

Transnational comparability of advanced pharmacy practice developmental frameworks: A country-level crossover mapping study.

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Abstract

Background: Previous work by the International Pharmaceutical Federation Education Initiative (FIPEd) demonstrates that even though some country-specific variations occur in pharmacy practice, there exists a set of practice-related competencies that are globally applicable. This study aimed to evaluate the transnational comparability of the Royal Pharmaceutical Society Advanced Pharmacy Framework (RPS-APF, Great Britain), and the Advanced Pharmacy Practice Framework for Australia (APPF). The objective was to obtain preliminary data on the transnational applicability of the developmental competencies contained in the two frameworks.

Method: A crossover mapping study involving 42 advanced level pharmacists from four countries was conducted. Qualitative interview (n=17) was also carried out to explore practitioners' perception of the frameworks.

Result: The average post-registration experience of the practitioners in the crossover study was 19 years. Directly observed within-subject agreement per advanced practice competency ranged from 45% to 86%. This agreement was significant for 87% of the competencies evaluated ($k \geq 0.21$; $p \leq 0.05$). The lowest agreement was in the “governance” competency ($k=0.13$; $p=0.21$). Wilcoxon sum rank test showed a statistically significant within-subject difference in the “collaborative practice” cluster ($p=0.043$). This was not observed in the other five advanced practice clusters. From the qualitative interviews, practitioners generally perceived the two compared advanced level frameworks as similar in content and indicated they found the described competencies to be useful for clarifying expectations of practice and identifying skills development needs.

Conclusion: These findings provide preliminary evidence of the comparability and

transnational applicability of the advanced pharmacy practice competencies contained in the two national competency development frameworks evaluated.

1 **Introduction**

2 The International Pharmaceutical Federation Education Initiative (FIP*Ed*) developed the FIP
3 Global Competency Framework (GbCF v1) in 2012 ¹. This framework was specifically
4 designed to provide global guidance on the practice-based expectations of foundation level
5 pharmacy practice. In this context, foundation level practice refers to pharmacists with
6 generally less than three years post-registration experience, or those returning to practice.
7 Ongoing validation of this developmental framework has demonstrated the relevance and
8 validity of the GbCF v1 competencies in 64 countries around the world ². This suggests that
9 even though some country-specific variations occur in pharmacy practice, there exists a set of
10 practice-related competencies that are globally applicable for foundation practice development.
11

12 The finding is in line with existing evidence from the field of medicine that has shown
13 transnational applicability of the Canadian CanMEDS Physician Competency Framework to
14 medical practice in Netherlands ³, Denmark ^{4,5} and Australia ⁶. It also corroborates evidence
15 from previous research that demonstrate the applicability of the General Level Framework
16 (developed in the United Kingdom, a precursor to the Foundation Pharmacy Framework⁷) to
17 pharmacy practice in Croatia ⁸, Serbia ⁹, Australia ¹⁰ and Singapore ¹¹.
18

19 Since its development, the GbCF v1 has been successfully used to design pre-service education
20 and training curriculum for undergraduate pharmacy students ¹². Also, Ireland ¹³, the Pacific
21 Island Countries ¹⁴, Serbia and Singapore have developed national frameworks for foundation
22 pharmacy level that are linked to the GbCF v1 ¹². The transnational validation of the GbCF v1
23 alongside similar evidence from the field of medicine underscores the feasibility and relevance
24 of a developmental framework that maps the expectations of professional practice for a global
25 pharmacy workforce. Further work is necessary to identify the transnational validity of the
26 core competencies required of an advanced (post foundation) pharmacy workforce.
27

28 Advanced pharmacy practice is generally held as that relating to practice that is implicitly
29 different from that achieved at initial registration¹⁵. Advanced practice can be, or should be,
30 demonstrably more complex with higher associated capabilities which can be professionally
31 recognised. This is particularly important in view of the global changing healthcare
32 environments where aging populations have resulted in increased prevalence of chronic and
33 co-morbid diseases that demand complex care services. Therefore, the availability of a

34 pharmacy workforce that is capable of providing complex evidenced-based medicines
35 expertise and pharmaceutical care services is essential.

36

37 A global survey of pharmacy organisations and professional bodies conducted by *FIPEd*
38 identified the existence of practitioner development frameworks for pharmacy practice in
39 twenty-seven countries ¹⁶. United Kingdom and Australia were the two countries with
40 published national developmental frameworks for advanced pharmacy practice ¹⁵. The
41 frameworks: the Royal Pharmaceutical Society Advanced Pharmacy Framework (RPS-APF)
42 and the Advanced Pharmacy Practice Framework for Australia (APPF), were developed and
43 mapped to population needs in United Kingdom and Australia respectively ^{17,18}. Further
44 systematic literature searching, and a survey conducted in 2015 (updated in 2016), did not yield
45 additional published national frameworks for advanced pharmacy practice, even though some
46 countries indicated the existence and national recognition of pharmacy specialties ¹⁵.

47

48 Content mapping, via a thematic analysis technique identified six competency themes (these
49 were the competency “clusters”) and 30 sub-themes (these were the developmental – or
50 behavioural competencies) common to the RPS-APF and APPF frameworks¹⁹. In total, 64
51 advanced pharmacy practice competencies were identified in the two frameworks with 34
52 contained in the RPS-APF and 30 in the APPF¹⁹. These competencies were commonly
53 described across three “levels” or “stages” of advanced pharmacy practice in both frameworks:
54 ‘advanced stage 1’, ‘advanced stage II’, and ‘mastery’ in the RPS-APF; and ‘transition’,
55 ‘consolidation’, and ‘advanced level’ in the APPF (Appendix 1).

56

57 A matrix of the competencies and descriptors in the RPS-APF cross-matched semantically with
58 corresponding competencies and descriptors in the APPF was created from the mapping
59 process¹⁹ (Appendix 2). The output of the framework mapping was presented to a panel of
60 international pharmacy experts (n=14) from nine countries for a review¹⁹. Consensus from the
61 expert group developed via a modified Delphi technique indicated broad similarity in advanced
62 practice competencies and descriptors between the two frameworks ¹⁹, further corroborating
63 existing evidence ²⁰.

64

65 The goal of this study was to evaluate the transnational comparability of the two frameworks.
66 The objective was to obtain preliminary data on transnational applicability of the
67 developmental competencies contained in these advanced level frameworks.

68 **Method**

69 This study was conducted in two phases. Phase 1 was a crossover study while qualitative
70 interviews were conducted in phase 2.

71 ***Sampling and data collection***

72 A convenience sample of practitioners from New Zealand, United Kingdom, Australia and
73 Ireland was used for this study. These were the countries identified to be actively involved in
74 formal articulation of advanced level pharmacy practice¹⁶. The pharmacy professional bodies
75 in these countries assisted with the project by disseminating study invitations to their respective
76 members via email. Participating organisations were the Pharmaceutical Society of Australia
77 (PSA), Society of Hospital Pharmacists of Australia (SHPA), Royal Pharmaceutical Society of
78 Great Britain, United Kingdom Clinical Pharmacy Association (UKCPA) and Pharmaceutical
79 Society of New Zealand (PSNZ). A minimum practice experience threshold of 5 years was
80 chosen for this study based on the consensus definition of advanced pharmacy practice^{18(p11)}.
81 Interested practitioners were requested to contact the study authors AU or AB using the details
82 included in the invitation. Practitioners who expressed interest to participate were assessed for
83 eligibility. Consent and enrollment forms were then forwarded by AU to the eligible
84 practitioners with enrollment completed on receipt of the signed forms. This study was
85 conducted between February and August 2014 with none of the participants indicating they
86 had undergone prior advanced practice credentialing in Australia or Great Britain. Figure 1
87 shows flow chart of the participant recruitment process.

88

89 ***Crossover study design***

90 A simple random allocation software was used to randomise study participants to either of two
91 groups: A or B. Participants self-assessed and mapped their practice on to one of the identified
92 frameworks at a specified time (T_1). After a three-month 'wash out' period, the same group of
93 practitioners then carried out a second self-assessment using the alternative framework (T_2).
94 The three-month washout period between the first and second assessment was calculated
95 respectively for each participant.

96

97 Each framework was fully reproduced and distributed via email as a questionnaire with the
98 inclusion of checkboxes for use by participants to self-assess their level of practice for each
99 competency (please see supplementary material Appendix 3 and 4). Participants used the
100 checkboxes provided to indicate their self-assessed level of practice per competency including

101 the type of ‘portfolio’ evidence they had available to support their assessment. A checklist of
102 12 sample portfolio evidences was provided for each of the competencies with participants
103 required to check as many evidence categories as available to support their individual
104 assessment. Completed documents were returned electronically.

105

106 ***Interviews***

107 The participants who completed the two self-assessments required for the study were invited
108 via email to participate in a semi-structured telephone interview. Interview time was agreed
109 between AU and each participant who indicated willingness to be interviewed. An email
110 reminder was forwarded to each participant prior to the interview date. The aim of the interview
111 was to explore participant perception of the two frameworks used with respect to content and
112 layout. It also aimed to obtain input on the self-assessment process (please see interview
113 schedule in appendix 5). Participants were interviewed until redundancy. Verbal consent for
114 audio recording was obtained from the participants at the start of the conversation. The
115 telephone interviews each lasted for 15-20 minutes and the recordings were transcribed
116 verbatim. A copy of the interview transcript was forwarded to the respective participants to
117 confirm validity.

118

119 ***Data analysis***

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121 The matrix of competencies created from the initial semantic framework mapping¹⁹ (Appendix
122 2) was used for the analysis. The objective of the analysis was to assess individual ranking of
123 matching competencies in the two frameworks. Within-subject agreement in ranking between
124 matching competencies in the frameworks was assumed to be indicative of parity for that
125 competency. Observed agreement was expressed using percentages. Kappa statistic (k) was
126 used to evaluate chance-corrected within-subject agreement (statistical significance was set at
127 $P \leq 0.05$). Values of $0 < k < 0.20$ indicated *slight or poor* agreement; $0.21 < k < 0.40$ *fair* agreement;
128 $0.41 < k < 0.60$ *moderate* agreement; $0.61 < k < 0.80$ *substantial or good* agreement; $k \geq 0.81$
129 *excellent* agreement; and $k = 1$ indicated *perfect* statistical agreement²¹⁻²³. Exploratory analysis
130 using the Wilcoxon sum-ranked test was also conducted to evaluate difference in within-
131 subject ranking of competencies.

132

133 The interview transcripts obtained in the second part of this study were coded and analysed
134 using a thematic analysis technique as previously described by Braun and Clarke²⁴. The
135 thematic coding was conducted independently by AU and AB with the results compared to
136 ensure credibility and reliability.

137

138 **Results**

139 **Crossover mapping study**

140 ***Demography***

141 After randomisation, twelve participants indicated they were unable to complete the first
142 assessment within the time required and dropped out. Also, two other participants were unable
143 to complete the second assessment due to role changes and these also dropped out of the study.
144 In total, 42 pharmacists from four countries completed the two self-assessments required for
145 the crossover study (Table 1). This included 15 participants each from Australia and New
146 Zealand, 11 from United Kingdom and one participant from Ireland. Majority (93%) of the
147 study participants were in hospital practice. Community, academic and primary care pharmacy
148 practice each had one participant represented. Mean length of practice was 19 years [SD: 11;
149 Min-Max: 5-52years]. More than half (57%) of the study participants indicated they were
150 leading-edge practitioners (please see Appendix 1 for definition of level of practice).

151

152 Observed agreement ranged from 45% (N=19) in the 'national priorities' competency to 86%
153 (N=36) in the 'reasoning & judgement' competency (Table 2). The k -values indicated fair
154 ($0.21 < k < 0.40$) to moderate ($0.41 < k < 0.60$) agreement for a majority ($n=26$ (87%)) of the
155 matching competencies evaluated. The k -values were also significant ($p < 0.05$) for all of the
156 competencies, except the 'governance' and 'national priorities' competencies (Table 2).
157 Wilcoxon sum-rank test showed a statistically significant within-subject difference in the
158 collaborative practice cluster ($p=0.043$). This was not observed in the other five clusters,
159 although the median ranks were lower in the first assessment for the 'leadership',
160 'management' and 'evaluation and research' clusters (Table 3).

161

162 Disparity in the evidence used to support self-assessment was observed between the three
163 cadres of advanced practice described in the two frameworks and across the identified clusters.
164 Although the 95%CI overlapped, the trend did indicate that "leading edge" practitioners are
165 more likely to be members of international, or regional committees, and are more likely to be
166 involved in research. This is in contrast to the "experienced" practitioners who were mostly
167 involved in staff management and in education and teaching roles. "Specialist-in-training"
168 practitioners were generally least able to support their self-assessments (Figure 2 and 3).

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171 ***Qualitative Interviews (phase 2 of the study)***

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173 This included seventeen participants in total with participants from the four countries in the
174 study represented (7 from Australia, 4 from New Zealand, 5 from United Kingdom and 1 from
175 Ireland).

176

177 **Prior self-assessment experience**

178 Most of the interviewees (53%) did not have formal self-assessment experience prior to the
179 study.

180

181 *No, this was the first time I have done a self-assessment. Ever since I completed my*
182 *post-graduate diploma, which was basically mapped against the General Level*
183 *Framework of the United Kingdom, I haven't used anything else to sort of guide my*
184 *development or see where I am. So this was the very first time that I had to use slightly*
185 *different tools to look at my practice.*

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187 *A48, experienced practitioner, UK*

188 Some of those with no prior self-assessment experience were interested and motivated to do so
189 in this study because they thought it would be a useful process.

190

191 *'No, I have never done something (self-assessment) like this before. Though I have been*
192 *in a management position for just over two years; I never thought of doing something*
193 *like this ... when I saw the advertisement by our hospital pharmacy society, I thought it*
194 *would be useful to give it a go, just to see where my practice was'.*

195

196 *A55, leading edge practitioner, Australia*

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198 **Perceptions about the frameworks**

199 The interviewees indicated they thought the two frameworks were similar in description of
200 competencies.

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202 *'... Without being too detailed, I think they were both quite similar in a lot of ways.*
203 *There was a lot of duplication between them ... generally I would say that the wordings*
204 *of the framework were quite similar'.*

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B33, leading edge practitioner, Ireland

'I found the frameworks to be very similar and didn't really see much difference. I know there was some gaps between doing the two assessments, but I do recall finding them to be similar in terms of wordings and description'.

B50, leading edge practitioner, New Zealand

They however reported some difficulties completing the framework in the first round but were more comfortable with the self-assessment process in the second round.

'I felt a bit lost the first time; I thought it was a bit difficult to comprehend. But by the second time I was quite familiar with the logic of the framework and knew what to do'.

A55, leading edge practitioner, Australia

'Even though I was quite familiar with the frameworks and evidence, I found it time consuming and difficult to do. I would say it was difficult to really get an accurate picture of it without spending a lot of time putting some sort of reflection into it, which is what I did in the first round. But by the second time I didn't have to reflect so much on what the statements meant and what evidence to include since I had already gone through the process.'

B5, leading edge practitioner, UK

Some thought reflection and exposure to the framework in the first round might have made completing the second assessment easier

'When I first saw the framework, I thought wow ... it felt a little bit overwhelming but when I read through the instructions and gave myself time to reflect, I felt more comfortable. The second round was a lot easier maybe because I sort of knew what the format was'.

B11, leading edge practitioner, New Zealand

238 Others specifically expressed difficulty with identifying appropriate evidence for use in
239 supporting self-assessment.

240

241 *'What I did find slightly difficult was selecting the right categories that my evidence*
242 *goes into. I had to refer back to information you sent about all the different meanings*
243 *and I don't think all my evidence kind of neatly fitted into all the categories that were*
244 *given. So, that probably was more difficult'.*

245

246 *A35, experienced practitioner, Australia,*

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248 They also indicated that this initial difficulty might have resulted in them underestimating their
249 perceived level of competence on some competencies.

250

251 *'I had an incidence the other day involving a work colleague ... in the end I found myself*
252 *thinking that maybe I had underestimated my competence. I found myself thinking that*
253 *may be if I actually searched through my hard drive and found everything I have done,*
254 *maybe I would have more evidence than I gave myself credit for'.*

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A35, experienced practitioner, Australia

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257 **Impact and relevance of the framework and self-assessment process**

258

259 The interviewees generally had positive opinions about the self-assessment process. They
260 found the assessments to be useful in identifying practice gaps while also providing a road map
261 for practice development.

262

263 *'I found the two self-assessments useful in identifying gaps in my practice that may limit*
264 *my ability to become an advance practitioner. They also pointed out for me areas of*
265 *advance practice that my current position does not offer, example master level*
266 *competencies and making an impact at a national level'.*

267

268 *A21, leading edge practitioner, Australia*

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270 *'It was a useful process because it helped me identify some areas where I haven't done*
271 *any particular work for one reason or the other; it gave me ideas about developing my*
272 *practice in those areas'.*

273

274 A48, experienced practitioner, UK

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276 *'It made me more conscious and a bit more aware of the things that I was doing. I*
277 *suppose it gave me a little bit of perspective about where I was and so that was useful.*
278 *It made me think about the scope or areas that I could be contributing to rather than*
279 *just the clinical stuffs.'*

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281 A51, leading edge practitioner, Australia

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283 *'I found the framework to be a methodical way to look at a portfolio of professional*
284 *activity. I don't think I would intuitively look at all the different dimensions and areas*
285 *that the framework prompted me to do. So I actually found that very constructive and*
286 *really useful and made me realise the breath of activity and how they could contribute*
287 *to making me a better practitioner'.*

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289 B33, leading edge practitioner, Ireland

290 **Discussion**

291

292 The results of the crossover study showed observed and chance corrected agreement for the
293 majority (87%) of the developmental competencies in the national frameworks. Although the
294 chance corrected agreement was relatively lower than the observed agreement (Table 2), this
295 may be due to the known k-statistic property of generally underestimating observed agreement
296 ^{25,26}. While there were inconsistencies in the ranking of competencies in three of the clusters
297 evaluated (Table 3), the results of the Wilcoxon signed-ranked test showed these were not
298 statistically significant in all but one competency in the frameworks.

299

300 The convenience sampling technique and the use of self-selected participants in this study
301 limits the generalisability of the findings, especially because studies show that self-selected
302 participants are likely to be more intrinsically motivated than the general population ³⁴. Given
303 that majority (93%) of the study participants were in hospital practice, future research involving
304 advanced pharmacy practitioners from practice areas like community, academic and industrial
305 pharmacy, and from other countries not represented is needed to add to the evidence base.
306 Similarities between the pharmacy practice model in United Kingdom, Australia and New
307 Zealand may be another source of bias in this study. However, with emerging evidence
308 showing broad similarities in pharmacy practice-related competencies globally², it can be
309 argued that the results are likely to be applicable to practice in mid- and low income countries.

310

311 Even though the overall study results showed inconsistencies in ranking that were not
312 statistically significant; the output in the analysis does indicate that the participants were likely
313 to underestimate their 'level' competence in the first assessment. It suggests an initial lack of
314 self-awareness of the breadth and depth of practice prior to exposure to the framework. This
315 corroborates the results from the qualitative interviews which indicated that the opportunity for
316 reflection and exposure to the competencies in the first 'exposed' framework likely aided
317 accurate assessment of competence with the second exposure to a framework. Evidence from
318 published literature²⁷ suggest this may be due to task familiarity in the second assessment. This
319 finding is in contrast to existing evidence²⁸ indicating that "learners" tend to overestimate their
320 abilities, although, the authors of the study also reported that overestimation was generally
321 attenuated by further training and increased self-awareness of gaps in practice (which may be
322 more particularly important with foundation – or less experienced – 'learners' and not
323 generalizable to advanced, experienced practitioners).

324 Furthermore, since the results in this study showed that some of the study participants ranked
325 their practice higher in the second self-assessment (Table 3), it is possible that the opportunity
326 for reflection provided by the first assessment may have heightened self-awareness of depth
327 and limitation of practice. Evidence from the qualitative interviews corroborates this finding;
328 further emphasising the need to promote reflective practice and routine self-assessment for
329 continually developing pharmacy practitioners. Reflective practice can promote self-awareness
330 of gaps in practice and facilitate self-directed learning for continuous professional
331 development. Potentially, it could ensure that pharmacists are continuously self-aware of their
332 capabilities and possibly provide the motivation and confidence needed to take on more
333 responsibilities. Ultimately, this would aid the efficient use of available pharmaceutical skills
334 and expertise, and is the *prima facie* reason for the use of developmental frameworks as a
335 continuous career skill escalator tool.

336

337 On the other hand, the observed change in ranking may have been potentiated by the *carryover*
338 *effect* inherent in crossover studies ^{29,30}. This is in line with evidence that demonstrate
339 improvement in understanding and greater confidence in perceived level of competence after
340 a four-day competency-based training workshop involving a group of health professionals ³¹.

341

342 Evaluation of the evidence used to support self-assessment demonstrates the two frameworks
343 are capable of differentiating between the three distinct cadres of advanced pharmacy practice
344 identified in the two frameworks. This corroborates evidence from previous research³² and is
345 in line with the practice profile expected of the different cadres of advanced practitioners^{18(p11)}.

346 Overall, the study results indicate a minimal disparity between the competencies in the two
347 national frameworks and demonstrates a commonality of advanced developmental
348 competencies that are applicable for advanced pharmacy practice in different countries as
349 suggested by previous research ^{2,8,9,10,32}. From a policy perspective, the initial difficulties with
350 using and understanding the terms in the frameworks suggests that training on the self-
351 assessment process and the use of frameworks is essential and this will assist in ensuring that
352 these tools are used effectively by practitioners.

353

354 **Conclusion**

355

356 This study provides preliminary evidence of transnational applicability of the competencies in
357 two nationally developed advanced practice frameworks (the RPS-APF and the Australian

358 APPF). In light of similar evidence from other studies looking at specific and specialized
359 competencies^{35,36}, our results also suggest that the two advanced pharmacy frameworks
360 evaluated here can be used as core mapping tools for the development of other country-specific
361 frameworks.

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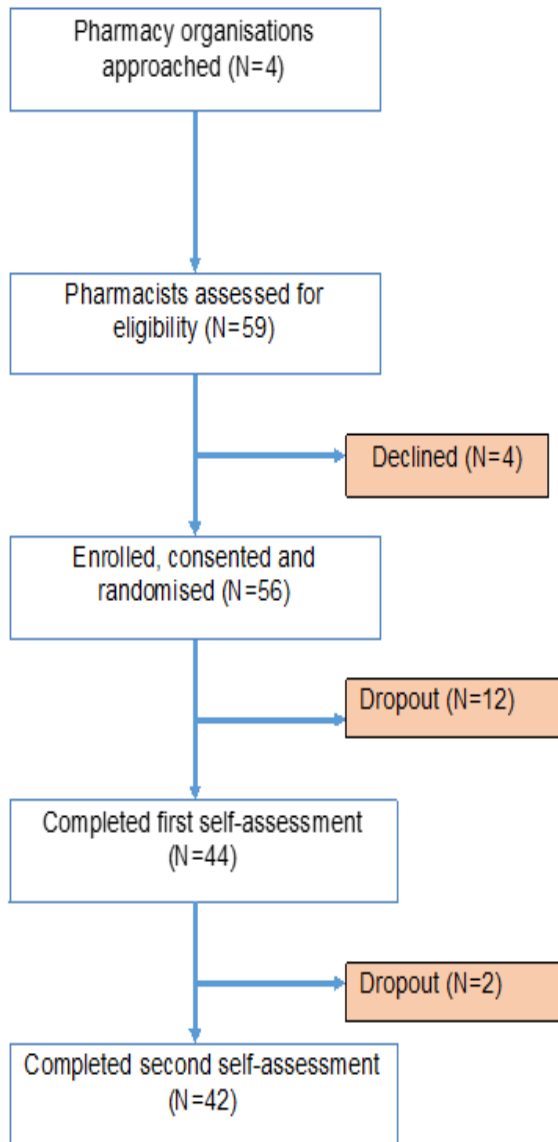
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Figure 1: Flow chart showing participant recruitment

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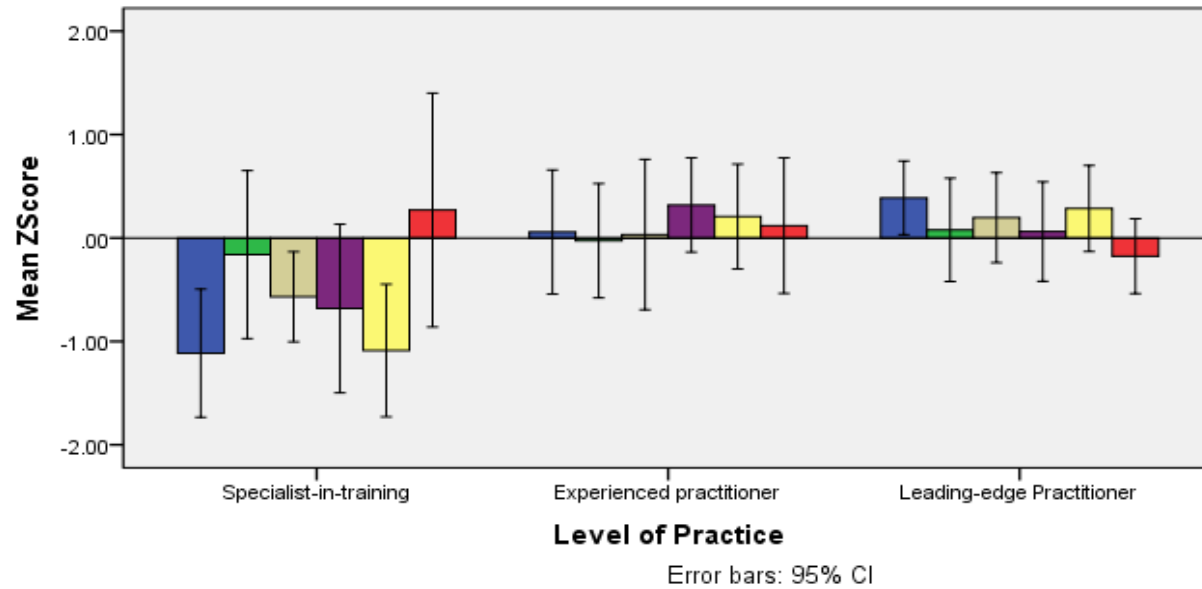
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467 **Programme: (Word/Mac)**

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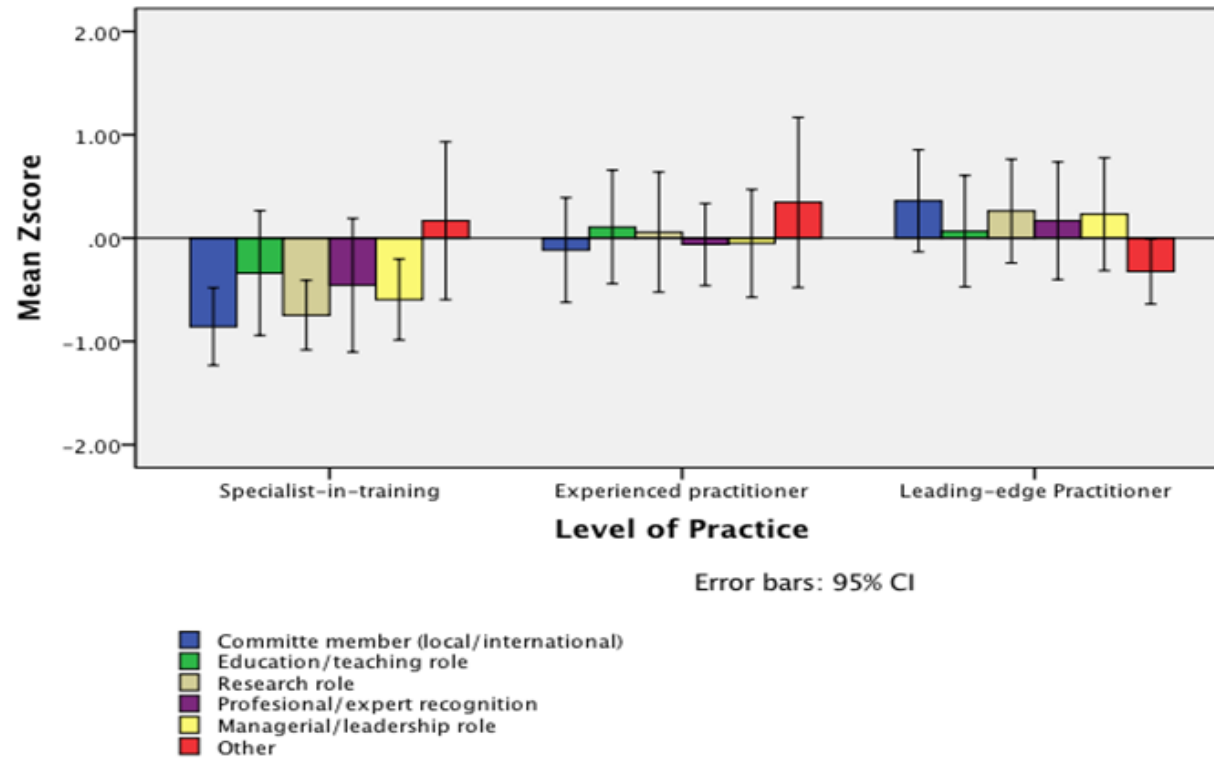
Figure 2: Evidence used to support self-assessment in the Expertise and Expert skills cluster



- Committee member (local/international)
- Education/teaching role
- Research role
- Professional/expert recognition
- Managerial/leadership role
- Other

Programme: (SPSS/Mac)

Figure 3: Evidence used to support self-assessment in the Evaluation and Research cluster



Programme: (SPSS/Mac)

Table 1: Participants' self-assessed level of practice

Level of practice	N (%)
Specialist-in-training	8 (19)
Experienced practitioner	10 (24)
Leading-edge practitioner	24 (57)
Total	42 (100)

Table 2: Within-subject Agreement per Competency

Cluster	Competencies	N Agreement (%)	K statistic (P)
<i>Expertise and Expert skills</i>	Expert skills	28 (67)	0.424 (<0.001)
	Delivery of expertise	23 (55)	0.253 (0.024)
	Professional autonomy	32 (76)	0.516 (<0.001)
	Reasoning & Judgement	36 (86)	0.725 (<0.001)
<i>Collaborative practice</i>	Communication	27 (64)	0.376 (0.002)
	Team work	27 (64)	0.352 (0.004)
<i>Leadership</i>	Strategic context & planning	28 (67)	0.426 (<0.001)
	Governance	18 (43)	0.130 (0.214)
	Vision	29 (69)	0.558 (<0.001)
	Innovation & service development	27 (64)	0.455 (0.001)
	Motivation	23 (55)	0.227 (0.044)
<i>Management</i>	National priorities	19 (45)	0.161 (0.098)
	Resource utilisation	28 (67)	0.479 (<0.001)
	Standards of practice	24 (57)	0.34 (<0.001)
	Managing risk	23 (55)	0.328 (0.001)
	Managing performance	20 (48)	0.215 (0.016)
	Project management	24 (57)	0.357 (<0.001)
	Managing change	28 (67)	0.474 (<0.001)
	Working across boundaries	17 (41)	0.170 (0.049)
<i>Education, Training & Professional Development</i>	Role model & mentorship	26 (62)	0.394 (0.001)
	Education & training	25 (60)	0.285 (0.007)
	Professional development	24 (57)	0.299 (0.006)
	Link practice to education	26 (62)	0.420 (0.001)
	Educational policy	30 (71)	0.600 (<0.001)
<i>Evaluation & research</i>	Critical evaluation	22 (52)	0.289 (0.005)
	Identifies gaps in evidence base	24 (57)	0.382 (<0.001)
	Develops & evaluates research protocols	25 (60)	0.466 (<0.001)
	Apply research evidence	21 (50)	0.351 (<0.001)
	Supervises others undertaking research	25 (60)	0.551 (<0.001)
	Establishes research partnerships	24 (57)	0.539 (<0.001)

Table 3: Median Rank per Competency Cluster

Cluster	Median rank		Wilcoxon sum rank Z (p)
	1 st Assessment	2 nd Assessment	
<i>Expertise and Expert Skills</i>	10	10	-0.838 (0.402)
<i>Collaborative Practice</i>	5	5	-2.027 (0.043)
<i>Leadership</i>	13	14	-0.897 (0.37)
<i>Management</i>	18.5	19.5	-1.197 (0.231)
<i>Education, Training & Professional Development</i>	12	12	-0.543 (0.587)
<i>Evaluation & Research</i>	13	13.5	-1.465 (0.143)

