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**Factors influencing persistence and recovery in stuttering: the role of ethnicity,
self-esteem and bullying.**

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II. Abstract

Background: Early research has shown that people who stutter tend to have close to average self-esteem. However, there has been limited previous research on how bullying affects stuttering outcome and no studies have looked at ethnicity and the persistence or recovery of a person's stutter. Also, the relationship between 1) self-esteem, 2) bullying and 3) ethnicity on the persistence or recovery of stuttering in the same group of individuals has not been previously investigated. **Aim:** This study investigated if self-esteem, experiences of bullying and ethnicity predicted whether people would persist or recover from stuttering in a sample of 82 young people from ages 8 to 22 years, who were diagnosed as people who stutter. **Method:** The 82 participants were divided into a persistent and a recovered group, and separated into children and adolescents in order to assess their self-esteem using Harter's (1985a; 1988a) Self-Perception Profiles for Children and Adolescents, respectively. A questionnaire (Appendix 2), devised in the Department of Psychology at University College London, was used to assess bullying experiences. Finally, participants classified themselves as 'white' or 'non-white' and stated whether they spoke only English at home or other languages. **Results:** The *t*-tests performed on the self-esteem data for all participants (when measured by competency in specific Harter (1985a; 1988a) domains) was not significantly below the average for fluent people, and were even higher than their peers in some domains. Using Chi Square analysis, the incidence of bullying was reported to be significantly associated with stuttering outcome ($p < 0.001$). Logistic regression was employed to predict discrete outcome of persistence or recovery in stuttering using the data collected on the participant's self-esteem and bullying and their ethnicity and primary language used. The measures that contributed most significantly were the self-esteem domains of Global Self-Worth and Mean Discrepancy Scores. **Conclusions:** In line with previous studies by Blood et al. (2003) and Yovetich et al. (2000), all the participants were close to average or higher self-esteem than their fluent peers. It was found that the incidence of bullying was higher in people who stutter than the estimates in previous studies done with young people throughout the United Kingdom. The predictive model indicates that *trait* self-esteem (Leary, 1999) could be an indication of stuttering outcome. These results are discussed in relation to support needed to be given to people who stutter to increase the chance of them recovering from their stutter.

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IV. Introduction

(i) Stuttering

Though many different labels have been used, stuttering has been recognized as a disorder for hundreds of years. Aristotle (384-322 BC) stated that it resulted because of conflict between various body functions and classified it as 'ischnophonia'. Since then, many theorists have adopted personal views of stuttering in order to inform treatments (Van Riper, 1973; 1982). Some of the important influences are parental concerns (Johnson, 1955), conflict of function of speaking (Sheehan 1970), control (or lack of it) of speech, which could be incorporated in a multifaceted framework (Starkweather, Gottwald & Halford, 1990).

Parent's placing 'unrealistic' demands on their children's speech progression during language development was the main causal factor of their stuttering, according to Johnson (1955). He believed that as the parents were the core contributors to the child's stuttering, therapy programs should essentially target the parents and their interaction skills. He assumed no organic aetiology within the brain or speech-motor system.

A theory that proposed a different aetiology was that stuttering is a conflict between the drive to speak and to refrain from speaking (Sheehan, 1953; 1958). Sheehan defined a person who stutters as a 'part time' normal speaker. The definition of "normal speakers" is that they are fluent and there is this expectation from the listener for fluency to occur in normal conversation. Sheehan (1970) showed that this expectation for fluency puts pressure onto the speaker and he believed that this caused increased stuttering. Sheehan's (1970) 'iceberg' analogy illustrated his theory of role conflict. In this model he showed that feelings such as shame, guilt, fear, avoidance, etc, which are invisible to the external world, are placed in the underwater section of the iceberg. The top part of the iceberg, which is seen by the outside world, illustrates the overt stuttering behaviours such as blocks and grimaces. He claimed that just as the bottom section of an iceberg is larger than the section above water, so the feelings that are not apparent to the outside world in people who stutter, are more than the overt behaviours shown.

Van Riper (1973; 1982) had a view that stuttering was a neuromotor disorder that could be brought under 'voluntary control' through the careful administration of therapeutic techniques. He suggested that people who stutter should attempt to

produce pseudo or artificial stuttering, as he claimed this desensitised the person to their own dysfluency and he actively contributed in the administration of this therapy. Van Riper himself had a severe stutter. He devised a four-phase program consisting of identification, desensitisation, modification and stabilisation.

The view that stuttering is a multifaceted disorder was presented (among others) by Yairi and Ambrose (1999). They discussed the concept that the person who stutters' actual dysfluency is only one part of a complex framework. Conture (1982) also thought of stuttering as part of a complex relationship between the person who stutters and their environment. He proposed that for stuttering to have the highest probability of occurring and continuing, a child susceptible to stuttering should be in a particular environment, i.e. public speaking. Starkweather et al. (1990) also suggested that a stutter is part of a larger difficulty in the disparity between cognitive, linguistic, motor and emotional capacities of a child compared with speech and language demands for communication, which increase as a child develops into an adolescent. This has been designated the Demands and Capacities Model.

In more recent years a scientific approach has provided results into the main cause of developmental stuttering. An investigation into hemispheric processing within known language centres in the brain has been conducted by Sommer, Koch, Paulus, Weiller and Buchel (2002). They mapped areas of the brain to show profound timing disturbances in the left hemisphere between areas involved in language organisation and execution. Their findings showed that developmental stuttering might have resulted from uncoordinated timing of activation in speech-relevant brain areas, i.e. the fibres that link the receptive language area to the expressive one. However, the experiment only used a small sample size and the research was adult-not child-orientated. Thus specific aetiology is inconclusive but they strongly suggest that cortical fibres linking hemispheric processing, as well as possible structural differences in the brain, could be the origin of stuttering.

(ii) Characteristics

According to Guitar (1998) stuttering is a disorder that has excessive repetitions, prolongations, and blocks, which cause an abnormally high amount and/or length of obstructions in the stream of speech. He considered that individuals who stutter are usually aware of their stuttering and often embarrassed by it and that stuttering is a motor execution difficulty, which is very difficult to prevent. Bloodstein (1987)

similarly discussed stuttering as a syndrome which is impaired by interruptions or blockages in the fluency or rhythm of speech. These can include rate, pitch and loudness of speech, as well as inflection patterns, articulation, facial expression and postural adjustments of the speaker. Stuttering is liable to be perceived by a listener as one, or a combination, of the following characteristics, according to Conture (1982):

1. Syllable repetition of a speech sound.
2. Prolongation of a speech sound.
3. An unusual/lengthy pause between the syllables of a word.
4. A repetition of a whole-word (in some instances).

These characteristics of stuttering are known as the core or primary behaviours. They are the indications of stuttering that are perceived by outsiders. Bloodstein (1987) argued that these repetitions, prolongations and pauses are behaviours that derive from motor execution difficulty. Bloodstein (1987) showed that, depending on the individual, they manifest in different ways but are generally imperative in defining stuttering. He divided the features of stuttering into three classes.

1. Overt Concomitants:

These are associated symptoms which tend to be performed relatively involuntarily and reflexively, particularly when the stutter has persisted for some length of time, and/or the person has become stressed or anxious. They are audible and/or visible reactions supplementary to or interspersed throughout a person who stutters' speech. These are intrusions such as a jerk of the head, filler words (i.e. 'um, err, well'), pitch shifts, and/or flushing.

2. Physiological Concomitants:

These are spontaneous and physiological elements of stuttering. These manifestations are restricted to a brief period just prior to, and during, stuttering. These changes do not appear when the person who stutters is speaking naturally or is silent. They are internal bodily symptoms that are observed indirectly by instruments for physiological investigation such as electroencephalography which examines brain wave changes. Under conditions likely to produce stuttering immediately preceding and during speech, there is often an acceleration of the heart's pulse rate. Internal physiological structures that could be affected by periods of stuttering include the cardiovascular system, endocrine system, hemispheric brain waves, and eye movements. However,

Sommer et al (2002) found that there are hemispheric processing differences between people who stutter and their non-stuttering controls.

3. Introspective Concomitants:

These are changes in the person who stutters personal states and perceptions of their environment when experiencing difficulties with speech. These parallel signs can include feelings of frustration, muscular tension and emotional reactions to stuttering. A very common feature is that a person who stutters will have feelings of apprehension that can fluctuate from mild uneasiness to extreme panic.

(iii) Recovery:

Crucial in determining the prevalence of recovery rates following treatment is the definition of 'recovery'. For example the studies by Onslow, Andrews, and Lincoln (1994), Lincoln and Onslow (1997) and Craig (1996) maintained that a criterion of less than 2% syllables stuttered indicated that the client had 'recovered' whereas, Kalinowski et al. (2005) considered that 'recovery' was defined as the complete removal of all overt and covert stuttering events.

Longitudinal studies of early childhood stuttering have shown that recovery rates, without professional treatment are variable. This may be due to the fact that the studies reported were based on different age groups (Bloodstein, 1995), but they can range from 36% (Cooper, 1972) to around 89% recovery (Yairi & Ambrose, 1992a).

Onslow et al. (1994) investigated how; following a parent-conducted programme of verbal response-contingent stimulation, a group of children aged below five years of age improved their fluency. They found that all of the children achieved median percentage syllables stuttered scores below 1.0 for a 12-month post-treatment period. Furthermore, Lincoln and Onslow (1997) reported that these children continued to present with near-zero levels of stuttering at seven years post-treatment.

Craig et al. (1996) also investigated the effectiveness of three treatments (intensive smooth speech, intensive electromyography and home-based smooth speech) on children and adolescents (aged 9 –14 years) who stuttered. They found a mean improvement in stuttering frequency of at least 85% and that the stuttering decreased to an average of less than 1% syllables stuttered post-treatment. However, there was no significant difference between the effectiveness of the three treatments.

However in contradiction to these reports of successful treatment, Kalinowski et al. (2005) conducted a survey of 101 Speech and Language Therapists assessing

therapeutic efficacy in the management of stuttering within the North Carolina (USA) public school system. A total of 2,036 children had been treated, yet the median reported recovery rate was only 13.9%. Kalinowski et al. (2005) concluded, therefore, that existing high claims of successful therapeutic outcome may best be attributed to natural spontaneous recovery. However, it should be noted that 'recovery' in this study was defined as the complete removal of *all* overt and covert stuttering events, whereas the studies of Onslow et al. (1994), Lincoln and Onslow (1997) and Craig et al. (1996) maintained that a criterion of less than two percent syllables indicated that treatment was successful.

(iv) Persistence:

Evidence found by Riley and Ingham (2000) showed that speech therapy for stuttering was most effective when the child was able to be treated at less than age six. Guitar (1998) also suggested that traditional adult stuttering speech therapy undertaken once a week usually took two or more years to achieve clinically significant efficacy. The recovery rates in children who stutter have been researched by Kalinowski et al (2002) and Yairi and Ambrose (1992a; 1999), which showed that as many as 70-80% of children who stutter will spontaneously recover.

However, due to extenuating factors such as the age of the recovery, the amount of therapy or gender of the person who stutters it is difficult to investigate the reasons why this population of people recover.

It is believed that around 1% of adults persist in their stuttering (Andrews & Harris, 1964), regardless of whether a person who stutters is treated or not. Factors that may influence persistence in stuttering include:

Age: Brown (1976) suggested that normal, fluent verbal language development will usually start between the ages of eight to twelve months and Bloodstein (1987) suggested that the age of stuttering onset can be as young as eighteen months; which coincides with this stage. However, he also noted the age of onset can vary from age seven to thirteen years, although the older the child the less likely it appears that stuttering will develop (Bloodstein, 1995).

Gender: There is a substantial increase in stuttering distribution from around 2:1 at onset (Yairi & Ambrose, 1992b) to 5.5:1 in older children (Bloodstein, 1995) between males and females respectively. Therefore, there appears to be higher persistence rates among boys than girls (Yairi & Ambrose, 1992a).

Heredity: Andrews et al. (1983) estimated that the incidence of stuttering among first-degree relatives of people who stutter was more than three times that of the general population. Moreover, there also appears to be a high degree of concordance of stuttering in identical twins (Bloodstein, 1995). Furthermore, Yairi et al. (1996) found that persistence and recovery in stuttering tended to be hereditary; the children in the study who had persistent stuttering had significantly more stuttering relatives who were persistent than who had recovered, and vice versa.

Overt speech characteristics: Recovery is more likely if simple and regular repetitions of syllables predominate than if speech is dominated by blocks (momentary occlusions of the airway) and prolongations (Van Riper, 1973). In addition, if the child's speech contains a substantial proportion of sound prolongations, this can signify a high risk of developing a chronic disorder (Conture, 1982).

In support of the findings of Van Riper (1973), Yairi et al. (1996) found that initial levels of part-word and monosyllabic word repetitions in dysfluent speech were higher in recovered groups than in persistent groups observed.

(v) Research Themes:

Dominant themes in stuttering research such as the speech and biological characteristics that might separate persistent and recovered speakers were examined in the above review. Whether other themes such as psychosocial factors are inherent to all people who stutter (whether they recover or persist), or specifically associated with persistent people who stutter, have been researched less. Based on past research, the following themes of self-esteem, bullying and ethnicity are to be investigated.

- **Self-Esteem**

Cooley (1902) illustrated that self-esteem was associated with how one incorporates the perceptions of other people into one's self image. Since that report, there have been many different psychological theories about self-esteem; what it is, what causes it and how someone's self-view can affect them psychologically. Coopersmith (1967) indicated that self-esteem is a term broadly used to refer to a person's evaluation of him/herself, which includes feelings of self-worth. According to James (1890) the concept of self and the ability to strive to feel good about one's self is an important aspect of human nature.

Leary (1999) discussed the sociometric theory of self-esteem. This is that humans possess a pervasive drive that endeavours to monitor the quality of relationships with others. Baumeister and Leary (1995) also suggested that early human beings who belonged to groups were more likely to survive and reproduce, thus humans have evolved with this drive. This sociometric factor is a psychological device that is continuously altering and is sensitive to the environment and changes in relationships. Researchers into self-esteem have separated the sociometric theory into two components. One is *state* self-esteem, which comprises of momentary fluctuations in a person's feelings about him/herself. The other is *trait* self-esteem, which is the person's general appraisal of his or her value (Leary, 1999). The self-esteem profiles (Harter, 1985a; 1988a) give an indication of both *state* and *trait* self-esteem as discussed in the 'Test Instruments' section in the 'Method' below.

- **Stuttering and Self-Esteem:**

As discussed, stuttering has been described as a multidimensional disorder of communication and there is some consensus among clinicians and researchers that self-esteem is directly related to stuttering.

In a study by Franck, Jackson, Pimentel and Greenwood (2003), using a semantic differential scale of bi-polar adjective pairs to rate the speaker on intelligence and personality traits, showed that school-age children had a more negative perception of people who stutter than people who do not. Overall they rated the person with a stutter as having more negative personality traits and being less intelligent. Bajina (1995) discussed that as a result of these negative perceptions of them and their speech impediment, people who stutter may (depending on personality and coping strategies for general stresses) develop adverse covert behaviours.

A more negative opinion of these traits in people who stutter continues into adulthood; Dorsey and Guenther (2000) asked American college professors to complete a questionnaire to judge the degree of personality items possessed by a hypothetical college student who stuttered or one who did not stutter. They found that the professors perceived the stuttering student more negatively on most personality traits. A person who stutters may want to avoid communicating through speech in any situation where they feel uncomfortable (Kalinowski et al, 1993). The lack of interaction has been thought to lead to negative biases formed by others towards the person who stutters. Kalinowski et al (1993), Bloodstein (1995), Sheehan (1970) and

Van Riper (1982) have suggested that these negative stereotypical prejudices could affect a person who stutters self-esteem.

However, in contradiction to the above perceptions of others, Yovetich, Leschied and Flicht's (2000) study on the self-esteem of 25 children who stutter, found that their self-esteem was equal to, and even higher in some cases, than their peers. Their study used the Culture Free Self-Esteem Inventory, 2nd Edition (CFSEI-2). Data that support the findings of Yovetich et al (2000) were given in a study into the self-esteem of adolescents (Blood et al, 2003). This evaluated how they responded to questions about stuttering as a stigmatising condition and their abilities to disclose information about their stutter. The results showed that they had positive self-esteem.

Blood et al (2003) and Yovetich et al (2000) suggest that the self-esteem of young people who stutter is comparatively close to their non-stuttering peers. However, both studies discussed interesting hypotheses about the reasons for the increased self-esteem, namely that previous therapy intervention could have affected the development of the self-esteem.

Beech and Fransella (1968) suggested that being a person who has a stutter only forms one part of a person's self-concept. Yovetich et al (2000) also suggested that a more direct measure of self-esteem for stuttering may produce more accurate results. Thus, asking questions purely about how one feels about their own stutter may prove more informative than general scores of self-esteem in other domains of their lives.

Davis, Howell and Cook (2002) suggested that children who stutter were often more reluctant to participate verbally in school as they fear situations where they stutter and thus tend to avoid situations that brought about anxiety. Davis et al (2002) also reviewed the involvement of social factors in stuttering. They found that social and environmental factors (in particular, bullying and social positions in groups) influenced onset and maintenance of stuttering. The children were less likely to take a role of leadership and have a small group of close friends, and they tended to avoid high-profile situations with the hope of minimising the occurrence of bullying. Davis et al (2002) showed that the view that others have towards them is highly relational to their self-concept. Therefore, the children who stuttered were more at risk of being victims of bullying and to being exposed to negative peer relations. This suggests how self-esteem may be exasperated by these situations and peer relations.

- **Bullying**

Bullying is defined by Rigby (1996) as a negative intentional action aimed at an individual who is not in a position to defend him/herself, causing either physical or psychological harm. Research has shown although bullying appears to be a common problem in mainstream schools (Smith & Brain, 2000), the problem of bullying may be even more prevalent among children with special educational needs (SEN) (Whitney, Nabuzoka & Smith, 1992), including children who stutter (Mooney & Smith, 1995). Three factors that may be indicative of why children with SEN may experience future or current bullying (Whitney et al., 1992) are; 1) they may have characteristics that could be viewed as an excuse for bullying, 2) lack of the beneficial effect of safety in numbers as they have fewer friends, and 3) they may be seen as less socially competent and thus more likely to be bullied.

- **Stuttering and Bullying**

Stuttering behaviour may influence whether or not a child is bullied at school. However, the bullying itself may have a negative impact on stuttering; in Mooney and Smith's (1995) study, 11% of respondents reported increased speech difficulties as a result of bullying behaviour, and 6% of respondents in Hugh-Jones and Smith's (1999) study reported that the bullying had a long-term effect on their speech difficulties.

Hugh-Jones and Smith (1999) conducted a survey of 276 persistent adult people who stutter and found that 83% of them reported that they had been bullied at some point during their school years. Bullying was 'always' or 'very often' related to 53% of the respondents stutter and this was 'sometimes' the case for 25%. In support of the findings of Whitney et al. (1992), the significant variable in predicting bullying was difficulty in making friends; 31% of respondents found that it was 'always' or 'very often' hard to make friends and 32% reported that this was 'sometimes' the case. Difficulty in making friends was a direct result of their stutter for 51% of respondents. However, severity of stutter was not found to be a direct predictor of being bullied in the logistic regression analysis used.

Mooney and Smith (1995) conducted another investigation that supported these findings. They examined the retrospective accounts of 324 adults who were persistent people who stutter and found that 82% of respondents were bullied at some

point during their school education, with 93% of them reporting that the bullying was often related to their stammer and 84% reporting difficulties making friends.

Davis et al. (2002) used a forced-choice sociometric procedure to assess the relationships between 16 dysfluent children and their classmates, aged between 8-14 years old. They found that in comparison with their fluent peers, the children who stuttered were three times more likely to be identified as victims of bullying, were viewed as less popular and thus were socially rejected significantly more often.

- **Ethnicity**

Ethnicity can be defined as a population of human beings whose members identify with each other. This can either be, as Smith (1987) suggests, on the basis of a presumed common genealogy or ancestry such as common cultural, linguistic, religious, or territorial traits, or recognition by others as a distinct group. Ethnicity and race are related concepts in that both are usually defined in terms of shared genealogy (Abizadeh 2001). However, ethnicity often also includes a shared cultural, linguistic, or religious trait, while race by contrast consists of shared biological (genetic or phenotypic) traits Smith (1987). Abizadeh (2001) argues that neither ethnicity nor race is genealogically or biologically determined; they are both social constructs. Shared genealogy cannot by itself determine ethnicity because one must arbitrarily choose which genealogical line to trace and how far back. Therefore, it has been documented that many of the cultural practices on which various ethnic groups are based are of relatively recent invention (Friedlander, 1975), and as Abizadeh (2001) suggests thus produced socio-politically and/or via social practices.

The classification of ethnic groups has attracted controversy in the past: particularly in the UK, at the time of the 2001 Census where the existence and nature of such a classification became more widely known. Different classifications, both formal and informal, are used in the UK. Perhaps the most accepted is the National Statistics classification, identical to that used in the 2001 Census in England and Wales (Appendix 1)

- **Stuttering and Ethnicity**

As discussed, stuttering can be described as a multifaceted disorder (Yairi & Ambrose, 1999). There has been little investigation into the effect of ethnicity on the recovery or persistence of stuttering. Daniels, Hagstrom and Gabel (2006) have, however, conducted a qualitative study of six African American persistent adult

people who stutter to explore how they ‘view communication, identity and life choices’ (p. 200). The results indicated that interaction of communication, ethnicity and culture affected how the participants perceived their stuttering. Some participants contended that race factors coupled with stuttering shaped their experiences in life, for example one participant explained that he felt his stutter was worse when communicating with fellow African Americans. Daniels, et al. (2006) conclude that ethnicity can have an effect on stuttering and thus more research is needed as ethnicity relates to persons who stutter.

There has been some consideration by Rustin, Botterill and Keiman (1996) about the linguistic factors that may contribute to the development of stuttering which bears on ethnicity to some extent (if they use a second language). Rustin et al. (1996), Dalton and Hardcastle (1997) and Starkweather et al. (1990) suggested that there is a rapid expansion of linguistic and cognitive development at about age two or three years and it is these demands that exceed their capacity to process, which contributes to developing a stutter. Bernstein Ratner (1981) also believed that there is a functional relationship between language formation and stuttering. Most studies have concentrated on English speakers thus more research on bilingual people who stutter is needed.

(vi) Hypotheses

There are no large-scale studies of bullying in children and adolescents who stutter, which include those who will recover as well as those who will persist. The findings of previous studies are specific to persistent people who stutter, such as the extensive surveys of Mooney and Smith (1995) and Hugh-Jones and Smith (1999) and Bajina’s (1995) study on self-esteem. Thus, previous studies have not been directed in a systematic way at examining the influences of these on whether a person will persist with or recover from their stutter. There have been no studies on the effect of a person’s ethnicity on their persistence or recovery of their stutter and the interaction of their ethnicity with psychosocial variables such as bullying and self-esteem.

There are also limited studies that examine the interaction between self-esteem and bullying but none looked particularly at populations of people who stutter. Two such studies are Slee and Rigby (1993) and Mynard et al. (2000). Consequently, possible interactions of these factors have not been investigated, in order to discover

any combined effect on persistence or recovery of a person's stutter that may exist. Therefore, based on this the following hypotheses for each factor are as follows:

Self-esteem:

Hypothesis 1: People who stutter will have lower than average self-esteem scores when compared to the general population.

Hypothesis 2: People who have recovered from stuttering will have higher self-esteem scores than persistent people who stutter.

Rationale: Based on anecdotal evidence from clinicians and the work of Bajina (1995) that self-esteem is negatively affected by a fluency disorder.

Bullying:

Hypothesis 3: There will be a high incidence of bullying amongst people who stutter

Hypothesis 4: People who have recovered from their stutter will have experienced less bullying whilst at school than those whose stutter has persisted.

Rationale: Based on the findings of Mooney and Smith (1995) and Hugh-Jones and Smith (1999).

Ethnicity:

Hypothesis 5: More people that have a persistent stutter will be from an ethnic minority background than of white ethnicity and vice versa.

Hypothesis 6: More people that have a persistent stutter speak more than English at home than only speak English and vice versa.

Rationale: Based on the linguistic theories by Rustin et al (1996) and findings of Daniels et al. (2006).

Interaction:

Hypothesis 7: low self-esteem and increased bullying will interact to predict a persistent stutter.

Rationale: Based on the findings of Slee and Rigby (1993) and Mynard et al. (2000).

V. Method

(i) Participants:

Data from 82 diagnosed stuttering participants was collected in this study. The participants ranged in age from eight years, three months to twenty-two years, four months. The mean age for the group was fifteen years. Participants classed as children were from age 8 to 16 and of these 13 were aged 8 to 11 years at the time of data collection. Participants classed as adolescents were from age 16 to 22 years. All participants lived in the UK (81 in England, 1 in Wales) and all of them spoke English fluently. There were 62 male and 20 female participants.

The amount of participants that were considered to have recovered from their stutter was 33 (40%), and 49 participants (60%) were identified as people who have a persistent stutter. The criteria for the persistent participants were as follows:

- a) They were originally diagnosed as stuttering by a trained speech and language therapist and assessed with the Stuttering Severity Instrument (SSI-3) (Riley, 1994).
- b) At the time of the re-tests they were described as still stuttering by themselves and their parents
- c) They scored 24 or above on the SSI-3 at the time of re-testing.

The criteria for the recovered participants were as follows:

- a) There was the same original diagnosis as outlined above for the persistent stutters at outset.
- b) At the time of the re-tests they were described as *not* stuttering any longer by themselves and their parents
- c) They scored below 24 on the SSI-3 at the time of re-testing, and their SSI-3 score had decreased by at least 2 points between the initial SSI-3 and re-testing.

All parents of persons age 18 and under and adults of aged 18 years and over had previously given consent to take part in this research study.

(ii) Procedure:

159 packages were sent by post to parents of children and adolescents or adults on the UCL Speech Research Team's database. 53 participants responded returning both questionnaires fully completed and 29 had been collected for a study done by an MSc student previously.

The package contained a letter to inform all participants and parents of the purpose of the study, i.e. to investigate how ethnicity, self-esteem and bullying are related to stuttering and a copy of 1) Self-Esteem questionnaire, 2) bullying questionnaire. Participants were asked to complete the questionnaires and return them in the stamped addressed envelope provided.

Following receipt of the questionnaires their data was entered onto an SPSS statistics database with their age, sex, ethnicity, first language, and the individual answers to each of the bullying questionnaire questions and the self-esteem questions. Questionnaires were previously sent to 66 participants (80%) to evaluate their own and their parent's perception about whether they continued to stutter. They were also re-tested previously by a member of the UCL Speech Research Team to designate whether the participant has a recovered or persistent stutter.

Further packages were sent to 16 participants (20%) with questionnaires about their current stuttering (i.e. if it had recovered or persistent) and a passage to read. These participants were telephoned and a sample of their conversational speech and their speech when reading was recorded in order to complete the re-testing of their stutter using the SSI-3.

(iii) Test Instruments:

- ***Self-esteem***

Self-esteem was measured using the Harter (1985a) Self-Perception Profile for Children and the Harter (1988a) Self-Perception Profile for Adolescents. The participants aged 8 to 16 completed the profile for children, and participants aged between 16 to 22 completed the profile for adolescents.

In the present study *state* self-esteem (Leary, 1999), is measured by scores taken from the specific judgements of competence in separate skill domains. In the children's version these sections included; Scholastic Competence, Athletic Competence, Physical Appearance, Social Acceptance, and Behavioural Conduct. In the adolescent version are all the domains from the children's version and three further sections; Job Competence, Close Friendship and Romantic Appeal because studies into the development of self-concept by Harter (1983, 1985b, 1988b & 1989) generally suggest that as a child increases with age there are more pressures put on them i.e. they are exposed to many more social roles and expectations. For example Wild et al (2004) found low body-image self-esteem and global self-worth were

uniquely associated with risk factors in girls. This may be, in some part, due to the widely available and somewhat controversial media influences, i.e. the emphasis on thinness and attractiveness (Harter, 1989).

The participant's *trait* self-esteem (Leary, 1999) was measured by scores taken from the specific judgements of competence in the domain of Global Self-Worth (GSW) and the Mean Discrepancy Scores (MDS) as part of the profiles. In order to obtain MDS' participants were presented with a variety of statements, such as 'some kids think it is important to.....' and were asked to rate how important they consider each of these to be. The importance scores were then compared with the competence scores for each domain in order to obtain a discrepancy score. If an individual deemed a domain important, but felt they were not competent in that area (there is a negative discrepancy between scores) it can be assumed that this person had low self-esteem in that particular domain. The discrepancy scores for each domain were then averaged to obtain a single score for each participant. This score may be considered as a more powerful indication of general self-esteem than the GSW score, as it takes ratings for both competence and importance in domains into account.

- ***Bullying:***

The geographical distribution of the participants and the sensitive nature of bullying as a subject meant that a questionnaire method was employed to assess bullying experiences. It was also anticipated that, as participants could remain anonymous, the use of a questionnaire might encourage honest responses.

The questionnaire (Appendix 2) comprised of ten questions, which related to different aspects of their experiences of bullying, if any. Firstly, whether the participants were bullied at school, and if so, what the nature of this bullying was. Secondly, whether the bullying affected the participants' stuttering in any way. Finally, the participants were also asked about the nature of their friendships at school because this was highlighted by Hugh-Jones and Smith (1999) as a strong predictor of being bullied. All questions were dependent on subjective recall and were given to participants of all ages. Answers were marked and numerically coded (excluding question 4 which was a qualitative question about age).

VI. Results

(i) Self-esteem:

Table 1 below presents the mean and standard deviation (SD) values for the scores of the child participants in each domain; Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Behavioural Conduct and Global Self-Worth and for their Mean Discrepancy Scores. The scores are also divided according to whether the children were recovered (RCS) or persistent (PCS). The Harter (1985a) mean standardised scores for children in each domain (excluding the Mean Discrepancy Scores, as no standardised value for this was available) are presented for comparison.

Table 1 shows that the mean scores for the separate domains (excluding Mean Discrepancy Scores) for all the children participating in this study fluctuated around the value of 2.9. The standard deviations ranged from 0.14 to 0.71, indicating a degree of variation between individuals. One-sample *t*-tests were performed to analyse the mean scores of each domain in comparison to the relevant standardised values.

Table 1: Scores on the Self-Perception Profile for Children (Harter, 1985a)

Domain	Harter's (1985a) Standardised Mean Scores	Mean (SD) scores for children (n=44)	Mean (SD) Scores for RCS (n=20)	Mean (SD) Scores for PCS (n=24)
Scholastic Competence	2.54	2.97 (0.59)	3.02 (0.52)	2.92 (0.65)
Social Acceptance	2.97	3.02 (0.71)	3.10 (0.56)	2.96 (0.82)
Athletic Competence	2.84	2.77 (0.67)	2.96 (0.53)	2.61 (0.74)
Physical Appearance	2.84	3.08 (0.59)	3.07 (0.47)	3.08 (0.14)
Behavioural Conduct	2.95	3.02 (0.61)	2.82 (0.62)	3.19 (0.57)
Global Self-Worth	3.05	3.28 (0.53)	3.32 (0.45)	3.25 (0.60)
Mean Discrepancy Score	-	- 0.34 (0.44)	- 0.40 (0.45)	- 0.29 (0.45)

A significant difference was found between the standardised scores and mean scores for all of the children in Scholastic Competence where all the child participants ($M=2.97$, $SD=0.59$) scored significantly higher than the standardised score ($M=2.54$),

$t(43) = 4.80, p < 0.005$ (two-tailed), in Physical Appearance the children participants ($M=3.08, SD=0.59$) scored significantly higher than the standardised score ($M=2.84$), $t(43) = 2.67, p < 0.011$ (two-tailed), and in Global Self-Worth the children participants ($M=3.28, SD=0.53$) scored significantly higher than the standardised score ($M=3.05$), $t(43) = 2.91, p < 0.006$ (two-tailed)

When the scores of the recovered child stutterers (RCS) were compared with the standardised scores on each domain (excluding Mean Discrepancy Scores), a significant difference was found in Scholastic Competence where the RCS ($M=3.02, SD=0.52$) scored significantly higher than the standardised score ($M=2.54$), $t(19) = 4.16, p < 0.001$ (two-tailed), in Physical Appearance the RCS ($M=3.07, SD=0.47$) scored significantly higher than the standardised score ($M=2.84$), $t(19) = 2.20, p < 0.04$ (two-tailed), and in Global Self-Worth the RCS ($M=3.32, SD=0.45$) scored significantly higher than the standardised score ($M=3.05$), $t(19) = 2.69, p < 0.015$ (two-tailed).

When the scores of the persistent child stutterers (PCS) were compared with the standardised scores on each domain (excluding Mean Discrepancy Scores), a significant difference was found in Scholastic Competence where the PCS ($M=2.92, SD=0.65$) scored significantly higher than the standardised score ($M=2.54$), $t(23) = 2.86, p < 0.009$ (two-tailed), in Physical Appearance the PCS ($M=3.08, SD=0.14$) scored significantly higher than the standardised score ($M=2.84$), $t(23) = 1.72, p < 0.099$ (two-tailed), and in Behavioural Conduct the PCS ($M=3.19, SD=0.57$) scored significantly higher than the standardised score ($M=3.05$), $t(23) = 2.05, p < 0.052$ (two-tailed).

A significant difference was found between the RCS and PCS in two domains. In Athletic Competence the RCS ($M=2.96, SD=0.53$) scored significantly higher than the PCS ($M=2.61, SD=0.74$), $t(42) = 1.75, p < 0.09$ (two-tailed), and in Behavioural Conduct the RCS ($M=2.82, SD=0.62$) scored significantly lower than the PCS ($M=3.19, SD=0.57$), $t(42) = 2.05, p < 0.05$ (two-tailed).

Table 2 below presents the mean and standard deviation (SD) values for the scores of the adolescent participants in each domain; Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Job Competency, Romantic Appeal, Behavioural Conduct, Close Friendships and Global Self-Worth and for their Mean Discrepancy Scores. The scores are also divided according to whether the children were recovered (RCS) or persistent (PCS). The Harter (1988a) mean

standardised scores for children in each domain (excluding the Mean Discrepancy Scores, as no standardised value for this was available) are presented for comparison.

Table 2 shows that the mean scores for the separate domains (excluding Mean Discrepancy Scores) for all the adolescents participating in this study fluctuated around the value 3.04. The standard deviations ranged from 0.31 to 0.86, indicating a large amount of variation between individuals. One-sample *t*-tests were performed to analyse the mean scores of each domain in comparison to the relevant standardised values.

Table 2: Scores on the Self-Perception Profile for Adolescents (Harter, 1988a)

Domain	Harter's (1988a) Standardised Mean Scores	Mean (SD) scores for adolescents (n=38)	Mean (SD) Scores for RAS (n=13)	Mean (SD) Scores for PAS (n=25)
Scholastic Competence	2.82	2.97 (0.58)	2.95 (0.65)	2.98 (0.55)
Social Acceptance	3.03	3.04 (0.64)	2.89 (0.78)	3.12 (0.57)
Athletic Competence	2.72	2.54 (0.72)	2.69 (0.86)	2.46 (0.65)
Physical Appearance	3.03	2.79 (0.58)	2.75 (0.61)	2.81 (0.58)
Job Competency	3.14	3.10 (0.64)	2.83 (0.82)	3.23 (0.50)
Romantic Appeal	2.53	2.61 (0.60)	2.52 (0.61)	2.65 (0.60)
Behavioural Conduct	2.80	2.96 (0.48)	2.90 (0.43)	2.99 (0.50)
Close Friendships	3.24	3.12 (0.74)	3.01 (0.95)	3.17 (0.63)
Global Self-Worth	2.98	3.05 (0.61)	3.12 (0.66)	3.01 (0.60)
Mean Discrepancy Score	-	- 0.44 (0.39)	- 0.65 (0.44)	- 0.33 (0.31)

The adolescent participants combined (across persistent and recovered) were compared with the standardised scores for each domain (excluding Mean Discrepancy Scores). The adolescent participants combined (M=2.79, SD=58) scored significantly lower than the standardised score for Physical Appearance (M=3.03), $t(37) = 2.52$, $p < 0.016$ (two-tailed). The adolescent participants combined (M=2.96, SD=48) also

scored significantly higher than the standardised score for Behavioural Conduct ($M=2.80$), $t(37) = 2.11$, $p < 0.04$ (two-tailed).

No significant differences were found when the scores of the recovered group were compared with the standardised scores for the nine domains (excluding Mean Discrepancy Scores).

The scores of the persistent group were compared with the standardised scores for each domain (excluding Mean Discrepancy Scores). The PAS ($M= 2.46$, $SD=0.65$) scored significantly lower than the standardised score for Athletic Competence ($M=2.72$), $t(24) = 2.03$, $p < 0.05$ (two-tailed). The PAS ($M= 2.81$, $SD=0.58$) scored significantly lower than the standardised score for Physical Appearance ($M=3.03$), $t(24) = 1.89$, $p < 0.07$ (two-tailed). The PAS ($M= 2.99$, $SD=0.50$) scored significantly higher than the standardised score for Behavioural Conduct ($M=2.80$), $t(24) = 1.9$, $p < 0.07$ (two-tailed).

The significant differences between the persistent (PAS) and recovered adolescent (RAS) groups on their scores for each domain (including Mean Discrepancy Scores) was found in the Job Competence domain and Mean Discrepancy Scores. The PAS ($M=3.23$, $SD=0.50$) had significantly higher Job Competence scores than the RAS ($M=2.83$, $SD=0.82$), $t(36) = 1.9$, $p < 0.07$ (two-tailed), but the persistent group ($M= -.33$, $SD = 0.31$) produced significantly smaller Mean Discrepancy Scores than the recovered group ($M=-0.65$, $SD=0.44$), $t(36) = 2.60$, $p < 0.01$ (two-tailed).

Comparing the general self-esteem of persistent and recovered participants:

Combining both the children and adolescents together, the recovered group ($M= -0.50$, $SD= 0.45$) produced significantly larger Mean Discrepancy Scores than the persistent group ($M= -0.31$, $SD=0.38$), $t(80) = 2.04$, $p < 0.05$ (two-tailed), indicating lower general self-esteem.

(ii) Bullying:

The principal findings from each item on the questionnaire are provided below. The number of participants who responded to each item is given in brackets following the item.

Question 1: Were/are you ever teased or bullied at school? (N=82)

All participants answered Question 1 and 68% (n=56) responded ‘yes’; 32% (n=26) responded ‘no’. Of those who responded ‘yes’, 29% (n=24) were recovered people who stutter and 39% (n=32) were persistent. Of those who responded ‘no’, 11% (n=9) were recovered and 21% (n=17) were persistent people who stutter. An association was found between whether or not a person was bullied during their education and stuttering outcome ($\chi^2 (1, N= 82) =10.98 , p < 0.001$)

Question 2: What form did the bullying take? (n=56)

The number of different types of bullying experienced by participants, having replied ‘yes’ to Question 1 (n=56), is shown in the distribution of percentage of participants (Table 3) and indicated that the majority of participants experienced only one form of bullying 57% (n=32), although participants’ experiences of bullying ranged from one type of bullying to six different types of bullying experienced.

Table 3: The percentage who experienced different types of bullying

Number of different types of bullying	Percentage (n)
1	57 (32)
2	23 (13)
3	12 (7)
5	4 (2)
6	4 (2)

Question 3: Was/is the bullying directly related to you stammering?

The regularity with which participants reported that the bullying they experienced was related to their stutter (Table 4) indicated that the modal response by all participants was that the bullying experienced was ‘sometimes’ directly related to their stuttering. However, the modal response for recovered children who stutter (RCS) was that it was ‘never’ related to their stutter and in contrast the modal response for persistent children who stutter (PCS) was that it was ‘sometimes’ related. The modal response for both recovered (RAS) and persistent (PAS) was that it was ‘very often’ related to their stutter.

Table 4: The percentage who responded to each answer in Question 3

Answer	%RCS (n)	%PCS (n)	%RAS	%PAS	Total % (n)
Never	9 (5)	5 (3)	2 (1)	2 (1)	18 (10)
Occasionally	4 (2)	7 (4)	5 (3)	4 (2)	20 (11)
Sometimes	2 (1)	9 (5)	6 (3)	9 (5)	26 (15)
Very Often	2 (1)	2 (1)	7 (4)	12 (7)	23 (13)
Always	5 (3)	4 (2)	0 (0)	4 (2)	13 (7)

Question 4: How old were/are you when the bullying was/is at its worst?(n=56)

The reported ages at which bullying was at its worst (Table 5) shows that the mean average age at which participants reported that bullying was most severe was 11.8 years, with a standard deviation of 2.42.

Table 5: The age ranges that participants reported in answer to Question 4

Age Range (years)	% (n)
6 – 7	9 (5)
8 – 10	36 (20)
11 – 13	46 (26)
14 +	9 (5)

Question 5: At the time of bullying how often did it/does it occur?

The regularity of bullying experienced by participants as reported on their questionnaires (Table 6) indicated that the modal response for all the participants was that bullying occurred a ‘few times a week’.

Table 6: The percentage who responded to each answer in Question 5

Answer	%RCS(n)	%PCS (n)	%RAS	%PAS	Total % (n)
Once a term	7 (4)	5 (3)	2 (1)	0 (0)	14 (8)
Few times a month	2 (1)	5 (3)	2 (1)	5 (3)	14 (8)
Once a week	2 (1)	4 (2)	4 (2)	4 (2)	12 (7)
Few times a week	9 (5)	11 (6)	13 (7)	15 (9)	48 (27)
Every day	2 (1)	2 (1)	2 (1)	5 (3)	11 (6)

Question 6: If you were bullied did/does it have an effect on your stammering? (N=55)

The percentage of the participants who responded ‘yes’ was 49% (n=27), and of those 16% (n=9) were recovered and 33% (n=18) were persistent people who stutter. The percentage of participants who responded ‘no’ was 51% (n=28) and of those 25% (n=14) were recovered and 25% (n=14) were persistent people who stutter.

Question 7: If yes, how much did/does the bullying affect your stammering? (n=27)

The percentage of the relative degree of severity with which participants who replied ‘yes’ to Question 6 (n=27) reported that bullying affected their stutter (Table 7) indicated that the modal response for all participants was that bullying had a ‘moderate’ affect. However, the modal response for both recovered children and adolescents who stuttered was that bullying only affected their stutter ‘a little’, where as for participants who are persistent people who stutter the modal response was ‘moderately’ affected.

Table 7: The distribution of percentage of participants who responded to each answer in Question 7

Answer	%RCS(n)	%PCS (n)	% RAS (n)	%PAS (n)	Total % (n)
A little	4 (1)	0 (0)	18 (5)	4 (1)	26 (7)
Moderately	0 (0)	7 (2)	12 (3)	22 (6)	41 (11)
Quite severely	0 (0)	4 (1)	0 (0)	22 (6)	26 (7)
Very severely	0 (0)	7 (2)	0 (0)	0 (0)	7 (2)

Question 8: How many close friends did/do you have at school? (n=82)

The recorded number of close friends that participants reported to have (Table 8) showed that the modal response for all participants was that they had over seven friends, which was reflected in the modal response for all adolescent participants but not for children. The modal response for recovered children who stutter (RCS) was equal between ‘five to six’ and ‘one to two’, which was less than adolescents. The modal response for persistent children who stutter (PCS) was also less at ‘three or four’ close friends.

Table 8: The distribution of percentage of participants who responded to each answer in Question 8

Answer	%RCS(n)	%PCS (n)	% RAS (n)	%PAS (n)	Total % (n)
Seven +	1 (1)	7 (6)	10 (8)	17 (14)	35 (29)
Five – six	6 (5)	6 (5)	3 (2)	4 (3)	19 (15)
Three – four	2 (2)	11 (9)	7 (6)	3 (2)	23 (19)
One – two	6 (5)	6 (5)	5 (4)	5 (4)	22 (18)
Nil	0 (0)	0 (0)	0 (0)	1 (1)	1 (1)

Question 9: Did you/do you find it hard to make friends at school? (n=82)

The results of the regularity with which participants found it hard to make friends, if at all (Table 9) shows that the modal response was that they ‘never’ found it hard to make friends.

Table 9: The distribution of percentage of participants who responded to each answer in Question 9

Answer	%RCS (n)	%PCS (n)	% RAS	% PAS	Total % (n)
Never	5 (4)	10 (8)	14 (12)	16 (13)	45 (37)
Occasionally	3 (2)	10 (8)	6 (5)	1 (1)	20 (16)
Sometimes	3 (2)	5 (4)	2 (2)	6 (5)	16 (13)
Very Often	3 (2)	5 (4)	0 (0)	3 (3)	11 (9)
Always	4 (3)	1 (1)	1 (1)	2 (2)	8 (7)

Question 10: If so, was/is this related to your stammer? (n=82)

33% (n=27) responded ‘yes’ (11 recovered and 16 persistent people who stutter); 67% (n=55) responded ‘no’ (22 recovered and 33 persistent people who stutter).

Comparing the bullying experiences of recovered and persistent participants (n=27):

The recovered participants (M=1.33, SD=0.50) only showed significantly reliable difference in scores for Question 7 (Appendix 2) from the persistent participants (M=2.56, SD=0.78) $t(25) = 4.25, p < 0.001$ (two-tailed).

(iii) Ethnicity

The percentage of the participants who were white ethnicity was 67% (n=55), and of those 29% (n=24) were recovered and 38% (n=31) were persistent people who stuttered. The percentage of participants who were of non-white ethnicity was 33% (n=28) and of those 11% (n=9) were recovered and 22% (n=18) were persistent people who stuttered. An association was found between a person's ethnicity and stuttering outcome ($\chi^2 (1, N= 82) = 9.56, p<0.002$)

The percentage of the participants who spoke only English at home was 77% (n=63), and of those 33% (n=27) were recovered and 44% (n=36) were persistent people who stutter. The percentage of participants who spoke other languages at home was 23% (n=19) and of those 7% (n=6) were recovered and 16% (n=13) were persistent people who stutter. An association was found between whether a person only spoke English at home or more languages and stuttering outcome ($\chi^2 (1, N= 82) = 23.61, p<0.001$)

(iv) Predicting Persistence or Recovery using Self-esteem, Bullying and Ethnicity Scores:

Logistic regression was employed to predict the discrete outcome of persistence or recovery in stuttering using the data collected on the participant's self-esteem and bullying scores together with their ethnicity and primary language used. The Logistic regression analysis was performed on the computer programme SPSS 14.0 using forced entry method. The logistic regression analysis involves testing of models to obtain the best fit for the data; the model is compared with a baseline model (that classifies all participants as persistent) by using chi square and computing the difference in the model's log-likelihood. The odds ratios of being in one group rather than another (when the value of the predictor increases by one unit) are provided.

A logistic regression model using self-esteem scores performed significantly better than the baseline model. $X^2(3) = 15.725, p=0.001$. The model accounted for between 17.5% and 23.6% of the variance and correctly predicted 70.7% of group membership. Each of the three self esteem measures used contributed significantly to the model as can be seen from the Wald statistics below (Table 10).

Table 10: Wald Statistics for the Logistic Regression of Variables Behavioural Conduct, Global Self-Worth and Mean Discrepancy Scores

Variable	Wald	Significance (<i>p</i>)	Odds ratio
Behavioural Conduct	7.356	0.007	4.426
Global self-worth	6.895	0.009	0.220
Mean Discrepancy Scores	7.803	0.005	6.406

A logistic regression model using bullying scores approached being significantly better than the baseline model. $X^2(4) = 8.9$, $p=0.064$. The model accounted for between 14.7% and 19.7% of the variance and correctly predicted 66.1% of group membership. Of the bullying measures used only Question 4 (Appendix 2) contributed significantly to the model as can be seen from the Wald statistics below (Table 11).

Table 11: Wald Statistics for the Logistic Regression of Variables Question 2, 3, 4 & 5 (Appendix 2)

Variable	Wald	Significance (<i>p</i>)	Odds ratio
Question 2	0.669	0.413 (ns)	0.767
Question 3	0.506	0.477 (ns)	1.179
Question 4	6.557	0.010	1.488
Question 5	0.780	0.377 (ns)	1.258

The data collected of participant's ethnicity and language failed to produce any significant predictors of persistence or recovery.

As the above tables show the three self-esteem domains of Behavioural Conduct (BC) Global Self-Worth (GSW) and Mean Discrepancy Scores (MDS.) as well as Question 4 (Appendix 2) contributed significantly to the models. Thus, a logistic regression model was done using these scores. It performed significantly better than the baseline model. $X^2(4) = 16.688$, $p=0.002$. The model accounted for between 25.8% and 34.6% of the variance and correctly predicted 69.6% of group membership. The only self esteem measures used which contributed significantly to the model were GSW and MDS as can be seen from the Wald statistics below (Table

12). Therefore, these are the areas that contribute most significantly to prediction of persistence or recovery of stuttering.

Table 12: Wald Statistics for the Logistic Regression of Variables Behavioural Conduct, Global Self-Worth and Mean Discrepancy Scores and Question 4 (Appendix 2)

Variable	Wald	Significance (<i>p</i>)	Odds ratio
Question 4	1.000	0.317 (ns)	1.184
Behavioural Conduct	1.053	0.305 (ns)	1.948
Global self-worth	5.915	0.015	0.149
Mean Discrepancy Scores	6.255	0.012	12.209

VII. Discussion

(i) Self-Esteem

The prediction that the participants who stutter would have lower than average self-esteem (Hypothesis 1) was not supported. The results showed that neither the children's nor the adolescents' general self-esteem was significantly lower than the standardised average. Their self-esteem was even higher than average in some cases as evidenced by the Global Self-Worth (GSW) scores, which represent the individuals general perception of their competencies. The participants' mean scores in each of the separate skill domains were also similar to standardised domain scores; the participants' mean score in the relevant domain was always greater than the mean standardised score if a significant difference existed.

However, one sample *t*-tests were used to find these significances. Therefore, although this gives an indication of the difference between the participants in this study and the standardised mean scores, a more in depth statistical analysis should be carried to deduce more irrefutable results. Similarly, Andrews and Harris (1964) evidenced that persistent stuttering is defined as stuttering existing past age 12 years. Consequently, it may be queried whether the thirteen participants that were aged 8 to 11 years at the time of data collection can be classed as persistent or recovered. It would therefore be important to use participants that are over age 12 years to dispel uncertainty about classing participants as persistent or recovered, in future research.

Blood et al. (2003) and Yovetich et al (2000) found no difference on measures of self-esteem between people who stutter and normative data, thus these results support their findings. Yovetich et al. (2000) suggested that role in the development of the self-esteem of people who stutter must be influenced by factors other than stuttering. The results of the present study supported the idea that certain strategies such as 'discounting', where individuals discount the importance of domains where they have lower self-esteem in order to maintain their self-worth could be used by people who stutter and clinicians to preserve self-esteem. Blood et al. (2003) also suggested that further strategies might be used to increase self-esteem by reducing the perceived stigma of stuttering. This included attributing negative feedback to the fact that they belong to a stigmatised group rather than to their own personal characteristics and comparing themselves to members of their own social group rather than with a non-stigmatised group.

The prediction that recovered people who stutter would have higher self-esteem than persistent people who stutter (Hypothesis 2) was only supported for children as the recovered group scored significantly higher in the Athletic Competence domain. For the adolescents the recovered group produced significantly larger Mean Discrepancy Scores (MDS) than did the persistent group. This indicated that the importance attributed to particular domains by the recovered group was generally greater than their perceived competencies in them, resulting in lower self-esteem. In concurrence with Yovetich et al. (2000) and Blood et al. (2003) the people who have a persistent stutter, in the present study, may have had therapy resulting in a more positive impact their feelings of self-worth. This therapy may have encouraged the use of strategies such as discounting, which would result in smaller MDS.

Interestingly the children and adolescents who had a persistent stutter scored significantly higher in Behavioural Conduct and Job Competence respectively. This could be due to the fact that being well behaved and working hard are areas that people who stutter can complete without the need to speak with other people thus it is an area that they could feel comfortable in and have high self-esteem for.

That recovered participants had lower self-esteem in some areas is an important finding, as it shows that even if people have recovered from their stutter, there may be long-term psychological consequences that require attention and support. Thus a multi-disciplinary approach, where psychologists are recruited to target the apparent discrepancy between importance and competence in certain domains, and any other negative thoughts or behaviours resulting from a previous stutter, could be beneficial.

The Harter Profiles (1985a; 1988a) used in the present study did not *directly* assess how stuttering affected the individual's self-esteem. Yovetich et al (2000) conceded that their self-esteem instrument had a similar problem and suggested that stuttering may become a clinical issue relative to self-esteem only when questions directly assess the problem.

For future studies, researchers could develop a self-esteem instrument that specifically asks questions regarding how a person's stutter influences their feelings of self-worth. In addition, it would be important to gain information about the nature of therapy received and the severity of the participants' stutter, for example using Bloodstein's (1995) developmental categories in order to determine whether self-esteem scores are indeed influenced by these variables.

(ii) Bullying

In the present study it was found that over half (68%) of the participants reported that they were bullied at some time in their educational career. Thus, the prediction that a high incidence of bullying would be found amongst people who stutter (Hypothesis 3) was supported. Further to the studies of Mooney and Smith (1995) and Hugh-Jones and Smith (1999) which found that bullying had a negative impact on the speech difficulties of persistent people who stutter.

However, this study also revealed that bullying also had an effect on the dysfluency of recovered people who stutter. It was found that 49% of participants, both recovered and persistent, reported that the bullying negatively affected their stutter, with 41% of these respondents reporting at least a 'moderate' effect. The prediction that recovered people who stutter would have experienced less bullying than those who were persistent (Hypothesis 4) was supported; whether or not a person was bullied at school was significantly associated with stuttering outcome.

The percentage of participants bullied in this sample (68%) appears higher than some estimates of bullying amongst non-stuttering young people. Morgan et al. (2006) stated findings from a 2001/02 cross-national survey carried out by the World Health Organisation (WHO) of 6423 school children in England aged between 11 and 16 years, that only 34% reported being bullied. Similarly, Todd et al. (2004) showed that the WHO survey in Scotland revealed that only 8.4% of 4404 school children of the same age range were regularly bullied.

However, the Morgan et al. (2006) and Todd et al. (2004) studies had different definitions of 'regular victims'. The first represented a person being bullied at least two times a month, and in the latter, the percentages reported reflected those young people bullied at least once in the previous two months, which could account for the lower percentages.

In contrast, the present study and a study conducted in Scotland by Mellor (1990) on 942 secondary school pupils revealed that a greater figure reported that they had been bullied at least once during their school careers. The Hugh-Jones and Smith (1999) and the Mooney and Smith (1995) studies also revealed that 83% and 82% respectively, of respondents reported having been bullied at some time during their school career which is closer to the findings in the present study (68%).

It was also found that 26% of participants reported that the bullying experienced was at least 'sometimes' related to their stutter. Experiencing one form of

bullying was the most common (57%) and most commonly experienced 'a few times a week' (48%). The bullying was reported to be most severe around the age of about 12. Within this study a greater predictor of stuttering outcome was age that a participant was bullied (modal age 11-13). This could be due to the puberty changes that occur around this age and also the change from primary education to secondary education, but further investigation is needed in this area.

These results demonstrate that further support in schools for young people who stutter is required. This is not only directed at how to cope with bullying behaviour, but also support during times of change, i.e. joining a new school. Parent, teacher and peer support may serve as a buffer against bullying at these problematic times.

The questionnaire was very qualitative as it relied on the participant's recollections of being bullied, which may be distorted. However, as the eldest participant was 22 years, many respondents were still at school, or had only recently left school, therefore the issue of long-term recall distortions should not have been especially prominent. Using observational data from participant's parents, teachers or peers may have improved reliability, as there was no way to confirm the responses as accurate. However, in order to obtain a comprehensive description of the participant's experiences of being bullied, it was necessary to ask the participants directly as ratings for bullying might differ greatly between outside observers.

A uniquely designed questionnaire was employed in this study, as standardised questionnaires about the bullying experiences of people who stutter are not currently available. The questionnaire was consequently neither standardised nor validated. Therefore, in order to provide researchers with a valid tool for assessing the precise relationship between bullying and stuttering future work needs to be directed at this undertaking.

(iii) Ethnicity

This study attempted to explore some of the aspects of ethnicity and an association was found between both ethnicity and stuttering outcome, and language spoken at home and stuttering outcome. In support of hypothesis 5 and 6 more 'white' participants recovered and more participants who only spoke English at home recovered, signifying that a more ethnically diverse background may have an impact on the person persisting to stutter.

However, the exact reason for the associations found is difficult to explain from the information collected, as ethnic information gathered for this study was limited. For future investigations a more detailed account of ethnicity may provide more significant results in predicting stuttering outcome, for example a breakdown of people's exact ethnic background to include race, language spoken, socio-economic background, etc.

In addition, a more diverse and balanced group of participants would need to be collected in order to get more detailed ethnic information in future studies. In the present study 67% of participants were 'white' and only 33% were 'non-white' ethnicity.

(iv) Predicting Persistence or Recovery

The measures that contributed most significantly to the logistic regression, which predicted the discrete outcome of stuttering, were Global Self-Worth (GSW) and Mean Discrepancy Scores (MDS). The self-esteem domain of Behavioural Conduct and the age of bullying data were no longer significant when combined, although they were when analysed separately.

In addition, it is interesting to note that the self-esteem domains of GSW and MDS are *trait* self-esteem, which is the person's general appraisal of his or her value (Leary, 1999). Therefore, it could be hypothesised that the *trait* self-esteem characteristics are better predictors of whether stuttering will persist or recover. It is important to note that this study indicates that although the GSW scores are lower for the persistent participants indicating lower self-esteem, the MDS are also lower for the persistent participants indicating that the importance attributed to particular domains by the persistent group was generally smaller than their perceived competencies in them. Thus, lower GSW self-esteem combined with a smaller importance put on self-esteem generally could result in persistent stuttering.

Although significant relationships between self-esteem and stuttering outcome were established for the domains of GSW and MDS, it is crucial to determine whether more detailed ethnicity information about participants or other psychosocial factors, such as personality or behavioural traits, significantly influence stuttering outcome.

VIII. Conclusion

This has been the first study to examine the psychosocial variables of self-esteem, bullying and ethnicity in the same group of individuals who stutter, and to examine the influence of these variables on persistence and recovery. This investigation found that self-esteem for people who stutter (persistent and recovered) was not significantly below the average for fluent people, and in some domains the people who stutter had higher self-esteem than their fluent peers.

It was found that the incidence of bullying was higher in people who stutter than the previous estimates of studies done with fluent young people throughout the United Kingdom.

There was a significant association between ethnicity and stuttering indicating that a more ethnically-diverse background may have an impact on the person persisting to stutter and a more in depth study into a detailed ethnic background of people who stutter may show further significant associations to stuttering outcome.

Logistic regression found that self-esteem when measured by the competency scores in the domains of GSW and MDS for people who stutter, significantly contributed to the discrete outcome of stuttering persistence or recovery.

Although this study has located a predictive model further investigation with people who stutter into these and other psychosocial factors which may affect stuttering outcome is required. More predictive models for persistence and recovery should be investigated, which would be of additional benefit in directing the therapy and support that should be offered to people who stutter to help them to recover rather than persist.

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Web Site:

www.statistics.gov.uk

X. Appendices

Appendix 1: National Statistics classification system and table of the key statistics for the 2001 Census in England and Wales.

National Statistics classification system

1. White

- British
- Irish
- Other

2. Mixed

- White and Black Caribbean
- White and Black African
- White and Asian
- Other Mixed

3. Asian or Asian British

- Indian
- Pakistani
- Bangladeshi
- Other Asian

4. Black or Black British

- Caribbean
- African
- Other Black

5. Chinese or other ethnic group

- Chinese
- Other

Census 2001: Key Statistics for England and Wales

AREA	ALL PEOPLE	WHITE	MIXED ETHNICITY
ENGLAND	49,138,831	90.92	9.08
WALES	2,903,085	97.87	2.13

Appendix 2: The questionnaire used to assess the bullying experiences of people who stutter. The number in each box represents the score allocated for a response given.

1. Were you/ are you ever teased or bullied at school?

<i>Yes</i>	<i>No</i>
<input type="text" value="0"/>	<input type="text" value="1"/>

2. What form did/does the bullying take?

<i>Name calling</i>	<i>Rumour spreading</i>	<i>threats</i>
<i>Physical bullying (e.g. hit or pushed)</i>	<i>Property stolen</i>	
<i>Being left out by your friends</i>		

1 point for each answer circled added together for a total score

3. Was/is the bullying directly related to your stuttering?

<i>always</i>	<i>very often</i>	<i>sometimes</i>
<input type="text" value="4"/>	<input type="text" value="3"/>	<input type="text" value="2"/>
<i>occasionally</i>	<i>never</i>	
<input type="text" value="1"/>	<input type="text" value="0"/>	

4. How old were/are you when the bullying was at its worst (years)?

No score allocated, age noted in the data

5. At the time of bullying, how often did it/does it occur?

<i>every day</i>	<i>few time a week</i>	<i>once a week</i>
<input type="text" value="4"/>	<input type="text" value="3"/>	<input type="text" value="2"/>
<i>few times a month</i>	<i>once a term</i>	
<input type="text" value="1"/>	<input type="text" value="0"/>	

6. Did/does the bullying have an effect on your stuttering?

Yes No
 0 1

7. If yes, how much did/does the bullying affect your stuttering?

very severely 4 *quite severely* 3 *moderately* 2 *a little* 1
not much at all 0

8. How many close friends did you do you have at school?

0 4 1-2 3 3-4 2 5-6 1 7 0

9. Did you/do you find it hard to make friends at school?

always 4 *very often* 3 *sometimes* 2
occasionally 1 *never* 0

10. If so, was/is this related to your stutter?

Yes No
 0 1