cramer 1997). The correlation between scores to 'satisfaction with duties' and 'degree of autonomy at job' was weak and between scores to 'career satisfaction' and 'autonomy with job' was not statistically significant, suggesting multiple influences to these factors and requiring further work.
Scores to 'job satisfaction' correlated with scores to 'career satisfaction', accounting for 41% of the variance between the two factors. 'Satisfaction with duties' had again an effect on the relationship between 'job satisfaction' and 'career satisfaction'. When 'satisfaction with duties' was held constant the partial correlation coefficient between 'job satisfaction' and 'career satisfaction' was lower (0.532, p < 0.0005) than Pearson's correlation coefficient. However, the difference between the coefficients was smaller than before, suggesting that while 'satisfaction with duties' partially explained the relationship between 'job satisfaction' and 'career satisfaction' its influence had diminished, suggesting multiple influences on these satisfactions.

Table 6.8. Pearson’s correlation coefficients between the factors at phase three.

<table>
<thead>
<tr>
<th></th>
<th>Job satisfaction</th>
<th>Career satisfaction</th>
<th>Satisfaction with duties</th>
<th>Degree of autonomy at job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>-</td>
<td>0.644, p &lt; 0.0005</td>
<td>0.636, p &lt; 0.0005</td>
<td>0.413, p = 0.003</td>
</tr>
<tr>
<td>Career satisfaction</td>
<td>0.644, p &lt; 0.0005</td>
<td>-</td>
<td>0.443, p = 0.001</td>
<td>0.215, p &gt; 0.05</td>
</tr>
<tr>
<td>Satisfaction with duties</td>
<td>0.636, p &lt; 0.0005</td>
<td>0.443, p = 0.001</td>
<td>-</td>
<td>0.371, p = 0.009</td>
</tr>
<tr>
<td>Degree of autonomy at job</td>
<td>0.413, p = 0.003</td>
<td>0.215, p &gt; 0.05</td>
<td>0.371, p = 0.009</td>
<td>-</td>
</tr>
</tbody>
</table>

6.4.8 Comparing Factor Scores at Phases One, Two and Three

General linear model analyses were undertaken to explore whether community pharmacists' professional satisfactions had changed over time (t₀, t₁, and t₂)(Kinnear & Gray 2004). This test enables a comparison of the measured scores between demographic groups over the three points in time, as well as a comparison of the measured scores within a demographic group over the three points in time (section 5.4.8). The employed test is the two-factor mixed factorial or repeated measures test (section 3.6.1). Factor one (within-subjects) comprised pharmacists' professional perceptions at three points in time; factor two (between-subjects) comprised demographics. The perceptions of the 42 pharmacists who responded at all three time points were included in the analyses. Differences between and within intervention and
non-intervention groups over time for job satisfaction were explored and similar tests were performed for all demographics and satisfaction scales.

6.4.8.1 Analysing Job Satisfaction over Time

There was no overall change in the mean score to job satisfaction over time (repeated measures test, $F = 0.822, p > 0.05$). As no overall change was expected, the scale can be assumed to be reliable; however, two significant differences over time were found. Female pharmacists seemed more satisfied with their jobs over time (repeated measures test $F = 6.704, p = 0.013$). Although female pharmacists scored higher than male pharmacists at all three points in time, the individual $t$-tests did not show any significant difference. There was attrition and new respondents, so the responses fluctuated over time.

Whilst employees were more satisfied with their jobs than owners at phase one and phase two, owners were more satisfied at phase three. The interaction between the 'job satisfaction' and employment was significant (repeated measures test, $F = 3.671, p = 0.040$). At the time of the phase three survey, the new NHS contract for community pharmacy services was becoming clearer, which may have had a more positive effect on the owners or contractors than on employees. This difference may be sustained after the contract's implementation as owners may be able to influence which services to provide, whereas employees have to rely on their employer's decision. On the other hand, changes to the remuneration system may cause more difficulties to owners as they may change the way their pharmacy is run.

One of the between subjects factors was the intervention and non-intervention groups and the within subjects factor was 'job satisfaction'. Extreme 'job satisfaction' scores were excluded from analysis as described in section 6.4.6. There was a trend of increasing 'job satisfaction' scores in the intervention group over time, whereas the scores in the non-intervention group remained lower, suggesting that participation in the Medicines Management project may have influenced 'job satisfaction' in the intervention group. The changes are further discussed in section 6.7. The mean scores are displayed over time in Figure 6.14.
Before comparing variances between and within subjects, the variances in the groups and covariances among the scores of the various levels of the within subjects factor should be homogeneous (section 3.6.1). A test of homogeneity of covariance, or Mauchly’s sphericity test for measurements of job satisfaction over time is displayed in Table 6.9 (Kinnear & Gray 2004).

Table 6.9. Mauchly’s test of sphericity for measurements of 'job satisfaction' (JS) over time.

<table>
<thead>
<tr>
<th>within subjects effect</th>
<th>Mauchly’s W</th>
<th>Approx. $\chi^2$</th>
<th>df</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>JS over time</td>
<td>0.753</td>
<td>10.78</td>
<td>2</td>
<td>0.005</td>
</tr>
</tbody>
</table>
In this case, the covariance of the measurements over time was heterogeneous ($p < 0.05$). To decrease the risk of accepting non-existing differences (section 3.4.1), the more conservative ANOVA F-test was chosen, which requires a higher F-value for significance by reducing the degrees of freedom. The within subjects test results are displayed in Table 6.10.

Table 6.10. Tests (Greenhouse-Geisser) of within subjects effects for 'job satisfaction' (JS) over time.

<table>
<thead>
<tr>
<th>source</th>
<th>sum of squares</th>
<th>df</th>
<th>mean square</th>
<th>F</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>JS over time</td>
<td>5.76</td>
<td>1.6</td>
<td>3.59</td>
<td>0.679</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>interaction between intervention and non-intervention groups and JS over time</td>
<td>7.15</td>
<td>1.6</td>
<td>4.46</td>
<td>0.844</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Despite the trend in increasing mean scores of 'job satisfaction' in the intervention group, the mean scores did not differ significantly within the groups (repeated measures test, $F = 0.679$, $p > 0.05$) and there was no significant interaction between the mean scores in the intervention and non-intervention groups over time (repeated measures test, $F = 0.844$, $p > 0.05$). Levene's test indicated that the variances between groups were homogeneous ($p > 0.05$) (Kinnear & Gray 2004). The between subjects test results are displayed in Table 6.11.

Table 6.11. Test of between subjects effects for 'job satisfaction' over time.

<table>
<thead>
<tr>
<th>source</th>
<th>sum of squares</th>
<th>df</th>
<th>mean square</th>
<th>F</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>intervention and non-intervention groups</td>
<td>51.4</td>
<td>1</td>
<td>51.4</td>
<td>1.740</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Pharmacists in the intervention group seemed to be more satisfied with their jobs than that of those in the non-intervention group (sections 6.4.7.1 and 6.5.4.1). However, the longitudinal 'job satisfaction' mean scores between the intervention and non-intervention groups did not differ significantly (repeated measures test, $F = 1.740$, $p > 0.05$). The between-within factorial ANOVA takes into account only those participants who responded to the survey at all three
Chapter 6: Results and Analysis

time points ($t_0$, $t_1$, and $t_2$), whereas t-test for unrelated means takes into account the responses from one time point only ($t_2$). However, there was a trend for increasing job satisfaction scores in the intervention group, whereas there was none in the non-intervention group. The intervention of clinical training and provision of medication reviews may have had an effect on the job satisfaction in the intervention group but the longitudinal influence may not have been detected; maybe due to sample size or the repeated measures test may have been insensitive. The results of the analysis may have been confounded by external factors influencing job satisfaction related to community pharmacy in general (a potential effect on both groups; further explored in section 6.5.4) and those related to the service provision development project (a potential effect on intervention group; further explored in section 6.5.5).

6.4.8.2 Analysing Career Satisfaction over Time

In this sample there was no overall change in the mean scores to 'career satisfaction' over time (repeated measures test, $F = 0.857$, $p > 0.05$). The scale can be assumed to be reliable as no overall change was expected, and no statistically significant longitudinal changes were found. One of the between subjects factor was intervention and non-intervention groups and the within subjects factor was 'career satisfaction'. There was a trend of increasing 'career satisfaction' scores in the intervention group over time, whereas the scores in the non-intervention group were unchanged, implying that the intervention may have influenced the 'career satisfaction' in the intervention group. The changes are further discussed in section 6.7. The mean scores are displayed over time in Figure 6.15.
Figure 6.15. 'Career satisfaction' scores over time in intervention and non-intervention groups.

Although the mean scores of 'career satisfaction' in the intervention group seemed to increase over time, they did not differ significantly within the groups (repeated measures test, F = 0.586, p > 0.05) and there was no significant interaction between the mean scores in the intervention and non-intervention groups over time (repeated measures test, F = 0.529, p > 0.05). 'Career satisfaction' in the intervention group seemed higher than in the non-intervention group (sections 6.4.7.2 and 6.5.4.1). However, the longitudinal 'career satisfaction' mean scores between intervention and non-intervention groups did not differ significantly (repeated measures test, F = 1.603, p > 0.05). There was a trend for increased 'career satisfaction' scores in the intervention group, whereas there was none in the non-intervention group. The intervention of clinical training and provision of medication reviews may have had an effect on the career satisfaction of the pharmacists in the intervention group, the influence may not have
been detected due to sample size or the repeated measures test may have been insensitive. The results of the analysis may have been confounded by external factors influencing 'career satisfaction' related to community pharmacy in general (a potential effect on both groups; further explored in section 6.5.4) and those related to the service provision development project (a potential effect on intervention group; further explored in section 6.5.5). It may take a longer time to influence career satisfaction and the changes in professional roles may have to become permanent before pharmacists perceive these changes in career opportunities.

6.4.8.3 Analysing Satisfaction with Duties over Time

In this sample there was no overall change in the mean score to 'satisfaction with duties' over time (repeated measures test, $F = 1.756$, $p > 0.05$). The scale can be assumed to be reliable. However, two significant differences were found. Pharmacists who held an additional appointment at all three phases were more likely to be satisfied with their duties (repeated measures test, $F = 5.572$, $p = 0.024$). Holding an additional appointment may directly increase 'satisfaction with duties', or these pharmacists may take on additional appointments because they already were satisfied with their duties. Respondents in the BDPCT were more satisfied with their duties than those in the HPCT and the THPCT at all three phases. On the other hand, 'satisfaction with duties' in the THPCT remained unchanged over time whilst at phases one and two respondents in the HPCT were less satisfied with their duties than those in the THPCT but almost as satisfied as those in the BDPCT at phase three, implying favourable general changes within the HPCT perhaps due to establishing the PCT or continuing community pharmacist led medication reviews as a service. The interaction between 'satisfaction with duties' and PCTs was significant (repeated measures test, $F = 2.635$, $p = 0.040$).

One of the between subjects factors was intervention and non-intervention groups and the within subjects factor was 'satisfaction with duties'. The scores to 'satisfaction with duties' in the both groups seemed to increase over time, suggesting that other factors than the intervention may have influenced 'satisfaction with duties' in both groups to be discussed in section 6.7, and are displayed in Figure 6.16.
Chapter 6: Results and Analysis

Figure 6.16. 'Satisfaction with duties' scores over time in intervention and non-intervention groups.

Although the mean scores to 'satisfaction with duties' seemed to increase over time in both groups, they did not differ significantly within groups over time (repeated measures test, $F = 1.750, p > 0.05$), and there was no significant interaction between the mean scores in the intervention and non-intervention groups over time (repeated measures test, $F = 0.039, p > 0.05$). At phase one, many had expected changes in community pharmacy to improve their satisfaction (section 4.5.4.1). The increase in the 'satisfaction with duties' in the both groups at phase three may have been influenced by the imminent new contract for community pharmacy services to enhance their clinical role. The items in the scale concentrated on perceived challenge at work and the emphasis of clinical and traditional dispensing duties. The mean scores to 'satisfaction with duties' similarly seemed to increase in the both groups over time; there were no differences between the 'satisfaction with duties' of the respondents in the intervention and non-intervention groups (repeated measures test, $F = 0.374, p > 0.05$).
6.4.8.4 Analysing Degree of Autonomy at Job over Time

In this sample there was an overall increase in the mean scores to 'degree of autonomy at job' over time (repeated measures test, $F = 3.945, p = 0.023$). No overall change had been expected, but, this again may have been related to the NHS contract for community pharmacy services. Additionally, significant differences within three demographic subgroups over time may explain some of the overall change. The mean scores to 'degree of autonomy at job' increased over time within the intervention group (repeated measures test, $F = 3.517, p = 0.038$). The mean scores to 'degree of autonomy at job' increased over time within the respondents who did not have a post-graduate qualification at phase one (repeated measures test, $F = 3.525, p = 0.036$). The mean score also increased over time for owners and employees; the mean scores to 'degree of autonomy at job' differed significantly over time (repeated measures test, $F = 3.300, p = 0.042$).

One of the between subjects factors was intervention or non-intervention group and the within subjects factor was 'degree of autonomy at job'. The mean scores to 'degree of autonomy at job' increased over time in the both groups. Pharmacists in the intervention group perceived themselves to be less autonomous at job at phases one and two than those in the non-intervention group but more autonomous at phase three, suggesting that participating in the Medicines Management project enhanced the 'degree of autonomy at job' of the intervention group and is discussed in section 6.7. The mean scores are displayed in Figure 6.17.
Figure 6.17. 'Degree of autonomy at job' scores over time in intervention and non-intervention groups.

The mean scores increased over time overall within groups (repeated measures test, $F = 3.137, p = 0.049$). However, this was due to the increase in the mean scores within the intervention group (repeated measures test, $F = 3.517, p = 0.038$), suggesting the intervention had influenced 'degree of autonomy at job' score. There was no significant interaction between the mean scores in the intervention and non-intervention groups over time (repeated measures test, $F = 0.902, p > 0.05$), even though pharmacists in the intervention group scored higher than those in the non-intervention group at phase three. No difference in the 'degree of autonomy at job' was found between the pharmacists in the intervention and the non-intervention groups (repeated measures test, $F = 0.131, p > 0.05$).
6.4.9 Responses to the Personal Development and Perceived Appreciation Items

The pharmacists' responses to the individual items have been shown in Table 6.3. One in four pharmacists perceived they were not encouraged to work towards further qualifications relevant to their job (C70), whereas an increased proportion felt that they were encouraged to study. As said before, the expected new contract may have influenced the respondents' perceptions (Department of Health 2004a). Most respondents continued to think they were trained sufficiently to work effectively, for example, dispense (C77). One in five did not plan their training and development needs regularly (D72). Most reported attending CPD events and reflected on what they had learned after attending (D75), but most pharmacists reported that they did not keep a CPD diary (sections 6.3.2 and 6.5.3.6) and may have difficulties recording when CPD becomes mandatory. Whilst most respondents felt valued by patients and customers and perceived that their services were appreciated (E40 and E43), two in five continued to think that patients were only concerned about the speed of service (E39). Almost four in five perceived that patients trusted the advice they received from pharmacists (E38). This bodes well for the implementation of the new contract for NHS services as these pharmacists perceived that they indeed have a role in patient care. However, at phase two those in the intervention group who performed well in providing medication reviews were more sceptical of patients' appreciation and their intentions to follow pharmacists' advice, suggesting that patients may not value services offered by pharmacists (section 5.4.10.3).

6.4.10 Exploring the Personal Development and Perceived Appreciation Items

In order to explore community pharmacists' professional satisfactions, and perceptions of their personal development needs and behaviour inferential analyses were conducted. The coding of negative statements was reversed (section 4.4.9).

6.4.10.1 Analysing Opportunities for Training and Education

Self-assessed competencies did not influence perceptions of being encouraged to study towards further qualifications; however, those who held an additional appointment were more
likely to perceive they were encouraged (C70, Table 6.12). Their involvement in activities outside their pharmacy may have stimulated them. No other significant differences or relationships were found between characteristics in responses to item C70. Although responses to the item in the intervention group were more positive than in the non-intervention group, the difference was not statistically significant.

Table 6.12. Exploration of item C70: Mann-Whitney U test at phase three.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>no additional appointment</td>
<td>38</td>
<td>3.18</td>
<td>3.00</td>
<td>21.72</td>
<td>-3.128</td>
<td>0.001</td>
</tr>
<tr>
<td>additional appointment</td>
<td>11</td>
<td>4.27</td>
<td>4.00</td>
<td>36.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No significant differences were found or relationships between characteristics in responses to item C77. The intervention group held similar views of having sufficient training to do their work effectively as the non-intervention group. This perception was not influenced by self-assessed competencies in the intervention group; self-assessed competence did not seem to reflect performance (section 6.3.6).

6.4.10.2 Analyzing Personal Planning of Training and Education

In the intervention group, self-assessed competency scores within 'personal' competency cluster, comprising statements on CPD, correlated with regularly planning training and development (D72, Spearman's $\rho = 0.585$, $p = 0.004$). No other significant differences or relationships were found with item D72. The intervention group was as likely to report planning their training and development need regularly as the non-intervention group. However, the intervention group was more likely to reflect on their learning after attending CPD events (D75, Table 6.13). Participation in the Medicines Management project may have influenced their awareness of the benefit of reflection, or they may have become more aware of the steps in the CPD cycle. Additionally, in the intervention group self-assessed competency scores within 'personal', 'problem solving' and 'management and organisation' competency clusters correlated with reflection on learning (Spearman's $\rho = 0.593$, $p = 0.013$; Spearman's $\rho =$
0.405, \( p = 0.049 \); Spearman’s \( \rho = 0.661, p = 0.010 \), respectively). No other significant differences or relationships were found between characteristics with item D75. In contrast to phase two, female pharmacists were not more likely to report reflecting on their learning. Perhaps, male pharmacists had become aware that they would have to conform with the future CPD requirements.

Table 6.13. Exploration of item D75: Mann-Whitney U test at phase three.

<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D75 &quot;After I have attended CPD events, I reflect on what I have learned&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>29</td>
<td>3.97</td>
<td>4.00</td>
<td>27.55</td>
<td>-2.066</td>
<td>0.038</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>20</td>
<td>3.60</td>
<td>4.00</td>
<td>21.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.4.10.3 Analysing Perceived Appreciation by Patients

In the intervention group pharmacists who assessed themselves highly in ‘delivery of patient care’ and ‘personal’ competency clusters perceived that patients would follow their instructions (E38, Spearman’s \( \rho = 0.627, p = 0.012 \); Spearman’s \( \rho = 0.486, p = 0.022 \), respectively). Pharmacists who perceived themselves to be less competent while performing better in medication reviews thought that patients would not follow their advice. They may have been more realistic or had become disillusioned, suggesting challenges for implementation of future service developments. Pharmacists may want to provide a service to enhance their job satisfaction but the service may not have an influence on patients (section 4.5.4.1). No other significant differences or relationships were found with item E38; the intervention group as a whole held similar views as the non-intervention group.

The intervention group continued to perceive that patients were not only concerned about the speed of the service (E39, Table 6.14); this should be taken into account when implementing a similar service where patients may not value the pharmacy service provided for them. On the other hand, this attitude may depend on the pharmacists or be a product of the perceived supply role in community pharmacy. The implementation of the new contract will hopefully change the situation. Although female pharmacists and those who had an additional
appointment did generally have a more positive perception about patients, the differences were not statistically significant at phase three, in contrast to phase one. No other statistically significant differences in responses to item E39.

No significant differences or relationships were found between the characteristics and responses to item E40. Whilst the intervention group seemed to hold more positive opinion of patients treating them courteously than the non-intervention group, the difference was not significant at phase three. A correlation between response to item E40 and length of tenure found at phase two, and the difference between pharmacists who had a consultation area and those who had not found at phase one, were not observed.

The intervention group was more likely to perceive patients to appreciate their services (E43, Table 6.14) as at phase one, but not at phase two. No other statistically significant differences or relationships were found. There was no difference between pharmacy owners and employees, and no correlation between number of years after graduation and response to the item, in contrast to phase one.


<table>
<thead>
<tr>
<th>variable</th>
<th>n</th>
<th>mean</th>
<th>median</th>
<th>mean rank</th>
<th>Z</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>E39 &quot;Patients are only concerned about getting their medication as quickly as possible so that they can leave as quickly as possible&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention group</td>
<td>29</td>
<td>3.21</td>
<td>3.00</td>
<td>28.53</td>
<td>-2.165</td>
<td>0.032</td>
</tr>
<tr>
<td>non-intervention group</td>
<td>20</td>
<td>2.45</td>
<td>2.00</td>
<td>19.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| E43 "Patients show appreciation for the services I provide them" |
| intervention group | 29  | 4.34 | 4.00   | 28.69     | -2.342 | 0.021 |
| non-intervention group | 20  | 3.70 | 4.00   | 19.65     |       |              |

6.4.10.4 Comparing Responses to the Personal Development and Perceived Appreciation Items at Phases One, Two and Three

A Friedman test was employed to determine if there was difference in responses to the items for the 42 respondents who responded to the survey at all three phases. Whilst there was no
statistically significant change in response to the seven individual items, pharmacists were more likely to think that they were encouraged to work towards further qualifications (C70) at phase three than they had been at phase two (Friedman test, $\chi^2 = 8.654$, $p = 0.013$; Wilcoxon test, $Z = -2.423$, $p = 0.014$), suggesting that changes expected in community pharmacy policies may have influenced pharmacists' perception of their possibilities to develop and use their skills and knowledge in practice.

**SUMMARY**

* 49 respondents completed the postal survey on professional perceptions and satisfactions
* Scales measuring professional satisfactions were internally reliable
* The intervention group showed more job and career satisfactions by this phase
* In the intervention group, 'career satisfaction' correlated with self-assessment of 'personal competencies' and 'satisfaction with duties' correlated with 'delivery of patient care competencies'
* 'Satisfaction with duties' contributed to the relationship between 'job satisfaction' and 'career satisfaction'
* There was a trend of increasing 'job satisfaction' and 'career satisfaction' in the intervention group over time, whilst no change in the non-intervention group
* In the intervention group, self-assessed 'personal competencies' positively correlated with 'planning training and development' and 'reflecting on learning', and as a whole the intervention group was more likely to reflect on their learning
* In the intervention group, pharmacists who assessed themselves to be more competent in 'delivery of patient care' and 'personal competencies' perceived that patients would follow their advice; however, self-assessed competence did not reflect performance
* The intervention group was more likely to think that patients were not only concerned about the speed of the service, and perceived that their services were appreciated
* Both groups perceived they were more encouraged to further their development at this phase than they had been at phase two
6.5 INTERVIEWS ON PROFESSIONAL PERCEPTIONS: RESULTS AND ANALYSIS

This section presents the results of community pharmacists' perceptions of CPD and professional satisfactions and whether they had changed over time as well as to explore perceptions of the intervention group of the Medicines Management project and their medication review performance.

6.5.1 Sample

Thirty-eight pharmacists were interviewed. Thirty-three pharmacists in the intervention group were interviewed while they were providing the second phase of medication reviews. One pharmacist refused to be interviewed, claiming to be too busy and stressed. Another had retired and could not be contacted for an interview. Fourteen pharmacists in the non-intervention group were interviewed at phase one; seven returned the professional perceptions survey at phase three, others could not be contacted for an interview. While five pharmacists were interviewed, two refused to be interviewed, claiming to be busy.

6.5.2 Demographics

The demographics were collected from phase three survey responses; however, four in the intervention group did not complete the survey (section 6.4.2). No female pharmacists in the non-intervention group were interviewed due to sample attrition. There were slightly more owners than employees (18/34); most pharmacists had a permanent contract (22/26), one pharmacist worked part-time. At phase three no-one in the non-intervention group had a consultation area in their pharmacy, compared to half at phase one. The proportion of respondents who had an additional or postgraduate qualification ranging from a Certificate to a Masters (13/34) had increased compared to phase one. One pharmacist in the non-intervention group had an additional appointment at phase three, compared to none at phase one.
6.5.3 Exploring Changes in Perceptions of Continuing Professional Development

This section explores changes in perceptions of CPD between phase one and phase three (Figure 6.18).

Figure 6.18. The analysis strategy for exploring changes in perceptions of CPD at phase three.

6.5.3.1 Meaning of Continuing Professional Development

This section explores changes in pharmacists' perceptions of CPD between phase one (section 4.5.3.1) and phase three; pharmacists had an understanding of the aim of CPD at both phases. Most pharmacists perceived CPD would help them to learn, improve and develop their skills and knowledge. However, they did not mention being or becoming more competent, but described becoming more confident instead. This increased by phase three. Additionally, self-perceived competence was thought to influence pharmacists' confidence to provide services to their patients:

"Make you more competent, obviously, in all areas that you are lacking, you know. [...] You know what you're talking about. Like if you're not sure of an area and you research and you've learnt more about it that basically just increases your competency. So, you can do your job more effectively."

1033F, female, intervention group, section 9
At phase one few pharmacists had gained an insight of what CPD cycle meant as promoted by the RPSGB as a key to professional development (RPSGB 2001c). The situation had not changed during the two years of the study. For some, attending courses or completing distance learning seemed to equal professional development (sections 4.5.3.3 and 6.5.3.3). Only three pharmacists were able to describe the complete CPD cycle at phase three. Indeed, three pharmacists in the intervention group perceived that whilst they had an insight of CPD, others might not. These had an additional appointment with the CPPE or LPC which may have influenced their perceptions, they thought that more detailed information and examples of CPD were needed:

"I think there is a lot of confusion at the minute as to what CPD actually means and exactly what it involves. I think the main things is to try to sort of, I think a lot of people are aware [that participation in CPD is mandatory] and so on but I think it hasn't been made clear as to what it is that you need to do and how to do it. So I think there is a lot of publicity as far as CPD [being mandatory] is concerned. I think there needs to be a little more explanation as to what it involves as far as the pharmacist is concerned."

1021f, male, intervention group, section 2

At the time of the interviews, implementation of mandatory participation in CPD was expected to be less than six months away in early 2005. These findings suggest that pharmacists may face difficulties in adhering to the CPD regulations of the RPSGB as they still did not seem to have had an understanding of what CPD means in practice, further discussed in Chapter 7.

6.5.3.2 Assessment of Learning

Initially half of the interviewees perceived that it was possible to assess pharmacists' learning, whereas another half perceived that an assessment was unnecessary (section 4.5.3.2). Now the majority of the pharmacists perceived that an assessment of their learning was unnecessary; the arguments were similar to those offered previously. Whilst it was perceived possible to assess pharmacists' knowledge, assessing competence was considered rather different. Some thought that pharmacists' practice or performance could be assessed by their customers; they had an obligation to provide services competently. Two pharmacists in the intervention group perceived that assessment of their learning would turn something enjoyable into a tedious task:
"I think to an extent you have to rely on people wanting to be on top of their profession and; therefore, accessing education and courses to achieve that. I think there would be problems if you actually make it such a mandatory thing that it becomes a chore and no longer a fun activity. [...] It’s fun to learn, rather than, you know, being forced to learn.”

1018F, male, intervention group, section 8

Many thought that they were able to self-assess their learning and did not need any external involvement that quite rightly, individual needs would guide CPD. However, the intervention group showed an inability to assess their own performance in this study and would need support (section 6.3.6). Some perceived that if there was a need to assess learning, individual feedback should be provided. Two pharmacists in the intervention group were CPPE tutors with insight of the abilities of their peers and suggested mentoring, facilitation and support for individual pharmacists' personal development:

"I think it should be reviewed and mentored. I would like it to, actually, be more of a mentoring process rather than assessment. Assessment tends to give you the opinion that you are passing or failing, especially when you send your CPD off for your three yearly to five yearly, whatever it may be, assessment. I would like much rather see in place there a proper mentoring process where I’m paired up with somebody or some people [...] and we share experienced and we can to a degree assess each other.”

1036F, male, intervention group, section 8

Whilst the accreditation structure leading to provision of a service had previously been questioned by a couple of pharmacists, five now perceived that an external assessment was necessary for any qualifications they might want to pursue. However, self-assessment of learning was perceived to be sufficient for most CPD:

"It depends on where you want to go with your career. If they are accredited and you wish to go for a job with the Health Authority or somewhere that will want to see any extra qualification you have, then yes. But if it’s just for yourself then it doesn’t really matter if you have any extra certificates. So, it really depends on what you want to do with your career.”

1002F, female, intervention group, section 8

Both the prospect of the new NHS contract for community pharmacy services (Department of Health 2005c) and participation in clinical training to provide medication reviews in Medicines Management project may have influenced these pharmacists’ perceptions, discussed further in Chapter 7.
6.5.3.3 Choosing Learning Activity

At phase one the pharmacists described the advantages and disadvantages of the different forms of learning activities (section 4.5.3.3). At both phases the most frequently mentioned learning activities were distance learning and workshops, both formal activities. This section explores how pharmacists chose the type of learning activity (Figure 6.19). Often these pharmacists' choices of learning were influenced by several factors some of which may have been more influential than others, leading pharmacists to have a preferred activity. This implies that at first alternating between different options may be difficult for pharmacists as suggested by the RPSGB (2004b).

Figure 6.19. Influences on choosing learning activity.

Whilst pharmacists should consider the most suitable learning activity for every topic they undertake (RPSGB 2004b), convenience was the deciding factor for two in five pharmacists in the intervention group and four pharmacists in the non-intervention group. Whilst the intervention group had chosen to participate in a service development project, they were not able to choose the method of the training. Some found a method that suited their learning style, others felt that time management guided their choice, whilst others still would choose between a workshop or distance learning according to access. Some pharmacists chose distance learning, reading and the Internet because they did not want to study in a group or preferred to study in their own time:
"Generally, we do the modules at home. Basically, I find that the easiest because then I can do it in my own time. [...] You are not tied down to a particular time or a day.”

1003F, male, intervention group, section 3

On the other hand, others chose workshops because once registered on a course they felt compelled to participate in order to learn. They perceived group interaction to aid learning:

"I prefer the workshops. They are the ones that I go to because if I just do reading it doesn't actually mean it's actually sunk in. So, I go to the CPD workshops where there is the interaction between people.”

1009F, female, intervention group, section 3

However, almost two in five pharmacists, one of them in the non-intervention group, perceived that choosing a learning activity was not entirely dependent on convenience. Some considered the support a learning activity could offer for their learning; workshops were perceived to be efficient when experiential learning was central to the subject, whereas studying on one’s own was better for more theoretical studies:

"Actually, the competence is very important within distance pack I choose if they are available. And then occasionally I choose the workshops, you know when they are available. But that one is if I need interaction with other colleagues [...] Otherwise if it's [...] more theoretical then a choose the distance learning packs.”

1011F, male, intervention group, section 3

Others were guided by their learning needs, peers, other HCPs, manufacturers of medicines, reference literature, and the Internet were perceived to be good sources of information needed for everyday community pharmacy practice. If they had a more extensive learning need, for example providing a new service, they would choose a suitable learning activity to match:

"It starts out from the learning objective actually. [...] Some CPD is small and takes a little bit of time, like the stuff you get in the Chemist & Druggist [...] The larger ones, things like training in the evenings usually are attached to current or new functions that we are going to take on or accreditations or whole day events for this purpose. [...] You work from that basis 'What so I need to do?' then 'What is the best basis to do it?'”

1037F, male, intervention group, section 3

It is essential that pharmacists achieve competence and remain competent; the learning activity they choose should support their development. If they have found an activity that suits them, they should be able to continue using it, as one pharmacist in the intervention group put it:
"I've tried lots of different ones. I mean I've tried the booklets from the CPPE. I've been to the courses, I've tried the online training, also the computer disk method. [...] I just tried different ways to see which one is the most stimulating and if you can get the most out of them. Try different methods to see if I can get as much information as I can from them. The best one is really the group sessions where you're interacting with different professionals, different colleagues, and different input from different angles. You know, the ones that you do by yourself are not as good, I don't think."

1042F, male, intervention group, section 3

6.5.3.4 Learning Needs and Development

Few pharmacists had plans for their learning and development at both phase one (section 4.5.3.4) and phase three. If anything, pharmacists were expecting the changes in community pharmacy services to guide their development:

"I mean it depends on what the [PCT] wants from us in the long run and then we will just decide which is more important. We just have to take it when it comes. It depends on the needs again, I mean what's required in specific area. I don't really have a specific... As long as you're aware of things then that's the main thing."

1028F, male, intervention group, section 11

Four pharmacists' personal development plans incorporated learning needed for a new role. Whether the Medicines Management project had influenced their decision to expand their role or whether their decision was a result of longer contemplation, is difficult to say:

"I have done a development plan, yes. I, firstly, want to develop in terms of clinical knowledge because I'm actually having to deliver a lot more clinical knowledge to others now. [...] I want to see certain aspects of assessing management skills. Particularly things like negotiating skills are high on my agenda and that's probably about it then though."

1036F, male, intervention group, section 10

6.5.3.5 Responsibility for Continuing Professional Development

At phase one the pharmacists described both advantages and disadvantages of national, local and individual responsibility for professional development (section 4.5.3.5). Many continued to perceive that at least two parties should be involved in deciding what to learn. One in three perceived that national authorities should take the responsibility in order to ensure uniformity in pharmaceutical knowledge. They were mainly pharmacy owners who also perceived that local authorities knew what was important to learn. Owners who were older than employees
(section 6.3.3.2) may have difficulties in identifying learning needs due to reliance on others in the past, even in the intervention group:

"I like to be given the topics that are perhaps important, so maybe individually is not my thing, no. As an individual I would rather somebody else.

1029F, female, intervention group, section 7

"I think some of the colleges could be allocated for continuous education. I am sure they can come up with, I mean just what the type of things we should be learning."

1030F, male, intervention group, section 7

The intervention did not promote the independent planning of their development. The pharmacists were to complete a pre-designed course and were only allowed to choose one training module and may not have had any different views than the non-intervention group. However, half of the pharmacists perceived that individual learning needs should govern CPD. These pharmacists were mainly employees and younger than owners. They may find it easier to identify their own learning needs. At phase one pharmacists’ preferences or interests in specific subjects were deciding factors, whereas at phase three some thought that achieving competence or becoming accredited to provide a service had an input, that CPD was related to a job. As described before (section 6.5.3), pharmacists’ perceptions may have been influenced by the expected new contract for community pharmacy services:

"I think that based on my knowledge I realise that I am lacking certain areas. I know it is going to be good for my practice when I have to do that on my own. [...] The most important thing is to make sure I know what I am doing."

1008F, male, intervention group, section 7

"It depends on what their role is. My CPD should be negotiated with myself, it should be negotiated with my employer [in terms of] what they expect from me, from my job description to a degree. It should be negotiated with the service I’m providing for the PCTs to make sure that I have competency I what I’m trying to deliver."

1036F, male, intervention group, section 7

"I think there’s going to be a lot of local commissioning by the PCT. [...] There’s a new contract coming up. So, with the new contract, obviously, you know, the pharmacist have to be prepared to take on certain loyalty and do certain things which means they may have to be accredited to do certain jobs. [...] Any other CPD, it should partly be pharmacist who are offering more than the day-to-day running of a business need to have some input and maybe [...] the LPC."

1027F, male, intervention group, section 8
6.5.3.6 Evaluating Learning

At phase one, few pharmacists perceived CPD as a cycle where they not only assessed their learning needs and tried to fulfil their objectives, but evaluated what they had learnt and whether they had learnt enough (section 4.5.3.6). However, evaluating what one has learnt is an essential part of CPD; otherwise any development is difficult (RPSGB 2004d). At phase three, many perceived evaluation as a recording task they had to fulfil in order to comply with the recommendations of the RPSGB (2004b). Whilst many may not have recorded their reflections, two in three did evaluate their learning in their own way. They reflected on what they had learnt, tried to evaluate whether what they had learnt was useful, how they could use their knowledge in practice, and whether they had any other learning needs. Whilst many did not perceive that they reflected on all these issues, these reflections and evaluations may, nevertheless, help them to develop, to improve and change their practice of pharmacy:

"I try to evaluate it, yes. I try to see what I have learnt and how I am going to use that in the day-to-day work in the pharmacy. But I don't actually make a record of it, officially evaluate it, like write it down. I just think about what I've learn and how I'm going to use it and how that will be useful to me."

1010f, male, intervention group, section 5

"In the sense that I identify what it is that I need. What I've learnt and what I'd like to learn."

1021f, male, intervention group, section 5

At the time of the interviews, the RPSGB had introduced recording CPD in south-east England and the anticipated start of mandatory participation was less than six months away. Only one pharmacist had started to evaluate learning outcomes and to record these reflections:

"Yes I do. I have to evaluate it. It's part of my contract I have with the CPPE that I do actually evaluate my learning."

1036f, male, intervention group, section 5

Eight pharmacists perceived that the multiple choice questions they answered after participating in formal learning activities constituted the evaluation, but they did not evaluate how they could use the knowledge they had attained in practice or whether they should engage in further studies:
"Yeah, there are questions as you go along, aren’t there? So usually, I think that evaluates it."
1002F, female, intervention group, section 5

Three pharmacists had taken a step further and had started to reflect on their learning as well as answering the questions:

"Not all the time [I don’t evaluate my learning]. Sometimes yes. I just reflect on what I have learnt and also by doing the multiple choice questions, as well. Isn’t that almost evaluating to see that you’ve learnt something?"
1033F, female, intervention group, section 6

Only four pharmacists perceived that they did not evaluate their learning in any way. However, two of them linked such evaluation with mandatory participation in, and recording of CPD that would be implemented later. It is not possible to deduce from their responses whether they evaluated their learning in any other way:

"I am glad to finish the module usually, so after that it’s very difficult to spend even more time evaluating what I have learnt after that. Usually I don’t. I’m pretty sure I don’t."
1003F, male, intervention group, section 6

"Well, I haven’t started all of that because that starts January the 1st. So, I’ll have to start filling those papers that the Pharmaceutical Society has sent. But I haven’t started doing that yet but I’ll have to in January [2005]."
1086F, male, non-intervention group, section 5

SUMMARY
*33 pharmacists in the intervention group and 5 in the non-intervention group were interviewed in-depth on changes in their professional perceptions and satisfactions
*few had gained insight of CPD over time despite the RPSGB information campaign to inform pharmacists what CPD means
*most continued not have plans for their learning and development and continued not to feel responsible for their continued development
*various factors influenced pharmacists’ choices of learning activities by phase three but they continued to think assessment of their learning was unnecessary
*whilst many reflected on their learning, few recorded their reflections; recording was perceived as a task performed to meet the RPSGB’s requirements for CPD
6.5.3.7 Overcoming Perceived Barriers to Participation in Continuing Professional Development

Pharmacists discussed factors that either encouraged or inhibited their participation in CPD at phase one (sections 4.5.3.7 and 4.5.3.8); many seemed to require incentives to participate. This section explores pharmacists' perceptions of the three main barriers to their participation in learning activities expressed at both phases and suggested remedies to diminish their influence at phase three (Figure 6.20).

Some pharmacists expressed uncertainty about what CPD involved at phase one, but this was not evident at phase three; it may have been resolved or may have been less of a priority. Nevertheless, three pharmacists in the intervention group perceived that pharmacists would need more information on what CPD entails (section 6.5.3.1):

"I think there is a lot of confusion at the minute as to what CPD actually means and exactly what it involves. [...] I think it hasn't been made clear as to what it is that you need to do and how to do it [...] there needs to be a little bit more explanation."

1021F, male, intervention group, section 2
Those who lacked motivation at phase one had withdrawn from the study; however, two others, one in each group, still lacked motivation for CPD. Only pharmacists in the intervention group perceived that everyone should be motivated enough to participate in CPD. Many felt that participating in learning activities was an obligation for all practising pharmacists which would enable them to develop and improve and to work as a pharmacist:

"It depends on how you feel the profession is important and how you like your job and how motivated you are."

1033F, female, intervention group, section 3

"I think as it's very relevant to the practice and you find certain areas difficult for you to practise then the only way is to improve on them is by trying to take on a course or asking them how you can improve on that. The motivation [...] would be a better service to what one is doing."

1011F, male, intervention group, section 2

"Motivation should be 'you can't practise if you don't do it', that'll be enough to motivate anybody. [...] It depends on everybody's interests but at the end of the day they know that if they don't do it and if you can't practise you're not going to get paid."

1038F, male, intervention group, section 2

Three in five perceived the main barrier was lack of time no matter how motivated they were. Two in five proposed that CPD should be incorporated into a working day. Learning would be more effective and pharmacists would be able to concentrate on studying whereas other commitments would not be affected. The majority, mainly owners, maintained that funding to cover locum costs would enable them to participate in learning activities. In contrast, three employees felt their employer should arrange their work in a way that would enable them to study during their working time:

"Like the GPs, they get locum fees, don't they, to attend the lectures in the day. Because most of the workshops I attend are in the evening and by the time we finish work you're too tired. It would be better during [the day] where we got reimbursed for locum fees."

1094F, male, non-intervention group, section 2

"It would be nice, how these barriers could be lifted would be if the employer, you know people who employ me, gave me time to do these things in workplace. Rather than expecting for me to do it in my own time."

1013F, male, intervention group, section 2
6.5.3.8 Current Level of Participation in Learning Activities

At phase one pharmacists' participation in learning activities was described (section 4.5.3.9). Although one pharmacist continued to lack motivation to study, another had become engaged in CE. The intervention may have influenced this change in opinion; the pharmacist linked participation in learning activities with job satisfaction. CPD policies may also have been influential:

"I had mixed feelings in the beginning but as I have caught on a bit I realise that it is necessary.”
109F, female, intervention group, section 4

Whilst two in three interviewees were participants in CE at phase one, the proportion had diminished to one in two by phase three. At the same time the proportion of pharmacists participating in CPD had increased from one in four to two in five along the phases. The proportions may have changed due to attrition; however, none in the non-intervention group had taken steps to becoming more responsible for their own learning. The training, providing a new service or becoming aware of the RPSGB's CPD policies may all have propelled the intervention group to take responsibility for their own learning. However, it seems that they had not become more aware of their learning needs which may cause problems when CPD becomes mandatory (section 6.3.6).

6.5.3.9 Perceptions of Need for Mandatory Continuing Professional Development

Pharmacists discussed the introduction of mandatory participation in CPD at phase one (section 4.5.3.10). The perceptions ranged from agreement to disagreement at both phases, but the interviewees expressed more positive perceptions at phase three than they had at phase one. The reasons for approval, acceptance, or disapproval did not change between the phases.

It seemed that most interviewees continued to perceive that introduction of mandatory participation in CPD would enhance their and others' competence. There were no differences between the intervention group and the non-intervention group. The changes in perceptions may be attributed to the passing of time. Some pharmacist may have become accustomed to the idea and others may have realised the positive influence of participation in learning.
activities during two years. These more positive perceptions regarding mandatory CPD participation may have influenced the pharmacists' perceptions of the level of their job and career satisfaction and are explored in the next section.

**SUMMARY**
* by this phase pharmacists perceived three main barriers to prevent their participation in learning activities and suggested how to minimise their effect
* provision of more information on CPD was suggested to dispel the uncertainty of what mandatory CPD would mean for community pharmacists
* being or becoming self-motivated to learn and develop and realising the benefits of participating in CPD were perceived to help those who lacked motivation to participate
* integration of CPD into the working day through support from employers and funding of CPD was perceived to increase the time available for CPD
* the proportion of the interviewees participating in CPD had increased between the phases
* by this phase pharmacists expressed more positive perceptions of mandatory CPD participation

6.5.4 Exploring Changes in Perceptions of Professional Satisfactions

This section explores changes in professional satisfactions between phase one and phase three (Figure 6.21).
6.5.4.1 Perceived Changes in the Level of Satisfaction

This section explores changes in satisfaction levels between phase one (section 4.5.4.1) and three. During the study there was a shift in career satisfaction (Figure 6.22).

Figure 6.22. Changes in career satisfaction of pharmacists interviewed at both phases.

Pharmacists seemed to have become more satisfied with their careers in pharmacy and in community pharmacy by phase three. There was no change in those who, however dissatisfied with community pharmacy, thought they would remain working in community until they retired. Pharmacists suggested at phase one that more variety in work and more clinical involvement in patient care would enhance satisfaction. The intervention group made up most interviewees at both phases so changes in proportions of pharmacists who were satisfied with their career may reflect the effect of training and providing medication reviews. The intervention group had a higher career satisfaction score at phase three and there was a trend of increasing career satisfaction over time in the intervention group (sections 6.4.7.2 and 6.4.8.2). At phase three the respondents compared their satisfaction with that at phase one and described reasons that had led to any changes (Table 6.15).
Table 6.15. Perceived changes in satisfaction with work.

<table>
<thead>
<tr>
<th>LEVEL OF SATISFACTION</th>
<th>Intervention group</th>
<th>Both groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in satisfaction</td>
<td>Many pharmacists in the intervention group perceived that local initiatives and national policies, and the Medicines Management project had:</td>
<td>Some pharmacists in both groups perceived that having accepted their situation in community pharmacy and community pharmacy policies had increased their satisfaction.</td>
</tr>
<tr>
<td></td>
<td>* improved community pharmacy practice; * recognised community pharmacists’ involvement in primary care; * enabled pharmacists to gain new clinical roles; and * enabled pharmacists to use their skills and knowledge in their work, which had enhanced their satisfaction with work in community pharmacy.</td>
<td></td>
</tr>
<tr>
<td>Both groups</td>
<td>Some pharmacists in both groups perceived that there had not been any changes in community pharmacy and; thus, they were as satisfied or dissatisfied as earlier.</td>
<td></td>
</tr>
<tr>
<td>Decrease in satisfaction</td>
<td>Some pharmacists in the intervention group perceived that despite local and national initiatives, and the Medicines Management project they were not able to use their skills and knowledge in their work, which had decreased their satisfaction.</td>
<td>Some pharmacists in both groups perceived that local and national initiatives had not: * changed in community pharmacy practice; and * enabled pharmacists to gain new clinical roles, which had resulted in less satisfaction.</td>
</tr>
</tbody>
</table>

Half of the interviewees perceived that they felt more satisfied with their jobs at the end of the study than at the start: they believed that changes, external or internal, had resulted in greater satisfaction. The majority in the intervention group perceived that those issues expected to improve community pharmacy at phase one had indeed increased their satisfaction with work. Many felt they had attained new skills and knowledge through the Medicines Management project and other service schemes, such as smoking cessation and minor ailments, which they were able to use in their everyday practice. These pharmacists’ contributions towards patients’ healthcare had increased and they could see the positive influence they had on patients’ health. Their new roles in primary care seemed to make their work more interesting and more worthwhile. What’s more important, their work seemed to be recognised:

"Yeah, [I am more satisfied now than I was then] because then, you know, I wasn’t even doing smoking cessation. I wasn’t doing minor ailments. I am doing both more now. It’s like extra service and the extra knowledge, I have to read wide amount to provide those services. So, it’s additional work, extra satisfaction doing them. So, I think I’ve moved ahead since then.”

1011f, male, intervention group, section 14
Chapter 6: Results and Analysis

"I wouldn't be here if I was dissatisfied. Oh yeah, I am quite happy with what I'm doing. (I am more satisfied because) we are hopefully doing more for the patients than we were a couple of years ago. It's nice when you do smoking cessation you go through eight to ten weeks with someone and they give up and they are so happy and they are so pleased. And because they are in the middle of a local estate we see them all the time and they're still not smoking and still healthier than they were. It's nice. It's lovely."

1024F, male, intervention group, section 14

"Slightly more satisfied, just slightly because I believe last year we hadn't started the Medicines Management review and I hadn't been doing smoking cessation. So, now that I'm doing that it makes the job not boring. Apart from dispensing you have other things that you do. You're more involved with the patient. You get people coming in and talking to you and you counsel them and you have more responsibility. So, it's like every day is not the same."

1033F, female, intervention group, section 16

"Yeah, I would say that. Yeah, because I think finally we are being recognised that we have a role to play in healthcare. So, that means a lot. That gives us positive vibes. It's a feel good factor. The government, the PCTs are all the same."

1043F, male, intervention group, section 14

The felt increase in satisfaction was individual. Some perceived that they were only slightly more satisfied than before whereas others felt much more satisfied than before. The influence of the Medicines Management project may not have been confined only to those who participated: one pharmacist in the intervention group thought that it had been such a good experience that she had enthused other pharmacists to undertake CPD and provide new services:

"I am definitely more satisfied now than before. I've learnt new skills and knowledge in practice. I was able to help patients to improve their lives. It was good. I felt very enthused. I have been able to tell colleagues who are not taking part about my experience and now they have got involved in other things. They are learning. And this is through listening to me, they too became enthusiastic."

1004F, female, intervention group, section 13

As described, many in the intervention group expected the Medicines Management project to increase their job satisfaction but this effect may have been confounded by other positive experiences with new services and lessened by the uncertainty of the future of the medication review service (section 6.5.6). Community pharmacists need to see the proposed improvements in services they provide and the role they have in primary care to be made permanent before they can invest in changes in their practice. Hopefully, implementation of the

280
medication review service as an enhanced service, as defined in the new community pharmacy contract (Department of Health 2005c), by the BDPCT and HPCT will dispel any uncertainty and instill enthusiasm for the changes. As one of the pharmacists put it:

"I can see positive things happening if the Medicines Management continues and if minor ailments continue then that would give me greater satisfaction. Although there is the talk of delivering either medicines management or... See, it is a pilot what we have done also the research that we have done but it is not a proper service as such. The encouragement is coming but for this state of nearly delivering a new service [is] very prolonged."

1023F, male, intervention group, section 14

The changes in community pharmacy and the Medicines Management project were not the only ones to influence satisfaction. For example, a new member of support staff had relieved the workload for one pharmacist in the intervention group, while three others in the intervention group thought that achieving financial stability had made them more satisfied:

"Slightly more satisfied now [...] I think two years ago there was a lot more uncertainty, I felt with the regulations and everything and things in the pipeline but now it seems a bit more stable at the moment from a business point of view."

1030F, male, intervention group, section 14

Another three in the intervention group felt more satisfied because they had learnt to live with their disillusionment with community pharmacy and accept that they could not change their situation. Indeed, they were not really more satisfied, they were less dissatisfied as their expectations reduced. Two pharmacists in the non-intervention group shared this perception and were the only ones in this group to claim that they felt more satisfied. All these pharmacists had grown to think that accepting their situation had made them more satisfied:

"I suppose two years ago I was more apathetic but now I’m not, you know. Now, you know, you’ve got to get on with it so that I accept the changes, I accept the situation and move forward. So, I suppose a bit more satisfied, I guess."

1038F, male, intervention group, section 14

Unfortunately, a minority in the intervention group and one pharmacist in the non-intervention group were either still dissatisfied or had become more dissatisfied by phase three. Some pharmacists felt the promised improvements in community pharmacy had failed to materialise and felt disgruntled:
"Probably a little bit more dissatisfied because the changes that we expected a little while ago. We took on these projects with the Medicines Management, we’ve taken the smoking cessation, some of the projects that we’ve taken on and, you know, it’s been very difficult to implement them. [...] So, it’s very difficult to implement, make appointments, spare time and nobody comes."

1049f, male, intervention group, section 14

"I’m a bit more dissatisfied than three years ago, put it that way. When smoking cessation and they were talking about emergency hormonal contraception and minor ailments and I did a bit of prescription, medication review but that was two years ago and I haven’t done much activity as such other than smoking cessation. And things they say pharmacists may get involved more, I haven’t seen them. Getting a bit more disillusioned than three years ago."

1083f, male, non-intervention group, section 15

It is essential that the implementation of the new contract for community pharmacy services, the advanced and enhanced services in particular, is successful. Pharmacists should perceive that their work contributes to improving patient health, that this is recognised by patients and other HCPs, and is adequately remunerated. Most importantly they should feel happy with their jobs and careers. Additionally, the PCTs should support implementation of enhanced services according to local needs, such as medication reviews, smoking cessation and minor ailments, so that pharmacists are able to use their abilities to benefit patients. The importance of the successful implementation of these services is exemplified by the experiences of two pharmacists in the intervention group. They felt dissatisfied because they perceived that they had attained skills and knowledge that they were unable to employ in their practice:

"I think I feel a bit frustrated rather than dissatisfied because I’m unable to use my skills. So more dissatisfied. I’ve got the knowledge but unable to use the skills."

1013f, male, intervention group, section 13

"Probably the same because there (are no) changes affecting the practice, that’s why because it’s more or less the same thing. Whatever knowledge, you’ve got it but you can’t implement it. As I said more power should be given, you know."

1040f, male, intervention group, section 13

Many in the intervention group perceived that their job satisfaction had increased, conversely pharmacists in the non-intervention group perceived no changes in their job satisfaction. Hence, the intervention, clinical training and service provision, had a positive influence on job satisfaction. The job satisfaction score in the intervention group was higher at phase three with a trend of increasing job satisfaction over time in the intervention group (sections 6.4.7.1 and 6.4.8.1). Indeed, some pharmacists perceived that participation in the Medicines Management
project had contributed to this increase and it was attributed to a variation in the work, acquiring new clinical roles in primary care, and being able to use their skills and knowledge for the benefit of the patients. However, some provided other services, such as smoking cessation and minor ailments scheme, which may have influenced satisfaction. These were not mentioned by the non-intervention group; the non-intervention group were likely to provide less services (section 6.3.3.1).

The longitudinal study design may have had an effect on all pharmacists' perceptions; they may have become conditioned by the study (Bowling 1997). Being interviewed and responding to the postal survey may have additionally increased the pharmacists' awareness of perceived improvements in community pharmacy and their expected positive influence on job satisfaction, which may, in turn, have come true. Given the range of opinions in both groups, it is unlikely that pharmacists expressed perceptions they thought were expected of them.

6.5.4.2 Changes in Sources of Satisfaction and Causes of Dissatisfaction and Suggested Improvements

Sections 4.5.4.2 and 4.5.4.3 described the perceived sources of satisfaction and causes of dissatisfaction emerging from the pharmacist interviews at phase one. Generally, the pharmacists perceived similar issues were sources of satisfaction and dissatisfaction at both phases (Figures 6.23 and 6.24), but some issues causing dissatisfaction at phase one were not present at phase three, maybe due to passing of time or these issues were important to pharmacists who withdrew or who declined to be interviewed at phase three. Moreover, external factors such as the new contract for community pharmacy may have had removed some of the issues perceived to cause dissatisfaction. Sometimes the perceived sources of satisfaction and causes of dissatisfaction were closely linked to each other, disputing the approach argued by Herzberg et al. (1959). The suggested improvements to community pharmacy at phase three were associated to both of these.
Four pharmacists in the intervention group felt satisfaction was a personal issue - either one was satisfied or not - and it was their own responsibility to motivate themselves. One claimed that starting in a new job would increase his satisfaction. The others felt generally satisfied, one linking satisfaction to CPD:

"I don't think you can ensure it [job satisfaction] for everyone. If someone is not satisfied at work, it may be that they are in the wrong field of work. I think maybe people do their job more effectively if they are taught, kept up-to-date and then they will get more satisfaction from it. If you fall behind you won’t really be up-to-date and you may not feel sort of satisfied but it’s hard. You can’t make everyone, I don’t think there’s some set way to make everyone satisfied at work."

1010F, male, intervention group, section 12

Few improvements were suggested to attitudes; many may have perceived that they now were appreciated by patients and other HCPs. Indeed, most perceived that patients trusted their advice and appreciated their services (section 6.4.9). Additionally, the intervention group may have achieved an improved working relationship with other HCPs through increased interaction within the Medicines Management project. In contrast, for one in three not receiving recognition from the authorities, this continued to cause dissatisfaction:

"I think the authorities could really think about how pharmacy could be used and then put their backs into getting that done. But it’s a lot talk at the moment and the new contract, in all the pharmacy pages you go through, lots and lots of talk about what pharmacists can do but very little follow through. I think that can be very frustrating."

1018F, male, intervention group, section 12
An integral part of being a community pharmacist is to offer help and support to patients in their medicine and healthcare related concerns (RPSGB 2004d). Therefore, unsurprisingly, being able to help patients and to fulfil the duty of care was perceived to be a source of satisfaction at both phases. Meanwhile many felt dissatisfied because they perceived they were not able to help patients as much as they wanted or that too much was demanded of them. Some felt that their attempts to help patients were hampered by legislation and felt dissatisfied at both phases. They thought that pharmacists should be able to supply certain medicines to patients who could not access their GP in the evenings or at weekends instead of having to refer them to the hospital:

"I think greater recognition of pharmacists by the NHS which is starting to happen but it's all too slow and a greater number of products available at the counter that are prescription only should be available as [pharmacy] medicines and endorsement. Also minor ailment scheme to be available through the NHS, through the pharmacies."

1023F, male, intervention group, section 12

Some of this dissatisfaction should be dispelled by pharmacists being able to supply a deregulated prescription only medicine to patients and by the new contract for the NHS services (sections 4.5.3.7 and 6.5.3). At phase one, many felt satisfied if they could also advise other HCPs, at phase three some in the intervention group voiced this source of satisfaction. They may achieved skills and knowledge through the Medicines Management project which enabled them to be confident when advising other HCPs:

"Certainly things like the Medicines Management, when the GPs take up your recommendations and you can see a health benefit for the patients and also seeing successful quitters on the smoking cessation scheme, that gives you a degree of satisfaction, yes."

1007F, male, intervention group, section 13

At phase one there were concerns about the then remuneration system paying for the number of prescriptions dispensed and not promoting introduction of services. While the new contract was expected to change the remuneration system, improvements to it were not suggested at phase three. Nonetheless, some pharmacists perceived remuneration still not to be sufficient at phase three; this caused dissatisfaction. Some pharmacists perceived that receiving sufficient remuneration for the provision of services ensured that they could provide those services, hire and retain staff and participate in training activities:
"But you need more people to work for you to develop your other skills and that is difficult because you need money, basically, and you need other facilities [consultation area]. Everything boils down to money in the end. It's difficult because no-one is really talking about remuneration."

1001F, male, intervention group, section 12

At phase one, being able to train staff was a source of satisfaction for one pharmacist in the intervention group. Interestingly, training staff was not a source of satisfaction for others at either phase. Few pharmacists work with another pharmacist, although they may be preregistration tutors or involved in postgraduate education. One pharmacist, who worked for a national pharmacy chain, felt satisfied in being able to share her skills, knowledge and experience with colleagues at both phases:

"I have been able to tell colleagues who are not taking part [in the Medicines Management project] about my experience and now they have got involved in other things, they are learning. And this was through me, they too became enthusiastic."

1004F, female, intervention group, section 13

Satisfaction or dissatisfaction were related to improvements in community pharmacy. At phase three one pharmacist perceived that other HCPs already provided the new services being offered to community pharmacy:

"I never said I am unhappy about my work. At the same time I don't want to do something that other professionals are already doing. Like say, a nurse is doing a diabetics clinic which is about a two-minute walk from where I am, then I don't really see any benefit or any pleasure for doing the same thing. So, really to me, I am quite fairly happy at what I am doing today."

1014F, male, intervention group, section 12

Conversely, many pharmacists perceived that their main role in dispensing made work tedious and thought that varied roles in their work in community pharmacy were or would be a source of satisfaction. Additionally, many felt that they could not use their skills and knowledge appropriately. Hopefully, as described before, providing advanced and enhanced services, for example, smoking cessation counselling or medication reviews, will change this:

"I think sometimes it just feels like, I don't know if every job feels like that, but I feel like you're in a factory line sometimes. When you work in a busy pharmacy, you're just constantly checking, constantly checking the work and not necessarily dispensing but always have prescriptions to check. Whereas I think that sometimes it is a bit monotonous. I find that if there was variation it would be a bit more stimulating."

1002F, female, intervention group, section 12
Chapter 6: Results and Analysis

"Just give pharmacists more clinical roles. You know, the smoking cessation has been good, so, you can take it from there. Like I said, just give us the opportunity to do more things."

1033F, female, intervention group, section 14

Additionally, one pharmacist advocated pharmacists' greater involvement in clinical patient care, as a means for safer use of medicines. If pharmacists worked more closely with other HCPs in primary care and had knowledge of patients' medical history, they would be able to better assess their patients' medical treatment to ensure the best care:

"More patient involvement in terms of following the whole history, following the whole therapeutic [sector] of treatments that we're giving. Sometimes we're just dispensing blindly, not realising what the treatment is for, what the diagnosis is or we can't get involved because we only get half of the story. We can't decipher everything from just the prescription we receive, so really from that element we're just stuck to the supply role. We're really not involved in how the patient is being treated, that way it'll provide better satisfaction that we are treating the right people for the right things."

1042F, male, intervention group, section 12

Community pharmacists will need to prove their competence through accreditation provided by higher education institutes to provide advanced services, and to become more involved in clinical patient care (Department of Health 2003a; Department of Health 2004a). Some pharmacists in this study did perceive that they would have to undertake CPD to provide new services (section 4.5.3.7). Additionally, at both phases some perceived their involvement in CPD was a source of satisfaction in their work, for which they would need more time:

"I think you need to keep up with the latest information that keeps you more interested. If you're doing CPD, I don't see why you're not satisfied really."

1009F, female, intervention group, section 12

Some thought that their workload was too high that the hours they had to work were too long, both attributed to stress. Perhaps through their experience in the Medicines Management project, many pharmacists perceived, to provide new services and to participate in training, they would need to hire another pharmacist or more staff to delegate dispensing and other duties:

"Maybe by the time we start doing those ones [new services], you know, it will put more pressure because it keeps me out of services [dispensing]. [...] But maybe if you have enough staff to help do them then you do some supervision. There are a lot of things which we can do here which we are not doing at the moment."

1011F, male, intervention group, section 14
At both phases, being able to earn a good living was a source of satisfaction for pharmacists. Some pharmacists felt that there was no guarantee for their income. Despite providing NHS services, community pharmacies were treated as businesses responsible for their own profitability. This perception was mixed with uncertainty for the future. At phase one the Governments’ consultation of deregulating control of entry to establish community pharmacies (Anonymous 2003) was seen as a threat to independent pharmacies and some pharmacists felt still insecure at phase three. Additionally, one in three expressed uncertainty towards the changes in community pharmacy at phase three. Whilst some felt that the changes were not happening quickly enough, others felt apprehensive of the future:

"I think at the minute because there is so many changes, I think the goal posts as far as pharmacy profession is concerned, what your task I suppose, especially with community pharmacist the goal post has now changed. I think once those changes are being made and hopefully there is a stabilisation period job satisfaction will increase."

1021F, male, intervention group, section 12

"I think like uncertainty in the profession and, you know, when we have a contractor in we don’t [know] whether he’s going to be honoured. Now all of a sudden they have this business of supermarkets opening up pharmacies and it’s supposed to be good but it sort of undermines our companies."

1082F, male, non-intervention group, section 13

Perceptions of satisfaction and dissatisfaction in the intervention group may have been influenced by their participation in the Medicines Management project. Their perceptions of the project are explored in the next section.

**SUMMARY**

* the proportions of those entirely satisfied with their career and those contemplating change of career within pharmacy had increased, conversely, the proportions of those conditionally satisfied and those contemplating leaving pharmacy had decreased between the phases
* half of the interviewees, all in the intervention group, felt more satisfied with their jobs by this phase, the perception of increased satisfaction was attributed to participation in the service development project, local initiatives and national policies
* some in both groups felt more satisfied as they had learnt to expect less and had become able to bear their disillusionment
* some in both groups were either still dissatisfied or had become more dissatisfied by this phase, the perception was attributed to that promised improvements had not materialised
* at both phases similar issues were perceived to be sources of satisfaction, for example, being able to help and support patients and causes of dissatisfaction, for example, perception of not being valued by the authorities
6.5.5 Exploring Perceptions of Medication Review Service

This section explores perceptions of the intervention group of the Medicines Management project and their medication review performance (Figure 6.25).

![Diagram of analysis strategy](image)

Figure 6.25. The analysis strategy for exploring perceptions of the medication review service.

6.5.5.1 Influences on Perceptions and Methodological Difficulties

The intervention group described the problems that occurred during the Medicines Management project, which may have influenced their perceptions of medication review service, CPD and professional satisfactions. A summary of these problems emerging from the interviews is displayed in Table 6.16.
Table 6.16. Perceptions of problems within the Medicines Management project.

<table>
<thead>
<tr>
<th>EXPERIENCED PROBLEMS: describes the perceptions of problems that occurred during the medicines management service project</th>
<th>CATEGORY</th>
<th>PROBLEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>A general lack of communication, facilitation and support, and encouragement between the project team, the PCTs and the pharmacists.</td>
<td></td>
</tr>
<tr>
<td>Prolonged Project</td>
<td>Too long a time gap between training and patient interviews, and the patient interviews themselves; this had led to waning of initial enthusiasm and motivation and forgetting the acquired knowledge. Some patients were thought to have forgotten the project or its aims.</td>
<td></td>
</tr>
<tr>
<td>Information Technology</td>
<td>Many computers did not function, or there was a problem with the software program. Some pharmacists confessed to having poor IT skills.</td>
<td></td>
</tr>
<tr>
<td>General Practitioners</td>
<td>Local GP surgeries not participating caused disappointment. GPs were poor at giving feedback on medication reviews.</td>
<td></td>
</tr>
<tr>
<td>Patients</td>
<td>Appointments with patients had been difficult to arrange. Interviews with control patients had been difficult because patients and their circumstances were unfamiliar and it had been difficult to provide the service for them.</td>
<td></td>
</tr>
<tr>
<td>Workload</td>
<td>The service was additional work, there was limited time to provide the service, and it was difficult to complete interviews, care plans and GP referrals during the working time.</td>
<td></td>
</tr>
<tr>
<td>Venue</td>
<td>Domiciliary visits were uncomfortable and more time consuming than appointments at pharmacies and GP surgeries, and travelling from one patient to another took time. GP surgeries were not the right place to provide a community pharmacy service, and they might not be open after surgery hours. It had been difficult to arrange locum cover needed for appointments outside pharmacies.</td>
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</tr>
</tbody>
</table>

Three pharmacists were unable to provide medication reviews because their local GP did not participate or they perceived their workload to prevent them from providing an additional service. Six others were not able to use the laptop computer given to them for the service provision; though it should have been possible to help the pharmacists whose laptops caused problems. These pharmacists had chosen to participate, successfully completed the intensive training and wanted to be able to provide medication reviews; instead, they became disenchanted due to a lack of support. Half of all pharmacists experienced problems with the computers. The software programme that had been developed for the service tended to malfunction and some pharmacists were not computer-literate. The training concentrated on pharmaceutical knowledge and skills rather than computer literacy. The pharmacists were shown how to use the software programme, but seemed to need more than one-day training.
as well as follow-up of skills. Before a computerised service is implemented, pharmacists may require individual training on computing to prevent stalling the service:

“I had problems with my computer. I phoned up to say there was a problem and I was told somebody was going to come and do it. Nothing happened and that was a bit frustrating for me. So, I couldn't kind of, like see things through which I wasn't very happy about.”

1032F, female, section 14

“I think it's lack of practice, really, that caused my computer problems.”

1023F, male, section 14

A lack of support and poor communication between the project team, the PCTs and the pharmacists were identified as problems by half of the pharmacists. Additionally, one in four thought that communication between general practitioners and community pharmacists had been poor. The pharmacists felt that GPs ignored the advice given to them:

“We didn't get much feedback from the GPs. I think we might have been ignored. At first I felt uncomfortable writing [patient referrals] because in the past we pharmacists have not been taken seriously by the GPs.”

1004F, female, section 14

More than one in three thought that the project had gone on for too long. They perceived that there had been two time gaps, the first between the initial training and the start of the service provision and the second before interviewing the patients for the second time. Five pharmacists perceived that their motivation to participate decreased as a result:

“I think what could have been more beneficial to me [...] was if I had a few [patients] on three monthly to six monthly [intervals] to see what really happened [to their treatment].”

1014F, male, section 15

Home visits made many feel uncomfortable, especially with an unfamiliar patient because they were unaware of the patient's circumstances. Whilst providing the service at a GP surgery was considered better than a domiciliary service, the pharmacists preferred to provide it at their own pharmacy.
"But surely [...] community pharmacists stay in the pharmacy, they don't go to people's houses and sort out their medications. They do it by the patients coming into the pharmacy, OK. Not even the doctor's surgery, otherwise there would [not] be such a thing as an independent pharmacist or community pharmacist."

1013F, male, section 14

Some felt that they had to provide the service after working hours because they did not have time during the day or could not get locum cover. They were adamant that there should be a structure for them to provide the service as part of their practice during their working hours. Two pharmacists said they would have to employ another pharmacist or technicians to manage the workload:

"So, if I get two technicians in here who are competent, I can spend more time doing [reviews]. I can't do both, I'm just too busy"

1035F, male, section 20

### 6.5.5.2 Training for the Medication Review Service

The intervention group had to successfully complete clinical training before providing the medication review service (section 4.2.4). A summary of the perceived benefits of as well as problems with, the training emerging from the interviews is displayed in Table 6.17.

<table>
<thead>
<tr>
<th>TRAINING: describes the perceptions of the clinical training for medication review service</th>
<th>CATEGORY</th>
<th>OPINION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits of training</td>
<td>The pharmacists perceived the training had been beneficial because: * it had been useful and helpful as preparation for providing medication reviews; * it had increased or refreshed pharmacists' knowledge; * it had an influence on practice and patient care; * it gave confidence for practice; and * it had prompted reflection on learning needs.</td>
<td></td>
</tr>
<tr>
<td>Problems with training</td>
<td>The pharmacists perceived the training had had its downside because: * it had been extra work; * it had been a difficult and intense course; and * it was perceived to have been aimed for hospital work and too detailed for community pharmacy.</td>
<td></td>
</tr>
</tbody>
</table>
Many thought that the training had been difficult and required a lot of work, perhaps implying pharmacists’ lack of clinical knowledge or lack of time and suggesting challenges for future service developments and the implementation of the advanced services. Nonetheless, they had been motivated to complete the training. The training had been useful and helpful; it had prepared pharmacists for providing medication reviews. The knowledge the pharmacists had acquired was not only applicable for this service but had impacted their everyday practice. The training had also given confidence:

“I actually really enjoyed [the training] when I was doing it. Even though it was extra work, you know, weekends and evenings, I did actually feel quite motivated doing it.”

1002F, female, section 16

“I’ve used [the knowledge], I mean, I suppose in an unofficial capacity I use it now in the everyday work that comes along. Because you look at the prescriptions and occasionally I’ve actually spoken to the GP and said: ‘You know, do you think this is right?’ [...] It makes you look at the scripts and it gives you more insight into the prescriptions and it makes you think ‘They really shouldn’t be having this lot of stuff. They really should be doing it some other way.’ It gives you more insight into what is going on.”

1024F, male section 16

The median year of graduation was 1985, education and training of pharmacy undergraduate students have changed markedly in the last 20 years (for example, The School of Pharmacy University of London 1990; 1995). What pharmacists had been taught at the university had prepared them for pharmacy work at that time and what they had to learn during this clinical training may have been completely new to them. For example, at The School of Pharmacy, University of London, pharmacy practice course was expanded with emphasis on clinical pharmacy, interpersonal and communication skills to correspond with extended pharmacist roles in the years before 1990. Pharmacy practice was taught by clinical lecturers and teacher practitioners, and students came into contact with patients through hospital placements. Further, the teaching methods changed, introducing an integrated syllabus and increasing small group teaching, at The School of Pharmacy between 1990 and 1995. Guidance was also given to students on self-directed learning and the concept of life-long learning was introduced. Additionally, although many of the pharmacists had participated in continuing education activities, they may not have participated in learning at Certificate level. Some pharmacists needed more support in their training than was possible through distance learning.
Chapter 6: Results and Analysis

"The courses themselves are not particularly easy, they are quite difficult as well. We did try to get some help from local colleagues on certain things we didn't understand."
1042F, male, section 16

Some perceived that the training had included unnecessary information. As they perceived that the training had been developed for pharmacists in hospitals, they did not need to learn everything for community pharmacy:

"Some of [the training], some of it was a bit too technically geared to the hospital side. With regard to some of the cardiac work, was really kind of what the hospitals do when patients have heart attacks, and how to read ECGs and things like that which probably isn't relevant. It's nice to know as background but we're never going to actually be involved in that."
1007F, male, section 15

The training for a particular service should be relevant in order to keep pharmacists motivated to learn. Pharmacists do need to achieve appropriate understanding of illnesses and their treatment if they are to provide medication reviews competently. It is possible though that pharmacists may have different learning needs which should be taken into consideration when developing services and training. There may have to be an initial individual assessment of pharmacists' skills and knowledge or competence instead of requiring everyone to complete the same training for any particular service. One of the younger pharmacists felt the training did not contribute anything new; it had been a revision of what had been previously learnt:

"It's not something new, it's something that we've already learnt at Uni. But it just probably was refreshing your memory and, you know."
1033F, female, section 18

Those who were not able to provide the service thought that providing the service as well as completing the training would have given them experience and had a greater impact on their practice. Two pharmacists who did provide the service, one of them with an MSc in Clinical Pharmacy reviewed medicines of 69 patients, did not think the training had been enough to become a competent medication reviewer. They felt pharmacists should learn more before being accredited and suggested that a complete clinical pharmacy course was appropriate:

"Because I wasn’t enrolled with the actual seeing of patients, [attained skills and knowledge] sort of melted into the background."
1020F, male, section 16
"I think [the training] was possibly not OK for people who didn’t have initial [...] background. [...] I think they needed more than just reading about 4 or 6 modules and then becoming a whatever, medicines management pharmacist. [...] I think that the modules are not going to make everybody an expert, if you ask 10 of them; the person will just get the basic out of the modules that you need. [...] I think it was just that you train people and then put them in there without actually evaluating to see how much they know or how they perform before releasing them into the place. I think that’s what it was, just 6 modules and then here you are, you’re an expert then you just have to speak to the GPs and give them advice. So, more training I think. I would have gone for a full year part time training, just the same as the clinical pharmacist. [...] I think people just learn on the surface whatever it is. It’s just very basic and very unfinished, gone.”

1041F, male, section 16

The perceptions and experiences of training may have influenced the service provision which is explored in the next section.

### 6.5.5.3 Providing the Medication Review Service

Many thought that the patient interviews and care planning had not been difficult, but had gone quite well and had been interesting; they did not elaborate any further. Many perceived that their performance in general as medication reviewers had improved over time: they had gained more experience. However, pharmacists’ performance had not improved by interviewing more patients and they may have been unreliable in assessing their competence (sections 5.3.3 and 6.3.6). It is more likely that pharmacists’ confidence had improved. Indeed, two pharmacists who felt apprehensive at the beginning found their skill and confidence improved as they reviewed more patients. In contrast, two others perceived they already had attained the skill, and as a consequence did not become any “better” at interviewing patients. These pharmacists may have felt that experience in providing other services had prepared them for interviewing patients in this study:

"The more you do it, the more you become accustomed to it and you get better at it, yeah. Initially, you are not quite sure what to do but the more you do it, you become more confident."

1010F, male, section 17

"I didn’t see any difference because I’ve been doing smoking cessation, minor ailments, all different things and I tend normally… people will come and they start asking me. [...] From before, like I used to explain to people what they [medicines] are doing, what is this medication and what is that and why do you have to take this at night and why do you have to take this at daytime. Then, it just kind of carried on to a deeper limit."

1026F, male, section 17

295
It is essential to acknowledge individual experiences and needs. Some might feel confident when they start providing a service after training, others not. Even though pharmacists generally perceived that they had become better and more confident at reviewing over time, experience alone may not be enough to improve performance and competence. Becoming competent may be a more complex process and pharmacists may need more individual support and feedback:

"I did have some help [...] from the first few because although we'd done the training, when it came to do it for real, it was a bit difficult. But when we got the swing of it, we managed the others quite well. Some were quite satisfying to do. With more patients better review, definitely improved, yes. Although, I felt more confident about doing them because we'd done a few already."

1042F, male, section 17

The process of becoming competent in reviewing patients' medicines may be lengthy and difficult. In order for a medication review service to become part of practice, pharmacists may need more training than participation in this project allowed. Therefore, any training to develop competent service providers should incorporate not only theoretical learning but practice. It is possible that within the study design pharmacists were not able to review enough patients or review them often enough to become fully competent; this concern was expressed by three pharmacists:

"Again, a lot of pharmacists didn't [review patients' medications] afterwards, gave up eventually. I think a lot of pharmacists ended up doing 3 or 4, 5 patients and therefore there was nothing gained as far as they're concerned. I think the more you do, the better you get. The more I did the better I've got and that's in terms writing and compiling and whatever and I think a lot of pharmacists didn't have the opportunities that I had because they only did about 3 or 4, 5, 7 maybe 9, some people even didn't do any. And that doesn't give you a lot of experience anyway, so."

1041F, male, section 16

Some perceived that not only being good at reviewing patients' medicines but also being confident in advising GPs was essential to providing the service. Only a few pharmacists felt confident giving advice to GPs at the beginning of the medication review service. Self-confidence, prior experience in advising other HCPs, or a good working relationship with local GPs may also have been contributing factors. Professional barriers or a lack of confidence in one's skills and knowledge may have deterred others. Some felt they had needed the safety net of a clinical pharmacist checking their patient referrals before they were sent to a GP. Some
perceived that their confidence increased through experience, and the limited feedback and support given by the clinical pharmacist:

"I did do [patient] referrals. I felt OK actually writing them. I think what made it brilliant was what I got back from [the clinical pharmacist]. The adjectives to use. I think that made my conversation with doctors a bit different. Initially, I was a bit reserved in my opinion but now if I see a prescription actually and I don't feel happy with it, I'm quite happy with saying 'This is wrong. That is not the way it's supposed to be done.' And I'll speak to them about it that way. Rather than as, you know, 'Do you think it should be that?' [but] saying 'It is this'. Becoming more assertive, that's the word. So, the language is much more different now."

1013F, male, section 17

"I think I made comments, statements and [the clinical pharmacist] would send them back and I would agree or disagree. So, I didn't at this stage have the total confidence in actually making the referral because we are still sort of trainees as I understand it and it was going back to [the clinical pharmacist] to make sure that we were doing the right thing."

1035F, male, section 18

Conversely, pharmacists who interviewed patients in the non-intervention group did not receive any feedback and may not have felt supported in their practice and learning, and may not have become as confident in providing the service. Feedback from a clinical pharmacist was perceived to be important to receive if possible to build up expertise:

"It would have been good [to get feedback] because at least then you know that the work you put in, something did come out of it."

1009F, female, section 19

Pharmacists who did receive the feedback and support felt they were needed, suggesting that these may be necessary for becoming confident and competent in providing future services. The experiences of the Medicines Management project and perceptions of one's performance may have influenced the pharmacists' opinions of a future medication review service.

6.5.5.4 Medication Review Service in the Future

One of the reasons the pharmacists in the intervention group decided to take part had been that they wanted to become able to provide a medication review service in the future. Older male pharmacists, owners and some who had been unable to provide medication reviews within this project expressed the strongest reservations. However, four in five wanted to
proceed with providing medication reviews as a regular enhanced service, perceptions related with providing medication reviews are explored in this section (Figure 6.26).

![Diagram](image)

Figure 6.26. Perceptions of requirements for, and effects of medication reviews as an enhanced service.

Adequate funding for service provision was perceived to be a prerequisite together with the medication reviews being integrated into the contract for NHS community pharmacy services for the pharmacists to be able to provide the service within their usual working hours:

"We are always willing to look at these things provided we get appropriate financial aid to release my time from working in the shop to go away and see patients or whatever is relevant to that particular management. At the end of the day most pharmacies would want some sort of compensation. At the end of the day their business is their most important aspect of their life. Anything that distracts away from their business and they don’t get rewarded they are not likely to get too pleased about that.”

1020F, male, section 16

Community pharmacies are businesses within the NHS and they as such must be financially feasible through adequate remuneration to be able to serve the local community. At the time of the interviews the new contract for NHS services had not been published, many seemed to perceive dispensing as their main role, with which additional services, such as medication reviews, should not interfere. Dispensing remained as one of the essential services and a main source of remuneration in the new contract. In contrast, the provision of, and remuneration for
medication review service is to be agreed locally. Funding for medication reviews may have a minor effect on remuneration; it is understandable that some pharmacists were concerned about not having time to dispense medicines and provide medication reviews:

"The difficulty is the allocation of time because [...] I interview about three, five minutes and then all of a sudden I’m no longer free because we have an open door situation where anybody can walk in requiring attention straight away and whatever we were doing [we have to leave]. We can’t be doing two things at once. How we’re going to do it is the big question because although we can allocate a time to do it, somebody can come in requiring our services there and then which we’ve already committed for abiding. So, either we refuse the attention for people walking in because we’re dealing with a scheduled appointment... it’s very difficult to juggle.”

1042f, male, section 20

However, four pharmacists realised that they would not be able to provide both dispensing and medication reviews at the same time. They would have to employ dispensing technicians or another pharmacist:

"I think, as I said, I’m seriously thinking of getting another pharmacist because at the end of the day I think they do these things effectively. Either you have to start getting some sort of good skill mix which is getting checking technicians and things like that or getting another pharmacist. Because otherwise I think when you’re on your own it’s difficult; somewhat difficult. [...] So, you know, it’s time constraints.”

1027f, male, section 20

If pharmacists offered the service to patients who frequented other pharmacies, they would have to provide the service at GP practices or conduct domiciliary visits. Pharmacists preferred to provide the service in their own pharmacies where they could use patient medication records and reference books, and because of perceived problems with other venues (section 6.5.5.1). They also preferred to review medications of patients who normally used their services:

"Within the project, I never did any of my own [patients]. [...] That is what I prefer because of the availability of reference books. We hold patients with patient medication records and information, it means it would be a lot more useful, anyway.”

1037f, male, section 17

"I would like to do it. I think I would like to do it again with my own patients. I think that would be better, yes.”

1008f, male, section 20
A consultation area is required in the new contract for some NHS services in community pharmacy. Many pharmacists have built or are planning to build one in their pharmacy to provide services at the pharmacy (section 6.3.2). Building a consultation area requires financial commitment - one of the pharmacists hoped to receive support from the PCT for restructuring the pharmacy:

"The one factor that I think could help is maybe if we actually had a consultation area in the pharmacy rather than a private part of the dispensary. An actual designated consultation room or area would be a more suitable place to do some interviews."

1007F, male, section 18

Additionally, pharmacists wanted to work with a local GP who they were familiar with and could further develop mutual respect for each other's expertise. All this would ensure the pharmacists' motivation to provide the service as they would feel their patients would benefit. The pharmacists in this study perceived that their confidence in providing the service had improved through experience (section 6.5.5.3). Others might feel more comfortable and become confident, if they started reviewing medicines of familiar patients and became confident in their collaboration with local GPs before potentially supporting unfamiliar patients and GPs:

"The first few patients I knew rather well and I was familiar with their medications. Interviewing control patients was a challenge because I didn't know them and I think it was a good idea to have the patient profile in advance."

1004F, female, section 16

One in five perceived that patients would benefit from the service in the form of improved care. Additionally, reviewing patients' medications was perceived to be one of pharmacists' roles and part of community pharmacy practice. Lastly, some of the pharmacists believed that providing medication reviews and having a clinical input to patient care increased their job satisfaction:

"It's something that I have started to do anyway. It has become the nature of my practice."

1004F, female, section 19

"I think it would a very useful service for the patients and it would be quite enjoyable for us."

1010F, male, section 20
"The idea was brilliant and I get a huge amount of satisfaction doing it because I learnt a lot from every patients I saw. It was like a learning curve for me because I saw problems and I was learning how to deal with the problems and I wanted to do more basically. That's the role that I want to see myself doing, not just sort of counting tablets all day long. I want to be basically clinically managing people's prescriptions."

1019F, male, section 15

"I think it's good. There is not much I can say about that. It's going to be done anyway and seeing that we've done it, suddenly you more from the point of just dispensing to being extra responsible for the patient, I think it's good. It builds relationships and patient trust in you."

1038F, male, section 20

Most pharmacists perceived that their participation in a medication review service had been positive with its contribution to their new role in primary care and job satisfaction. They were enthusiastic to continue providing the service as long as they and the PCTs could agree on the terms.

**SUMMARY**
* the intervention group perceived they had experienced problems during the Medicines Management project, which may have influenced their professional perceptions and satisfactions and perceptions of the medication review service itself
* the training was perceived to have been beneficial but arduous, and many had become more confident in providing medication reviews over time, feedback was perceived to enhance confidence
* most wanted to continue providing the medication review service in the future and suggested how to improve the service that was perceived to improve patient care and job satisfaction
6.6 EVALUATING INFLUENCES BETWEEN SELF-ASSESSED COMPETENCE AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS

This section presents the evaluation of influences of self-assessed competence and participation in a service development, and pharmacists’ professional perceptions and satisfactions by interfacing both quantitative and qualitative data. As before, the evaluation is presented by comparing an attribute with an associated satisfaction or perception score and a quote from the in-depth interviews (section 4.6). These influences are discussed in section 6.7.

The influence of self-assessed competence was explored in the intervention group. Those who assessed themselves to be always competent in the ‘personal’ competency cluster, comprising behavioural statements on CPD, seemed more satisfied with their jobs and careers (sections 6.4.7.1 and 6.4.7.2). Confidence in one’s competence may enhance satisfaction; however, medication review performance was not positively related with self-assessed competence (section 6.3.6). Lower job and career satisfaction may result in striving to perform better to become more competent or to change one’s career (Tables 6.18 and 6.19).

Table 6.18. Influences between self-assessed competence and job satisfaction.

<table>
<thead>
<tr>
<th>Self-assessed competence</th>
<th>Job satisfaction</th>
<th>Quote: Satisfaction now compared with two years ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Personal' cluster</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Always                  | 16.00            | [I am more satisfied now than I was then] because then I wasn’t even doing smoking cessation. I wasn’t doing minor ailments. I am doing both more now, it’s like extra service and extra knowledge. I have to read wide amount to provide those services. So, it’s additional work, extra satisfaction providing them."
                  | Cl 95% 13.95-18.05 | 1011F, male, section 14 |
| Usually                 | 12.43            | "Probably a little bit more dissatisfied because the changes that we expected a little while ago. We took on these projects, the Medicines Management, [...] smoking cessation. [...] It’s been very difficult to implement them."
                  | Cl 95% 10.24-14.62 | 1042F, male, section 14 |
Table 6.19. Influences between self-assessed competence and career satisfaction.

<table>
<thead>
<tr>
<th>Self-assessed competence</th>
<th>Career satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Personal' cluster</td>
<td>Mean score</td>
</tr>
<tr>
<td>Always</td>
<td>15.00</td>
</tr>
<tr>
<td></td>
<td>CI 95%: 13.21-16.79</td>
</tr>
<tr>
<td>Usually</td>
<td>11.29</td>
</tr>
<tr>
<td></td>
<td>CI 95%: 9.23-13.34</td>
</tr>
</tbody>
</table>

Pharmacists who assessed themselves to be always and usually competent perceived that while they felt encouraged to further their development, they were already competent enough to work in community pharmacy (C70 and C77, Table 6.20). They may have thought of their current duties, or they may have perceived that they now could provide medication reviews. Both groups had plans for their professional development (D72), nevertheless some pharmacists continued to be uncertain if they could identify their learning needs. Evaluating, or reflecting on learning was not dependent on self-assessed competence (D75, Table 6.21). Pharmacists perceived that they thought about what they had learnt; whether evaluating their learning leads to change and development is less than certain and would require further follow-up.
### Table 6.20. Influences between self-assessed competence and perceptions of professional development.

<table>
<thead>
<tr>
<th>Self-assessed competence</th>
<th>C70 “I do not get encouraged to work towards further qualifications relevant to my job”</th>
<th>C77 “I have sufficient training to do my job effectively”</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Personal’ cluster</td>
<td>Median response: Disagree</td>
<td>Median response: Agree</td>
</tr>
</tbody>
</table>

#### ‘Personal’ cluster Quote: Planning professional development

**Always**

“I have [thought about my professional development]. I think I just need to read up on more topics. Say, dermatology [...] and also all of these new things that are coming into the pharmacy like, weight checks and cholesterol checks and advising about heart and diet. [...] I am already a smoking cessation advisor, so, I would like to follow all of the new health advisory roles. [...] So, I would like to develop in that way.”

1009F, female, section 10

**Usually**

“[I have been thinking about my professional development] on and off I have to say. I think I sort of tend to act on things that really interest me like, the smoking cessation and the minor ailments. Apart from the fact that obviously the PCT wants us to do it anyway. [...] One of the things that crossed my mind the other day [...] is that I’m not overly up-to-date on what all the new skin treatments are on eczema and psoriasis. So, in the near future that is something I shall have to [...] look at.”

1024F, male, section 10

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### Table 6.21. Influences between self-assessed competence and perceptions of evaluating learning.

<table>
<thead>
<tr>
<th>Self-assessed competence</th>
<th>D75 “After I have attended CPD events, I reflect on what I have learnt”</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Personal’ cluster</td>
<td>Median response</td>
</tr>
<tr>
<td><strong>Always</strong></td>
<td>Agree</td>
</tr>
<tr>
<td><strong>Usually</strong></td>
<td>Agree</td>
</tr>
</tbody>
</table>

The intervention group seemed more satisfied with their jobs and careers (sections 6.4.7.1 and 6.7.4.2). This increase in satisfaction was associated with participation in the Medicines Management project and other new roles initiated by local and national policies (Table 6.22). The job had become more varied, hence, more satisfying. In contrast, the non-intervention group had expected changes in community pharmacy but the promised new roles had not materialised and they felt dissatisfied. The intervention group saw a future for them in community pharmacy and was involved in new services and roles (Table 6.23).
Chapter 6: Results and Analysis

anticipating such changes, the non-intervention group continued to contemplate leaving community pharmacy if nothing changed. The introduction of the new contract for NHS services in community pharmacy may have influenced these pharmacists’ satisfactions (Department of Health 2004a).

Table 6.22. Influences between participation in a service development and job satisfaction.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Mean score</th>
<th>Quote: Satisfaction now compared with two years ago</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention group</strong></td>
<td>14.00 CI 95% 12.82-15.18</td>
<td>&quot;I do [feel more satisfied]! I have been active in a few things, new things. Minor ailments, prescribing and pilot projects and smoking cessation and Medicines Management and all that. So, add a bit more and you’ll be doing more than just dispensing.&quot; 1031f, female, section 14</td>
</tr>
<tr>
<td><strong>Non-intervention group</strong></td>
<td>11.70 CI 95% 9.98-13.42</td>
<td>&quot;I’m a bit more dissatisfied than three years ago. [...] When smoking cessation, and they were talking about emergency hormonal contraception and minor ailment and I did a bit of prescription [...] review but that was two years ago. I haven’t done much activity as such other than smoking cessation. Things they say pharmacists may get involved more, I haven’t seen them. Getting a bit more disillusioned.&quot; 1083f, male, section 15</td>
</tr>
</tbody>
</table>

Table 6.23. Influences between participation in a service development and career satisfaction.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Mean score</th>
<th>Quote: Future in community pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention group</strong></td>
<td>12.41 CI 95% 11.06-13.77</td>
<td>&quot;[I do see myself as a community pharmacist]. Maybe, I’m already doing the smoking cessation [...], the Medicines Management, maybe to run a clinic as well. Like as asthma clinical or to be doing things like the warfarin monitoring when it’s available, just to get more involved. [...] Things like that to make the job more clinically exciting.&quot; 1033f, female, section 13</td>
</tr>
<tr>
<td><strong>Non-intervention group</strong></td>
<td>9.85 CI 95% 7.79-11.91</td>
<td>&quot;[New services and roles] we like to do we never got a chance to do or the condition is not suitable for us to carry on. And we ended up doing things we had been doing for a long time, like dispensing. If the role is more fulfilling in the future, certainly I would stay. In the following five years I think I will be still in community [pharmacy, then] it would be hospital unfortunately.&quot; 1083f, male, section 12</td>
</tr>
</tbody>
</table>
Chapter 6: Results and Analysis

The pharmacists' responses to the personal development items did not alter over time (C70, C77). It seems that participation in training and providing a service may not be sufficient to change these perceptions. The intervention group continued to feel encouraged to study towards further qualifications (C70, section 6.4.10.1). Whilst both groups thought about their professional development, the intervention group seemed to plan their development and perceived that they were able to identify learning needs (D72, Table 6.24). The participation may have influenced them to become aware of their learning needs; however, both groups continued to perceive that they were fully trained to work in community pharmacy. Pharmacists seemed to understand the aim of CPD but had not realised that they may have learning needs (sections 4.5.3.1 and 6.5.3.1). While pharmacists had not reflected their learning at phase one, they perceived that they now evaluated their learning (D75, Table 6.25); the way of evaluating was dependent on the individual. Both groups linked evaluating and recording of learning together; however, few kept a record of their learning outcomes.

Table 6.24. Influences between participation in a service development and being encouraged to develop.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Median</th>
<th>Quote: Planning professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Agree</td>
<td>&quot;I have been thinking about my personal development like everybody else. You got a lot, you can learn a lot. [...] I'm possibly ahead of a lot of people [as] they haven't got the qualifications I have but I think there is still plenty to learn. There are quite a few areas I could go in and get better expertise than I [have] now.&quot;</td>
</tr>
<tr>
<td>Non-intervention</td>
<td>Uncertain</td>
<td>&quot;I do [think about my personal development] but it's quite frustrating. Some of the study days I like to go either they are not available in this area of the time is not convenient.&quot;</td>
</tr>
</tbody>
</table>

1041F, male, section 10

1083F, male, section 11
Table 6.25. Influences between participation in a service development and perceptions of evaluating learning.

<table>
<thead>
<tr>
<th>Participation</th>
<th>Median</th>
<th>Quote: Evaluating learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Agree</td>
<td>&quot;I try to evaluate [my learning]. I try to see what I have learnt and how I am going to use that in the day-to-day work in the pharmacy. But I don't actually make a record of it [...] like write it down.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-intervention group</td>
<td>Agree</td>
<td>&quot;Not always, I'm afraid. When I choose a study day I normally choose the one which is relevant to my day-to-day work. I suppose I evaluate later on when I come across something that I didn't know before the study day and later on if I can tackle the problem more effectively, I assume I have been able to make use of the study event.&quot;</td>
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</table>

SUMMARY
* Pharmacists assessing themselves to be more competent in the 'personal' cluster were more satisfied with their jobs and careers at this phase
* Feeling encouraged to further one's development, perception of being competent enough and evaluating one's learning did not influence self-assessment of 'personal competencies'
* The intervention group was more satisfied with their jobs and careers by this phase
* The non-intervention group continued to feel less certain about being encouraged to further their development
* Both groups perceived that they thought about their development and evaluated their learning by this phase
6.7 DISCUSSION OF INFLUENCES BETWEEN SELF-ASSESSED COMPETENCE AND A SERVICE DEVELOPMENT, AND PROFESSIONAL PERCEPTIONS AND SATISFACTIONS

This section discusses the findings presented in section 6.6; the limitations and the findings of the whole study are further discussed in Chapter 7.

By this phase the intervention group seemed more satisfied with their jobs and careers: the training and service provision had an effect on their professional satisfactions. The changes in their role would have to be perceived as permanent before a marked increase in professional satisfactions occurs. The increase in satisfactions was attributed to providing medication reviews and other new services, increased variation in the job, and local initiatives and national policies supporting change. Providing clinical services and having a challenging job are said to influence hospital pharmacists’ professional satisfactions (Quandt et al. 1982; Noel et al. 1982; Olson & Lawson 1996; Kawabata et al. 1998); similar activities may improve community pharmacists’ professional satisfactions. The non-intervention group had expected similar changes in their roles but felt let down by the authorities and dissatisfied, and continued to think about leaving community pharmacy.

Pharmacists seemed more satisfied with their jobs and careers the more ‘personally’ competent they thought they were. Confidence in one’s expertise may enhance satisfaction, or satisfaction may enhance confidence in one’s performance ability (Deselle & Tipton 2001). However, in this sample, the better the performance in medication reviews, the lower the self-assessed competence. Professional dissatisfaction seemed to influence wanting to perform better to become more competent in community pharmacy or elsewhere.

Most continued to perceive that they were fully trained to work in community pharmacy despite the expected changes to the NHS contract for community pharmacy services. The non-intervention group continued to feel less certain about being encouraged to study further, indicating that pharmacists are unlikely to embrace training for any new services before they have been implemented.
Most reported thinking about their professional development, suggesting some improvement over time, perhaps due to the expectation of participation in CPD becoming mandatory. However, community pharmacists have been reported to find it difficult to identify their learning needs (Attewell et al. 2005), suggesting pharmacists may require facilitation and support in their CPD. The intervention group seemed to plan their development and continued to perceive that they could identify their learning needs. Most pharmacists continued to report reflecting on their learning and described ways of evaluating their learning, but only few kept a record.
Chapter 7
DISCUSSING PROFESSIONAL PERFORMANCE, COMPETENCE, PERCEPTIONS AND SATISFACTIONS
7.1 INTRODUCTION

Limitations and methodological difficulties experienced during the study are discussed in this chapter together with the findings of the whole study and, finally, conclusions.

7.1.1 Limitations

Ideally, a sample of community pharmacists should have been selected and allocated in groups at random to allow comparison of intervention and non-intervention groups without intervening confounding factors in an intervention study (section 3.3.1). However, the recruitment of an intervention group was restricted to pharmacists working within the former Barking and Havering Health Authority. The group had been recruited by the former Health Authority; these participants may have been self-selected. However, due to the high level of commitment required of them, training and providing medication reviews over a long period of time, randomisation was not possible. Hence, a pragmatic approach to sampling and allocation to groups was applied.

Pendergast et al. (1995) observed that despite random sampling, pharmacists who showed more job satisfaction were more likely to participate in a service development project. In contrast, in this study, the intervention and non-intervention groups seemed equally satisfied at phase one, suggesting that the decision to participate in the service development project had not influenced satisfaction, or satisfaction alone had not influenced willingness to participate. Additionally, pharmacists working in the three PCTs showed similar levels of satisfaction and a comparison of professional satisfactions over time between the groups was possible.

The former Barking and Havering Health Authority limited the size of the intervention group to around 40 pharmacists (Appendix 1), therefore, calculating the size of a representative sample was not possible. Whilst this study involved quantitative methods, qualitative methods were also employed which require intensive work, restricting the sample size further but allowing detailed study (Smith 2002). Purposive sampling methods used in qualitative research were
employed to recruit the non-intervention group pharmacists, the findings of this small sample may not be generalisable. However, in the intervention group the range of performance in training and in medication reviews varied from poorer to better, while professional satisfactions in both groups ranged from very dissatisfied to very satisfied, suggesting that despite self-selection the sample may have been representative of a larger population.

7.1.2 Methodological Difficulties

A longitudinal study design was chosen to evaluate whether pharmacists’ professional perceptions would change over time and when the change would occur. Attrition of respondents was expected, pharmacists may have changed jobs over time or decided not to participate. The final findings represent the perceptions and satisfactions of those who responded to the longitudinal postal survey at all three points in time and were interviewed twice. The only known variables for non-respondents were gender and location of the pharmacy. The observed differences between the intervention and non-intervention groups may be biased due to lower response in the non-intervention group. The responses of late respondents may be assumed to be similar to non-respondents (Smith 2002). However, it was not possible to test differences between early and late responses due to a small sample size. In the longitudinal postal survey, waves of reminders were sent to non-respondents to encourage response and decrease attrition; 50% of the sample responded at all three phases. This response rate may be considered good. Cross-sectional surveys have reported response rates between 20 and 90% amongst community pharmacists (Smith 2002). In the interview study the non-intervention group were contacted a minimum of three times in an attempt to persuade them to interview. Despite their being busy, 14 were interviewed at phase one and five at phase three. The intervention group may have felt more obliged to participate or felt their experience had to be expressed, only one pharmacist declined to be interviewed at phase three.

Ideally, exploration of the professional perceptions and satisfactions of a sample of community pharmacists should have been conducted before the intervention group was recruited to decrease potential bias of the findings, but was not possible as the former Health Authority
recruited these pharmacists. At phase one, the survey and the interviews exploring professional perceptions and satisfactions were conducted as soon as it was practically possible. At this stage the intervention group had only started the training and there was little difference between the groups’ perceptions and satisfactions. The administration times of the other surveys in the longitudinal study and the phase three interview period reflected the advancement of the Medicines Management project. The intervention group perceived they experienced problems during the Medicines Management project which may have influenced their professional perceptions and satisfactions. The phases were longer than originally planned. Had they been shorter, the intervention group may have been more satisfied. On the other hand, changes preceding improved career satisfaction may be complex and take a longer time to have an effect. The whole process is complex and multi-factorial.

Postal surveys and interviews were chosen to explore pharmacists’ professional perceptions and satisfactions. The survey was relatively easy to administer and the findings were relatively easy to analyse and provided broad data. The interviews complemented the survey by providing in-depth information on complex perceptions and satisfactions, and proved a great commitment for the pharmacists and the researcher. After the intervention group had been interviewed face-to-face, it was decided that all subsequent interviews were to be conducted by telephone to minimise travel time from one pharmacy to another. Instead of individual interviews, group interviews or focus groups could have been arranged; however, pharmacists could not have been interviewed during their working day. They may not have wanted to participate after hours and travel somewhere to be interviewed. Focus groups would not have offered the same confidentiality as individual interviews; the pharmacists may have felt inhibited to discuss their professional perceptions and satisfactions in others’ presence (Smith 2002).

The intervention group was encouraged to keep a diary on their learning during the training at phase one; many declined or required assistance with the format of the diary. The pharmacists were encouraged to record their learning experiences again as the diaries designed for phases one and two were given to them. It was not possible to further facilitate the recording of CPD in this study. The pharmacists did not use the distributed diaries and few recorded their learning in other ways, suggesting that mandatory recording of CPD may be difficult for any pharmacist.
While the assessment of performance in medication reviews was based on a sample of all patient referrals written by the community pharmacists because the clinical pharmacist was not able to review them all for the comparison, this may be a useful research tool in the future. The referrals written by the clinical pharmacist were taken as "gold standard" because the researcher did not have access to additional patient information. Observing pharmacists' performance in medication reviews would have been logistically difficult, and maybe intrusive from the patients' and the pharmacists' perspectives, and may have influenced the review itself (Smith 2002). However, the performance assessment based on patient referrals contributed to knowledge of development of competence together with the self-assessed competence survey.
7.2 DISCUSSION

Overall the Medicines Management project or the intervention was successful: most pharmacists in the intervention group completed the training and many provided medication reviews for the sample of elderly patients in primary care. What’s more, they wanted to continue providing the service to improve patient care and to further enhance their professional satisfaction. Pharmacists undertook up to eight different types of learning activities; those providing more services and those possessing a postgraduate qualification participated in more activities during the study period. Provision of more services may require undertaking more learning activities, either as training to become accredited or keeping up-to-date with developing services. They would participate in relevant learning activities to develop professionally, to keep up to date and to refresh skills and knowledge also described by Attewell et al. (2005), and to enhance confidence and job satisfaction. Various factors influenced pharmacists’ choices of types of learning activities, indicating that they may not consider the advantages of all potential options available for them as suggested by the RPSGB (2004b). The intervention group felt more encouraged to work towards further qualifications relevant to their work and tended to perceive that patients appreciated their services and perhaps chose to participate in a service development project. While they thought the training for providing medication reviews was arduous, they perceived it was beneficial for providing that service and for daily practice. They showed determination to attain this accreditation, perhaps also to improve their professional satisfaction.

The pharmacists in this study were less satisfied than hospital pharmacists were in south of England (Rajah et al. 2001; Borja-Lopetegi et al. 2005), indicating differences between professional satisfactions in hospital and community pharmacy. Throughout the study, pharmacists wanted to help patients and advise other HCPs and to feel that community pharmacy services were appreciated, also reported by Ortiz et al. (1992) and Boardman et al. (2001), suggesting that these two domains are important for pharmacists to feel satisfied. Unfortunately, at the beginning of the study many felt that their attempts to improve pharmacy services were still restricted by authorities as reported by Thomas et al. (1996a; 1996b) almost a decade ago. The pharmacists felt they were not valued which, combined with a perceived lack of professionalism in community pharmacy, had caused disenchantment and, perhaps a
lack of motivation to develop performance and improve services. Pharmacists have been reported to change jobs to improve their professional satisfactions (Gaither & Mason 1992; Tweddell & Wright 2000; Boardman et al. 2001). However, these pharmacists rarely changed jobs. The career path in community pharmacy seemed to start from working as an employee in a chain pharmacy, continuing with work in an independent pharmacy and, perhaps, ending in owning a pharmacy. Whilst some contemplated leaving pharmacy, changing jobs was not an option for many. Instead, changes in community pharmacy were expected to improve the situation. However, uncertainty of the future of community pharmacy caused dissatisfaction in some.

There was a trend of increasing ‘job satisfaction’ and ‘career satisfaction’ scores in the intervention group, whereas in the non-intervention group the scores seemed not to change. By the end of the study, the intervention group seemed more satisfied with their jobs and careers. Many in the intervention group attributed the enhanced professional satisfactions to participating in the service development project, local initiatives and national policies: overall they felt more valued. The training and providing medication reviews seemed to have influenced professional satisfactions in the intervention group. Others in both groups were either still dissatisfied or had become more dissatisfied, due to promised improvements not materialising. However, the proportions of those who felt entirely satisfied with their careers, and those contemplating a change of career within pharmacy instead of leaving pharmacy altogether, had increased. Many in the intervention group wanted to continue providing the service. Whether these changes in satisfactions are sustainable over a longer period of time is uncertain but possible and requires further investigation. The change of the contract for NHS services in community pharmacy may give pharmacists more permanent opportunities to provide patients other services than dispensing and so has made some of these aspirations reality (Department of Health 2005c).

Pharmacists are expected to prove their competence before being able to provide advanced services, medicines use review and prescription intervention service, designed to support patients’ use and knowledge of their medicines (Department of Health 2005c). The assessment is based on competencies in the General Level Competency Framework (McRobbie et al. 2001; Antoniou et al. 2004). In contrast, the Department of Health did not give any guidance to PCTs
on the assessment of competencies required for providing enhanced services, for example, medication reviews (Department of Health 2005c). Few studies have reported training provided for community pharmacists reviewing patients’ medication, comprising of training up to six weekend workshops (Krass & Smith 2000; Benrimoj et al. 2003a; Benrimoj et al. 2003b; Benrimoj et al. 2003c). In this study, the distance learning course at Certificate level gave the pharmacists extensive training on four areas of therapeutics, with less emphasis on counselling skills. A demand for also training pharmacists in counselling was highlighted by a recent report into smoking cessation training (National Institute for Health and Clinical Excellence 2005), suggesting that specific training in counselling may enable pharmacists to provide many services.

In this sample, the training results were not associated with any specific pharmacist characteristics, perhaps due to the small sample size. Pharmacists achieving higher results in one module were likely to do so in the others, conversely, achieving lower results in one module was associated with other lower results. Larsson et al. (2004) suggested that perceptions of one’s role may influence learning and development of competence in trainee anaesthetists. The pharmacists achieving lower results in training may not have been motivated to change their role in community pharmacy. Individual differences, as well as motivation or a lack of it, influences learning (Burris 1976). They may have needed more support and feedback in their training to perform better, also suggested for smoking cessation training (National Institute for Health and Clinical Excellence 2005). While some pharmacists mainly perceived that external problems had prevented them from providing the service, a lack of individual support during the training may have led to not feeling confident enough to begin to review, or to review many patients’ medications.

Studies on the effects of pharmacists’ medication interventions on patient care have often used outcomes like impact of advice on patient compliance or knowledge of treatment, clinical or economic outcomes, or GP approval of advice as a measure of pharmacists’ contribution to healthcare (Caleo et al. 1996; Begley et al. 1997; Mackie et al. 1999; Granâs & Bates 1999; Zermansky et al. 2001; Holland et al. 2005). Krcka et al. (2005) reported that community pharmacists identified 34% of care issues after training provided by the CPPE when reviewing patients’ medications. In contrast, this study explored pharmacists’ favourable and unfavourable performances in providing medication reviews including incomplete and incorrect
identifications and recommendations. The pharmacists perceived that their performance improved over time. They identified 75% of the DRPs and suggested 58% of the beneficial solutions, suggesting that while they may not have become fully competent, the training had been more effective or pharmacists more motivated. On the other hand, Rethans et al. (1991) found that GPs may perform better in a test situation than in actual practice, indicating that interfering factors such as a lack of time may influence performance in practice.

Better performance in training seemed to result in better performance in medication reviews, indicating the usefulness of the training for providing medications reviews. Future performance in medication reviews may be predicted using a regression equation based on performance in training. Different type of training, perhaps with more extensive studies in therapeutics, combining distance learning with workshops and theoretical studies with practical learning and individual feedback, may yield different results in medication review performance. For example, outreach visits made little difference to GPs' prescribing habits, whereas formal seminars and workshops were reported to change GPs' behaviours (Santoso 1996; Watson et al. 2001; Witt et al. 2004). In this sample, the limited feedback some pharmacists received or limited experience of reviewing more medications did not influence performance. Pharmacists may require more individual support and feedback on their performance to develop their competence in medication reviews, also suggested for smoking cessation services (National Institute for Health and Clinical Excellence 2005). Different types of training need to be studied to find the most suitable and effective.

On average, the pharmacists self-assessed their competency in the four clusters to be in the usually category, indicating they thought they were mostly competent but identified some learning needs. Austin et al. (2004) reported that 86% of pharmacists met 'patient care competency' standards, others were offered education and training to become competent. In this study, self-assessed competence was influenced by gender, employment, type of company, postgraduate qualification, age and length of tenure. Pharmacists with a longer registration have demonstrated greater difficulty in meeting competency standards (Austin et al. 2004), suggesting deterioration of competence after graduation perhaps due to not participating in learning activities or forgetting skills and knowledge not used in practice, or changes in pharmacy education and pharmacy practice over the years (for example, The
Despite the training and providing medication reviews, the intervention group did not assess themselves to be more competent than the non-intervention group in any of the competency clusters. Both the training and providing medication reviews may have made the intervention group confront their learning needs, or they may have underestimated their competence while the non-intervention group may have overestimated theirs. Perhaps the more the intervention group learnt, the more they knew what they did not know. Additionally, in the intervention group better performance in training and in medication reviews was related to poorer self-assessed competence. Better performance in 'suggesting beneficial actions to solve DRPs' seemed to result in poorer self-assessed competence in 'delivery of patient care'. Future self-assessed competency in 'delivery of patient care' cluster may be predicted using regression equation based on 'performance in suggesting beneficial solutions to DRPs'. However, pharmacists may need more support to truthfully self-assess their competence, requiring further work.

Similarly, GPs, nurses and other community pharmacists have reported over- and underestimations of their performance (Jansen et al. 1995; Tracey et al. 1997; Latif et al. 1998; Glajchen & Bookbinder 2001; Barnsley et al. 2004), indicating more widespread difficulties with self-assessment of competence. Social desirability and overconfidence, or a lack of confidence were factors interfering with reporting true performance (Jansen et al. 1995; Latif et al. 1998; Glajchen & Bookbinder 2001; Barnsley et al. 2004). More support than was possible to offer during this project may be required for development of competence and confidence in one's competence. In this sample, older pharmacists tended to perceive that they were experienced enough not to participate in CPD, whereas younger pharmacists thought they were still developing their competence. In contrast, other newly qualified pharmacists perceived that they were at the peak of their pharmaceutical knowledge and did not need to participate in learning activities but needed to develop their communication skills (Ward et al. 2000). GPs were found to be more self-confident about technical clinical skills than GP trainees, whilst not necessarily more competent (Jansen et al. 1995), suggesting there may be groups of HCPs requiring support in their pursuit of different competencies and self-awareness of competence.
The CPD system the RPSGB is planning to implement relies on self-assessment of learning needs and taking responsibility for one’s learning (RPSGB 2005a). Most pharmacists had only a vague idea of CPD and the CPD cycle although the RPSGB introduced the concept in 2001 and has continued to inform pharmacists during the period of the study (RPSGB 2002c; RPSGB 2004b). Few expressed how they assessed their learning needs or evaluated their own learning. Attewell et al. (2005) reported that community pharmacists were unsure how to evaluate their learning. Pharmacists seemed to need support and facilitation in understanding how to approach the CPD process and to objectively assess their learning needs and improve their competence (James et al. 2002; Goldsmith et al. 2003; Antoniou et al. 2004). Throughout the study pharmacists tended not to feel responsible for their own development and by the end, few had plans for their development despite the passing time, suggesting they may not be independent, self-directed, adult learners (Lau 2003; Kaufman 2003). As teachers have a role in supporting undergraduate students in their development to become independent learners instead of being dependent on external guidance (ten Cate et al. 2004), pharmacists may need mentors to become independent learners and then mentor others.

Throughout the study many thought that external learning assessment was unnecessary or not desirable. Whilst many thought they reflected on their learning, few recorded these reflections; recording CPD was perceived as a task performed to meet the RPSGB’s requirements for CPD (RPSGB 2005a). Younger pharmacists, those working in chain pharmacies and those participating in a greater number of learning activities were more likely to keep a CPD diary. Keeping a learning record may be a company policy or a habit for younger pharmacists. They were more likely to work in chain pharmacies but they may have been also required to record their learning while studying at the universities. Remembering all the learning activities one has participated in may be easier if they are recorded; however, pharmacists in the intervention group were less likely to keep one despite participating in more learning activities. Despite encouragement and facilitation the intervention group did not record their learning experiences in the provided CPD diaries, suggesting challenges for mandatory recording of CPD. Many perceived that the Medicines Management project and their daily work were too demanding for them to keep a log on their learning as well. These pharmacists were not alone in not recording their CPD, few pharmacists have been reported to have a CPD portfolio (Mottram et al. 2002; Bell et al. 2002; Attewell et al. 2005). By the end of the study, pharmacists seemed
more positive about mandatory CPD participation, while, some had been threatened by it at the beginning. Hutchinson (2003) highlighted the importance of feeling that the learning environment and experience is safe for developing competence. Knowing that CPD records are ultimately monitored by the RPSGB, recording truthful, meaningful reflections of one’s practice and learning through these reflections may be difficult.

Many felt motivated to develop, but perceived that barriers may prevent them from participating in learning activities. By the end of the study pharmacists perceived three main barriers and suggested how to minimise their effect. Provision of more information on CPD was suggested to dispel the uncertainty of what mandatory CPD would mean for community pharmacists. Being or becoming self-motivated to learn and develop and realising the benefits of participating in CPD were perceived to help those who lacked motivation to participate. Lack of time for participating in learning activities reported by the pharmacists seems to be a perpetual barrier to participation (Hanson & DeMuth 1991; Ward et al. 2000; Bell et al. 2002; Attewell et al. 2005). Integration of CPD into the working day through support from employers and funding of CPD was perceived to increase the time available for CPD.

Pharmacists could be offered help with learning from their employers; however, this option may not be feasible in independent or small chain pharmacies. Facilitation may not be possible to provide by advisors working for PCTs and inspectors working for the RPSGB without employing more specific staff. Peer-assessment or mentoring provided by other local community pharmacists would require training of the mentors and may complicate relations between potentially competing pharmacists. However, tutors providing CPPE led training may be impartial. All these options are time consuming and require remuneration, training the assessors and providing the facilitation sessions. On the other hand, pharmacists could be taught to self-assess their skills and knowledge through training provided by higher education institutes, CPPE or other faculties. The training may be included in the undergraduate curriculum as one of the competencies MPharm students should learn. Of course, this option is arduous for the lecturers facing this task, but the sooner future practitioners learn to become independent learners and to self-assess their competence, the better for their further development and the quality of their work whichever career they choose.
7.3 CONCLUSIONS

This research showed that community pharmacists are willing to study to provide a new service and ultimately change their role within primary care. Hope of increasing job and career satisfactions motivated the intervention group and this was proved justified: their professional satisfactions improved throughout the study and at the end they were more satisfied with their jobs and careers than the non-intervention group. The improved satisfactions were credited to providing the service and becoming clinically more involved in patient care, together with other local initiatives and changing national policies. This positive finding supports the change of the contract for community pharmacy NHS services; satisfactions of other community pharmacists may improve as a result. Whether the improvement of professional satisfactions seen in this study are sustainable remains uncertain and needs to be studied further.

The training enabled the pharmacists to provide medication reviews to elderly patients and to integrate their new skills and knowledge into their everyday practice. Whilst the training by distance learning was extensive, it alone was not sufficient for pharmacists to become fully competent in providing medication reviews. Nevertheless, the pharmacists' performance was better than was reported by another study. Providing medication reviews may have to be regarded as part of the training. Additionally, in order for pharmacists to develop and maintain their confidence and competence in reviewing medications, they need more continuous, individual, close support and feedback than was possible during the Medicines Management project. Research into optimal training for providing medication reviews is required.

The intervention group was unable to assess their own competence with some under- and overestimation of their competence. If this disparity is more widespread, pharmacists may not be able to develop professionally as CPD is dependent on self-assessment of learning needs. What's more, throughout the study the concept of CPD and what it entails continued to be vague. It is uncertain whether pharmacists are able to embark on CPD without support and facilitation, especially as perceived barriers to participation in learning activities exist. Practising pharmacists need support now but new generations of pharmacists could be introduced to self-assessment of competence during the undergraduate pharmacy course. Undergraduate competencies need to be studied and a competency framework needs to be developed.
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Appendices
Appendix 1: Summary of the Medicines Management project protocol

Barking and Havering Medicines Management: A randomised controlled trial of community pharmacist medication review service

Aim

The aim of the Medicines Management project was to compare the impact of a community pharmacist medication review service to the general practices' usual repeat prescribing system on the quality and the cost-effectiveness of repeat prescribing for patients aged 65 years or more, receiving 4 or more repeat medicines simultaneously.

Objectives

The objectives of the Medicines Management project were:
1) to develop a medication review service led by specially trained and accredited community pharmacists;
2) to evaluate the impact of the medication review service on the number of drug related problems (DRPs) at baseline and at 6 to 12 month follow-up for patients aged 65 years or more, receiving 4 or more repeat medicines in the numbers of:
   * repeat medicines received at baseline and follow-up;
   * primary care consultations;
   * hospital consultations; and
   * hospital admissions;
3) to assess patient satisfactions;
4) to assess general practitioner (GP) satisfaction;
5) to evaluate cost-effectiveness of the service; and
6) to make recommendations for future medication review service delivery.

Study Participants

All pharmacists within the Barking and Havering Health Authority were invited to participate and up to 40 pharmacists were to be recruited. Each pharmacist had to complete 300 hours of training by distance learning before becoming certified as competent in medication review services.

All general practices within the Barking and Havering Health Authority were invited to participate. Eligible practices had to have a computerised repeat prescribing system and a suitable consulting room available for use by the pharmacist.

All patients aged 65 years or over, receiving 4 or more medicines on repeat prescription within participating practices were eligible to be invited to participate. Patients were excluded if they were unable to provide informed consent due to cognitive impairment or lived in residential or nursing homes.

Clinical Pharmacy Training

All training for pharmacists and assessment of course work were provided and organised by the Robert Gordon University, Aberdeen. The training comprised a two-day workshop on patient interviews and care planning, five distance learning clinical pharmacy modules at Certificate
level, and a one-day IT-training workshop to introduce a data collection software program
developed at the Robert Gordon University to the pharmacists. The workshop on patient
interviews and care planning and the Pharmaceutical care planning module aimed to prepare
the pharmacists to provide the medication reviews. The therapeutics modules encompassed the
treatment of major disease states. They comprised: Pharmaceutical care planning;
Cardiovascular therapeutics I and II; Endocrine therapeutics; and an optional module, either
Respiratory, Musculoskeletal or Gastrointestinal therapeutics. Each of the modules was worth
5 credits.

The training started with the Pharmaceutical care planning module and continued through the
compulsory modules to the optional module. Pharmacists had to achieve at least 40% of the
total in each of the five modules in order to become accredited. Whilst the pharmacists’
ability to formulate and document pharmaceutical care plans was assessed in the Pharmaceutical care
planning module, case studies with multiple choice questions, short answers and short essays
were used in the assessment of the others.

**Provision of Medication Reviews**

Patients were randomly allocated into intervention and non-intervention groups. Patients in both
groups were interviewed on their medications and care plans and referrals were written for
them. However, only the referrals of the patients in the intervention group were sent to the GPs
at the baseline. Patients in the non-intervention group received the standard care from their GP
between the baseline and the follow-up. After the follow-up interview referrals of both groups
of patients were sent to the GPs. Any life threatening DRPs were to be referred to the GPs
immediately, leading to the exclusion of the patient from the project.

Standardised summaries of patients’ medical notes held at the GP surgeries were provided for
the pharmacists by the researcher (a pharmacist) and another community pharmacist. The
pharmacists were allocated a minimum of 20 patients to be interviewed on their medications.
The pharmacists identified potential DRPs based on the summary of the medical notes and the
patient interview. If the pharmacists thought that any patient they had interviewed was
experiencing any DRPs, they wrote a pharmaceutical care plan for that patient detailing all the
identified DRPs and the actions they suggested to solve these problems. They also wrote a
patient referral prioritising DRPs they perceived to be most important and the actions suggested
to solve these to the patient’s GP who would decide on implementation of the suggestions,
excluding other less significant DRPs from the care plan to not overwhelm GPs with a number
of DRPs at the baseline. At follow-up the pharmacists referred any potentially unresolved DRPs
from baseline and any new DRPs they identified to the GP.
The Medicines Management project was conducted within the PCTs of Barking and Dagenham, and Havering where the intervention group of community pharmacists had been recruited by the former Health Authority of Barking and Havering. The non-intervention group of community pharmacists was recruited within the PCTs of Barking and Dagenham, Havering, Tower Hamlets, and City and Hackney.
Appendix 3: Ethical approval
Appendix 4: Professional perceptions and satisfactions questionnaire: phases one, two and three

Questionnaire

Please, tick as appropriate.

Gender
Female □ Male □

Location of pharmacy
Barking & Dagenham PCT □ Havering PCT □ Tower Hamlets PCT □

Consultation area in the pharmacy
Yes □ No □

Employment status
Proprietor □ Employee □

Contracted hours
Full-time □ Part-time □

Job security
Permanent □ Fixed term contract □

Please, give information about the following:

Number of months or years in current post __________ months / years (delete as appropriate)

Degree(s) and other qualifications:__________________________________________________________

Graduation year for BPharm/BScPharm __________

Additional appointments e.g. in the HA or LPC:________________________________________________

Please, tick as appropriate.

The used abbreviations are:
SD = "strongly disagree", D = "disagree", U = "uncertain", A = "agree", and SA = "strongly agree".

A61 All things considered, I am satisfied with my current job. □ SD □ D □ U □ A □ SA □

F56 I find challenge in my work. □ SD □ D □ U □ A □ SA □

C70 I do not get encouraged to work towards further qualifications relevant to my job. □ SD □ D □ U □ A □ SA □

E43 Patients show appreciation for the services I provide them. □ SD □ D □ U □ A □ SA □

A62 The idea of spending the remainder of my life in a job like my current one is depressing. □ SD □ D □ U □ A □ SA □

Please, continue on the next page.
<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>G34 I determine the extent to which I provide a clinical service.</td>
<td>SD</td>
</tr>
<tr>
<td>B68 If I were to pursue any type of career I wanted, I would stay in pharmacy.</td>
<td>D</td>
</tr>
<tr>
<td>F36 I am not clear about what type of duties (clinical, managerial, dispensing) are expected of me.</td>
<td>U</td>
</tr>
<tr>
<td>A63 I often leave work with a “bad” feeling, a feeling that I am doing something which I do not enjoy.</td>
<td>A</td>
</tr>
<tr>
<td>E40 Patients and customers treat me courteously.</td>
<td>SA</td>
</tr>
<tr>
<td>F60 I have the opportunity to make use of my skills and abilities at my place of employment.</td>
<td>SD</td>
</tr>
<tr>
<td>D75 After I have attended CPD events, I reflect on what I have learned.</td>
<td>D</td>
</tr>
<tr>
<td>C77 I have sufficient training to do my work effectively.</td>
<td>U</td>
</tr>
<tr>
<td>B66 If I had a son who told me he was interested in pursuing a career in pharmacy, I would encourage him.</td>
<td>A</td>
</tr>
<tr>
<td>G55 My work schedule is flexible.</td>
<td>SA</td>
</tr>
<tr>
<td>B67 If I had a daughter who told me she was interested in pursuing a career in pharmacy, I would encourage her.</td>
<td>SD</td>
</tr>
<tr>
<td>A64 I often get so wrapped up (interested) in my work that I lose track of time.</td>
<td>D</td>
</tr>
<tr>
<td>F35 I am expected to perform too many traditional dispensing duties.</td>
<td>U</td>
</tr>
<tr>
<td>D72 I plan my training and development need regularly.</td>
<td>A</td>
</tr>
<tr>
<td>E38 In general, I find that patients attempt to comply with the directions and advice I give them.</td>
<td>SA</td>
</tr>
<tr>
<td>F30 I do not feel able to perform clinical activities.</td>
<td>D</td>
</tr>
<tr>
<td>G8 I am allowed a sufficient amount of freedom to decide how I do my work.</td>
<td>U</td>
</tr>
<tr>
<td>B65 If I had to decide all over again whether to go into pharmacy, knowing what I know now, I would choose another field.</td>
<td>A</td>
</tr>
<tr>
<td>G22 I determine the pace at which I work.</td>
<td>SA</td>
</tr>
<tr>
<td>E39 Patients are only concerned about getting their medication as quickly as possible so that they can leave as quickly as possible.</td>
<td>D</td>
</tr>
</tbody>
</table>
Appendix 5: Professional perceptions and satisfactions interview guides and schedules:
phase one

Interview Guide for Barking & Havering
CPD & job and career satisfaction

Q1 What makes you satisfied in your work? What makes you dissatisfied at work? (A,F)

Q2 What does continuing professional development (CPD) mean for you as a community pharmacist?
* What are the major incentives for CPD for you?
* What would motivate you to take part in CPD? Why would you participate in CPD?
* What would you gain from CPD? What would your patients gain from CPD?
* What are the major obstacles for CPD for you?

Q3 What kind of CPD activities would you like to participate in?
Would you like to continue to take all the modules offered by the RGU?

Q4 How could/should CPD be assessed? Can it be assessed? Do you think it is possible to quantify the effect of CPD?

Q5 What effect could CPD have on your life?

Q6 How would you like to develop as a pharmacist? (C)
* Personally?
* Professionally?

Q7 What would you like to do in the future? (B)

Q8 Have you identified skills or knowledge that need brushing up? (D)

Q9 To what extent are you able to decide on the contents of your work? (G)

Q10 As far as you know, what kind of services do your patients appreciate? (E)

Footnote: The letters A-G refer to the factors in the survey.
Interview Guide
CPD & job and career satisfaction

Q1 What does continuing professional development (CPD) mean for you as a community pharmacist?
Q1A What are the major incentives for CPD for you?
Q1B What would motivate you to take part in CPD? Why would you participate in CPD?
Q1C What would you gain from CPD? What would your patients gain from CPD?
Q1D What are the major obstacles for CPD for you?

Q2 What kind of CPD activities would you like to participate in, CPPE evening meetings, workshops, distance learning? Or, already participate in?
Q2A What do you think about the PJ’s or the C&D’s CPD series?
Q2B Would you like to continue to take all the modules offered by the RGU?

Q3 Have you identified skills or knowledge that need brushing up? (D)

Q4 What do you think about the RPSGB’s plans to make participation in CPD activities mandatory?
Q4A What do you think about the system GPs have?
Q4B When is the best time for CPD, during the working day or in the evenings or weekends?

Q5 Who should decide on the contents of a pharmacist’s CPD activities, the individual, local authorities or say, DoH?
Q5A Is support or management needed, who should provide it?

Q6 Do you think it is reasonable to require 30 hours worth of CPD annually?

Q7 Now, CPD is for professionals, people who have their exams and grades, and of course you cannot be asked to go back to college and sit exams. How do you think the effect of CPD can be assessed? Sitting through an evening meeting might not be enough to learn? How could/should CPD be assessed? Can it be assessed? Do you think it is possible to quantify the effect of CPD?
Q7A Who should be appointed as an assessor?

Q8 What effect could CPD have on your life?
Q8A Do you feel more confident in your work with CPD/the MM course?

Q9 How would you like to develop as a pharmacist? (C)
* Personally?
* Professionally?

Q10 What would you like to do in the future? (B)
Q10A Do you see yourself as a community pharmacist?

Q11 What makes you satisfied or dissatisfied in your work? (A,F)
Q11A What makes you satisfied at work?
Q11B What makes you dissatisfied at work?

Q12 As far as you know, what kind of services do your patients appreciate? (E)
Q12A Do you think the easy accessibility is always a strength of the profession?
Q12B Do patients come to the pharmacy for advice?

Q13 To what extent are you able to decide on the contents of your work? (G)

Q14 What is your relationship with the local GPs?
Q14A Do you think that the Medicines Management project has an effect on that?

Q15 What are the new roles of pharmacists? Should the new roles of the pharmacists be promoted better?
Q15A Would you like to see pharmacy more as a part of the NHS/primary care?
Q15B Pharmacists as part of a health centre?
Q15C Views about LPCs/membership?
Q15D Promotion of pharmacists, appreciation by public/HCPs/Government?
Q1 What does continuing professional development (CPD) mean for you as a community pharmacist? What are the major incentives for CPD for you? What would motivate you to take part in CPD? Why would you participate in CPD? What would you gain from CPD? What would your patients gain from CPD? What are the major obstacles for CPD for you?

Q2 What kind of CPD activities would you like to participate in, CPPE evening meetings, workshops, distance learning, read the PJ or C&D? Or, already participate in?

Q3 Have you identified skills or knowledge that need brushing up? (D)

Q4 What do you think about the RPSGB’s plans to make participation in CPD activities mandatory?

Q5 Who should decide on the contents of a pharmacist’s CPD activities, the individual, local authorities or say, DoH?
Q6  Do you think it is reasonable to require 30 hours worth of CPD annually?

Q7  Now, CPD is for professionals, people who have their exams and grades, and of course you cannot be asked to go back to college and sit exams. How do you think the effect of CPD can be assessed? Sitting through an evening meeting might not be enough to learn? How could/should CPD be assessed? Can it be assessed? Do you think it is possible to quantify the effect of CPD?

Q8  What effect could CPD have on your life?

Q9  How would you like to develop as a pharmacist? Personally/professionally? (C)

Q10 What would you like to do in the future? (B)

Q11 What makes you satisfied in your work? What makes you dissatisfied at work? (A,F)

Q12 As far as you know, what kind of services do your patients appreciate? (E) Do you think the easy accessibility is always a strength of the profession?

Q13 To what extent are you able to decide on the contents of your work? (G)
# Appendix 6: Context of professional perceptions and satisfactions questions in the interview guides and schedules

## Interview Guides & Schedules

Perceptions of continuing professional development, competency & job and career satisfaction

<table>
<thead>
<tr>
<th>Phase one interviews:</th>
<th>Context</th>
<th>Phase two interviews:</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>before the start of the medication review service</td>
<td></td>
<td>after the conclusion of the medication review service</td>
<td></td>
</tr>
<tr>
<td><strong>Q1</strong></td>
<td>What does continuing professional development (CPD) mean for you as a community pharmacist?</td>
<td>To explore community pharmacists' perceptions of CPD.</td>
<td><strong>Q1</strong></td>
</tr>
<tr>
<td><strong>Q1A</strong></td>
<td>What are the major incentives for CPD for you?</td>
<td>To explore community pharmacists' perceptions of motivating factors and benefits of participation and potential obstacles in depth.</td>
<td><strong>Q1E</strong></td>
</tr>
<tr>
<td><strong>Q1B</strong></td>
<td>What would motivate you to take part in CPD? Why would you participate in CPD?</td>
<td>Motivational factors and barriers have been explored in surveys.</td>
<td><strong>Q2</strong></td>
</tr>
<tr>
<td><strong>Q1C</strong></td>
<td>What would you gain from CPD? What would your patients gain from CPD?</td>
<td><strong>Q2A</strong></td>
<td>Do you participate in any other learning activity outside your profession?</td>
</tr>
<tr>
<td><strong>Q1D</strong></td>
<td>What are the major obstacles for CPD for you?</td>
<td><strong>Q2B</strong></td>
<td>Would you like to continue to take all the modules offered by the RGU?</td>
</tr>
<tr>
<td><strong>Q2</strong></td>
<td>What kind of CPD activities would you like to participate in, CPPE evening meetings, workshops, distance learning? Or, already participate in?</td>
<td>To explore participation in CPD, if pharmacists have preferred learning methods and styles.</td>
<td>The RPSGB requires pharmacists to take part in every type of activity. Pharmacists may have their own learning styles and preferences - they cannot be expected to change. CPD may become a chore if there are too many requirements or restrictions.</td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>Have you identified skills or knowledge that need brushing up? (D)</td>
<td>To explore whether pharmacists could identify independently learning needs and whether they thought that participation in CPD was necessary for them. To explore community pharmacists' participation in CPD and motives for participation.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Lots. There's always something as years go by.&quot; Pharmacists did identify learning needs but may not think they do and do not record this.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>Do you evaluate your learning? How?</td>
<td>To explore whether the pharmacists evaluate their learning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prompt:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>After you have completed a learning experience, for example, [use the learning method from response to Q2], do you evaluate your learning? How?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Many pharmacists did identify learning needs but not many of them talked about evaluating their learning. Important for the future mandatory CPD.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Q4</strong></td>
<td>What do you think about the RPSGB's plans to make participation in CPD activities mandatory?</td>
<td>To explore community pharmacists' perceptions of mandatory CPD. To explore motivation for and barriers to participation in CPD and potential facilitation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q4A What do you think about the system GPs have?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q4B When is the best time for CPD, during the working day or in the evenings or weekends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Q4</strong></td>
<td>What do you think about the introduction of mandatory participation in CPD?</td>
<td>To explore whether the pharmacists' perceptions of mandatory CPD have changed.</td>
<td></td>
</tr>
<tr>
<td><strong>Q5</strong></td>
<td>Who should decide on the contents of a pharmacist's CPD activities?</td>
<td>To explore community pharmacists' perceptions of responsibility for learning, whether they are independent learners and need for facilitation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prompt:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The individual, local authorities or say, DoH?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q5A Is support or management needed, who should provide it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Q5</strong></td>
<td>Who should decide on the contents of a pharmacist's CPD activities?</td>
<td>To explore whether the pharmacists' perceptions of responsibility for learning had changed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prompt:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Who should decide on the contents of a pharmacist's CPD activities? The individual him/herself, local authorities or say, even national authorities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Q6</strong></td>
<td>Do you think it is reasonable to require 30 hours worth of CPD annually?</td>
<td>To explore community pharmacists' participation in CPD.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The question is not relevant anymore; recording of hours is not required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7</td>
<td>How could/should CPD be assessed? Can it be assessed? Do you think it is possible to quantify the effect of CPD?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Now, CPD is for professionals, people who have their exams and grades. And, of course, you cannot be asked to go back to college and sit exams. How do you think the effect of CPD can be assessed? Sitting through an evening meeting might not be enough to learn?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7A</td>
<td>Who should be appointed as an assessor?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8</td>
<td>What effect could CPD have on your life?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8A</td>
<td>Do you feel more confident in your work with CPD/the MM course?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To explore community pharmacists' perceptions of CPD assessment, whether it is possible and whether it is a necessity. To explore whether pharmacists are independent learners.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8A</td>
<td>To explore what community pharmacists perceive to be the benefit of CPD participation and potential obstacles for participation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Q8</td>
<td>What effect could CPD have/has on your work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Life&quot; made some pharmacists to think about barriers to CPD, which was expected. At the same time the question was meant to explore perceived benefits: increased confidence and competence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9</td>
<td>How would you like to develop as a pharmacist? (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there anything you would like to do?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9</td>
<td>To explore whether community pharmacists perceive development necessary or whether they think they are competent. To explore whether they are independent learners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Q9</td>
<td>How would you like to develop as a pharmacist? (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you thought about your learning needs and personal development? How would you like to develop as a pharmacist?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10</td>
<td>What would you like to do in the future? (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you see yourself as a community pharmacist?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10</td>
<td>To explore community pharmacists' career satisfaction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Q10</td>
<td>What would you like to do in the future? (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you see yourself as a community pharmacist?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To explore whether the pharmacists' perceptions of CPD assessment have changed.

To explore whether the pharmacists' perceptions of benefits of CPD have changed.

To explore whether the pharmacists' perceptions of development have changed.

"Life" changed to "work" led to responses of benefits and barriers.

To explore whether the pharmacists' perceptions of career satisfaction have changed.

The new prompt facilitated pharmacists responses.
| Q11 | What makes you satisfied or dissatisfied in your work? (A,F)  
| Q11A | What makes you satisfied at work?  
| Q11B | What makes you dissatisfied at work? | To explore community pharmacists' job satisfaction. | *Q11 | What could be done to ensure job satisfaction?  
| Prompt: |  
| As it is possible to feel dissatisfied about work, what do you think could be done to ensure job satisfaction? | To explore what the pharmacists would suggest to remedy potential job dissatisfaction. To explore whether the pharmacists' perceptions of job satisfaction had changed. | *Q11C | Are you more satisfied than dissatisfied? Or the other way round?  
| If you think back two years, are you now more satisfied than you were then, or more dissatisfied or maybe the same? Could you tell me why? |

| Q12 | As far as you know, what kind of services do your patients appreciate? (E)  
| Q12A | Do you think the easy accessibility is always a strength of the profession?  
| Q12B | Do patients come to the pharmacy for advice? | To explore community pharmacists' perceptions of patients and their needs.  
| | Not in the scope of this project. |  

| Q13 | To what extent are you able to decide on the contents of your work? (G) | To explore community pharmacists' satisfaction with their duties.  
| | Not in the scope of this project. |  

| Q14 | What is your relationship with the local GPs?  
| Q14A | Do you think that the Medicines Management project has an effect on that? | To explore community pharmacists' perceptions of general practitioners.  
| | Not in the scope of this project. |  

| Q15 | What are the new roles of pharmacists?  
| Q15A | Would you like to see pharmacy more as a part of the NHS/primary care?  
| Q15B | Pharmacists as part of a health centre?  
| Q15C | Views about LPCs/membership?  
| Q15D | Promotion of pharmacists, appreciation by public/HCPs/Government? | To explore community pharmacists' perceptions of development of community pharmacy.  
| | Not in the scope of this project. |
| QA | Did you interview any patients? Why not? | To explore perceived barriers to provision of the medication review service in the intervention group.  
External barriers: employers not letting, patients not attending, IT not working...  
Internal barriers: not confident... |
|---|---|---|
| QB | What do you think about the training you completed? In comparison with providing the service? | To explore the active pharmacists' perceptions of the training.  
Was the training adequate for the service? Did it make the pharmacists competent? |
| QC | How did you feel about the patient interviews and care planning? Becoming better over time? | To explore the active pharmacists' confidence in providing the service and their self-perceived competence. To explore the development of their confidence. |
| QD | Did you write GP referrals? How did you feel about writing them? | To explore the active pharmacists' confidence in providing the service and their self-perceived competence. |
| QE | Were you given feedback on the GP referrals? How did you feel about that? | To explore the development of the active pharmacists' competence. |
| QF | What do you think about providing the medication review service in the future? | To explore the active pharmacists' perceptions of the feasibility of the service, and their self-perceived competence. |
Appendix 7: Medication review performance assessment form

PERFORMANCE AS MEDICATION REVIEWER - 2003

<table>
<thead>
<tr>
<th>PATIENT</th>
<th>COHORT</th>
<th>PHARMACIST</th>
<th>SURGERY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of the interview</td>
<td>GP referral</td>
<td>Time of the referral</td>
<td>Feedback?</td>
</tr>
<tr>
<td></td>
<td>community pharmacist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>clinical pharmacist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

**DRUG RELATED PROBLEM: identified by the experienced pharmacist**

<table>
<thead>
<tr>
<th>1</th>
<th>Unnecessary therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Inappropriate choice of therapy</td>
</tr>
<tr>
<td>3</td>
<td>No indication apparent</td>
</tr>
<tr>
<td>4</td>
<td>Inappropriate formulation/delivery</td>
</tr>
<tr>
<td>5</td>
<td>Ineffective therapy</td>
</tr>
<tr>
<td>6</td>
<td>Inappropriate dose/dosing schedule</td>
</tr>
<tr>
<td>7</td>
<td>Untreated indication</td>
</tr>
<tr>
<td>8</td>
<td>Adverse drug reaction</td>
</tr>
<tr>
<td>9</td>
<td>Admitted non-compliance</td>
</tr>
<tr>
<td>10</td>
<td>Drug interaction</td>
</tr>
<tr>
<td>11</td>
<td>Monitoring required</td>
</tr>
<tr>
<td>12</td>
<td>Contra-indication</td>
</tr>
<tr>
<td>13</td>
<td>Counseling required</td>
</tr>
<tr>
<td>14</td>
<td>Add</td>
</tr>
<tr>
<td>15</td>
<td>Delete</td>
</tr>
<tr>
<td>16</td>
<td>Change</td>
</tr>
<tr>
<td>17</td>
<td>Other</td>
</tr>
<tr>
<td>18</td>
<td>Nothing to refer</td>
</tr>
</tbody>
</table>

**DRUG RELATED PROBLEM: identified by the experienced pharmacist**

<table>
<thead>
<tr>
<th>1</th>
<th>Clinical DRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Clerical DRP</td>
</tr>
<tr>
<td>3</td>
<td>Nothing to refer</td>
</tr>
</tbody>
</table>

**DRUG RELATED PROBLEM: identified by the community pharmacist - ACCURACY OR DISCREPANCY**

<table>
<thead>
<tr>
<th>0</th>
<th>DRP not observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DRP observed</td>
</tr>
<tr>
<td>2</td>
<td>Incomplete DRP observation; refining AND/OR addition of information required</td>
</tr>
<tr>
<td>3</td>
<td>Incorrect DRP observation</td>
</tr>
<tr>
<td>4</td>
<td>Low priority OR incorrect DRP observation</td>
</tr>
<tr>
<td>5</td>
<td>Nothing to refer</td>
</tr>
</tbody>
</table>

**IMPACT of accuracy of, or discrepancy in identification of a drug related problem to the patient**

<table>
<thead>
<tr>
<th>1</th>
<th>Benefit (DRP observed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Potential benefit (DRP observed but refining required)</td>
</tr>
<tr>
<td>3</td>
<td>Potential risk (DRP not observed OR irrelevant DRP)</td>
</tr>
<tr>
<td>4</td>
<td>Nothing to refer</td>
</tr>
</tbody>
</table>

xvii
### ACTION proposed by the experienced pharmacist

<table>
<thead>
<tr>
<th>No action proposed (Not a drug related problem)</th>
<th>Stop drug</th>
<th>Change dose/directions</th>
<th>Initiate therapy</th>
<th>Confirm indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change drug to new BNF subsection</td>
<td>Monitoring required</td>
<td>Change drug and/or formulation within the same BNF subsection</td>
<td>Counselling required</td>
<td>Add</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delete</td>
<td>Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nothing to refer</td>
</tr>
</tbody>
</table>

### ACTION proposed by a community pharmacist: ACCURACY OR DISCREPANCY

<table>
<thead>
<tr>
<th>No action proposed (DRP not observed OR DRP observed but action not proposed)</th>
<th>Accurate proposed action (DRP observed OR DRP observed but refining required)</th>
<th>Incomplete proposed action; refining AND/OR addition of advice required (DRP observed OR DRP observed but refining required)</th>
<th>Incorrect proposed action (DRP observed OR refining required)</th>
<th>Irrelevant OR incorrect proposed action (Not a DRP OR Potentially low priority DRP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

| Nothing to refer |  |

### IMPACT of accuracy of, or discrepancy in proposing an action to the patient

<table>
<thead>
<tr>
<th>Benefit (Correct proposed action)</th>
<th>Potential benefit (Refining of correct proposed action required)</th>
<th>Potential risk (No action proposed, incorrect proposed action OR irrelevant proposed action)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

| Nothing to refer |  |
Appendix 8: Diaries for recording continuing professional development and correspondence

Barking and Havering Medicines Management Study Log Book 2002

Footnote: This diary was given to the pharmacists in the intervention group as they attended the two IT-training events after having completed the Medicines Management clinical training course. The pharmacists were asked to record their plan for CPD for August - December 2002, reflect on their learning and record their experiences during the clinical training they had just completed and during the patient interviews they were about to start.
Personal Plan for Continuous Professional Development
August - December 2002

Objectives (fill in as many as you like)
1
2
3

Rationale
*
*
*

Development Method
*
*
*
*

Timescale

Criteria for Measuring Success

Outcomes or Conclusions of Development (to be filled in at the end of the CPD period)

Further Action or Development (to be filled in at the end of the CPD period)

Date for the plan development Review date

Signature

xx
Education and Training Record
August - December 2002

Course/conference name and date

Overview of course/conference content and learning outcomes

Key learning experiences
What were the main things you learned from this course/conference which resulted in a change in your practice?
Medicines Management Training Modules

*Care Planning
Submission Date

Key learning experiences and reflection

*Cardiovascular Therapeutics I
Submission Date

Key learning experiences and reflection

*Cardiovascular Therapeutics II
Submission Date

Key learning experiences and reflection
*Endocrine Therapeutics
Submission Date

Key learning experiences and reflection

*Respiratory/Musculoskeletal/Gastrointestinal Therapeutics
Submission Date

Key learning experiences and reflection
<table>
<thead>
<tr>
<th>Date</th>
<th>Issues discussed</th>
<th>Key learning experiences and reflection</th>
</tr>
</thead>
</table>

Peer Meetings
| Date | Key learning experiences and reflection |
Footnote: This diary was sent to the pharmacists in the intervention group as they started reviewing patients’ medications in the Medicines Management project. The pharmacists were asked to record their plan for CPD for January - December 2003, reflect on their learning and record their experiences during the patient interviews.
Personal Plan for Continuous Professional Development
January – December 2003

Objectives (fill in as many as you like)
1
2
3

Rationale
*
*
*

Development Method
*
*
*
*

Timescale

Criteria for Measuring Success

Outcomes or Conclusions of Development (to be filled in at the end of the CPD period)

Further Action or Development (to be filled in at the end of the CPD period)

Date for the plan development

Review date

Signature
Education and Training Record
January - December 2003

Course/conference name and date

Overview of course/conference content and learning outcomes

Key learning experiences
What were the main things you learned from this course/conference which resulted in a change in your practice?
Record of Important Experiences at Work

Date                  Key learning experiences and reflection
## Patient Interviews

<table>
<thead>
<tr>
<th>Date</th>
<th>Key learning experiences and reflection</th>
</tr>
</thead>
</table>

XXX
COMMUNITY PHARMACISTS’ IDENTIFICATION OF LEARNING NEEDS FOR CPD

This questionnaire aims to explore your views on a list of statements about community pharmacy practice. It is based on a grid designed to help community pharmacists identify learning needs to aid their continuing professional development. The responses to this questionnaire will be used to develop this grid further. Your responses are confidential and will be made anonymous.

This questionnaire consists of TWO sections. Please follow the instructions given at the start of each section.

SECTION 1

This section will help us learn a little bit about you.

Please tick a box or fill in the answers as appropriate.

1. Are you: [ ] Male [ ] Female

2. How old are you? ________ years

3. In what year did you qualify as a pharmacist in the United Kingdom? _______________________

4. Where did you study your pharmacy degree? ____________________________________________

5. I work: [ ] Full-time [ ] Part-time (<25 hours/week)

6. I am currently working as: (please tick the appropriate box)

<table>
<thead>
<tr>
<th></th>
<th>In an independent community pharmacy (not part of a chain of 5 or more)</th>
<th>In a medium sized (non-national) chain of pharmacies.</th>
<th>In a large national organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaried pharmacy manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A salaried/second pharmacist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A locum pharmacist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A community pharmacy owner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please state)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. How long have you been in your current post?______________ years/months
(please delete)

8. I have a: (qualifications)

[ ] Doctorate
[ ] Postgraduate Diploma
[ ] No further qualifications
[ ] Postgraduate Masters
[ ] Postgraduate Certificate
[ ] Other (please state)________________

Please describe the subject/field

9. I am currently studying for:

[ ] Doctorate
[ ] Postgraduate Diploma
[ ] No further qualifications
[ ] Postgraduate Masters
[ ] Postgraduate Certificate
[ ] Other (please state)________________

Please describe the subject/field

10. Do you hold any additional appointments e.g. work for the PCT on a sessional basis, LPC representative: [ ] Yes [ ] No

Please describe

11. Do you provide any additional services from your pharmacy? Please tick from the following:

[ ] PCT/GP led medication review
[ ] Qualified smoking cessation advisor
[ ] Screening/monitoring e.g. blood pressure/blood sugar levels
[ ] Supervised consumption of methadone
[ ] Minor ailments scheme
[ ] Weight management
[ ] Osteoporosis testing
[ ] Other (please describe)________________

Please give details of any training you have received to provide these services:
12. In which PCT is your pharmacy located?
[ ] Barking and Dagenham
[ ] Havering
[ ] Tower Hamlets
[ ] City and Hackney

13. Do you have a consultation area in the pharmacy?
[ ] Yes [ ] No [ ] Planned for the future

14. Do you keep a CPD log book?
[ ] Yes [ ] No

15. Please tick the activities you have undertaken in the last 2 years?
[ ] CPPE workshops
[ ] Conference attendance
[ ] CPPE distance learning
[ ] Other e-learning
[ ] CPPE e-learning
[ ] Local workshops and training
[ ] Reading relevant professional journals
[ ] Other distance learning material (e.g. NPA) please state_____________________
[ ] Other (Please give details) _________________________________
SECTION 2

This section consists of statements about working practices. Please place a **tick** in **ONE** of the boxes to indicate how often you feel you show these behaviours as a community pharmacist. If you feel the behaviour is not relevant to community pharmacy, please tick the right-hand column.

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Never</th>
<th>Not relevant or applicable to my work</th>
</tr>
</thead>
<tbody>
<tr>
<td>I retrieve all relevant patient information from medical and nursing staff, PMR and patient.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I document an accurate and comprehensive drug history.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I identify <strong>drug-drug</strong> interactions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>I identify <strong>drug-patient</strong> interactions e.g. allergies, pregnancy.</td>
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<td>I identify <strong>drug-disease</strong> interactions e.g. asthma and NSAIDs.</td>
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<td>I prioritise interactions appropriately according to the severity.</td>
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<td>I take the appropriate action to resolve interactions once identified.</td>
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<td>I ensure the correct dose for all patients.</td>
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<td>I ensure the dosage regimen is appropriate.</td>
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<td>I ensure the formulation and concentration are appropriate.</td>
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<td>I ensure the clarity of the prescription.</td>
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<td>I ensure the prescription is legal e.g. controlled drugs, date, signature.</td>
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<tr>
<td>I label dispensed medicines accurately.</td>
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<td>When responding to symptoms, I use appropriate questioning to obtain all the relevant information from the patient.</td>
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<td>When responding to symptoms, I refer the patient when appropriate.</td>
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<tr>
<td>When responding to symptoms, I document the consultation where appropriate in patient's record.</td>
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<td>I identify pharmaceutical problems e.g. adverse drug reactions.</td>
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<td>I prioritise pharmaceutical problems.</td>
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<td>I refer to and apply recent clinical guidelines where appropriate.</td>
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<tr>
<td>I take appropriate action to resolve or refer pharmaceutical problems.</td>
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XXXIV
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<tr>
<th>STATEMENT</th>
<th>Always</th>
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<th>Not relevant or applicable to my work</th>
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<tbody>
<tr>
<td>I document any interventions made.</td>
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<td>I accurately identify a patient's need for lifestyle advice.</td>
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<tr>
<td>I take into account the patient's background when delivering patient education (e.g. elderly, young mother, disability, health beliefs).</td>
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<td>I accurately identify a patient's need for medicines information.</td>
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<td>I communicate accurate and reliable information about medicines and drugs.</td>
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<td>I provide the information in an appropriate form.</td>
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<tr>
<td>I assess the outcome of my contribution to the patient's care.</td>
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<tr>
<td>I prioritise my work well.</td>
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<td>I am punctual.</td>
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<td>I demonstrate initiative when required.</td>
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<tr>
<td>I use my time at work efficiently and complete all my tasks.</td>
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<tr>
<td>I communicate clearly, precisely and appropriately with others.</td>
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<tr>
<td>I pass on relevant information to other pharmacy staff.</td>
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<tr>
<td>I recognize the value of all members of staff.</td>
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<tr>
<td>I work effectively as part of a team.</td>
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<tr>
<td>I recognise the value of other members of the healthcare team.</td>
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<tr>
<td>I use appropriate channels to refer patients to other members of the healthcare team.</td>
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<tr>
<td>I recognise the role of non-clinical staff within organisations (e.g. company or PCT).</td>
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<tr>
<td>I maintain patient confidentiality.</td>
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<td>I recognise my limitations.</td>
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<tr>
<td>I document all legally required information e.g. private prescriptions, CD register.</td>
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<td>I document critical incidents.</td>
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<td>I recognise and accept personal responsibility for my own actions.</td>
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<tr>
<td>I inspire confidence.</td>
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<td>I take responsibility for patient care.</td>
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<td>I maintain a CPD portfolio.</td>
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<td>I identify my CPD learning needs.</td>
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<tr>
<td>I evaluate my learning.</td>
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<tr>
<td>I am able to access information from appropriate information sources.</td>
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<tr>
<td>I am able to abstract key points from information gathered.</td>
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<tr>
<td>I keep information needed on a day-to-day basis up to date e.g. malaria chart.</td>
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<td>I am able to demonstrate a logical thought process to problem-solving.</td>
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<td>My knowledge of pathophysiology is excellent i.e. the effect of disease state on normal organ function.</td>
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<tr>
<td>I am able to discuss how drugs work.</td>
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<td>I am able to describe the major side-effects of drugs.</td>
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<tr>
<td>I am able to evaluate information gathered.</td>
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<td>I appraise the options available.</td>
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<td>I demonstrate clear decision making.</td>
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<tr>
<td>I provide accurate information (e.g. to patients, GPs, staff).</td>
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<tr>
<td>I provide relevant information (e.g. to patients, GPs, staff).</td>
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<tr>
<td>I provide timely information (e.g. to patients, GPs, staff).</td>
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<td>STATEMENT</td>
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<td>I ensure problems I have identified are resolved.</td>
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<td>I show an awareness of clinical governance issues in all tasks.</td>
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<tr>
<td>I follow the organisation's standard operating procedures.</td>
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<td>I look to improve the quality of the services offered.</td>
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<tr>
<td>I am able to identify the need for new services.</td>
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<tr>
<td>I use the appropriate references to ensure appropriate reimbursement e.g. drug tariff.</td>
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<tr>
<td>I claim reimbursement appropriately for local services provided.</td>
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<td>I am able to describe how prescribing budgets affect prescribing.</td>
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<td>I can describe the structure of my employing organisation.</td>
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<tr>
<td>I can describe the key organisations that affect service delivery e.g. NPA, PSNC</td>
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<tr>
<td>I am aware of and follow my organisation's policy on working with the pharmaceutical industry.</td>
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<tr>
<td>I ensure all staff are competent to undertake the tasks expected of them.</td>
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<tr>
<td>I am pro-active in training other healthcare professionals e.g. staff at residential homes.</td>
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<tr>
<td>I carry out staff appraisals on a regular basis.</td>
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<tr>
<td>I support staff to develop organisational and personal aspirations.</td>
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<tr>
<td>I show an awareness of employment issues.</td>
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<tr>
<td>I source pharmaceuticals in a timely manner.</td>
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<td>I resolve supply problems promptly.</td>
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<td>I ensure stock levels are well managed i.e. the balance between owing medicines and date expired stock</td>
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<tr>
<td>I ensure that the stock purchased maximises profitability.</td>
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Appendix 10: Professional perceptions and satisfactions interview schedule: phase three

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<tr>
<th>Pharmacist</th>
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<td>Tape</td>
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**Interview Guide**

**Follow-up**

Q1  What does continuing professional development (CPD) mean for you as a community pharmacist?

Q1E  As it is possible to feel that there are barriers to participation in CPD, what do you think could be done to ensure motivation to participate in CPD?

Q2  A number of different CPD activities or methods for learning exist; how do you choose your method for learning?

Q3  After you have completed a learning experience, for example, [use a learning method from response to Q2], do you evaluate your learning? How?

Q4  What do you think about the introduction of mandatory participation in CPD?

Q5  Who should decide on the contents of a pharmacist's CPD activities? The individual himself/herself, local authorities or say, even national authorities?
   - individual
   - local
   - national

Q7  CPD is about professional learning, and for people who have their degree. Do you think CPD should be assessed externally? Why? Why not?

Q8  Thinking about the potential benefits, what effect could CPD have or already has on your work?

Q9  Have you thought about your learning needs and personal development? How would you like to develop as a pharmacist?

Q2C  As a matter of curiosity, CPD is, of course, about professional learning, but do you participate in any other learning activity outside your profession?
   - Yes
   - No

Q10  What would you like to do in the future? (B) Do you see yourself as a community pharmacist?

Q11  As it is possible to feel dissatisfied about work, what do you think could be done to ensure job satisfaction?

Q11C  Are you more of satisfied than dissatisfied? Or the other way round? If you think back two years, are you now more satisfied than you were then, or more dissatisfied or maybe the same? Could you tell me why?

I am □ more satisfied than dissatisfied.
I am □ more dissatisfied than satisfied.
I am □ more satisfied now than before.
I am □ more dissatisfied now than before. □ The same.
The following questions apply for intervention group only.

QA  There have been some difficulties in providing the medication review service. Did you experience any problems? Did you interview patients?
   □ Yes - All of them   □ Yes - Some of them - Why?
   □ No - Why not?

QB  What did you think about the training you completed? In comparison with providing the service?

QC  How do you feel about the patient interviews and care planning? Becoming better with experience?

QD  Did you write GP referrals?
   □ Yes - How did you feel about writing them?
   □ No - Why not?

QE  Were you given feedback on the GP referrals? How did you feel about that?
   □ Yes
   □ No

QF  What do you think about providing the medication review service in the future?