

Developmental dyslexia in selected South African schools: Parent perspectives on management



Authors:

Salome Geertsema¹ 
 Mia Le Roux¹ 
 Chemoné van Niekerk¹ 
 Louise Dyer¹ 
 Melindie Boooyse¹ 
 Monja Bothma¹ 
 Talitha Nel¹ 

Affiliations:

¹Department of Speech-Language Pathology and Audiology, Faculty of Humanities, University of Pretoria, Pretoria, South Africa

Corresponding author:

Salome Geertsema,
 salome.geertsema@up.ac.za

Dates:

Received: 18 Oct. 2021
 Accepted: 01 June 2022
 Published: 30 Aug. 2022

How to cite this article:

Geertsema, S., Le Roux, M., Van Niekerk, C., Dyer, L., Boooyse, M., Bothma, M. et al., 2022, 'Developmental dyslexia in selected South African schools: Parent perspectives on management', *South African Journal of Childhood Education* 12(1), a1136. <https://doi.org/10.4102/sajce.v12i1.1136>

Copyright:

© 2022. The Authors.
 Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

Read online:



Scan this QR code with your smart phone or mobile device to read online.

Background: South Africa has a dearth of research regarding the management of children with dyslexia (CWD), which could be exacerbated by the apparent lack of parental support. South Africa has a unique educational, linguistic and socio-economic context; thus, more specific investigations were warranted into the perspectives and needs of parents and caregivers of CWD in South Africa.

Aim: To determine the parental perspectives of the management of their CWD in South African schools.

Setting: An online research survey was sent to South African parents with a CWD.

Methods: A descriptive, embedded design, including both qualitative and quantitative aspects, was implemented. The study was cross-sectional in nature. Stratified sampling was used in which the participants were divided into two separate strata.

Results: Results indicated that most parents of CWD had good knowledge regarding dyslexia in South Africa. Most parents with CWD had difficulty with the social stigma surrounding the disorder. Furthermore, parents were aware of their role in their CWD's education; however, a lack of resources was evident in South Africa leading to poor parental experiences.

Conclusion: There is a lack of resources and access to appropriate services such as multisensory teaching methods and accommodations in South Africa. Parents of CWD therefore did not receive enough support in the management of their child's dyslexia. Future research should be conducted regarding South African teachers' knowledge and perspectives regarding dyslexia and the management thereof. It was recommended that professionals trained in the management of dyslexia educate and advocate for CWD and their families

Keywords: dyslexia; South Africa; schools; management; children; parents; perspectives; experiences.

Introduction

Dyslexia is a specific learning disorder (SLD) that globally puts approximately 700 million people at risk of life-long difficulties such as illiteracy and social exclusion (Cramer 2014:2). It is therefore imperative that dyslexia is managed effectively to allow learners who are impacted by this condition to achieve their full potential. The efficacy of any treatment approach ultimately lies in the support of knowledgeable and informed parents (Acar, Chen & Xie 2021:2). Global research conducted at schools in England, the USA, Northern Ireland and India reports that roles of the parents within the school environment are uncertain and that their views are not considered (Banga & Ghosh 2017:959; Beck et al. 2017:152; Cook 2017:51; Hegstad 2017:8; Ross 2019:141, 153). The parents in these studies experience a variety of emotions such as anger, frustration and guilt, much like those in South Africa (Du Plessis 2012:36–37). However, South Africa has a dearth of novel research into the management of children with dyslexia (CWD), which is exacerbated by the apparent lack of parental support. Moreover, given the unique educational, linguistic and socio-economic context locally, more specific investigations need to be launched into the perspectives and needs of parents and caregivers of CWD in South Africa.

Overview of dyslexia

Dyslexia is a language-based learning impairment and specific reading disorder (Powers et al. 2016:337; Tamboer, Vorst & Oort 2016:464). It is an inability to develop accurate or fluent reading (decoding), writing (nemkinesia) and spelling (encoding) and may lead to impairment in mathematical reasoning (dyscalculia) (Hammond & Hercules 2016:5). Dyslexia, with its classified

subtypes, is associated with morphological and functional abnormalities in the brain areas associated with reading (Ozernov-Palchik & Gaab 2016:156).

The several classified subtypes of dyslexia include dysnemkinesia (poor motor memory development for written symbols), dysphonesia (an inability of grapheme-phoneme correspondence) and dyseidnesia that manifests as a poor ability to distinguish between whole words as visual pictures and link them with auditory sounds (Coltheart & Friedmann 2018:8–26). The mentioned characteristics are identified in a person with dyslexia through the *Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5)* criteria (APA 2013). According to the American Psychiatric Association (2013), dyslexia is now classified as an SLD in the *DSM-5*. Regardless of these demarcated specifics, controversy still exists regarding the interpretation and application of these diagnostic criteria to the most effective management protocols for dyslexia, as seen by the numerous studies conducted to understand the cause of dyslexia, its epidemiology and effective management of learning disabilities (Adubasim & Nganji 2017:2).

International perspectives of dyslexia management

The effect of an all-inclusive diagnostic umbrella term such as SLD may complicate the management of the condition, as not all SLDs would benefit from the very distinct treatment options for dyslexia alone (Cainelli & Bisiacchi 2019:559). Research conducted in Brazil, the United States of America (USA), India, China, the United Kingdom (UK) and Ireland specifically indicates the plethora of views on treatment. In Brazil, transcranial stimulation is used to improve the reading capability of individuals with dyslexia (Rios et al. 2018:6). Individuals are generally able to recognise the difficulties with literacy, but continued misconceptions about a specific diagnosis such as dyslexia are still present in the USA (Castillo & Gilger 2018:212). According to research studies done in India, the language processing skills are the most important part of management (Rao et al. 2017:165), yet little is mentioned about the different types of decoding and encoding. In Gharuan, a village situated in India, management includes educational frameworks, an individualised education plan (IEP) and early management (Shaywitz, Morris & Shaywitz 2008:1417–1418). Management of dyslexia in China is delayed compared with other languages such as English because of the complex Chinese writing systems (Cai et al. 2020:204). In the United Kingdom, the most effective management for dyslexia is phonics based – and multisensory approaches including auditory, visual and kinaesthetic aspects (Tidy & Huins 2015:3). In Ireland, it is widely suggested that schools receive further navigation and support in using resourcing models to meet the needs of the CWD, as they recently had to change the educational teaching support provided for CWD because the previous support did not meet the learners' needs (Tiernan & Casserly 2018:51–52). Finally, a recent Finnish study proposed a model of association learning, through which basic reading and spelling could be

instructed. This game-based instruction (GraphoLearn Technology) has been designed for application in various alphabetic writing systems and can therefore benefit both opaque and transparent orthographies (Lyytinen et al. 2021). As such, this instructional approach may provide some answers for South Africa, where the language of learning and teaching (LoLT) is mainly the opaque English, yet many of the official languages of the country (e.g. Afrikaans and Sepedi) are transparent. However, irrespective of the common occurrence and nature of dyslexia, both internationally and on African soil, the disorder and its accompanying challenges of low resources and socio-economic factors have not received adequate attention in most developing countries (Makgatho et al. 2022).

Schools require support not only in using resource models but also in providing adequate emotional support to their learners (Rao et al. 2017:163). Dyslexia should preferably be addressed via a multiprofessional approach, including speech–language therapists (SLTs), educational psychologists and clinical psychologists, who may aid by providing emotional support to the CWD and their caregivers (Cainelli & Bisiacchi 2019:559). According to Rao et al. (2017:163), a lack of emotional support is considered a risk factor for increased internalising, anxious and depressive behaviour amongst CWD. Teachers and scholastic environments are critical elements in the identification and management of CWD, as it is their responsibility to teach learners how to read (Lindstrom 2019:198). Multiple research studies confirm that teachers have a gap within their knowledge base regarding efficient reading instruction, and this includes limited knowledge of phonemic awareness, phonics instruction and morphemes (Hategan et al. 2018:117; McMahan, Oslund & Odegard 2019:22). This dearth of knowledge may be exacerbated where the learners have dyslexia.

Evidence-based intervention approaches are just as important as teacher knowledge because they provide an adequate framework for teaching reading and writing (International Dyslexia Association 2019:1). Children with dyslexia have a phonological deficit and specific emphasis should thus be placed on phonological awareness skills in the management approach (International Dyslexia Association 2019:3). Effective techniques proposed by the International Dyslexia Association are collectively known as structured literacy (SL) instruction (Fallon & Katz 2020:336–337). Structured literacy is a general term associated with evidence-based intervention approaches which utilise all components of spoken language to teach reading, writing and spelling (International Dyslexia Association 2019:6). The language areas targeted in this approach may include phonology, orthography, syllables, morphology, syntax and semantics (Fallon & Katz 2020:337). A generalised approach to dyslexia management may be effective for many learners, but it is not necessarily sufficient for all, as the core of individual problems may not be clear, and the development of each CWD must be facilitated in a unique manner (Cainelli & Bisiacchi 2019:669;

Rao et al. 2017:163). In summary, there is a global controversy regarding effective management approaches to an SLD such as dyslexia, pertaining to the knowledge of professionals and teachers of CWD as well as within the research describing evidence-based intervention approaches. It is therefore reasonable to assume that differing and confusing perspectives may also be prevalent amongst parents or caregivers of CWD.

Parental perspectives of the management of dyslexia in the international context

Research has been conducted at schools in England, the USA and Northern Ireland to determine the experience of parents with CWD within the school environment. The findings of these studies show that parents' roles are uncertain, their views are not considered, they have difficulty accessing professionals and resources and they do not fully understand their rights (Beck et al. 2017:152; Cook 2017:52; Ross 2019:141, 153).

Some studies reported that parents had difficulty accepting the diagnosis of dyslexia in their child and were hesitant to agree to adaptations in the academic curriculum (Fernández-Alcántara et al. 2017:538). Parents not only experience difficulty in the school environment but also in their more immediate environment, especially related to increased levels of stress. Ongoing stress can affect the parent-child relationship in several ways, such as insecure attachment (Carotenuto et al. 2017:5), low self-esteem (Delany 2017:100) and low family cohesion (Carotenuto et al. 2017:5).

Many parents, especially mothers of CWD, have more stress and depressive behaviours than other parents (Carotenuto et al. 2017:5; Multhauf, Buschmann & Soellner 2016:1204). Educating parents with CWD may minimise parental stress associated with acceptance and management of dyslexia. Overall, it is evident that parents with CWD experience and display a variety of negative emotions and behaviours. A few emotions that are evident include stress (Carotenuto et al. 2017:5), depression (Multhauf et al. 2016:1204), emotional strain (Banga & Ghosh 2017:961), isolation (Cook 2017:54), disempowerment (Ross 2019:153) and frustration (Cook 2017:57). Common behaviours that are reported in parents with CWD are internalising and externalising behaviour such as aggression, disagreement and indecision (Multhauf et al. 2016:1204; Watt 2020:123). It is therefore evident that parents of CWD require a greater extent of support in all spheres of life. South Africa faces additional challenges in the management of dyslexia because of the multilingual environment and lack of resources. It is consequently reasonable to assume that this context may also add to the psychosocial and general impact on the perspectives of local parents with CWD, but further research is needed.

Dyslexia management in the South African context

Learners in South Africa have access to schooling, but they experience inconsistencies in the quality of education

received (Mkhwanazi 2018:79). Studies conducted locally demonstrated that many school-aged learners display poor literacy skills (Fourie, Sedibe & Muller 2018:85; Wilsenach 2015:7). Moreover, several South African CWD remain unidentified because of limited resources and screening and assessment tools (Clark, Naidoo & Lilenstein 2019:2, 9). In addition, it is often required of the learners to perform academically in reading and writing whilst receiving education in a language other than their first language (Moonsamy & Kathard 2015:69-70).

The Department of Basic Education in South Africa makes provision for different accommodations for CWD such as additional reading time, allowing recordings in the classroom and using audiobooks (IEB 2017). However, the liable individuals such as teachers and government officials do not always provide the necessary granted accommodations (Dreyer 2015:96). Schools in South Africa have trouble in early identification of learning barriers (Mkhwanazi 2018:76). The Education White Paper No. 6 (Department of Education 2001) stated that an inclusive education environment should be provided for learners with special needs. This statement implies that these learners should, where possible, attend mainstream schools (Walton et al. 2009:105). Unfortunately, a recent study conducted in the North-West province reported that the public school environments still do not consider the needs of learners with disabilities such as dyslexia, despite the Education White Paper policy (Leseyane et al. 2018:6). Because of the lack of resources and inadequate management in South Africa, parents of CWD may have negative perspectives of the management of dyslexia.

Parent perspectives on the management of dyslexia in a South African context

From the many proposed reasons elucidated in the previous sections internationally, parent perspectives are not always considered or even investigated when it comes to CWD. In one of the few reported local studies, Du Plessis (2012: 36-37) established some years ago that parents of learners with learning disabilities in the Western Cape experience common emotions such as frustration, confusion, anger, guilt and helplessness. Likewise, Dreyer (2015:96) later proposed that the stated emotions may be increased if parents do not feel that they receive the necessary support from the community and education system. Parents of CWD have a variety of experiences, but all parents experience an elevated level of stress (Bull 2003:341-347; Dreyer 2015:96). A more recent study conducted in KwaZulu-Natal found that parents have insufficient knowledge of dyslexia and experience a lack of resources within the community (Mkhwanazi 2018:49, 59-60). Resources include insufficient support in mainstream schools, and the attendance of special schools is therefore required (Mkhwanazi 2018:59-60). It is evident from the few research studies available in the South African context that parents often have negative emotional experiences relating to the management of their CWD in South African

schools. Parents play an important role in the management of dyslexia in their CWD's lives, as they spend the most time with their children in everyday contexts. Furthermore, it is needed for the skills that are taught in the clinical setting to be executed at home to improve generalisation of those skills to the child's daily living activities. South Africa faces many other challenges because of the lack of resources as well as the diversity regarding socio-economic status, languages and culture, and thus more specific research is required within this field to enhance the efficacy of dyslexia management in South African schools. This present study aimed to understand these specific factors by adding to the standing corpus of knowledge, within the entire South African context, on the parental perspectives and experiences relating to the management of their CWD in schools locally.

Aims and objectives

The aim of this study was to determine parental perspectives of the management of their CWD in South African schools. The subsequent objectives were to explore the emotional experiences of a South African parent with a CWD regarding the child's SLD and the social stigma surrounding the disorder. We also explored the resources of schools in South Africa to support a CWD and aimed to determine the South African parents' knowledge and beliefs relating to their CWD, as well as their level of knowledge regarding the management of dyslexia in schools. Additionally, we set out to determine South African parents' experiences and difficulties regarding the management of dyslexia in South African schools. Finally, we wanted to determine South African parents' understanding of their roles and their involvement in their CWD's education as well as their experiences regarding the teachers' and school staff's ability to manage dyslexia in the South African school environment.

Method

Study design

The study design was an embedded design, as it includes both qualitative and quantitative data (Leedy & Ormrod 2016:313). The quantitative approach was the central approach, whereas the qualitative approach served as the complementary approach. The qualitative aspect of this study design aimed to obtain detailed data to understand the parental perspectives of the management of their CWD in South African schools. The quantitative aspect was useful in studying this phenomenon by determining the consensus of parental perspectives of the management of their CWD in South African schools. The quantitative research followed a descriptive design, which included survey research to obtain data about self-reported beliefs or opinions (Neuman 2014:192). All the data was collected from the participants at one point in time and is thus considered a cross-sectional study.

Setting

Data collection for this study was conducted in the form of a research survey, which was sent to South African parents with a CWD via an online questionnaire.

Study population and sampling strategy

The study population included parents or primary caregivers of school-aged CWD (6–18 years of age) who attended schools in South Africa during the academic year of 2021. The child must have been formally diagnosed with dyslexia. A total of 104 participants commenced the survey, of which only 93 participants completed the survey. The 11 incomplete responses were omitted within the data analysis, and thus only the 93 complete responses were analysed and the results of which are included in this article. Stratified sampling was implemented in which the study population was divided into two strata. The strata consisted of parents of CWD whose children have been diagnosed within the last 4 years (Group A) and parents of CWD who have been diagnosed longer than 4 years ago (Group B). The strata dividing allowed the researchers to learn about the different experiences parents may have, depending on how long ago their CWD was diagnosed. Group A had 64% of the participants and Group B had 35% of the participants who completed the survey. See Table 1 for a description of the demographic information of the participants.

TABLE 1: Demographics of participants.

Categories	Subcategories	Group A (%)	Group B (%)
Gender	Male	62	38
	Female	77	23
Age (in years)	7–10	97	3
	11–14	76	24
	15–18	17	83
Grade	Grade 1–3	92	8
	Grade 4–7	91	9
	Grade 8–9	35	65
	Grade 10–12	0	100
Home language	Afrikaans	73	28
	English	56	44
Language of learning and teaching	Afrikaans	72	28
	English	58	43
Type of school	Public school	70	30
	Private school	70	30
	LSEN school	71	29
	Other	39	62
Province	Limpopo	100	0
	Gauteng	60	40
	Free State	57	43
	Western Cape	73	27
	Eastern Cape	80	20
	Northern Cape	100	0
	Northwest	75	25
	Mpumalanga	100	0
Comorbidities	KwaZulu-Natal	63	38
	Yes	62	39
	No	74	26

LSEN, Learnes with Special Educational Need.

Data collection

The data were collected by means of an online survey. The survey was created and distributed through the online survey software Qualtrics. Access to Qualtrics was granted through the Department of Speech–Language Pathology and Audiology, University of Pretoria. The survey was adapted from several existing questionnaires and interview schedules, namely the Teacher Awareness of Dyslexia questionnaire (Thompson et al. 2015), the Parent Perspectives of the Effects of Public, Private and Home School Learning Environments on Students with Dyslexia questionnaire (Haws 2017), the Experiences of Parents with Children Who Have Been Diagnosed with Dyslexia in Secondary Schools of Msunduzi Municipality, Pietermaritzburg interview guide (Mkhwanazi 2018) and the Experiences of Parents of Children with Reading Difficulties interview schedule (Du Plessis 2012). The survey was adapted to be better suited for studying the phenomenon of determining the parental perspectives of the management of their CWD in South African schools. The questions were designed to obtain both nominal and ordinal types of data.

All the identified potential participants for this study were contacted via the social media platform Facebook. A link to the survey was sent to the participants by posting the link on the selected Facebook groups (Red Apple Dyslexia Association, Die Rooi Appel and Stark-Griffin Dyslexia Academy).

Content validity was considered to determine how well the instrument represents the components of the variable being measured and therefore contributed to the validity of the study (Brink, Van der Walt & Van Rensburg 2018:160). A characteristic of reliability used in this study was stability. The stability was ensured by asking the same question twice, with each question being phrased differently to improve the reliability of the results.

TABLE 2: Survey responses with percentage differences in the knowledge base.

Number	Statement	Correct answers of Group A (%)	Correct answers of Group B (%)	% Difference between the two groups (%)
1	Dyslexia is a language-based learning disability	58	73	15
2	CWD may experience difficulties with mathematics	26	30	4
3	The exact causes of dyslexia are clear	16	33	17
4	CWD may experience difficulty with expressing themselves verbally	23	21	2
5	CWD may find it difficult to comprehend when others speak	27	27	0
6	Children with dyslexia have trouble remembering letter symbols for sounds and forming memories for words	90	79	11
7	Formal testing of reading, language and writing skills is the only way to confirm a diagnosis of suspected dyslexia	10	9	1
8	Dyslexia can negatively impact an individual's future job prospects	45	61	16

CWD, children with dyslexia.

Data analysis

The target population was divided into two strata, namely Group A and Group B. These two strata were compared during the data analysis process together with the analysis of all the data. Both descriptive statistics and inferential statistics were used. In descriptive statistics, frequency distributions (nominal data), measures of central tendency (mean), simple descriptive statistics (percentages) and measures of variability (standard deviation) were used to make conclusions about the data. In inferential statistics, the chi-square, *t*-test and *p*-value were used. The chi-square is commonly used to test nominal and ordinal data that were appropriate for this research study (Garth 2008:62). The *t*-test was used to compare the means of Group A and Group B. The *p*-value was used to identify the statistical significance of an observed difference. The chi-square, *t*-test and *p*-value were performed by using a variety of functions on Microsoft Excel. The data analysis process was conducted with the assistance of a statistician.

Ethical considerations

Ethical clearance was granted from the departmental research and ethics committee at the University of Pretoria. The participants were neither put at risk nor were they harmed whilst conducting this research study. An informed consent form inviting participants to participate and detailing what was expected of the participants as well as ensuring that they were aware that their participation was strictly voluntary and was attached to the survey. The informed consent form had to be read and agreed to before the survey could be commenced. The participants were allowed to opt out of completing the online survey at any time without any negative consequences. The researchers had to consider the privacy settings on social media to determine whether the information was public or private (Social Media Research Group 2016:16–18). The researchers protected the privacy and confidentiality of all the participants and stored all the data collected in a safe place.

Results

Knowledge about dyslexia

The knowledge about parents with CWD was tested with regard to true and false answers to statements. The two strata were compared with each other, namely the group where CWD was diagnosed within the last 4 years (Group A) and the group where CWD was diagnosed more than 4 years ago (Group B). The participants were divided into these categories because it provided information on the differing knowledge base, perspectives and experiences of parents, depending on how long ago their child was diagnosed.

As indicated in Table 2, a difference was noted between the two groups' knowledge in statements 1, 3, 6 and 8. In statements 1, 3 and 8, parents of Group B, displayed greater knowledge on that specific statement than those in Group A.

In Question 6, Group A displayed better knowledge on the statement that CWD has trouble remembering letter symbols for sounds and forming memories for words. Both groups had poor knowledge about the following statements: 2 to 5 and 7. Group A displayed weaker knowledge vis-à-vis statements 1 and 8. The 11 statements that were not mentioned in Table 2 resulted in appropriate knowledge of parents and no differences between the two groups were noted. There was only a 1% difference between the two groups' total score of the 19 statements. These figures conclusively indicated that there was no difference between the knowledge of parents with CWD diagnosed recently or later.

Parental experiences of the management of dyslexia in South African schools

Warning signs prior to and influence of formal diagnosis

It was evident that CWD in South African schools present with warning signs before being formally diagnosed with dyslexia. Warning signs were more clearly delineated by the parents of Group A, perhaps because of more recent memories. Nonetheless, most of the parents with CWD 62% stated that the teacher did not recognise the warning signs before their CWD got diagnosed. Yet when asked if the diagnosis of dyslexia helped their teacher to understand the disorder and to better support their CWD in the classroom, 57% of the parents in Group A and 51% of parents in Group B agreed or strongly agreed, and therefore there was a moderately significant difference between the two groups ($p = 0.02$).

Teacher knowledge and attitudes of dyslexia and effort in managing dyslexia in the classroom

Parents were asked if their teacher had a positive or negative view of their CWD. Eighty-three per cent of parents felt that their CWD's teacher had a positive view of their child. Only 17% of the parents with CWD responded negatively. Regarding teacher knowledge of dyslexia being adequate, a mere 6% of parents in Group A and 3% in Group B strongly agreed that there was no need for concern in this regard. When considering both groups, an average of 71% of parents who had a CWD in a South African school had at least one person in the school who understood their CWD's special needs. Conversely, there was an unfortunate 19% of the parents in Group A and a near-similar total of 15% in Group B who disagreed with this statement. Most parents with CWD (47%) agreed that their teacher put in extra effort for their CWD, could support their child's learning, fostered motivation and hope for their CWD and treated them fairly. In terms of the South African teacher being able to support the child's learning, a highly significant difference between Group A and B with a p -value of 0.001 was observed in this regard. Unfortunately, there were also 25% of parents who disagreed that their teacher fostered motivation and hope for their CWD and 21% who disagreed that their teacher treated their CWD fairly. In both Group A (49%) and B (58%), most parents (54% – combined) felt that their child's school did not have the resources to provide intensive treatment for dyslexia, including multisensory instruction and accommodations. A fair amount (24%) of parents in Group A and 9% of parents in

Group B were unsure whether their CWD's school had the resources to provide intensive treatment for dyslexia. It was evident that there was a significant difference ($p < 0.005$) between Group A and B, especially in the number of parents who answered 'unsure' in this regard. Therefore, it could be seen that 67% of children of parents in Group A and 58% of children of parents in Group B did not receive multisensory teaching methods in their South African schools.

Accommodating children with dyslexia in the classroom

41% of the parents in Group A felt as if their child's teacher had adequate knowledge and skills to provide appropriate accommodations for their child at school. With a p -value of 0.02, there was moderate evidence of a difference between Group A and B and therefore showed a small improvement over time as 42% of the parents in Group B felt the same. Many parents in both groups (54%) felt as if the South African school that their child was attending provided sufficient accommodations for their child. However, there was a concerning 32% of the parents in Group A who did not feel that there were sufficient accommodations provided. Thirty-four per cent of CWD received extra time as an accommodation provided by the school, which was the most common accommodation. This was followed by 30% having a reader, 27% who received writing and spelling help, 4% were unsure about the accommodations, 3% were seated in front of the class and only 2% had one-on-one help.

Parental involvement in the management of dyslexia

Most parents (81%) perceived themselves to be involved in the management of their child's dyslexia in the school environment. According to the survey responses, most parents also reported interacting with the school or teacher(s) (96%) and frequently meeting with their child's teacher (64%) to assist their children in the academic environment. Only a few of the parents (47%) reported that they had had only positive experiences when interacting with the school or teacher(s), with an alarming 53% of parents who were unsure or who disagreed with this fact. The majority of parents (97%) felt as though they were aware of the role they played in their children's education; however, of these, 19% of parents reported that their opinion and views regarding their child's education were not considered in the academic environment. Furthermore, 23% of parents were unsure regarding whether their opinions and views were considered. Therefore, out of the 97% of parents who were aware of the role they played in their children's education, only 57% of those reported that their opinions and views were considered in their child's school context. Most parents (77%) did, however, report that they were well informed on what dyslexia was and the effective management techniques thereof in the school context. Seventy-one per cent of parents reported that they had a good relationship with their child's teacher, but only 47% of parents reported that their child's teacher(s) kept them informed about their child's progress in the classroom. Furthermore, most parents (64%) reported that they experienced difficulty accessing professionals and resources for their CWD.

The data obtained was then divided into Groups A and B. The mean and standard deviation from both groups are depicted separately in Table 3. The mean and standard deviation were derived from the responses to a Likert scale (i.e. strongly disagree [1], disagree [2], unsure [3], agree [4] and strongly agree [5]). Additionally, the *p*-value comparing the responses from the two groups is also included in Table 3. A *p*-value of ≤ 0.05 indicates that a statistically significant difference exists between the responses of the two groups, and a *p*-value of > 0.05 indicates that no statistical difference was found between the responses of the two groups, and thus their responses were similar.

TABLE 3: Mean, standard deviation and *p*-value comparing parental involvement in Group A and Group B.

Statement	Strata	Mean	Standard deviation	<i>p</i> -value comparing 2 strata
I am involved in the management of my child's dyslexia in the school environment	Group A	3.82	1.12	0.009*
	Group B	4.27	0.96	
I interact with the school or teacher(s) in an attempt to assist my child in the academic environment	Group A	4.34	0.51	0.003*
	Group B	4.39	0.81	
I have only had positive experiences when interacting with the school or teacher(s) relating to my child's education	Group A	3.21	1.26	0.019*
	Group B	2.76	1.30	
I often meet with my child's teacher(s) concerning my child's reading difficulties	Group A	3.38	1.10	0.011*
	Group B	3.85	1.02	
I have a good relationship with my child's teacher(s)	Group A	3.61	0.91	0.011*
	Group B	4.03	0.72	
I am aware of the role I play in my child's education	Group A	4.57	0.66	0.019*
	Group B	4.52	0.56	
I am well informed on what dyslexia is and effective management techniques in the school context	Group A	3.69	1.05	0.001*
	Group B	4.42	0.60	
My opinion and views of my child with dyslexia's education are always considered in the school context	Group A	3.41	0.95	0.004*
	Group B	3.61	1.18	
I experience difficulty accessing professionals and resources for my child with dyslexia	Group A	3.48	1.28	0.060
	Group B	3.67	1.25	
My child's teacher(s) keep me informed of my child's progress in the classroom	Group A	3.07	1.19	0.021*
	Group B	3.12	1.30	

*, Indicates a statistically significant difference between the two groups.

TABLE 4: Mean, standard deviation and *p*-value comparing emotional perceptions of Group A and Group B.

Statement	Strata	Mean	Standard deviation	<i>p</i> -value comparing 2 strata
I wish I had had my child evaluated for dyslexia at an earlier age	Group A	4.18	1.15	0.002*
	Group B	3.30	1.60	
My emotional well-being improved after my child was diagnosed with dyslexia	Group A	3.53	1.09	0.051
	Group B	3.36	1.27	
I experience difficulties whilst helping my child with dyslexia with homework	Group A	3.57	1.20	0.015*
	Group B	3.88	1.17	
I am able to support my child academically	Group A	3.47	1.15	0.007*
	Group B	3.82	1.06	
I receive sufficient support from my child's school and teachers regarding my child's education and the management of my child's dyslexia	Group A	2.72	1.28	0.025*
	Group B	2.76	1.10	

*, Indicates a statistically significant difference between the two groups.

Emotional perceptions

Most parents (72%) reported that they wished they had had their child evaluated for dyslexia at an earlier stage. Most parents (60%) also reported that their emotional well-being improved after their child was diagnosed with dyslexia. Most parents felt as though they were able to support their CWD academically (67%); however, in contrast, a vast majority reported having difficulties helping their CWD with homework (73%). The minority of parents (33%) felt as though they received sufficient support from their child's school and teacher(s) regarding their child's education and the management of their child's dyslexia. However, a shocking 67% indicated that they were unsure or disagreed with that statement.

The obtained results were also divided into Group A and Group B. The mean and standard deviation were determined based on the Likert-scale responses (i.e. strongly disagree [1], disagree [2], unsure [3], agree [4] and strongly agree [5]). Table 4 depicts the mean and standard deviation from the two groups separately, together with the *p*-value comparing the responses from the two groups.

Figures 1 and 2 depict the emotions experienced by parents when their child was diagnosed with dyslexia. Based on this information, the most felt emotions were helplessness, anxiety, stress and frustration.

Forty-one per cent of parents in Group A had bad experiences with a school or teacher regarding their child's dyslexia and/or the management thereof, whereas only 59% of parents in Group B had bad experiences with

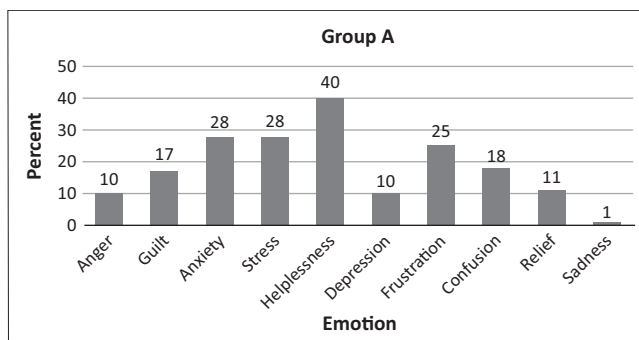


FIGURE 1: Emotions of parents in Group A when their child was diagnosed with dyslexia.

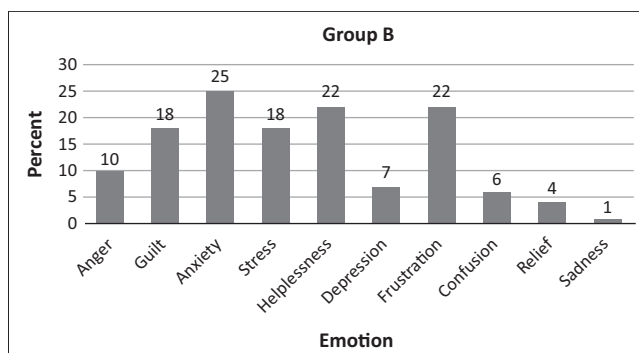


FIGURE 2: Emotions of parents in Group B when their child was diagnosed with dyslexia.

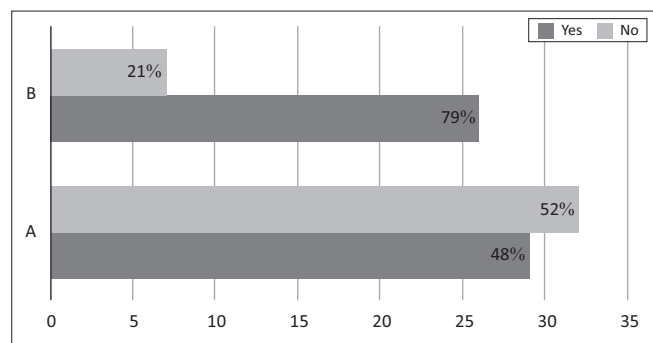


FIGURE 3: Coping with children with dyslexia.

a school or teacher. Figure 3 depicts the perceived ability to cope with a CWD of parents in both groups.

Discussion

Emotional perceptions regarding their child's specific learning disorder

It is clear from the results obtained that SLD, specifically dyslexia, is a multifaceted disorder that affects CWD and their parents in a variety of ways. One important aspect to consider was their emotional perceptions and experiences regarding dyslexia and the management thereof. The results suggested that more parents from Group A wished that they had had their children evaluated for dyslexia at an earlier stage compared with the parents from Group B. Pertaining to their emotional well-being, most parents from both groups agreed that their emotional well-being did improve after their child was diagnosed with dyslexia. This could possibly be because of knowing why their children were struggling and thus being able to provide them with appropriate intervention and support to help them succeed in the future. It was evident that more parents in Group B perceived themselves to be able to support their child academically. However, in contrast, it was noted that Group B also stated having more difficulty helping their CWD with homework compared with Group A.

It is evident that parents of CWD require support in all spheres of life, especially in the academic context. Results from this study determined that most parents from both groups respectively feel as though they do not receive sufficient support from their child's school and teacher(s) regarding their child's education and the management of their child's dyslexia. Furthermore, more parents from Group A reported not receiving sufficient support compared with Group B. This finding may delineate that the longer a CWD has been diagnosed, the more the parents are able to obtain the necessary support required. However, as most parents reported not having sufficient support in the academic context, it is of great concern that the South African schools and teachers are unable to provide the necessary support for managing dyslexia. As Dreyer (2015:96) stated, parental emotions may increase if parents do not receive the necessary support from the community and education system.

When looking at parental emotions when their child was diagnosed with dyslexia in South Africa, many emotions corresponded with previous research. Emotions such as anger, frustration, guilt and helplessness are all common amongst parents with CWD, both in the international and local context (Banga & Ghosh 2017:959; Beck et al. 2017:152; Cook 2017:51; Du Plessis 2012:36–37; Hegstad 2017:8; Ross 2019:141, 153). This study had similar findings in that the parents mostly felt emotions such as frustration, guilt and helplessness, with the addition of emotions such as stress and anxiety. It was found that parents in Group B were able to better cope with the demands placed on them by having a CWD. This correlates with previous research conducted by Dreyer (2015:96), as Group B reported feeling more supported and thus experienced fewer negative emotional perspectives compared with those in Group A.

It is important to note, however, that approximately half of parents (50%) who participated in this study have children who also present with other comorbid conditions in addition to their dyslexia. The most common comorbid conditions are as follows: attention-deficit hyperactivity disorder (ADHD) (54%), dysgraphia (17%), anxiety (5%), central auditory processing disorder (CAPD) (5%), speech disorder (5%), Irlen syndrome (2%), autism (2%) and other (dyscalculia, social phobia, diabetes, verbal apraxia, visual motor integration issues, Tourette syndrome; 10%). These additional conditions might have contributed to more emotional responses than coping with dyslexia alone.

Resources of schools in South Africa

The results of this current study were indicative that South African schools lack resources in the treatment of dyslexia. It is observed that more parents in Group A have uncertainty regarding the resources that are currently available than those in Group B. This positively relates to both previous international and local research (Clark et al. 2019:2, 9; Rao et al. 2017:163). Research representing the South African context portrays that children in South Africa are being diagnosed late or remain unidentified because of limited resources (Clark et al. 2019:2, 9; Mkhwanazi 2018:76). Similar findings were noted in this research study as the majority of CWD in Group A (73%) and Group B (60%) were diagnosed with dyslexia after the age of 8 years. It was alarming to note that approximately half of the participants (48%) first noticed their child's dyslexia and only a few teachers (28%) were able to identify that the CWD has dyslexia. In the UK, the most effective management for dyslexia includes multisensory approaches including auditory, visual and kinaesthetic aspects (Tidy & Huins 2015:3). It is evident from the results that CWD who attend South African schools do not receive multisensory management approaches. In the South African context, multisensory teaching is especially needed because of the linguistically diverse environment, and the lack thereof is indicative of inadequate management. Similarly, the current study also found that

both groups experience similar difficulties in accessing professionals and resources for their CWD. It was noted that 34% of the CWD in this study had to change schools, a lack of resources (44%) and learning difficulties (34%) being the overarching reasons for the change of schools. A similar finding was reported by Mkhwanazi (2018:59–60), who also stated that insufficient support in mainstream schools resulted in the attendance of special schools being required. These results further support the findings that South African schools do not have sufficient resources to provide effective services for CWD and their families. This lack is a cause of great concern, as it suggests that South African schools and teachers are not equipped to provide sufficient support to CWD and their parents. This finding is similar to those studies conducted in the international context, which also states that parents have difficulty accessing professionals and resources (Beck et al. 2017:152; Cook 2017:52; Ross 2019:141, 153). As dyslexia is a life-long learning disability, the necessary support during the school years is essential for future success; therefore, it is troublesome that South African schools do not have the appropriate resources to facilitate these CWD's potential success.

Parents' level of knowledge regarding their children with dyslexia and the management of dyslexia in schools

The results obtained reflected that, although there were some differences in the responses to the true and false questions pertaining to the parents' knowledge regarding their CWD and the management of dyslexia in schools, the parental knowledge of both groups was generally appropriate. However, there is still some discrepancy between what they believe dyslexia is, the difficulties that may be experienced by CWD, as well as how to appropriately assess and diagnose dyslexia. The overall finding that parental knowledge is relatively acceptable is contradictory to the findings from Mkhwanazi (2018), which stated that parents from the KwaZulu-Natal region specifically had insufficient knowledge of dyslexia.

Perceptions regarding the South African parents' role and involvement in their children with dyslexia's education

Although most parents in both groups reported being involved in the management of their child's dyslexia in the school environment, a difference was found between the groups. Group B seemed to be more involved in the management of their child's dyslexia compared with Group A, which could possibly be because of their children having been diagnosed with dyslexia for a longer period. Therefore, the parents are more aware of how to be involved in the management of their CWD as they have had obvious further experience with it. Most parents in both groups felt as though they interacted with the school or teacher(s) to assist their child in the academic environment. However, it was noted that Group A was slightly more in agreement to this statement. Similarly, most parents in both groups reported

often meeting with their child's teacher(s) concerning their child's reading difficulties. However, in contrast to the aforementioned, more parents from Group B reported meeting with their child's teacher(s) compared with Group A. Most parents in both Group A agreed that they were aware of the role they played in their child's education and that their opinions and views were considered in the school context. Conversely, it was noted that more parents from Group B reported being aware of their role in their child's education than the parents from Group A, which can understandably be ascribed to increased exposure to the disorder. Similarly, more parents from Group B agreed that their opinions and views of their CWD's education were considered in the school context compared to the parents of Group A. These findings contradict previous research studies conducted in the international context, which states that parents' roles are uncertain and that their views are not considered (Beck et al. 2017:152; Cook 2017:52; Ross 2019:141, 153). It was evident that the parents from Group B believed that they were well informed on what dyslexia is and effective management techniques in the school context, compared with the parents from Group A. In conclusion, parents from Group B seemed to better understand their role and are more involved in their CWD's education compared with Group A.

South African parents' experiences regarding the management of dyslexia in South African schools

The Department of Basic Education in South Africa makes provisions for different accommodations for CWD (IEB 2017). Most parents agreed to the fact that appropriate and sufficient accommodations are provided. However, similar to the findings of Dreyer (2015:96), 30% of parents stated not having been granted accommodations, implying that there is still a cause of concern regarding teachers and government officials providing the granted accommodation. Largely, one can conclude that a substantive portion of parents did not feel as if dyslexia is managed effectively in South Africa. Although most of parents felt that their CWD's teacher had a positive view of their CWD, they felt concerned regarding their CWD's teacher's knowledge regarding dyslexia. A smaller portion of the parents felt that there was no one in the school who understood their CWD. It was clear from the results obtained that many parents (both Group A and B) had negative experiences whilst interacting with the school or teacher(s). It was, however, found that Group B had more negative experiences than Group A, where the CDW had been diagnosed more recently. The possible discrepancy between the school and teacher(s) knowledge regarding dyslexia during previous and recent years could be another reason for this finding. More parents from both groups reported having a good relationship with their CWD's teacher(s) than the parents who reported that their child's teacher(s) kept them informed on their CWD's progress in the classroom. This is contradictory, as one would assume that having a good relationship with the child's teacher(s) would result in the teacher keeping the parents informed regarding the child's progress. It was noted that more parents

from Group B appeared to have a good relationship with their CWD's teacher(s) compared with Group A, regardless of their negative experiences earlier on. Nonetheless, the Group B parents also seemed to have better relationships with their CWD's school and teacher(s) currently. These findings are in line with a recent study conducted in the North-West province that reported that South African public school environments do not consider the needs of learners with disabilities despite the Educational White Paper policy (Leseyane et al. 2018:6). Yet most parents felt as if there was at least one person who understood their CWD and some teachers were putting in extra effort, supporting their child's learning, fostering hope and motivation and treating their child fairly.

Strengths and limitations

There are strengths and limitations that should be considered when interpreting the research findings. The data were obtained from participants in all nine provinces, which is representative of the South African context. A variety of different school contexts (i.e. private, public and LSEN) were also included in this study. However, only English and Afrikaans-speaking individuals participated in this research study. This indicates that the research findings cannot be generalised to the other official languages of South Africa, which is important as South Africa is a multilingual and multicultural context. Another limitation to this study was that the study population was small for survey research, and thus the findings could have been skewed. Some of the participants also did not complete the full survey, possibly indicating that participants were uncomfortable or did not understand some of the questions. Incomplete survey responses could also result in skewed data.

Implications or recommendations

As dyslexia is a life-long learning difficulty that places CWD at risk of a variety of difficulties such as illiteracy and/or social exclusion, it is of great concern that parents of CWD reported not having enough support. Recommendations for clinical practice are thus that South African professionals trained in managing dyslexia (such as SLTs) utilise the present results to improve their own management of dyslexia in South African schools. This may be achieved by advocating for CWD as well as providing teachers and schools with the necessary knowledge and support to better address these issues in the classroom and school context through specific training pre- and post-tertiary education. Future research should be conducted to determine the South African teachers' perspectives and knowledge regarding dyslexia, including their ability to identify warning signs and manage dyslexia in the school context. Further studies should also be conducted to determine whether parents from more culturally and linguistically diverse backgrounds have similar experiences than the parents in this study. These future research investigations may subsequently support to the knowledge base surrounding the current management of CWD in South Africa.

Conclusion

The overall aim of this study was to determine the parental perspectives of the management of their CWD in South African schools. The parents who participated are appropriately informed on what dyslexia is as well as the effective management thereof. The majority had sufficient knowledge of their role in their CWD's education. However, it is clear that parents of CWD feel as though they do not receive sufficient support from their CWD's school and teacher(s) in the education of their CWD and the management of their dyslexia. There is a discrepancy between the type and quantity of accommodations provided to CWD, and multisensory teaching methods are lacking for the most part in the South African school system. It was also evident that a lack of resources and access to appropriate services for their CWD were also perceived as problematic. As such, a vast majority of parents with CWD in South Africa do not perceive themselves as receiving enough support within the South African school environment to effectively address their CWD's specific needs.

Acknowledgements

Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

S.G., M.L.R., M.B., M.B., L.D., T.N. and C.V.N. were equal main contributing authors of this article. S.G. was the main supervisor and M.L.R. the co-supervisor of the project.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

References

- Acar, S., Chen, C.I. & Xie, H., 2021, 'Parental involvement in developmental disabilities across three cultures: A systematic review', *Research in Developmental Disabilities* 110, 103861. <https://doi.org/10.1016/j.ridd.2021.103861>
- Adubasim, I. & Nganji, J., 2017, 'Dyslexia – A learning difference', *Autism: Open Access* 7(1), 1000203.
- American Psychiatric Association (APA), 2013, *The diagnostic and statistical manual of mental disorder*, 5th edn., American Psychiatric Association Publishing, Washington, DC.
- Banga, G. & Ghosh, S., 2017, 'The impact of affiliate stigma on the psychological well-being of mothers of children with specific learning disabilities in India: The mediating role of subjective burden', *Journal of Applied Research in Intellectual Disabilities* 30(5), 958–969. <https://doi.org/10.1111/jar.12311>

- Beck, G.J., Hazzard, D., McPhillips, T., Tiernan, B. & Casserly, A.M., 2017, 'Dyslexia policy and practice: Cross-professional and parental perspectives on the Northern Ireland context', *British Journal of Special Education* 44(2), 144–164. <https://doi.org/10.1111/1467-8578.12172>
- Brink, H., Van der Walt, C. & Van Rensburg, G., 2018, *Fundamentals of research methodology for healthcare professionals*, 4th edn., Juta & Co Ltd., Cape Town.
- Bull, L., 2003, 'The use of support groups by parents of children with dyslexia', *Early Child Development and Care* 173(2–3), 341–347. <https://doi.org/10.1080/0300443030303092>
- Cai, L., Chen, Y., Hu, X., Guo, Y., Zhao, X., Sun, T. et al., 2020, 'An epidemiological study of Chinese children with developmental dyslexia', *Journal of Developmental & Behavioral Pediatrics* 41(3), 203–211. <https://doi.org/10.1097/DBP.0000000000000751>
- Cainelli, E. & Bisiacchi, P.S., 2019, 'Diagnosis and treatment of developmental dyslexia and specific learning disabilities: Primum non nocere', *Journal of Developmental and Behavioral Pediatrics* 40(7), 558–562. <https://doi.org/10.1097/DBP.0000000000000702>
- Carotenuto, M., Messina, A., Monda, V., Precenzano, F., Iacono, D., Verrotti, A. et al., 2017, 'Maternal stress and coping strategies in developmental dyslexia: An Italian multicenter study', *Frontiers in Psychiatry* 8, 1–7. <https://doi.org/10.3389/fpsy.2017.00295>
- Castillo, A. & Gilger, J.W., 2018, 'Adult perceptions of children with dyslexia in the USA', *Annals of Dyslexia* 68, 203–217. <https://doi.org/10.1007/s11881-018-0163-0>
- Clark, A., Naidoo, K. & Lilienstein, A., 2019, 'Adapting a screening tool for dyslexia in isiXhosa', *Reading and Writing (South Africa)* 10(1), 1–10. <https://doi.org/10.4102/rw.v10i1.235>
- Coltheart, M. & Friedmann, N., 2018, 'Types of developmental dyslexia', in E. Dattner & D. Ravid (eds.), *Handbook of communication disorders: Theoretical, empirical, and applied linguistics perspectives*, pp. 721–752, De Gruyter Mouton, Berlin.
- Cook, J., 2017, 'How schools and school systems respond to students with dyslexia and their families: A qualitative study', D.Ed thesis, Northeastern University, Boston, MA.
- Cramer, S., 2014, *Dyslexia International: Better training, better teaching*, Dyslexia International.
- Delany, K., 2017, 'The experience of parenting a child with dyslexia: An Australian perspective', *Journal of Student Engagement: Education Matters* 7(1), 97–97.
- Department of Education, 2001, *Education White Paper 6: Building an inclusive education and training system*, Department of Education, Pretoria.
- Dreyer, L.M., 2015, 'Experiences of parents with children diagnosed with reading difficulties', *Southern Africa Review of Education* 21(1), 91–111.
- Du Plessis, A., 2012, 'The experiences of parents of children with reading difficulties', Educational Psychology Master's thesis, Stellenbosch University, Stellenbosch.
- Fallon, K.A. & Katz, L.A., 2020, 'Structured literacy intervention for students with dyslexia: Focus on growing morphological skills', *Language, Speech, and Hearing Services in Schools* 51(2), 336–344. https://doi.org/10.1044/2019_LSHSS-19-00019
- Fernández-Alcántara, M., Correa-Delgado, C., Muñoz, Á., Salvatierra, M.T., Fuentes-Hélices, T. & Laynez-Rubio, C., 2017, 'Parenting a child with a learning disability: A qualitative approach', *International Journal of Disability, Development and Education* 64(5), 526–543. <https://doi.org/10.1080/1034912X.2017.1296938>
- Fourie, J., Sedibe, M. & Muller, M., 2018, 'The experiences of foundation phase teachers regarding reading literacy interventions at an underperforming school in Gauteng province', *Interchange* 49(1), 85–109. <https://doi.org/10.1007/s10780-017-9311-4>
- Garth, A., 2008, *Analysing data using SPSS: A practical guide*, Sheffield Hallam University, Sheffield.
- Hammond, J. & Hercules, F., 2016, 'Understanding dyslexia: An introduction for dyslexic students in higher education', *Learning Times* 8(2), 1–6.
- Hategan, C.B., Talas, D., Costea-Bărluțiu, C. & Trifu, R., 2018, 'Reading fluency: Normative data for Romanian speaking population', *Social Welfare: Interdisciplinary Approach* 2(7), 105. <https://doi.org/10.21277/sw.v2i7.302>
- Haws, K., 2017, 'Satisfaction levels of Central Minnesota parents regarding the school instruction of their dyslexic children', Doctor of Education Dissertation, St. Cloud State University, St. Cloud, MN.
- Hegstad, E., 2017, 'The role of labels in the perception of dyslexia', BA Management and Psychology Dissertation, Lancaster University.
- IEB, 2017, *Procedural manual for the implementation of accommodations*, viewed 18 April 2021, from <https://remedialteachingsupport.co.za/wp-content/uploads/2016/02/17092-Attachment-IEB-Manual-for-accommodations-2017.pdf>.
- International Dyslexia Association, 2019, *Structured literacy: An introductory guide*, International Dyslexia Association, Baltimore, MD.
- Leedy, P.D. & Ormrod, J.E., 2016, *Practical research: Planning and design*, 11th edn., Pearson Education, London.
- Lesevane, M., Mandende, P., Makgato, M. & Cekiso, M., 2018, 'Dyslexic learners' experiences with their peers and teachers in special and mainstream primary schools in North-West province', *African Journal of Disability* 7(0), 363. <https://doi.org/10.4102/ajod.v7i0.363>
- Lindstrom, J.H., 2019, 'Dyslexia in the schools: Assessment and identification', *Teaching Exceptional Children* 51(3), 189–200. <https://doi.org/10.1177/0040059918763712>
- Lyytinen, H.J., Semrud-Clikeman, M., Hong, L., Pugh, K. & Richardson, U., 2021, 'Supporting acquisition of spelling skills in different orthographies using an empirically validated digital learning environment', *Frontiers in Psychology* 12, 566220. <https://doi.org/10.3389/fpsyg.2021.566220>
- Makgatho, M.M., Lesevane-Kgari, M., Cekiso, M., Mandende, I.P. & Masha, R., 2022, 'Evaluating the awareness and knowledge of dyslexia among primary school teachers in Tshwane District, South Africa', *African Journal of Disability* 11, a807. <https://doi.org/10.4102/ajod.v11i0.807>
- McMahon, K.M., Oslund, E.L. & Odegard, T.N., 2019, 'Characterizing the knowledge of educators receiving training in systematic literacy instruction', *Annals of Dyslexia* 69, 21–33. <https://doi.org/10.1007/s11881-018-00174-2>
- Mkhwanazi, N.P., 2018, 'Experiences of parents with children who have been diagnosed with dyslexia in secondary schools of Msunduzi Municipality, Pietermaritzburg', Master of Social Science (Educational Psychology) Master's thesis, University of KwaZulu-Natal, KwaZulu-Natal.
- Moonsamy, S. & Kathard, H., 2015, *Speech-language therapy in school context, principles and practices*, Van Schaik Publishers, Pretoria.
- Multhauf, B., Buschmann, A. & Soellner, R., 2016, 'Effectiveness of a group-based program for parents of children with dyslexia', *Reading and Writing* 29(6), 1203–1223. <https://doi.org/10.1007/s11145-016-9632-1>
- Neuman, W.L., 2014, *Basics of social research: Qualitative & quantitative approaches*, 3rd edn., Pearson Education Limited, London.
- Ozernov-Palchik, O. & Gaab, N., 2016, 'Tackling the "dyslexia paradox": Reading brain and behavior for early markers of developmental dyslexia', *Wiley Interdisciplinary Reviews: Cognitive Science* 7(2), 156–176. <https://doi.org/10.1002/wcs.1383>
- Powers, S.J., Wang, Y., Beach, S.D., Sideridis, G.D. & Gaab, N., 2016, 'Examining the relationship between home literacy environment and neural correlates of phonological processing in beginning readers with and without a familial risk for dyslexia: An fMRI study', *Annals of Dyslexia* 66(3), 337–360. <https://doi.org/10.1007/s11881-016-0134-2>
- Rao, S., Ajay, R.S., Ramanathan, V., Sharma, A., Dhar, M., Thatkar, P. et al., 2017, 'Prevalence of dyslexia among school children in Mysore', *International Journal of Medical Science and Public Health* 6(1), 159–159. <https://doi.org/10.5455/ijmsph.2017.05082016592>
- Rios, D.M., Correia Rios, M., Bandeira, I.D., Queiros Campbell, F., De Carvalho Vaz, D. & Lucena, R., 2018, 'Impact of transcranial direct current stimulation on reading skills of children and adolescents with dyslexia', *Child Neurology Open* 5, 1–8. <https://doi.org/10.1177/2329048X18798255>
- Ross, H., 2019, 'Supporting a child with dyslexia: How parents/carers engage with school-based support for their children', *British Journal of Special Education* 46(2), 136–156. <https://doi.org/10.1111/1467-8578.12254>
- Shaywitz, S.E., Morris, R. & Shaywitz, B.A., 2008, 'The education of dyslexic children from childhood to young adulthood', *Annual Review of Psychology* 59(1), 451–475. <https://doi.org/10.1146/annurev.psych.59.103006.093633>
- Social Media Research Group, 2016, *Using social media for social research: An introduction*, pp. 1–25, Government Social Research.
- Tamboer, P., Vorst, H.C.M. & Oort, F.J., 2016, 'Five describing factors of dyslexia', *Journal of Learning Disabilities* 49(5), 466–483. <https://doi.org/10.1177/0022219414558123>
- Thompson, P.A., Hulme, C., Nash, H.M., Gooch, D., Hayiou-Thomas, E. & Snowling, M.J., 2015, 'Developmental dyslexia: Predicting individual risk', *Journal of Child Psychology and Psychiatry and Allied Disciplines* 56(9), 976–987. <https://doi.org/10.1111/jcpp.12412>
- Tidy, C. & Huins, H., 2015, *Dyslexia*, viewed 18 April 2021, from <https://patient.info/doctor/dyslexia-pro>.
- Tiernan, B. & Casserly, A.M., 2018, 'The impact and the implications of policy regarding the organisation of support for pupils with dyslexia in Irish primary mainstream schools', *Irish Educational Studies* 37(1), 51–67. <https://doi.org/10.1080/03323315.2017.1421089>
- Walton, E., Nel, N., Hugo, A. & Muller, H., 2009, 'The extent and practice of inclusion in independent schools in South Africa', *South African Journal of Education* 29(1), 105–126. <https://doi.org/10.1590/S0256-01002009000100007>
- Watt, J., 2020, 'Splashes of light: Parents of children with dyslexia explore experiences through visual arts', *International Journal of Education Through Art* 16(1), 115–128. https://doi.org/10.1386/eta_00020_1
- Wilsenach, C., 2015, 'Identifying phonological processing deficits in Northern Sotho-speaking children: The use of non-word repetition as a language assessment tool in the South African context', *The South African Journal of Communication Disorders* 63(2), 1–11. <https://doi.org/10.4102/sajcd.v63i2.145>