

Self-concept and Depression Levels of Students with Dyslexia in Singapore

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Abstract

The purpose of this study is to examine the self-concept and depression levels of students with dyslexia in Singapore. Thirty students (8 - 13 years old), who were diagnosed with dyslexia and of at least average intelligence, participated in structured one-on-one interviews. Biographical data forms and two measurement scales (i.e., the Self-Perception Profile of Children, and Children's Depression Inventory(CDI)) were used in the interviews. *Results:* The proportion of students who rated academic self-concept domain positively was not significantly different from that who rated the domain negatively. A significant proportion of students provided positive self-ratings on social acceptance (73.91%), athletic competence (78.57%) and global self-worth (81.25%) domains. With regard to depression, the levels of self-reported depressive symptoms in this Singapore sample were not higher than those in the CDI's American normative sample. Finally, a significant negative relationship was found between academic self-concept and overall depression level, even when academic performances were held constant. *Conclusions:* Students with dyslexia, in Singapore, did not tend to have low academic self-concept or feel depressed when they compared themselves with their peers without dyslexia. Instead, they possessed some protective factors, such as positive global self-worth, and positive self-concept on athletic abilities and social acceptance. Implications and limitations of this study were discussed.

Keywords: dyslexia, self-concept, global self-worth and depression levels

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Introduction

Dyslexia is defined as a neurologically-based, specific learning difficulty that is characterised by difficulties in reading, spelling and/or writing (Dyslexia Association of Singapore (DAS), 2009). Individuals with dyslexia usually struggle in learning, especially when writing or reading is involved. In Singapore, there are about four percent of primary and secondary school learners with dyslexia (Jin et al., 2011).

Several past research studies suggested that individuals with reading difficulties had an increased risk for low self-concept and depression (Alexander-Passe, 2006; Boetsch, Green & Pennington, 1996; Humphrey, 2002; McNulty, 2003; Riddick, 1996; Riddick, Sterling, Farmer & Morgan, 1999). Such risk might be related to these individuals' experiences of frequent poor academic performance, feelings of discrimination or rejection by significant others (e.g., peers and teachers), and/or being labelled "dyslexic" (Edwards, 1994). At present, there are no published studies that explore the self-concept and depression level of students with dyslexia in Singapore.

Self-concept and Global Self-worth

Similar to past studies, this study used the terms 'self-concept' and 'self-esteem' inter-changeably (Bear & Minke, 1996; Lawrence, 1996). The two terms were referred to an individual's cognitions or feelings about the "self" (Morvitz & Motta, 1992; Stone & May, 2002). However, these two terms were differentiated from the term 'global self-worth', which was referred to a person's overall view of one's worth as a person (Harter, 1993).

Over the past decades, a considerable amount of studies agreed that self-concept was a multidimensional, rather than unitary, construct (Marsh & Gouvenet, 1989; Shavelson, Hubner, & Stanton, 1976). Self-concept was not merely represented by a single, mean or total score on a measure of self-concept (Harter, 1985). Instead, self-concept could be evaluated in different domains.

In the current study, Harter's (1985) widely-used model of multidimensional self-concept was used to understand the different aspects of the "self". Specifically, Harter's *Self-Perception Profile for Children* (SPPC; 1985) scale was used in this study. The SPPC evaluates how competent or adequate a child, between the age of eight and thirteen years, thinks he/she is in five domains of self-concept. Harter (1985a) defined the five domains as below:

1. *Scholastic competence* measures the child's view of his or her competence within the area of academic performance.
2. *Social acceptance* measures the child's view of the degree to which he or she is accepted by peers, is popular or is liked by most peers. It does not measure competence (i.e., social skills) directly.
3. *Athletic competence* measures the child's perceived competence in sports and outdoor games.
4. *Physical appearance* measures the child's view on how he or she looks (i.e., height, weight, body, face and hair).

5. *Behavioural conduct* measures the degree to which the child likes the way he or she behaves, does the right thing, acts the way he or she is supposed to, and does the things he or she is supposed to.

In addition, the SPPC includes the *global self-worth* subscale. This subscale is not merely an additive function of a child's self-concept across the specific domains. Instead, global self-worth is a separate entity, which uses a separate set of items and measures an overall judgement of the child's worth as a person (i.e., the degree to which the child likes himself/herself as a person or likes the way he/she is leading his/her life) (Harter, 1993).

Relating self-concept to global self-worth, Renick and Harter (1989) found a strong correlation between global self-worth and academic self-concept in children with learning disabilities (LD), in general, indicating that a child's academic self-concept was likely to predict his/her global self-worth. Global self-worth was also found to be related to self-concept on athletic competence and physical appearance (Renick and Harter, 1989). However, these conclusions might only be applicable to the general population of LD.

Recent studies on self-concept in dyslexia (Burden, 2008; Frederickson & Jacobs, 2001; Pakzad & Rogé, 2005; Polychroni, Koukoura, & Anagnostou, 2006; Riddick et al., 1999; Ridsdale, 2004) found that children and adolescents with dyslexia had a significantly lower academic self-concept than those without dyslexia. However, the global self-worth of children with dyslexia was not significantly lower than that of those without dyslexia. Hence, the results imply that dyslexia may reduce academic self-concept, but it may not reduce global self-worth. A possible explanation to the findings is that students with dyslexia may protect their global self-worth by compensating their weaknesses or incompetence (e.g., academic competence) with their strengths (e.g., athletic competence), receiving social support (Hagborg, 1996; Kloomok & Cosden, 1994) and/or adopting self-handicapping behaviours (Urduan & Midgley, 2001).

In few studies that explored non-academic self-concept in dyslexia, they found that children and adolescents with dyslexia or poor reading usually perceived themselves to be less popular or valued than those without dyslexia (Fairhurst & Pumfrey, 1992; Humphrey, 2002).

At present, a meta-analytic review on the relationships between dyslexia and self-concept has not been conducted. This may be related to the limited research into relationships between dyslexia and self-concept. Two meta-analytic studies were carried out on the relationships between LD, in general, and self-concept (Bear, Minke & Manning, 2002; Zeleke, 2004). Consistent with previous findings on dyslexia, the two studies found that the academic self-concept of students with LD was more negative than that of their normally achieving peers (Zeleke, 2004); and the global self-worth of students with LD was not significantly different from that of their normally achieving peers (Bear, Minke, & Manning, 2002; Zeleke, 2004).

Yet, inconsistent with previous studies of dyslexia, the two meta-analytic studies found no significant difference in perceived social acceptance between the two groups of students. The results appear to suggest that different types of

LD may have different impacts on individuals' self-concept and global self-worth.

Depression Levels

There have been fairly inconclusive debates in the literature over whether people with dyslexia are more likely to experience depression (Miller, Hynd, & Miller, 2005). There were past research findings that showed that negative emotions (e.g., sadness, disappointment, frustration and shamefulness) or even depression were frequent complications in dyslexia (Alexander-Passe, 2006; Dahle, Knivsberg & Andreassen, 2011; Riddick, 1996; Scott, 2004; Wright-Strawderman & Watson, 1992).

On the other hand, some studies (Lamm & Epstein, 1992; Miller, Hynd, & Miller, 2005) found no significant difference in the prevalence of depression among people with and without dyslexia or LD. Furthermore, Burden and Burdett (2005) reported a low level of depression in students with dyslexia.

Relationships between Depression and Self-concept

Kazdin (1988) noted that low self-concept was often a prominent feature of depression. Furthermore, Heath (1995) found that students with LD who reported higher levels of depression tended to have lower academic self-concept, independent of their actual academic achievement. These findings inspired the present study to explore the relationships between self-concept and depression, while holding the actual academic performance constant.

The Current Study

This study aimed to examine the self-concept and depression levels of students (aged between eight and thirteen years) with dyslexia in Singapore.

Research Design

With regard to self-concept, the current study did not aim to make inter-group comparisons between students with and without dyslexia. Instead, this study aimed to explore the self-concept of students with dyslexia who made mental comparisons with peers without dyslexia. It explored how students with dyslexia would evaluate themselves (i.e., positively or negatively) when they compared themselves to their peers without dyslexia.

The levels of self-reported depressive symptoms in the current sample were compared to those in the American normative sample derived from the Children's Depression Inventory (CDI), as there were no local norms constructed for comparisons.

Hypotheses

Five hypotheses were examined. The first three hypotheses focus on self-concept in dyslexia. *First*, students with dyslexia would likely have a negative self-concept on their scholastic competence. *Second*, students with dyslexia

would likely have a positive global self-worth. *Third*, there would be a significant relationship between global self-worth and self-concept on scholastic competence, athletic competence or physical appearance.

The next two hypotheses focus on depression in dyslexia. The *fourth* hypothesis predicted that the levels of self-reported depressive symptoms in students with dyslexia in Singapore would be significantly higher than those in the American normative sample derived from the CDI. Lastly, the *fifth* hypothesis predicted that students with higher levels of self-reported depressive symptoms would have lower perceived scholastic competence, independent of their actual academic performances.

Method

Subjects

The sample consisted of thirty students from five not-for-profit specialist learning centres in Singapore. All thirty students were of chronological age from eight to thirteen years; had a formal diagnosis of dyslexia by a psychologist; had no formal diagnosis of other learning difficulties; and had at least average intelligence. In addition, the students were attending main-stream schools, apart from the learning centres. Table 1 provides demographics of this sample.

Measures

Self-Perception Profile for Children (SPPC; Harter, 1985)

The “What I Am Like” scale of the SPPC is a 36-item self-report questionnaire, which is used for children aged between eight and thirteen years. It measures global self-worth and five domains of self-concept. The scale reported fairly satisfactory internal consistency reliability alpha coefficients, which were between 0.71 and 0.86, on its six subscales. Various studies showed that the internal consistency and test-retest stability of its subscales were satisfactory (Granleese & Joseph, 1994; Muris, Meesters & Fijen, 2003).

Each item consists of two opposite statements. One statement represents a negative perception of the “self” (e.g., “Some kids wish they could be a lot better at sports”), while the other represents a positive perception of the “self” (e.g., “Other kids feel they are good enough at sports”). Subjects were asked to choose one of the two statements to indicate which kind of children they were most like, and then decide whether the description was “sort of true” or “really true”. Responses were scored from 1 to 4. A score of 1 or 2 was associated with negative self-rating on a subscale (i.e., a negative statement was chosen). A score of 3 or 4 was associated with positive self-rating on a subscale (i.e., a positive statement was chosen).

Children’s Depression Inventory (CDI; Kovacs, 2003)

The CDI is a 27-item self-report questionnaire which measures depressive symptoms for school-aged individuals, between the age of seven and seventeen

years. The items are grouped into six subscales of depressive symptoms, namely, *negative mood*, *interpersonal problems*, *ineffectiveness*, *anhedonia*, *negative self-esteem*, and a *total score*, which provides an overall level of depression.

There are three choices for each item on the CDI, corresponding to three levels of symptomology: 0 (absence of symptoms), 1 (mild symptoms) or 2 (definite symptoms). Higher scores indicate higher levels of self-reported depressive symptoms.

Biographical Data Form

The biographical data form included information, such as date of birth, gender, ethnic group, duration with the learning centres and academic results. An overall academic performance of each student was obtained, by averaging the sum of academic performances (in percentages) on four subjects (i.e., English, Mathematics, Mother Tongue, and Science).

Procedure

Together with parents' written consent, thirty students voluntarily took part in an hour, one-on-one interviews. The interviews were conducted by this study's investigator, at the learning centres or students' residential homes.

When completing the SPPC, students were asked two questions to find out if they were comparing themselves to their peers without dyslexia. The two questions included "Which group of children were you comparing yourself to when you were thinking of ... (e.g., "classwork", "sports", "the number of friends you have", "looks", "behaviours" or "yourself as a person")?" and "Do most of them have dyslexia?"

All items on the questionnaires and form were read to the students who responded verbally. The investigator recorded all responses on the relevant questionnaires or form. Towards the end of interviews, students were thanked for their participation.

Results

Cronbach's alpha reliability coefficients were obtained to estimate the reliability of SPPC ($\alpha = 0.88$) and CDI ($\alpha = 0.88$) measures. Missing data in all subsequent analyses were managed using pairwise missing-value treatment.

Self-concept and Global Self-worth

On the SPPC scale, ratings of students who compared themselves to their peers without dyslexia were re-coded into two groups (i.e., "Negative" and "Positive"). "Negative" group included rating scores of 1 and 2, which represented a negative self-rating on the item, and "Positive" group included rating scores of 3 and 4, which represented a positive self-rating on the item.

Chi-square tests were then used to examine the distributions of the six SPPC's subscale ratings of students who compared themselves to their peers without dyslexia (see Table 2). The proportion of students who indicated a

positive self-rating on social acceptance ($\chi^2 = 5.26, p < .05$), athletic competence ($\chi^2 = 9.14, p < .005$) or global self-worth ($\chi^2 = 6.25, p < .05$) was significantly higher than that of students who indicated a negative self-rating. However, no significant differences were found in the students' ratings on scholastic competence ($\chi^2 = 0.04, p > .05$), physical appearance ($\chi^2 = 0.22, p > .05$) and behavioural conduct ($\chi^2 = 1.96, p > .05$).

Relationships between Self-concept and Global Self-worth

Pearson's zero-order correlation results showed that global-self-worth was significantly correlated to physical appearance ($r = 0.46, p < .05$) and behavioural conduct ($r = 0.67, p < .01$), but not with academic self-concept ($r = 0.26$).

Depression Levels

One sample *t*-tests were employed to examine the differences in the levels of self-reported depressive symptoms between the current Singapore sample and CDI's American normative sample. Both samples did not differ significantly on their mean levels of self-rated depressive symptoms, specifically on negative mood ($t(29) = -0.68, p = 0.50$, two-tailed), interpersonal problems ($t(29) = -0.40, p = 0.69$, two-tailed), ineffectiveness ($t(29) = 0.50, p = 0.62$, two-tailed), anhedonia ($t(29) = -1.33, p = 0.19$, two-tailed), negative self-esteem ($t(29) = -2.08, p = 0.05$, two-tailed) and total CDI subscales ($t(29) = -0.99, p = 0.33$, two-tailed).

Relationships between Depression and Self-concept

Finally, table 3 reveals the Pearson's zero-order and partial correlations between self-reported depressive symptoms and perceived scholastic competence. The negative relationships between perceived scholastic competence and ineffectiveness ($pr = -0.50, p < .05$), negative self-esteem ($pr = -0.50, p < .01$) and total CDI ($pr = -0.52, p < .05$) remained significant even when the average academic performance was held constant. When holding the academic performance of English, Mother Tongue, Mathematics or Science constant, significant negative relationships were found between perceived scholastic competence and negative mood ($pr = -0.49, -0.50, -0.48, -0.49, p < .01, .05, .05, .05$), ineffectiveness ($pr = -0.51, -0.51, -0.50, -0.52, p < .01, .05, .05, .01$), negative self-esteem ($pr = -0.51, -0.52, -0.49, -0.51, p < .01, .05, .05, .01$) or total CDI ($pr = -0.53, -0.54, -0.52, -0.53, p < .01, .01, .01, .01$).

Discussion

Self-concept and Global Self-worth

Based on the chi-square test results, there was insufficient evidence to support the *first hypothesis* which predicted that students with dyslexia would likely have a negative self-concept on their scholastic competence. The current study revealed that students with dyslexia did not tend to have a negative academic self-concept when they compared themselves with their peers without dyslexia. A possible explanation for this result is that the current sample of students with dyslexia, who received an average of 24-month specialist academic support from the learning centres, might have learnt some compensatory learning methods or skills to help them better cope with their studies. With better coping in their studies, the academic self-concept of these students might have improved or enhanced.

However, there was evidence to support the *second hypothesis* which predicted that students with dyslexia would likely have a positive global self-worth. The current finding suggests that students with dyslexia like or value themselves as a person, despite having difficulties reading and/or writing.

Results from the current study also showed that students with dyslexia would likely to have positive self-concept on social acceptance and athletic abilities. This finding suggests that students with dyslexia tend to feel accepted or liked by their peers. In addition, athletic abilities appear to be an area of perceived strength in these students.

Relationships between Self-concept and Global Self-worth

There was insufficient evidence to fully support *hypothesis three* which predicted that there would be a significant relationship between global self-worth and self-concept on scholastic competence, athletic competence or physical appearance.

The correlational findings of this study suggest that behavioural conduct and physical appearance are domains of self-concept that are more predictive of the global self-worth in students with dyslexia. Specifically, students with high perceived behavioural conduct and/or physical appearance are more likely to value or like themselves as a person than those with low perceived behavioural conduct and/or physical appearance.

On the other hand, academic self-concept and global self-worth are not significantly related to each other. A possible conjecture is that some mediating factors may have influenced the significance of the relationship between academic self-concept and global self-worth. For example, students with dyslexia may view other academic-related factors (e.g., effort or improvement on academic work), which are not measured in this study, to be equally important to self-worth. In other words, these students, who perceive their academic competence to be low/negative, may not have low global self-worth, as their effort on academic work may have compensated their low academic self-concept, thereby protecting their global self-worth.

Depression Levels

Results from one sample *t*-tests did not support the *fourth hypothesis* – that is, the levels of self-reported depressive symptoms in students with dyslexia in Singapore would be significantly higher than those in the American normative sample derived from the Children's Depression Inventory (CDI). Unlike previous studies, the current findings suggest that students with dyslexia are not more depressed than those without dyslexia. Miller, Hynd and Miller (2005) suggested that the differences in the previous and current findings might be related to the difference in sampling procedures used in the different studies. For instance, previous studies (Cohen, 1992; Wright-Strawderman & Watson, 1992) which reported a higher risk of emotional distress had included children with more generalized, rather than specific LD.

Furthermore, Bonifacci, Candria and Contento (2008) explain that the occurrence of emotional distress, such as depression or anxiety, in children with dyslexia may be affected by their cognitive functioning levels. Compared to students of low average intelligence, those of at least average intelligence are more likely to learn remediation skills quickly, derive creative ways for learning, or excel in other areas where reading/writing may not be crucial (e.g., work related to designing, cooking, computer or sports). Consequently, the emotional distress due to their reading and writing difficulties is reduced. Hence, the, at least, average cognitive functioning of students in the current study may be a protective factor for their well-beings.

Relationships between Depression and Self-concept

Finally, as predicted, students with higher levels of self-reported depressive symptoms would have lower perceived scholastic competence, independent of their actual academic performances. This finding is valuable as it helps identify the specific group of students with dyslexia, who is at a higher risk of emotional distress.

Implications

The results of this study have several implications when working with students (aged between eight and thirteen years) with dyslexia in Singapore. As students with dyslexia tend to have positive self-concept on athletic competence and social acceptance, parents and/or school may encourage them to learn and participate in sports or peer-group activities to build on their perceived strengths.

Furthermore, interventions or programmes that include the enhancement of perceived and actual behavioural conduct may be beneficial to students with dyslexia. This is because, based on the current finding, such programmes may enhance the global self-worth of these students.

Finally, regular monitor on the emotions of students with dyslexia with negative or low academic self-concept is important as this specific group of students with dyslexia is at a higher risk of emotional distress. Early

intervention or therapy may be provided to these students to prevent depression.

Limitations

Interpretation of the results in the current study should be in line with its possible limitations. As this study involve face-to-face interviews with participants, there are possibilities that participants may feel uncomfortable revealing their personal thoughts and feelings to a stranger (i.e., the investigator of this study), and/or may respond in a manner that make them look better than they are.

Furthermore, the current findings are limited to students with dyslexia who are of at least average intelligence and are receiving professional academic support. Future studies may investigate if similar results are found in students with dyslexia who are not receiving specialist academic support or are of below average cognitive functioning.

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Tables

Table 1. *Demographics of the current sample (N=30)*

<i>Variable</i>	<i>Number of students</i>	<i>Percentage of students (%)</i>
Gender		
<i>Male</i>	21	70
<i>Female</i>	9	30
Age (years)	<i>Mean(M)=10.13</i>	<i>Standard Deviation(SD)=1.22</i>
8	1	3.30
9	10	33.30
10	9	30.00
11	5	16.70
12	4	13.30
13	1	3.30
Race		
<i>Chinese</i>	28	93.30
<i>Malay</i>	1	3.30
<i>Indian</i>	0	0.00
<i>Eurasian</i>	1	3.30
Duration with specialist learning centre (months)	<i>Mean(M)=24.43</i>	<i>Standard Deviation(SD)=15.62</i>

Table 2. *Distributions of the six SPPC's subscale ratings of students who compared themselves to their peers without dyslexia.*

<i>Subscale / Type of Statement Chosen</i>	<i>Number of students</i>	<i>Percentage of students (%)</i>	<i>Chi-square (χ^2)</i>
Scholastic Competence (n=25)			0.04
<i>Positive</i>	12	48.00	
<i>Negative</i>	13	52.00	
Social Acceptance (n=23)			5.26 *
<i>Positive</i>	17	73.91	
<i>Negative</i>	6	26.09	
Athletic Competence (n=28)			9.14 **
<i>Positive</i>	22	78.57	
<i>Negative</i>	6	21.43	
Physical Appearance (n=18)			0.22
<i>Positive</i>	8	44.44	
<i>Negative</i>	10	55.56	
Behavioural Conduct (n=25)			1.96
<i>Positive</i>	16	64.00	
<i>Negative</i>	9	36.00	
Global Self-worth (n=16)			6.25 *
<i>Positive</i>	13	81.25	
<i>Negative</i>	3	18.75	

Note. * $p < .05$ ** $p < .005$

Table 3. Correlations between self-reported depressive symptoms and perceived scholastic competence

CDI subscales Of Depressive Symptoms	Perceived Scholastic Competence					
	Zero- order	Partial Correlations (Holding academic performance constant)				
		English	Mother Tongue	Maths	Science	Average / Overall
Negative Mood	-0.50**	-0.49**	-0.50*	-0.48*	-0.49*	-0.48
Interpersonal Problems	-0.27	-0.26	-0.28	-0.24	-0.26	-0.23
Ineffective-ness	-0.51**	-0.51**	-0.51*	-0.50*	-0.52**	-0.50*
Anhedonia	-0.36	-0.34	-0.37	-0.33	-0.34	-0.33
Negative Self- esteem	-0.52**	-0.51**	-0.52*	-0.49*	-0.51**	-0.50*
Total CDI	-0.54**	-0.53**	-0.54**	-0.52**	-0.53**	-0.52*

Note. * $p < .05$ ** $p < .01$