

■ Dyslexia and Psycho-social Functioning: An Exploratory Study of the Role of Self-esteem and Understanding

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Individuals with dyslexia may have lower self-esteem and exhibit more emotional and behavioural difficulties than those without reading problems. However, the nature of any relationship between self-esteem and psychopathology remains unknown. This exploratory study assessed levels of self-esteem using the *Self-Perception Profile for Children* (Manual for the Self-Perception Profile for Children. University of Denver, CO: Denver; 1985) and psycho-social adjustment using the *Strengths and Difficulties Questionnaire* (J. Child Psychol. Psychiatry, 1997; 38: 581–586) and examined child and parent understanding, attitudes and the perceived impact of reading difficulties on daily life. Sixty-eight children assessed as dyslexic on the basis of discrepancy scores (mean age 11.2 years; 44 male), and their parents, participated. No global self-esteem deficit was found, but the mean score for both child and parent-rated *scholastic competence* was significantly lower than that of the general population. Rates of social, emotional and behavioural difficulties were significantly higher than in the general population and were correlated with self-esteem. For children who had high global self-worth, both children and their parents had more positive attitudes towards their reading difficulties and were less likely to perceive a negative impact on relationships. The association between academic self-esteem and emotional symptoms is consistent with the proposed link between dyslexia and internalizing difficulties. Good self-esteem and a good understanding of dyslexia may help children avoid some of these difficulties. Further research with

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larger more representative samples is necessary as understanding the factors that promote successful psycho-social adjustment is essential to the development of effective prevention and intervention strategies. Copyright © 2009 John Wiley & Sons, Ltd.

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INTRODUCTION

Individuals with dyslexia may exhibit more frequent emotional and behavioural difficulties than those without reading problems (see Maughan & Carroll, 2006 for a review). The link between dyslexia and disruptive behaviour disorders is well documented in both epidemiological and clinical samples (Arnold *et al.*, 2005; Carroll, Maughan, Goodman, & Meltzer, 2005; Hinshaw, 1992; Willcutt & Pennington, 2000), but the association with emotional difficulties (e.g. anxiety and depression) has received less research attention (Beitchman & Young, 1997) despite higher levels of depression being well documented in the general learning disabled population (Huntington & Bender, 1993). Although evidence exists for an association between dyslexia and internalizing problems, understanding of the exact nature of this association remains limited. Willcutt and Pennington (2000) suggest that the academic underachievement associated with dyslexia may predispose children to become more withdrawn, anxious and depressed than children without dyslexia. The relationship is more likely to be indirect, as research also demonstrates that not all individuals with dyslexia experience behaviour problems, and many children and adults show successful psycho-social adjustment (Boetsch, Green, & Pennington, 1996; Burden & Burdett, 2007; Maughan & Hagell, 1996; Miller, Hynd, & Miller, 2005). Further research is required to examine and clarify the process underlying the association between reading difficulties and internalizing problems.

Self-esteem is an important component of psycho-social adjustment and emotional well-being. Low self-esteem has been documented in children and adults with dyslexia (Alexander-Passe, 2006; Carroll & Iles, 2006; Edwards, 1994). However, much of the research focusing on the prevalence of self-esteem problems in children with dyslexia has not been able to examine the relationship between self-esteem and psycho-social adjustment as the presence of psychopathology is often an exclusion criterion or a consequence of the sample (e.g. Burden & Burdett, 2007; Humphrey, 2002; Humphrey & Mullins, 2002). Understanding the relationship between reading difficulties, self-esteem and behaviour problems are essential to the development of effective prevention and intervention strategies. This exploratory study examined the relationship between dyslexia, self-esteem and psycho-social adjustment.

Reading Difficulties and Psycho-social Adjustment

Children with reading deficits are nearly five times more likely to exhibit anti-social behaviour than children in the general population (Rutter & Yule, 1970)

and elevated rates of specific reading problems and general academic failure have been documented in samples of conduct disordered or delinquent children (Frick *et al.*, 1991). Of particular concern is the co-morbidity of dyslexia and attention deficit hyperactivity disorder (ADHD), which is the most common psychiatric concomitant of reading disabilities (Maughan & Carroll, 2006). Maughan, Pickles, Hagell, Rutter, and Yule (1996) suggest that conduct problems may be associated with comorbid ADHD rather than academic underachievement *per se*. However, subsequent research has demonstrated an independent relationship between reading difficulties and behavioural problems after controlling for ADHD (Arnold *et al.*, 2005; Trzesniewski, Moffitt, Caspi, Taylor, & Maughan, 2006). Longitudinal work suggests that learning difficulties precede problems with aggression, and that this relationship becomes reciprocal with increasing age (Miles & Stipek, 2006); Trzesniewski *et al.* (2006) suggest a similar reciprocal causation pattern between specific reading difficulties and anti-social behaviour.

Internalizing problems have received less research attention (Beitchman & Young, 1997), and some recent studies suggest that children with reading difficulties are *not* at increased risk for internalizing psychopathology (Maag & Reid, 2006; Miller *et al.*, 2005). However, these specific findings may be attributable to methodological issues (definition of depression and very small sample size, respectively), and a larger body of evidence indicates that there *is* an association between language difficulties and internalizing problems such as anxiety, depression or social withdrawal (Arnold *et al.*, 2005; Carroll & Iles, 2006; Carroll *et al.*, 2005; Lindsay & Dockrell, 2000; Riddock, Sterling, Farmer, & Morgan, 1999). Symptoms of anxiety and depression remain significant after controlling for comorbid ADHD (Arnold *et al.*, 2005; Willcutt & Pennington, 2000).

Although research indicates an association between dyslexia and internalizing problems, understanding of the exact nature of this association remains limited. Willcutt and Pennington (2000) suggest that the academic under-achievement associated with dyslexia may predispose children to become more withdrawn, anxious and depressed than children without dyslexia. There has been some support for this: Maughan, Rowe, Loeber, and Stouthamer-Loeber (2003) found evidence to suggest a direct causal relationship between reading disability and younger boys' depression (but not anxiety), while Carroll *et al.* (2005) found evidence that reading difficulties may present a direct cause of anxiety problems (but not depressive symptoms) in children. Further research is required to examine and clarify the process underlying the association between reading difficulties and both externalizing and internalizing behaviour problems.

The Importance of Self-esteem

As previously discussed, research highlights the co-occurrence of reading difficulties and behaviour problems, especially emotional problems. Research also indicates that reading achievement may have a negative impact on self-esteem (Chapman & Turner, 1997). Perceptions of Scholastic competence predict lower levels of anti-social behaviour (Leung & Lau, 1989), and Academic self-concept has been shown to directly contribute to the development of

anti-social behaviour rather than the symptoms of ADHD (Pisecco, Wristers, Swank, Silva, & Baker, 2001). Scholastic competence was an important protective factor for peer-rejected children with ADHD, with self-perceived scholastic competence being a better predictor of resilience than actual academic achievement (Mikami & Hinshaw, 2006).

Research suggests that self-esteem is often low in reading disabled populations, with children and young people reporting lower global self-worth, lower perceived competence in scholastic domains and more depressive symptomatology than normal achievers (Alexander-Passe, 2006; Boetsch *et al.*, 1996; Chapman & Tumner, 1997; Humphrey, 2002; Snowling, Muter, & Carrol, 2007). Although a large body of research indicates that self-esteem is often low, it is important to note that this is not always the case. Budren and Burdett (2005) found no self-esteem deficit in a sample drawn from an independent school for boys with dyslexia, and research suggests that children who attend specialist units are less likely to report low levels of self-esteem than dyslexic children in mainstream schools (Humphrey, 2002). While acknowledging the mixed findings concerning levels of self-esteem, it seems reasonable to suggest that self-esteem, especially academic self-esteem, may make an important contribution to psycho-social adjustment of children with reading difficulties.

The Contribution of Understanding and Social Support

Self-esteem is often associated with the child's understanding of their disability (Cosden, Elliott, Noble, & Kelemen, 1999), and understanding the circumscribed nature of reading and spelling difficulties appears to be associated with successful adult psycho-social functioning (Boetsch *et al.*, 1996; Maughan & Hagell, 1996). A full understanding of their reading difficulties may enable individuals to set realistic goals and thereby experience success rather than failure. It is not only the child's understanding that may promote a more positive self-concept (Budren & Burdett, 2005; Heyman, 1990; Rothman & Coden, 1995), supportive family and peer relations may also play an important role. Children who perceive greater parental understanding (Morvitz & Motta, 1992), or who perceive greater social support from parents, teachers and peers (Kloomok & Cosden, 1994) have a more positive self-concept. Adaptive family interactions, the expectations and attributions of parents and teachers, school interactions that engage or alienate the child all contribute to the psycho-social outcome of children with learning impairments (Morrison & Cosden, 1997) and these contextual factors would be expected to contribute to the psycho-social adjustment of children with dyslexia as a child reading difficulties can impact on family functioning (Snowling *et al.*, 2007) and more general social relationships. This proposal is consistent with the views expressed in qualitative work exploring adults' experiences of living with dyslexia (Minnis, Terras, MacKenzie, & Thompson, 2004) in which individuals reported that relationships with parents and teachers were often strained as a result of poor understanding, and that successful intervention and support were associated with positive feelings of increased confidence and self-esteem.

This exploratory study assessed levels of self-esteem and socio-emotional and behavioural difficulties of children with reading difficulties who come for assessment. Early intervention is key, and this may be a particularly vulnerable

group that has not received appropriate recognition and support. Understanding the nature of any difficulties in this group may inform the development of more effective prevention and intervention strategies. Specifically this project aimed (1) to establish the nature of any self-esteem deficit (global and/or specific); (2) to determine levels of psycho-social adjustment; (3) to determine if low self-esteem is associated with psycho-social adjustment in children with reading difficulties; (4) to explore child and parent understanding, attitudes and perceived impact of reading difficulties on daily life and its relationship to self-esteem and psycho-social adjustment.

METHOD

Participants

An opportunity sample of children aged 8–16 assessed by the 'Dyslexia Institute (Scotland)' (now 'Dyslexia Action') between August 2002 and July 2003 and their parents were invited to participate. Of the 133 eligible children assessed, 75 consented (56% response rate). All children were assessed by an educational psychologist, and dyslexia identified using the standard IQ-reading ability discrepancy criterion. Seventy-five children were recruited, however, after assessment six were diagnosed as non-dyslexic and no assessment information was available for one other child. These children were excluded, resulting in a final sample of 68. There were 44 males (65%) and 24 females (35%), with a mean age at the time of testing of 11.2 years (SD 2.14; range 7.67–16.58). Dyslexia severity was calculated using Turner's (1997) Dyslexia Index: This scale emphasizes the continuum of reading ability and the practical limitations presented to each individual, rather than severity in an absolute sense. Utilizing a six-test model, results of two assessments of general reasoning, information processing, and literacy skill are converted to an index score. An index score of less than 0 indicate no dyslexia signs, scores between 0 and 0.49 indicate few dyslexia signs, scores between 0.5 and 0.99 indicate mild dyslexia, scores between 1 and 1.49 indicate moderate dyslexia, scores between 1.5 and 1.99 indicate severe dyslexia signs and scores >2.0 indicate very severe dyslexia. On the basis of this index, 20% of the sample displayed few dyslexia signs; 31% mild dyslexia; 24% moderate dyslexia; 15% severe dyslexia and 3% very severe dyslexia. Severity information was unavailable for five children (7%).

Fifty two percent of the families were from professional or managerial occupations, compared to 1.8% in the general population (General Register Office for Scotland, 2005). One parent (mostly mothers) per child completed and returned questionnaires (except in one case where the SDQ was not completed).

Measures

Self-esteem

Child and parental perceptions of child self-esteem were assessed using respondent appropriate versions of the Self Profile for Children (SPPC, Harter, 1985). This multidimensional measure of self-esteem contains 36 items and provides a global measure of self-worth as well as five sub-scales that assess

self-perceptions of Scholastic Performance, Social Acceptance, Athletic Competence, Physical Appearance and Behavioural Conduct. Each sub-scale is assessed by six items. The questionnaire has been standardized on both a North American and a Scottish population (Hoare, Elton, Greer, & Kelry, 1993). Reliabilities were comparable from both samples, with sub-scale reliabilities as measured by Cronbach's α ranging from 0.72 to 0.83. The Scottish norms are used for comparison in this study. The SPPC has been used in research involving with children with dyslexia (Snowling *et al.*, 2007) and general learning disabled samples (Cosden *et al.*, 1999; Rothman & Coden, 1995). Parental perceptions of their child's self-esteem were assessed using the Teacher's Rating Scale of Child's Actual Behaviour (Harter, 1985) as this measure is suitable for use not only by teachers, but also by other adults whose ratings would be considered informative. This 15-item questionnaire reflects the same sub-scales as the SPPC but obviously contains no measure of Global Self Worth.

Emotional and Behavioural Problems

Emotional and behavioural problems were assessed using the *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). This 25-item screening instrument has separate questionnaires for parents, teachers and children (aged >10 years). Five sub-scales assess Emotional Symptoms, Conduct Problems, Peer Problems, Hyperactivity and Pro-Social Behaviour. Each sub-scale is assessed by five items. Items are answered 'not true', 'somewhat true' or 'certainly true', hence each of the five sub-scales can have a score of 0–10. The first four sub-scale scores can be summed to provide a Total Difficulties Score based on 20 items (range 0–40) reflecting the present of emotional and behavioural problems. The SDQ has the added advantage that it also provides a measure of positive (pro-social) behaviour. Comprehensive standardization data are available concerning cut-off scores for each sub-scale and the Total Difficulties Score, which indicate children as likely psychiatric 'cases' (Goodman, 2001). These norms are used in the present study.

The SDQ is regularly used as a screening measure and has been shown to be effective in indentifying the co-morbidity of attainment and behaviour problems in educational contexts (Adams, Snowling, Hennessy, & Kind, 1999; Lindsay & Dockrell, 2000). The SDQ has good reliability and validity (Goodman, 2001). Comprehensive normative data are available as the SDQ was used in a national survey of child & adolescent mental health involving a representative British sample of 10 438 individuals aged 5–15 (Meltzer, Gatward, Goodman, & Ford, 2000). SDQ specificity and sensitivity for the presence of emotional and behavioural difficulties is good, with the SDQ indentifying over 70% of individuals with conduct, hyperactivity, depressive and some anxiety disorders (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000).

Understanding and Perceived Impact of Dyslexia Scale (UPIDS)

Informed by our focus group findings (Minnis *et al.*, 2004) and the extant literature (Heyman, 1990), questionnaires for parents (P-UPIDS) and children (C-UPIDS) were developed to assess parental and child attitudes, understanding and perceived impact of dyslexia on daily life (see Appendices A and B). Areas

tapped included the perceived impact of reading difficulties on behaviour and emotional well-being; family and peer relations and understanding of the nature of reading difficulties. Both parent (P-UPIDS) and child (C-UPIDS) questionnaires incorporated 26 statements requiring a forced choice response on a four-point scale, ranging from 'strongly agree' to 'strongly disagree'. In order to place these quantitative responses in a qualitative context, three open questions probed perceived child strengths and weaknesses and associated reasoning, knowledge and understanding of the causes of reading/spelling difficulties, ways to address problems and the opportunity to add any additional information. A score for *attitudes* was obtained by calculating the mean response to items 1–11, with items 5 and 11 reverse-scored due to the positive wording of the statement. A score for *relationships* was obtained by calculating the mean response to items 13–18 for parents and items 14–19 for children. A score for *understanding* was obtained by calculating the mean response to items 19, 22–24 for parents and items 20, 23–25 for children and in each of these cases the first two items were reverse scored.

Procedure

Pilot work: In order to assess the utility and acceptability of the questionnaire packs, these were mailed to parents of existing Dyslexia Institute pupils. Five responded, of whom four were contacted by telephone. Opinions on the measures were positive, but a preference was expressed for closed questions, which was taken into consideration.

Main study: Following the pilot phase, questionnaire packs were circulated with all subsequent Dyslexia Institute first assessment appointment letters (or as a separate mailing to existing pupils) during the data collection phase (12 months). All mailings were followed up by a telephone call approximately 1 week later offering the opportunity to ask any questions about the research and to provide assistance on completing the measures if necessary.

RESULTS

Self-esteem

Analysis of SPPC scores indicated no global self-esteem deficit, but children in this sample had significantly poorer self-perceptions of Scholastic Competence compared to the general population ($t = -7.09$; $p < 0.001$). There were no other significant differences from the general population (see Table 1). Parent-rated perceptions of child competence showed the same pattern and there was a significant correlation between parent & child self-esteem ratings on all sub-scales (e.g. Scholastic Competence, Pearson $r = 0.386$, $p < 0.01$).

Socio-emotional and Behavioural Difficulties

Table 2 shows that parent-rated mean SDQ Total Difficulties score and sub-scale scores, with the exception of the Pro-social Behaviour sub-scale, differed significantly from the norm indicating that there are likely to be high levels of

Table 1. Child-rated SPPC scores for dyslexic and normative sample

| SPPC sub-scale | Mean (SD) for study sample (N = 60) | Mean (SD) for normative sample |
|-----------------------|-------------------------------------|--------------------------------|
| Scholastic Competence | 1.95 (0.56)** | 2.72 (0.60) |
| Social Acceptance | 3.02 (0.77) | 2.98 (0.63) |
| Athletic Competence | 2.68 (0.82) | 2.77 (0.65) |
| Physical Appearance | 2.89 (0.76) | 2.70 (0.67) |
| Behavioural Conduct | 2.76 (0.49) | 2.71 (0.56) |
| Global Self Worth | 2.92 (0.75) | 2.95 (0.57) |

** $p < 0.01$.

Table 2. Parent-rated SDQ mean scores for dyslexic sample and general population

| SDQ scale | Mean (SD) in study sample ($n = 67$) | Mean (SD) in general population ($n = 10\,298$) |
|--------------------|--|---|
| Emotional Symptoms | 3.77 (2.49)** | 1.9 (2.0) |
| Conduct Problems | 2.11 (2.35)* | 1.6 (1.7) |
| Hyperactivity | 6.56 (2.5)** | 3.5 (2.6) |
| Peer Problems | 2.78 (2.49)** | 1.5 (1.7) |
| Pro-social | 8.31 (1.75) | 8.6 (1.6) |
| Total Difficulties | 15.22 (7.07)** | 8.4 (5.8) |

** $p < 0.001$, * $p < 0.01$.

psychopathology within the sample. Overall, parent and child SDQ ratings were highly correlated (e.g. Total Difficulties Pearson $r = 0.722$; $p < 0.01$; Emotional Difficulties Pearson $r = 0.484$; $p < 0.05$).

Goodman's (1997) three-category system to indicate 'caseness' (Normal, Borderline and Abnormal) was used to categorize the data, and the scores were compared to the proportions expected according to general population norms. Results for the Total Difficulties scores indicated that 43% of the children were rated as 'abnormal' by parents compared to the expected 10%. Results for the sub-scales are presented in Table 3 below. The parent ratings varied significantly from expectation for all scales, except Prosocial Behaviour, which was within the normative range (see Table 3).

Dyslexia, Self-esteem and Behaviour Problems

If low self-esteem is correlated with psychopathology, then we would expect to find significant negative correlations between the SPPC and SDQ scores, as a low SPPC score indicates low self-esteem and high SDQ scores reflect emotional and behavioural difficulties (except for the Pro-social Behaviour sub-scale where the opposite applies).

Pearson's correlations (see Table 4) show a significant negative association between parent-rated SDQ Total Difficulties Score and child-rated Global Self Worth, a global measure of self-esteem, and all SPPC sub-scales. Child-rated Global Self Worth was significantly related not only to the SDQ Total Difficulties

Table 3. Percentage of children per SDQ 'caseness' category for the dyslexic sample ($N = 67$)

| Parent-rated SDQ scale | Normal (%) | Borderline (%) | Abnormal (%) | Comparison with general population (χ^2) |
|--------------------------------------|------------|----------------|--------------|---|
| Emotional Symptoms | 49.3 | 14.9 | 35.8 | 46.80** |
| Conduct Problems | 67.2 | 10.4 | 22.4 | 5.57 |
| Hyperactivity | 34.3 | 19.4 | 46.3 | 75.25** |
| Peer Problems | 58.2 | 10.4 | 31.3 | 21.02** |
| Pro-social | 89.6 | 6.0 | 4.5 | 5.16 |
| Total Difficulties | 44.8 | 11.9 | 43.3 | 90.08** |
| General population ($n = 10\,298$) | 80 | 10 | 10 | |

** $p < 0.01$, * $p < 0.05$ for $df = 2$.

Score but also to the parent-rated Conduct Problems, Hyperactivity, Peer Problem sub-scales and marginally related ($p = 0.06$, two-tailed) to the emotional symptoms sub-scale.

With respect to the Scholastic Competence sub-scale, the area of self-esteem in which a deficit was found for this sample, poor perceived scholastic ability was significantly associated with high levels of Emotional Symptoms, Conduct Problems, Peer Problems, and the Total Difficulties score.

Child-rated Psycho-social Adjustment ($n = 23$) shared a similar pattern with Global Self Worth being significantly correlated with their self-reported Total Difficulties Score ($r = -0.723$; $p < 0.01$) and all sub-scales, with the exception of Pro-social Behaviour. Perceived scholastic competence was significantly related to emotional difficulties ($r = -0.510$; $p < 0.05$), Peer Problems ($r = -0.572$; $p < 0.01$) and the Total Difficulties score ($r = -0.566$; $p < 0.01$).

Understanding and Perceived Impact of Dyslexia

Table 5 shows responses to the questions exploring understanding and the perceived impact of reading difficulties on daily life and social relationships.

Responses indicate that dyslexia was perceived, by both children and parents, to have impacted on a range of socio-emotional and academic aspects of life. Children often felt down and less confident when they experience difficulties with reading/spelling, which impact on their attitudes towards school. Reading/spelling difficulties were also perceived as having a negative impact on peer and family relationships. Although three quarters of parents and half the children reported that they understood their reading difficulties. It is of interest to note that both children and parents expressed a need for more information.

Self-esteem: Attitudes, Understanding and Relationships

Results indicated that reading difficulties are perceived as having a negative impact on many areas of daily life. What impact may this have on self-esteem? Is

Table 4. Correlation (Pearson r , $N = 59$) between SPPC and parent-rated SDQ scores

| | Scholastic Competence | Social Acceptance | Athletic Competence | Physical Appearance | Behavioural Conduct | Global Self Worth |
|----------------------|-----------------------|-------------------|---------------------|---------------------|---------------------|-----------------------|
| Emotional Symptoms | -0.272* | -0.397** | -0.262* | -0.294* | -0.185 | -0.244 ($p = 0.06$) |
| Conduct Problems | -0.299* | -0.372** | 0.101 | -0.288* | -0.590** | -0.516** |
| Hyperactivity | -0.113 | -0.200 | -0.035 | -0.187 | -0.380** | -0.364** |
| Peer Problems | -0.478** | -0.571** | -0.502** | -0.222 | -0.257* | -0.393** |
| Pro-social Behaviour | 0.274* | -0.017 | -0.058 | -0.228 | 0.184 | -0.070 |
| Total Difficulties | -0.406** | -0.536** | -0.252* | -0.341** | -0.481** | -0.522** |

** $p \leq 0.01$, * $p \leq 0.05$ (two-tailed).

Table 5. Percentage agreement with perceived impact of dyslexia ($N = 67$)

| | % Parent agree | % Child agree |
|--|----------------|---------------|
| Behaves differently | 56 | 27 |
| Gets down/upset | 84 | 55 |
| Less confident | 77 | 56 |
| Copes well | 47 | 52 |
| Does not like going to school | 40 | 35 |
| Parents treat child differently | 41 | 15 |
| Teachers treat differently | 52 | 45 |
| Classmates treat differently | 28 | 15 |
| Brothers/sisters treat differently | 16 | 11 |
| Does not have many friends | 21 | 53 |
| Misses out on fun with friends | 31 | 28 |
| Understand reading/spelling difficulties | 75 | 52 |
| Like more information | 93 | 63 |
| Recognized and helped early enough | 29 | 39 |

it the case that low self-esteem is associated with a child's attitudes and understanding of their reading difficulties? Is low self-esteem associated with negative parental attitudes concerning their child's learning difficulty?

Responses were combined (as outlined in the section 'Method') to obtain mean scores for Understanding, Attitudes and Relationships. A high Understanding score reflects a good understanding, while a low score reflects poorer understanding. A low Attitudes score reflects negative attitudes (perceives reading difficulties as having a negative influence on many areas of life), while a high score reflects a positive outlook. A low Relationship score suggests that reading difficulties are perceived as having a negative impact on relationships. Conversely a high score reflects that reading difficulties are thought to have less of an impact.

There was a significant correlation between children's Attitudes and their Global Self Worth ($r = 0.542$; $p < 0.01$), and scholastic competence ($r = 0.5$; $p < 0.01$), indicating that children with more positive attitudes towards their reading difficulties reported higher self-esteem. Global Self Worth was also significantly correlated ($r = 0.377$; $p < 0.01$) with children's perceived impact of dyslexia on family and peer relations, and marginally correlated with Scholastic Competence ($r = 0.246$; $p = 0.06$ two-tailed), suggesting that children who perceived their reading difficulties as having little impact on their social relationships had higher self-esteem.

Positive parental attitudes to their child's dyslexia ($r = 0.336$; $p < 0.01$), their perceived impact of dyslexia on family and peer relations ($r = 0.457$; $p < 0.01$) and parent's understanding of their child's difficulties ($r = 0.283$; $p < 0.05$) were significantly correlated with their child's Global Self Worth. Parent understanding was related to the child-rated sub-scales of Social Acceptance, Physical Appearance and Behavioural Conduct. Parental Attitudes ($r = 0.220$; $p = 0.09$ two-tailed) and Perceived impact on Relationships scores were marginally related ($r = 0.245$; $p = 0.06$ two-tailed) to their child's perceived Scholastic Competence, but their understanding was unrelated.

Psycho-social Adjustment: Attitudes, Understanding and Relationships

Children with more positive attitudes toward their dyslexia ($r = -0.338$; $p < 0.01$) and who perceived a less negative impact on relationships ($r = -0.40$; $p < 0.01$) were perceived by their parents as having fewer peer problems. The significant negative correlations between the Total Difficulties Score and child Attitudes ($r = -0.266$; $p < 0.01$) and their perceived impact of dyslexia on Relationships ($r = -0.36$; $p < 0.01$) and the marginally significant correlation ($r = -0.242$; $p = 0.06$ two-tailed) between emotional difficulties and perceived impact on relationships are consistent with the assumption that a positive outlook and good peer and family relations promote successful psycho-social adjustment.

It is also interesting to examine child attitudes and understanding in relation to their own perceptions of psycho-social functioning. Owing to the limits imposed by the self-report SDQ (only appropriate for 10 yrs and over) data are only available for 35 children and are consistent with parental reports. Children's attitudes towards their reading difficulties shared a marginally significant correlation ($r = -0.379$; $p = 0.06$ two-tailed) with their self-rated total difficulties score and a significant correlation with their self-rated emotional difficulties ($r = -0.242$; $p < 0.05$ two-tailed).

Parents with more positive attitudes to their child's dyslexia perceived their children to have less psycho-social adjustment difficulties ($r = -0.508$; $p < 0.01$), specifically fewer emotional ($r = -0.481$; $p < 0.01$), conduct ($r = -0.278$; $p < 0.05$), hyperactivity ($r = -0.280$; $p < 0.05$) and peer problems ($r = -0.420$; $p < 0.01$). Children were also perceived as being more pro-social ($r = 0.262$; $p < 0.05$). Parents who perceived a less negative impact of dyslexia on relationships also rated their children as having less psycho-social adjustment difficulties ($r = -0.605$; $p < 0.01$), specifically fewer emotional ($r = -0.428$; $p < 0.01$), conduct ($r = -0.469$; $p < 0.01$), and peer problems ($r = -0.443$; $p < 0.001$), as well as less hyperactivity ($r = -0.398$; $p < 0.01$). There was no significant association between parents' understanding of their child's dyslexia and any SDQ measures.

DISCUSSION

Results indicate that, on assessment, children with dyslexia in this sample do not have lower global self-esteem than the general population, but do have a specific self-esteem deficit in the area of scholastic competence. Social, emotional and behavioural difficulties are significantly more common than general population norms and this poor psycho-social adjustment is significantly correlated with lower self-esteem. Child and parent attitudes and understanding of the nature of dyslexia appear to be related to self esteem, and dyslexia is perceived as having a negative impact on both family and peer relations. Conversely, children who have positive attitudes concerning their reading/spelling difficulties, have good relationships with their family and their peers, and have parents with a good understanding of their dyslexia, tend to have higher self-esteem.

Before considering the insights offered by our findings it is important to acknowledge the limitations of this study. The sample size is small and of higher

social economic status than the general population, although comparable to that of other studies (e.g. Snowling *et al.*, 2007). The lack of obvious deficits in Global Self Worth may, at least in part, be explained by socio-economic status. Recruitment from a specialist centre may also have introduced bias into the sample, as parents may be more motivated, more involved, and more knowledgeable than those in the general population. Since data were only collected at assessment, with no subsequent follow up, it is not possible to assess the impact of assistance. Existing research indicating more positive adjustment for children receiving special education (Budren & Burdett, 2005; Humphrey & Mullins, 2002) suggests this may be the case and highlights the need for this issue to be addressed in future research. Despite these limitations, the findings are significant as they demonstrate the high rate of socio-emotional and behavioural difficulties in children who are experiencing reading difficulties when they come for independent assessment. Such high rates indicate that this group may be vulnerable and highlights the need for early intervention relating to both reading and more general psycho-social adjustment.

Self-esteem

The levels of self-esteem found in this sample are consistent with existing research. For example, low levels of Scholastic competence and normal levels of Global Self Worth have been previously been reported in reading disabled children with high socio-economic status (Casey, Level, Brown, & Brooks-Gunn, 1992). More recently, Snowling *et al.* (2007) in their adolescent follow-up study of children at risk of dyslexia found that the 'at risk impaired' group had lower opinions of their scholastic competence than the 'at-risk non-impaired' or control group. Bearing in mind the limitations of this sample, it is encouraging that Global self-esteem was within the normal range, however it is concerning that perceptions of scholastic competence were low given its demonstrated association with anti-social behaviour (Pisecco *et al.*, 2001). Hence, the low levels of perceived scholastic competence evident in this study are cause for concern. Obtained results indicate children with higher scholastic competence show better psycho-social adjustment and that poor perceived scholastic ability is not only associated with poor adjustment but specifically associated with high levels of emotional symptoms and peer problems.

Psycho-social Adjustment

Children in this sample showed poor psycho-social adjustment: 43% of the sample was rated as abnormal compared to 10% in the general population. Significant differences were also found between the sample and population norms on the sub-scales of Emotional Symptoms, Hyperactivity, Conduct and Peer Problems. Such poor adjustment especially in relation to emotional symptoms is consistent with existing research (e.g. Carroll *et al.*, 2005; Maughan & Carroll, 2006; Willcutt & Pennington, 2000) and consistent with existing data indicating increased levels of anxiety in dyslexic students in higher education (Carroll & Iles, 2006). Our findings indicate that both externalizing and internalizing difficulties are present in a school age sample when they come

for assessment. Furthermore, the obtained results indicate evidence for internalizing difficulties being reported by both parent and child reports. It is important to examine both parent and child perception in relation to psycho-social adjustment as parental reports of psycho-social adjustment may underestimate internalizing difficulties. Parents may be more aware of externalizing behaviour problems and tend to report less internalizing symptoms (Boetsch *et al.*, 1996). In previous work both adolescents and parents reported high levels of inattention and delinquent behaviour; but only adolescents, but not parents, reported increased levels of anxiety and depression (Arnold *et al.*, 2005). This is especially relevant as internalizing problems may be particularly associated with reading difficulties (Carroll *et al.*, 2005; Willcutt & Pennington, 2000).

Peer problems were particularly salient in our sample: 31% of children received an abnormal SDQ rating for peer problems compared with the expected 10% in the general population. Sample scores on the SDQ Peer Problems subscale differ significantly from the population norms and are significantly negatively correlated with both scholastic competence and Global Self Worth, suggesting that peer relations may make an important contribution to self-esteem and that low self-esteem may be related to behaviour problems. High levels of social anxiety have been documented in adults with dyslexia (Carroll & Iles, 2006) so high levels are not surprising in children, especially in a sample at assessment. Peers have been identified as a source of low self-concept in children with dyslexia (Humphrey, 2003) and scholastic competence has been identified as a buffer in peer rejection in children with ADHD (Mikami & Hinshaw, 2006). Children in this sample do not have the assumed protection of scholastic competence, as reported rates are low, and may be particularly vulnerable to peer influences as they have only recently received recognition and support for their reading difficulties.

The Importance of Understanding

Understanding and acceptance of what it means to have reading difficulties may help maintain or foster the development of positive self-esteem and successful psycho-social adjustment (Boetsch *et al.*, 1996; Budren & Burdett, 2005). Our findings indicate that children with positive attitudes towards their reading difficulties have more positive perceptions of both their academic abilities and their Global Self Worth. Interestingly, children's understanding of their readings difficulties does not appear to be associated with their self-esteem and psycho-social adjustment. However, this may reflect the fact that children were recruited when they came for their initial assessment and have yet to develop a full understanding of the nature of their difficulties. Consistent with this interpretation is the finding that both parent and children expressed a need for more information. Despite the fact that children in this sample have just been assessed they have been coping with their difficulties possibly for some time and this may be reflected in their attitudes and how they cope. Children with reading difficulties are often bullied: 50% of children in previous research reported having been bullied or teased because of their dyslexia (Humphrey and Mullins, 2002). Children can adopt different 'profiles of inner logic' regarding their

dyslexia, which produce different ways of coping with and maintaining their self-image (Singer, 2005). Children may protect themselves against teasing and feeling worthless by concealing their emotions and academic failures, or by valuing their personal, social and academic progress in areas other than reading. If such positive coping strategies can be actively fostered in children with dyslexia, then this may support and promote successful academic and social adjustment. Such a proposal is consistent with the findings and recommendations of Alexander-Passe (2006) with respect to dyslexic teenagers: female students reported low general and academic self-esteem and the frequent use of emotional and avoidance-based coping and moderate levels of depression. In contrast, male self-esteem was comparable to the norm, they tended to use task-based coping strategies and showed minimal depression. Although this was a younger sample and no gender differences were apparent, the presence of low scholastic self-esteem and the high level of emotional symptoms suggest that difficulties may be present in younger children when they come for assessment.

Parental emotional support has been identified as a protective factor in psychological outcomes generally (Werner & Smith, 2001) and our findings suggest it may be particularly important with respect to the adjustment of the children in this sample. Good relationships with family and peers are associated with high levels of self-esteem suggesting that supportive relationships may be a protective factor in the development and maintenance of a child's self-esteem. Parental knowledge, openness and acceptance of their child's disability are related to child self-esteem (Raviv & Stone, 1991) and our finding of a significant association between parental understanding of their child's reading difficulties and their child's Global Self Worth is consistent with this.

From a practical perspective these findings suggest that effective interventions need to address not only the provision of information to promote understanding, but also ensure that this new found knowledge is used to support effective relationships that foster self-esteem. The promotion of good family functioning may be particularly important in relation to dyslexia as parents reported that reading difficulties had an impact not only the family generally but also a negative impact on mothers' health in terms of increased levels stress and depression (Snowling *et al.*, 2007). The protective role of social support is consistent with the 'niche explanation' (Boetsch *et al.*, 1996) that highlights the role of contextual change in promoting successful psycho-social functioning in adults with dyslexia. Increasing age and independence allows a move away from possibly negative school and home experiences, into a context where employment, friends and significant others allow more opportunities for positive evaluations, social support and understanding (Maughan & Hagell, 1996).

A Resilience Perspective

Further research is required to identify and understand the factors that promote successful psycho-social adjustment in children and adults with reading difficulties. It may be informative to consider adjustment in terms of risk and

resilience. A resilience perspective allows reading difficulties to be considered in their wider ecological context, i.e. how internal and external contextual factors such as social support; relationships with family and peers; teachers' judgments; motivation, self-concept and effort may promote resilience and reduce the risk of failure for students with learning difficulties (Meltzer, 2004). Most, if not all, of these factors have been considered in relation to children and adults with dyslexia and many interesting findings have informed both research and practice. However, what is lacking is an overall framework to integrate these research findings and further guide research.

The concept of resilience has been widely applied in mental health (Mikami & Hinshaw, 2006; Rutter, 2000), developmental psychology (Luthar, Cicchetti, & Becker, 2000) and recently in relation to learning disabilities where the presence of a learning disability is conceptualized as a risk factor that increases the likelihood of adverse outcomes but does not predict future behaviour (Margalit, 2004; Morrison & Cosden, 1997). Applying a resilience perspective to the psycho-social dimension of dyslexia supports a move away from a deficit approach and helps promote the understanding of factors associated with success as well as failure. Within the resilience framework, dyslexia may be regarded as a risk factor that increases the likelihood of adverse outcomes rather than necessarily entailing a negative outcome. The dyslexia risk factor exerts its influence by interacting with other aspects of the child (personal characteristics such as self-esteem, motivation, personality, etc.) and their environment (family and peer relations, levels of educational support, etc.) and it is these interactions, rather the presence of dyslexia itself, that determine successful psycho-social functioning.

The utility of a resilience perspective lies in its integrative, explanatory and research value. It provides a framework to integrate exiting research findings to provide a more detailed understanding of the psycho-social dimensions of those with reading difficulties. By considering the transactional nature of the relationship between individuals and their environments, we can view general development, adjustment and coping with dyslexia as dynamic processes and highlights that longitudinal research is needed to understand not only how it happens, but how it changes over time, i.e. how individuals may respond to different environments and different interventions at different times. The resilience perspective with its emphasis on individuals, contexts and their interactions offers a useful framework within which to situate future research exploring the social dimension of reading difficulties.

CONCLUSION

Results indicate the high rate of socio-emotional and behavioural difficulties in children who are experiencing reading difficulties when they come for independent assessment. Such high rates indicate that this group may be vulnerable and highlights the need for early intervention relating to both reading difficulties and more general psycho-social adjustment. Further research is required to identify factors that promote successful psycho-social adjustment, and a resilience perspective may be a useful way forward.

APPENDIX A: P-UPIDS: Parental Understanding and Perceived Impact of Dyslexia Scale

The impact of dyslexia on your child’s life

Please indicate (by ticking box ☒) how much you agree with the following statements

| | strongly agree | agree | disagree | strongly disagree |
|---|----------------|-------|----------|-------------------|
| 1. My child misses out on fun with their friends because of their reading/spelling difficulties | | | | |
| 2. My child behaves differently because of their reading/spelling difficulties | | | | |
| 3. My child gets down/upset when they have reading/spelling difficulties at school | | | | |
| 4. My child is less confident because of their reading/spelling difficulties | | | | |
| 5. My child copes well with their reading/spelling difficulties | | | | |
| 6. My child doesn’t like going to school because of their reading/spelling difficulties | | | | |
| 7. My child does poorly in all subjects at school | | | | |
| 8. My child’s reading/spelling difficulties have made it hard for the rest of the family | | | | |
| 9. My child’s reading/spelling difficulties will affect their choice of career | | | | |
| 10. My child’s reading/spelling difficulties will affect the rest of their life | | | | |
| 11. My child will do better at school over time | | | | |

12. Please list what you see as your child’s strengths and weakness.

Strengths.....
.....
.....
.....

Weaknesses.....
.....
.....
.....

How you feel about your child's reading/spelling difficulties

Please indicate (by ticking box ☒) how much you agree with the following statements

| | strongly agree | agree | disagree | strongly disagree |
|--|----------------|-------|----------|-------------------|
| 13. I treat my child differently because of their reading/spelling difficulties | | | | |
| 14. Teachers treat my child differently because of their reading/spelling difficulties | | | | |
| 15. My child's classmates treat them differently because of their reading/spelling difficulties | | | | |
| 16. My child's brothers and/or sisters treat them differently because of their reading/spelling difficulties | | | | |
| 17. My child doesn't have many friends because of their reading/spelling difficulties | | | | |
| 18. My relationship with my child has been badly affected by their reading/spelling difficulties | | | | |
| 19. I understand my child's reading/spelling difficulties | | | | |
| 20. I talk to my child about how they are doing at school | | | | |
| 21. I talk to my child about any problems they are having | | | | |
| 22. I think my child will always need extra help with their school work | | | | |
| 23. I think my child will grow out of their reading/spelling difficulties | | | | |
| 24. I think my child's reading/spelling difficulties will get worse over time | | | | |
| 25. I think my child will cope better with their reading/spelling difficulties over time | | | | |
| 26. I would like more information about my child's reading/spelling difficulties | | | | |
| 27. I think my child's reading/spelling difficulties have been recognized and helped early enough | | | | |

28. What do think causes reading/spelling difficulties and what do you know about ways to help?

.....

.....

.....

29. Is there anything else you would like to tell us?

Thank you for taking the time to answer this questionnaire

APPENDIX B: C-UPIDS: Child understanding and Perceived Impact of Dyslexia Scale

How dyslexia affects YOU
Please indicate (by ticking box ☒) how much you agree with the following statements

| | strongly agree | agree | disagree | strongly disagree |
|--|----------------|-------|----------|-------------------|
| 1. I miss out on fun with my friends because of my reading/spelling difficulties | | | | |
| 2. I behave differently because of my reading/spelling difficulties | | | | |
| 3. I get down/upset when I have reading/spelling difficulties at school | | | | |
| 4. I am less confident because of my reading/spelling difficulties | | | | |
| 5. I cope well with my reading/spelling difficulties | | | | |
| 6. I don't like going to school because of my reading/spelling difficulties | | | | |

| | | | | |
|--|--|--|--|--|
| 7. I do poorly in all subjects at school | | | | |
| 8. My reading/spelling difficulties have made it hard for my family | | | | |
| 9. My reading/spelling difficulties will affect the job I do when I am older | | | | |
| 10. My reading/spelling difficulties will affect what I do for the rest of my life | | | | |
| 11. I will do better at school over time | | | | |

12. Please tell us what things you are good at and what things you are not so good

Things I am good at

Things I am not so good at

13. Why do you think you are good at some things and not others?



How YOU feel about your reading/spelling difficulties
Please indicate (by ticking box ☒) how much you agree with the following statements

| | strongly agree | agree | disagree | strongly disagree |
|--|----------------|-------|----------|-------------------|
| 14. I am treated differently because of my reading/spelling difficulties | | | | |
| 15. My parents treat me differently because of my reading/spelling difficulties | | | | |
| 16. Teachers treat me differently because of my reading/spelling difficulties | | | | |
| 17. Classmates treat me differently because of my reading/spelling difficulties | | | | |
| 18. Brothers and/or sisters treat me differently because of my reading/spelling difficulties | | | | |
| 19. I don't have many friends because of my reading/spelling difficulties | | | | |

| | | | | |
|---|--|--|--|--|
| 20. I understand why I have difficulties at school | | | | |
| 21. I talk to my parents about how I am doing at school | | | | |
| 22. I talk to my parents about any problems I have | | | | |
| 23. I will always need extra help with my school work | | | | |
| 24. I think I will grow out of my reading/spelling difficulties | | | | |
| 25. I think my reading/spelling difficulties will get worse over time | | | | |
| 26. I think I will cope better with my reading/spelling difficulties as I get older | | | | |
| 27. I would like more information about why I have difficulties in school | | | | |
| 28. I think my reading/spelling difficulties have been recognized and helped early enough | | | | |

29. What do you think causes reading/spelling difficulties and what do you know about ways to help?

30. Is there anything else you would like to tell us?

 Thank you for answering these questions 

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