DYSLEXIA
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# Am I Dyslexic? Parental Self-Report of Literacy Difficulties

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In the absence of criteria for the diagnosis of dyslexia, considerable weight is given to self-report, in particular in studies of children at family risk of dyslexia. The present paper uses secondary data from a previous study to compare parents who self-report as dyslexic and those who do not, in relation to objectively determined levels of ability. In general, adults are more likely to self-report as 'dyslexic' if they have poorer reading and spelling skills and also if there is a discrepancy between IQ and measured literacy. However, parents of higher social status who have mild literacy difficulties are more likely to self-report as dyslexic than parents who have weaker literacy skills but are less socially advantaged. Together the findings suggest that the judgement as to whether or not a parent considers themselves 'dyslexic' is made relative to others in the same social sphere. Those who are socially disadvantaged may, in turn, be less likely to seek support for their children. Â © 2014 The Authors Dyslexia Published by John Wiley & Sons Ltd.

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Dyslexia is a neurodevelopmental disorder that affects reading accuracy and fluency (Lyon, Shaywitz, & Shaywitz, 2003). Depending on the criteria used, prevalence rates vary from 3 to 6% (Hulme & Snowling, 2009) and children who come from a family where there is a history of dyslexia are at increased risk of developing dyslexia (30–65%).

However, the concept of dyslexia has changed in recent years. Increasingly, it is recognized that there is no 'gold standard' for diagnosis and the cut-off between 'normal' and 'poor' reading is arbitrary. Moreover, while the term dyslexia is used to refer to reading below expectations given age and ability, discrepancy definitions have mostly fallen out of use. These changes in the concept of dyslexia were recognized by the Rose Review (2009) which noted that '*dyslexia occurs across the range of intellectual abilities' and 'is best thought of as a continuum…. (with) no clear cut-off points*'. Nonetheless, older concepts of dyslexia prevail among the general public, and Paradice (2001) suggests that parents are more likely than education professionals to hold the view that dyslexia is found in children with normal or above average intelligence. Parental beliefs are an important consideration as they may influence the decision whether or not to refer their child for dyslexia assessment.

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Since dyslexia runs in families, another factor which may influence the referral process is whether a parent has personally experienced reading difficulties and whether they are aware that they might be dyslexic. For an adult who has never been formally assessed it will be difficult to make a judgement about the level of their own literacy skills and to know how these compare to the average. Generally, in the absence of objective measures, people make judgements about themselves by making comparisons with others. For example, Melrose, Brown, and Wood (2013) showed that, when judging the severity of symptoms of anxiety and depression, people are more likely to rate themselves according to how they perceive their symptoms relative to others' rather than according to objective levels. Similarly, judgements of the health benefits of exercise depend upon how much exercise the person believes that they are doing in relation to others (Maltby, Wood, Vlaev, Taylor, & Brown, 2012). In short, people find it easier to make relative than absolute judgements. Furthermore, errors of judgements are more likely to occur when the sample from which a person draws their conclusion is not representative of the whole population. Social background is one factor that could influence the way in which conclusions are drawn.

Snowling, Dawes, Nash, and Hulme (2012) identified a number of factors that increased the likelihood of a parent self-reporting as 'dyslexic' on a reading questionnaire. These include age, gender, and socio-economic status (SES), as well as objectively measured literacy skills. Here we use findings from a secondary analysis of these data to discuss the judgements of adults regarding whether or not they are 'dyslexic'. We were particularly interested in considering why some adults self-report as dyslexic despite having normal literacy and why other adults do not self-report as dyslexic even when they have poor reading and spelling. These questions are both important and contentious. For adults, the failure to self-report as dyslexic can affect opportunities both in higher education and in the workplace. In addition, parents who are unaware of their own difficulties may be less likely to identify and to seek support for literacy problems affecting their children.

We consider a number of hypotheses in relation to these issues using both questionnaire and objective data collected from parents of preschool children tested by Snowling *et al.* (2012). We hypothesized that:

(i) Parents who self-reported as dyslexic would have poorer literacy than those who did not
(ii) Given 'lay' beliefs about dyslexia, it would be more likely for a person to report as dyslexic if there was a significant discrepancy between their literacy skills and their general cognitive abilities (IQ)
(iii) The tendency for an adult to self-report as dyslexic would be conditioned by their socioeconomic status. Parents who have higher status occupations should (all other things being equal) be more likely to self-report than parents in lower status occupations, which are likely to have lower literacy demands

Finally, we considered how adults with poor literacy who did not self-report compared with adults with normal literacy who did self-report. Essentially both groups can be considered to have made errors of judgement. We hypothesized that the main differences between these two groups would be in socioeconomic status with the former (non-reporting) group being of lower SES than the latter (reporting) group.

 

## METHOD

### Data Set

The data analysed were collected from parents of 3-year-old children recruited to the 'Wellcome Language and Reading Project' via advertisements and referrals from speech and language therapy services (see Nash, Hulme, Gooch, & Snowling, 2013 for details). All children were monolingual English speakers with no known neurological conditions. The final sample consisted of 260 children, recruited to one of three groups: children who had a first degree relative with a suspected or diagnosed literacy difficulty, children whose parents were concerned about their speech and language development, and children from families with no known or suspected difficulties who were considered to be typically developing. There were 11 sibling pairs in the project, meaning that the total number of parents able to participate was 498. Ethical clearance for the study was provided by the University of York, Department of Psychology's Ethics Committee, and the NHS Research Ethics Committee. Parents provided informed consent for their families to be involved.

Parents completed the Adult Reading Questionnaire (ARQ; Snowling *et al.*, 2012) and were invited for an assessment of literacy and cognitive skills. Four hundred and thirty three of the parents completed the ARQ (87% of total), and, of these, 379 agreed to be assessed on a battery of psychometric tests (76% of total). The sample analysed in this paper consisted of 233 mothers and 146 fathers. Their ages ranged from 18 to 61 (mean = 36.27; SD = 6.23).

Snowling *et al.* (2012) classified parents as having either 'poor' or 'normal' literacy. Individuals were considered to have 'poor literacy' if their score on a composite measure of nonword reading and spelling fell below 90. The sample was further classified according to whether they self-reported as dyslexic (or not). The above classification produced four groups: parents with poor literacy (PL) who self-reported as dyslexic (PL-SR) and those who did not self-report (PL-NSR); parents with normal literacy (NL) who self-reported as dyslexic (NL-SR) and those who did not (NL-NSR).

### Tests and Procedures

Parents completed questionnaires related to their own literacy skills and were assessed on a battery of psychometric tests. Information regarding parental occupation and education was gathered during a structured interview.

### Psychometric tests

*Nonverbal ability*

The Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) Block Design subtest was used to provide an estimate of nonverbal IQ. In this test, the participants copied a series of increasingly complex 2-D patterns using coloured blocks.

*Vocabulary*

The WASI (Wechsler, 1999) Vocabulary subtest was used to provide an estimate of verbal IQ. In this test, the participants were asked to provide verbal definitions

 

for words increasing in difficulty. Answers were scored for depth of vocabulary knowledge as specified in the manual.

*Reading*

The Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner, & Rashotte, 1999) was given to assess participants' ability to read a list of printed words (sight word efficiency) and pseudowords (phonemic decoding) accurately and fluently. Participants were given 45 s to read as many items as possible.

*Spelling*

The Spelling Subtest from the Wide Range Achievement Test (WRAT 4; Wilkinson & Robertson, 2006) was used to assess spelling ability. Participants were asked to spell words increasing in difficulty.

*Adult reading questionnaire*

The questionnaire comprised 15 items assessing aspects of literacy, language, and organization (see Snowling *et al.*, 2012 for details). The following item was used to determine self-report status:

Dyslexia is a difficulty with reading and writing in people who:

- do OK in other aspects of life (their difficulty is mostly with reading and writing)
- have had the chance to learn to read but have not been able to learn like others

Based on this, do you think you are dyslexic? (yes/no/maybe)

Given uncertainty surrounding the definition of dyslexia, responses of yes and maybe were taken as indicating self-report of dyslexia.

**Measures of SES**

*Education*

Parents provided information about their highest level of education; this was coded using the following scale from 1 to 6 as follows: 1 = no formal qualifications, 2 = GCSEs or equivalent, 3 = A levels or equivalent, 4 = vocational qualification or other, 5 = degree, and 6 = higher degree.

*Social deprivation*

Postcodes were used to calculate the Rank of Total Deprivation according to the ONS Neighbourhood Statistics (http://www.neighbourhood.statistics.gov.uk/dissemination/). Scores range from 1 to 10 with 1 as the highest level of social deprivation (low SES).

*Occupation*

Information was collected regarding parental occupation, and this was coded using the Office for National Statistics (ONS) Standard Occupation Classification (SOC, 2000). This classification system includes the following nine categories: 1. Managers and Senior Officials; 2. Professional Occupations; 3. Associate Professional and Technical Occupations; 4. Administrative and Secretarial Occupations; 5. Skilled Trades Occupations; 6. Personal Service Occupations; 7. Sales and

 

Customer Service Occupations; 8. Process, Plant and Machine Operatives; 9. Elementary Occupations

Those who were unemployed, students, or full-time parents were asked to provide details of their previous occupation. This scale was reverse scored for the purposes of analysis so that it matched the direction of the other two SES measures (high score relates to higher SES).

## RESULTS

The descriptive statistics for each group are shown in Table 1. It can be seen that, among parents with poor literacy, those who self-reported as dyslexic had lower reading and spelling scores and higher general cognitive abilities (nonverbal IQ and vocabulary) than those who did not. They also appeared to be slightly more educated and of higher SES. Among adults with normal literacy levels, although there was no obvious difference in education or socioeconomic status, those more likely to report themselves as dyslexic had lower levels of reading and spelling and more of a discrepancy between their literacy and general cognitive abilities.

The first hypothesis was that people who self-reported as dyslexic would have poorer literacy than those who did not self-report. Within the groups of parents with poor literacy, those who self-reported (PL-SR) had significantly poorer scores on measures of word reading ($t(375) = -2.89$, $p = .005$), and spelling ($t(375) = -2.17$, $p = .033$) than those who did not self-report (PL-NSR). The same was true for those with normal literacy; those who self-reported (NL-SR) had lower scores than those who did not self-report (NL-NSR) (word reading, $t(375) = -5.34$, $p < .001$; spelling, $t(375) = -4.81$, $p < .001$).

Table 1. Descriptive statistics for all measures by self-report and literacy status

| | Poor literacy | | | | Normal literacy | | | |
|---|---|---|---|---|---|---|---|---|
| | Self-reported | | Not self-reported | | Self-reported | | Not self-reported | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| N (M:F) | 51 (25,26) | | 29 (9,20) | | 19 (10,9) | | 280 (102,178) | |
| Age (years) | 34.53 | 6.3 | 32.83 | 6.60 | 37.89 | 7.68 | 36.84 | 5.91 |
| Word reading efficiency[a] | 77.59 | 8.11 | 82.38 | 6.49 | 86.05 | 8.81 | 97.48 | 11.65 |
| Spelling[b] | 84.42 | 8.56 | 87.79 | 5.26 | 101.53 | 6.32 | 109.14 | 10.64 |
| Nonverbal IQ[c] | 111.01 | 14.75 | 108.07 | 13.64 | 116.66 | 10.91 | 115.86 | 11.07 |
| Vocabulary[b] | 96.96 | 15.78 | 87.09 | 12.65 | 106.32 | 13.57 | 108.98 | 14.67 |
| Discrepancy IQ–literacy composite | 31.94 | 15.85 | 23.79 | 12.22 | 20.37 | 12.85 | 8.29 | 13.03 |
| Discrepancy vocab–literacy composite | 16.94 | 14.42 | 2.57 | 12.93 | 10.46 | 12.43 | 1.05 | 14.15 |
| Social deprivation | 6.14 | 2.78 | 5.76 | 2.54 | 7.47 | 2.57 | 7.15 | 2.63 |
| Occupation | 8.28 | 2.42 | 7.71 | 2.42 | 9.65 | 1.62 | 9.74 | 2.09 |
| Education | 3.24 | 1.34 | 2.79 | 1.10 | 4.16 | 1.54 | 4.42 | 1.42 |

[a]= TOWRE sight word, standard score.
[b]= Standard score.
[c]= Block design standard score.

 

The second hypothesis was that people would be more likely to self-report as dyslexic if there was a discrepancy between their literacy skills and general cognitive abilities. It can be seen in the table that there is a substantial discrepancy between nonverbal ability and literacy attainment for people who do and do not self-report irrespective of whether they had poor or normal literacy (poor literacy, $t(77) = 2.39$, $p = .02$; normal literacy, $t(297) = 3.91$, $p < .001$). A similar pattern was observed examining the discrepancy between vocabulary (rather than non-verbal IQ) and literacy skills. Whereas for the no self-report groups, vocabulary was broadly in-line with literacy skills, there were discrepancies for the groups who self-reported (PL-SR vs PL-NSR, $t(57) = 3.88$, $p < .001$; NL-SR vs NL-NSR, $t(256) = 2.43$, $p < .05$).

Third, it was hypothesized that people in jobs with higher literacy demands would be more likely to self-report than those in lower status occupations. We found no strong evidence in support of this hypothesis: among parents with literacy skills in the normal range, there was no difference in any of the social demographic variables between those who did and did not self-report (occupation, $t(354) = -.221$, $p = .828$; education, $t(373) = -.782$, $p = .435$; social deprivation, $t(374) = .517$, $p = .605$). Similarly, parents with poor literacy who self-reported were not different in levels of education, occupational or social advantage than those who did not self-report (occupation, $t(354) = .942$, $p = .351$; education, $t(373) = 1.374$, $p = .170$; social deprivation, $t(374) = .619$, $p = .536$).

Finally, we considered the important question of how adults with poor literacy who did not self-report compared with adults with normal literacy who did self-report. Essentially both groups can be considered to have made errors of judgement. First it is worth noting that the group who self-reported (mistakenly according to objective criteria; NL-SR) had higher verbal and non-verbal abilities than those who did not (Non-Verbal $t(57) = 2.30$, $p < .05$; Vocabulary $t(57) = 4.37$, $p < .001$). Second, the two groups did not differ significantly in the discrepancy that they showed between general cognitive abilities and literacy levels (NV discrepancy $t(57) = .93$; Verbal $t(57) = 1.83$). However the non-reporting group with poor literacy (PL-NSR) was lower on all three demographic variables than the self-reporting group with normal literacy levels (NL-SR) (occupation, $t(354) = 2.58$, $p < .05$; education, $t(373) = 3.57$, $p < .001$; social deprivation, $t(374) = 2.28$, $p < .05$).

## DISCUSSION

This study aimed to explore the factors that affect the propensity to self-report as dyslexic amongst adults whose children were participating in a prospective longitudinal study of children at high-risk of dyslexia. It was hypothesized that parents would be more likely to self-report as 'dyslexic' if they had more severe literacy difficulties, if there was a discrepancy between their literacy and their nonverbal ability, and if they were in higher level occupations.

The findings confirmed that in general terms, people who self-report as dyslexic have poorer literacy skills than those who do not self-report. They are also more likely to self-report as dyslexic if they have a discrepancy between their literacy skills and non-verbal ability. However, in the absence of clear-cut criteria for dyslexia, a novel question asked by this study was whether, all things being equal,

 

demographic factors affect the propensity of an adult to self-report as dyslexic. In order to address this issue, we focused on adults with poor literacy who did not self-report as dyslexic and adults with literacy levels within normal limits who did. While both of these two subgroups showed large discrepancies between their non-verbal abilities and their literacy skills (24 and 20 standard score points respectively), only the group who were better educated and had higher status jobs and higher socioeconomic circumstances tended to self-report as 'dyslexic'. This finding is salutary and calls into question the absence of clear-cut objective criteria surrounding use of the term 'dyslexia' in education.

On one hand, these findings might be interpreted as reinforcing an old 'middle-class' stereotype of dyslexia. Furthermore, the preamble to the key question of whether or not a person self-reported as dyslexic, viz: '*Dyslexia is a difficulty with reading and writing in people who do OK in other aspects of life*', could conceivably have increased the likelihood of the more able parents to self-report. However, since both reporting and non-reporting subgroups under-attained on literacy tests, the interpretation we favour is that the judgement of whether or not to 'self-report' was based on a *relative* judgement regarding literacy levels in relation to others from a similar socioeconomic background. In short, better educated people in higher status occupations appear to be either more aware of, or more likely to invoke, the lay view that dyslexia is defined as a 'discrepancy between IQ and reading and spelling skills' in relation to themselves than those who are less advantaged. This could be because they are more likely to experience their relatively poor literacy as a handicap (e.g. Elbro, 2010). The corollary of this is that less well educated parents in lower status occupations, even those who fulfil the discrepancy definition of dyslexia, are less likely to be recognized or to have arrangements made to support their learning needs. Furthermore, in the worst case scenario, such parents may be less likely to raise concerns about the reading difficulties of their children. Given that dyslexia is a heritable disorder (Fisher & DeFries, 2002), such inter-generational processes could lead to a cycle of educational disadvantage preventing upward social mobility in families with low levels of literacy.

A limitation of the present study was the arbitrary cut-offs for defining poor literacy and the small numbers of parents who were mistaken in their judgements relative to objective criteria. However, the paper is an initial attempt to address the novel and contentious question of what causes a person to self-report as dyslexic. The findings highlight the fact that the discrepancy definition of dyslexia still has currency amongst the general public, in particular among better educated parents. A proviso is that the definition of dyslexia that the participants saw in the Adult Reading Questionnaire may have introduced bias to the self-report for some people as it did imply a discrepancy.

Furnham (2013) highlights some of the prevailing 'myths' associated with lay knowledge of dyslexia. On the whole, participants had a reasonable awareness of what constituted clinically diagnosed dyslexia; however, there was still evidence of limited understanding. Moreover, the findings suggest that people from lower SES backgrounds might have different lay definitions of dyslexia from those of high SES.

Arguably, the onus is on professionals and policy makers to ensure that children whose parents may themselves experience literacy problems are as likely to be identified as 'at risk' of reading difficulties as more advantaged children. We propose in this light that it is crucial for schools to implement screening and monitoring

 

procedures that will enable the early identification of children who are not progressing well in literacy and the delivery of effective interventions (Snowling & Hulme, 2011).

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