

Exploring Parental Perception and Teacher Sensitisation to Specific Learning Disorder: Current Trends and Future Strategies in Indian Perspectives

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Abstract

Over the past few decades, National Education Boards (ICSE & CBSE) and various state governments have explicitly been awarded privileges and provisions to accommodate Specific Learning Disability (SLD), an unseen handicap. However, awareness of SLD has steadily risen in India. Nonetheless, the vast majority of people in general, particularly parents and teachers, continue to lack awareness. The study aims to assess the parents' understanding and primary school teacher's sensitisation about learning disabilities with occupational therapy principles and strategies. Following the quantitative methodology, we have chosen purposive sampling and required 100 parents and 100 teachers from the general community. A mobile-based application consisted of 14 questions in which general questions are 4 and main questions are 10 to assess the understanding and sensitisation regarding Specific Learning Disability. The development and the design of the Learning Disability ONE App directly revealed the result that the teachers and parents have below average knowledge in 8 out of 10 questions, especially in those questions that are related to the symptoms and are intervention-based. The study concluded that the teachers and parents had poor understanding and sensitisation regarding Specific Learning Disability. Whereas in female teachers have a higher knowledge compared to male teachers about Learning Disability.

Keywords: *Specific Learning Disability; Parent understanding and Teacher sensitisation; Mobile based application*

INTRODUCTION

Specific learning disorders (SLD), often referred to as learning disability, is a neurodevelopmental disorder (NDD) in which issues in important areas of learning process. These can be dyslexia, dysgraphia, dyscalculia, dyspraxia, and developmental aphasia. In recent decades, India has seen a gradual rise in awareness surrounding Specific Learning Disabilities (SLD). National Education Boards such as ICSE (Indian Certificate of Secondary Education), CBSE (Central Board of Secondary Education) and various state governments have officially

recognised the need for accommodations and support for kids with this invisible challenge. Despite this progress, a critical need remains for more proactive strategies to disseminate awareness within our communities, particularly among educators and parents. In this paper, we explore the current landscape of SLD awareness in India and advocate for targeted efforts to bridge the gap in understanding and support for kids affected by these disabilities. Through comprehensive strategies and education initiatives, we can work towards fostering a more inclusive environment that empowers individuals with SLD to thrive in academic and social settings.¹

The term 'learning disability' came to use in the 1960s² as a generic term that refers to a heterogeneous group of neurobehavioral disorders characterised by significant unexpected, specific, and persistent difficulties in the acquisition and use of efficient reading, writing or mathematical abilities despite traditional instruction, intact senses, average intelligence, adequate motivation, and adequate socio-cultural opportunity.³ According to the Diagnostic and Statistical Manual of Mental Disorder (DSM)-V, SLD stands for a group of disorders that impede the ability to learn or to use the requisite academic skills. It comprises impairment in reading, writing, and mathematical ability.⁴ It is characterised by the unexpected failure of an individual to acquire, retrieve and use information competently.⁵

GLOBAL AND INDIAN PREVALENCE

Diagnostic and Statistical Manual of Mental Disorders (DSM-5) estimates the prevalence of all learning disorders (including impairment in writing, reading, and mathematics) to be about 5% to 15% worldwide.⁶ Overall literature reported that the prevalence of LD among children varied from 8.7% to 9.7%.⁷ A review of Indian studies on the prevalence of learning disabilities indicates that various types of scholastic skills disorders affect 3-10% of the student population.⁸ In India, approximately 13-14% of all school children are affected by learning disorders.¹ The prevalence and patterns of learning disabilities among school-going children in this northern Indian city represent 3.08% of the total population.⁹ The incidence of learning disabilities in Indian school children ranges from 9-39%, implying that in a school with 1000 children, approximately 100-300 could be affected by a learning disorder. Poor school performance or scholastic backwardness is estimated to affect one in every five school children in India.¹⁰

CLINICAL MANIFESTATIONS

Presently, a conclusive diagnosis of SLD typically occurs around eight years old.¹¹ Most children with learning disabilities have deficits in basic reading skills. Even mild deficits in reading skills can cause problems in learning. Learning-disabled students have more anxiety compared to their peers. Learning disorders significantly negatively impact adolescents' emotional, behavioural and educational functioning.¹² 12.97% of rural primary school children having IQs greater than or equal to 90 were found to have poor academic achievement.¹³ If a learning disability goes undetected, a child's poor academic performance will bring an adverse impact on health-related quality of life by causing poor self-esteem, disturbed peer and family relationships, and unease in social interactions.¹⁴

PARENTAL KNOWLEDGE

Parents were well educated and from wealthy households but did not know enough about the fundamental problems with Specific Learning Disability. Owing to their restricted understanding of Specific Learning Disability, parents were not entirely aware of the behavioural and learning issues that the kid was exhibiting at home and at school. This result is consistent with the earlier study, which found that most parents did not know the origins of the term "SLD" and could not explain it to their children.¹⁵ It has been demonstrated that parents'

lack of understanding and awareness causes a delay in the identification and treatment of these "hidden" diseases.¹⁶ Students who have complicated issues that could impair their capacity to learn, including certain learning disorders (henceforth LD), are considerably more affected by this influence.¹⁷ A crucial strategy for raising parental awareness is health education counselling, which also has a significant impact on the caregiver load and general well-being of school-age children with Specific Learning Disability.¹⁸ The parents noted the child's learning challenges as having been noticed at the nursery level. They recognised it as an illness after 2 or 3 years of occurrence, or usually when the person was 10 years old.¹⁹ Even if the parents were aware of their child's learning disability, they did not receive enough support from the school or other authorities. According to a study, parents were not well-informed about the condition; only 3 out of every 25 pairs of parents learned about it from mental health nurses and psychiatrists.²⁰

TEACHER KNOWLEDGE

Teachers are the primary educators, overseeing students' learning processes, activities, reading abilities, behaviour, adaptation, and special needs.²¹ However, research indicates that teachers often lack comprehensive knowledge and awareness about LD, leading to challenges in adequately preparing teachers to meet the diverse needs of all students. A strong understanding of LD allows teachers to identify early signs and risk factors and implement evidence-based, tailored instructional preventive strategies according to their needs. In India, many children go unnoticed due to limited awareness among educators and other professionals working in school. Private school teachers generally exhibit greater awareness of learning disabilities compared to their counterparts in government and unaided primary schools, attributed to their experience in handling disabled students and the oversight they receive from school management.²²

Strategies for Gap filling

To address these gaps, the following sensitisation strategies should focus on several key areas:

- **Comprehensive Training Programs:** Develop and implement comprehensive training programs for teacher educators that cover the neurobiology of LD, assessment techniques, evidence-based interventions, and strategies for creating inclusive classrooms.
- **Understanding Learning Disabilities:** Teachers need to have a clear understanding of what learning disabilities are, including their types, causes, and characteristics. This includes differentiating between LD and other factors affecting learning, such as environmental factors or lack of motivation.
- **Early Identification and Intervention:** Teachers should be trained to recognise early signs of learning disabilities in students. This includes observing academic performance, behavior patterns, and response to instruction. Early identification allows timely interventions and support, preventing further academic difficulties and promoting positive outcomes.
- **Individualised Support Strategies:** Sensitisation programs should equip teachers with strategies for providing individualised support to students with LD. This may include differentiated instruction, accommodations, and modifications to curriculum and assessment methods to meet the diverse learning needs of all students.
- **Creating Inclusive Classrooms:** Teachers should learn how to create inclusive classrooms that welcome and support students with LD. This includes fostering a positive and supportive classroom culture, promoting peer acceptance and understanding, and addressing any stigma or misconceptions about LD.

- **Collaboration:** Foster collaboration between teacher educators, special educators, and researchers to share expertise and resources.
- **Incorporate LD Content:** Integrate LD content into existing teacher education courses to ensure all educators have a foundational understanding of LD.
- **Use of Technology:** Teachers should be aware of available resources, such as assistive technologies, support services, and professional development opportunities. Utilise technology platforms for continuous learning and resource sharing among teacher educators.¹⁷

The government of India, since 2001, has launched the Sarva Shiksha Abhiyan ('Education for All' Movement), which is a comprehensive and integrated flagship program to attain universal elementary education in the country in a mission mode. The program aims to provide valuable and relevant education to all children, including children with disabilities.¹⁹ The curriculum in every teacher education program in India should compulsorily include a specific course on the curriculum and instruction of children with special needs so that future classroom teachers have the necessary skills to teach children with SLD.²³

One of the key future strategies for school teacher sensitisation to SLDs is the implementation of comprehensive professional development programs. These programs should be designed to increase teachers' knowledge and understanding of SLDs, including their causes, characteristics, assessment methods, and evidence-based interventions. Teachers need access to up-to-date information, research-based strategies, and practical tools to effectively support students with SLDs in the classroom.²⁴ Teachers should be trained in the use of assistive technology tools, such as text-to-speech software, graphic organisers, digital math tools, and audiobooks, to promote accessibility, engagement, and academic success for students with SLDs. Accessible educational materials, online resources, and interactive learning platforms can also supplement classroom instruction and provide additional support for diverse learners.²⁵ Furthermore, promoting a strengths-based approach and positive reinforcement can empower students with SLDs and promote their self-confidence, motivation, and resilience. Teachers can celebrate students' strengths, interests, and achievements, provide constructive feedback, and create opportunities for success and recognition.²⁶ In conclusion, enhancing school teacher sensitisation to Specific Learning Disorders requires a multifaceted approach that includes professional development, collaboration, assistive technology, educational resources, and a strengths-based approach. By implementing these future strategies, schools can create inclusive learning environments where all students, including those with SLDs, can thrive academically, socially, and emotionally.²⁷

METHODOLOGY

Participants were recruited from schools and nearby communities. The Institutional Ethics Committee at Amity University and schools approved this study. All participants were required to give their consent voluntarily.

Study Design- Action-based Research and quantitative methodology were used in this study.

Study setting- Participants were recruited from the nearby community and schools. Parents are listed from the nearby community, and teachers are listed from the schools.

Study Population- The study population consisted of parents and teachers. The study's target population consisted of parents and teachers from nearby communities and schools.

Sample Size-100 parents and 100 teachers

The main phase of the study

Source of data

Formal written permission was obtained from the ethical committee and principal of selected schools after discussing the purpose and objectives of the study with them. Also, the teachers were explained the purpose of the study, and confidentiality was assured to them. Researchers go to every parent living in their society and explain to them about their research and benefits.

Inclusion criteria- Parents and teachers from a nearby community, Parents with normal kids, and Teachers working in mainstream schools from nursery to 5th standard.

Exclusion criteria include having children with disabilities and teachers who have been working in special schools.

Research Tool-

The study assessed the parents' understanding and teacher sensitisation on Learning Disabilities. The mobile application prepared a self-structured multiple-choice questionnaire to assess the knowledge regarding Learning Disabilities among the parents and teachers. The review of literature, the expert's opinion and the investigator's own experience provided the basis for the construction of the tool.

The tool consisted of the following two parts:

Before the demographic data, there is a slide for consent, the purpose of the study, and the division between parents and teachers. After that, the demographic data and questions slide will appear.

Part I: Demographic data

This part consisted of items for obtaining personal information about subjects such as Name, Age (in years), gender, Education, school name, years of experience and qualification.

Part II: General questions for parents and teachers; after that, they both will learn the remedial strategies for every question.

Criterion measurement

Criterion measurement for assessment of knowledge is as follows:

Good = (>70%)

Average = (53-70%)

Below Average = (\leq 50%)

Poor= (\leq 30%)

The procedure of the study

For participants, I employed purposive sampling in quantitative research. The procedure begins with key, well-placed people with knowledge of potential participants being questioned. I contacted 100 parents and 100 teachers from nearby communities who underwent screening for the study. The researcher goes to every parent living in their society and explains to them about the research and benefits of the further application process, how to install newly developed mobile applications, and how to fill that. Same for the teacher's researcher went to schools and talked to the principal and explained the research and the newly developed mobile application.

After obtaining consent, they started collecting the information we required for the study. Participants' understanding and knowledge regarding the disease were stored in the mobile application, and in the next slide, they all received remedial strategies through the same application. The content to improve their knowledge is based on the occupational therapy domain. The content is also helpful for enhancing awareness in parents and society. In the mobile application, we provided questions for assessing parents' knowledge and sensitisation of the teachers regarding Specific Learning Disability.

RESULT

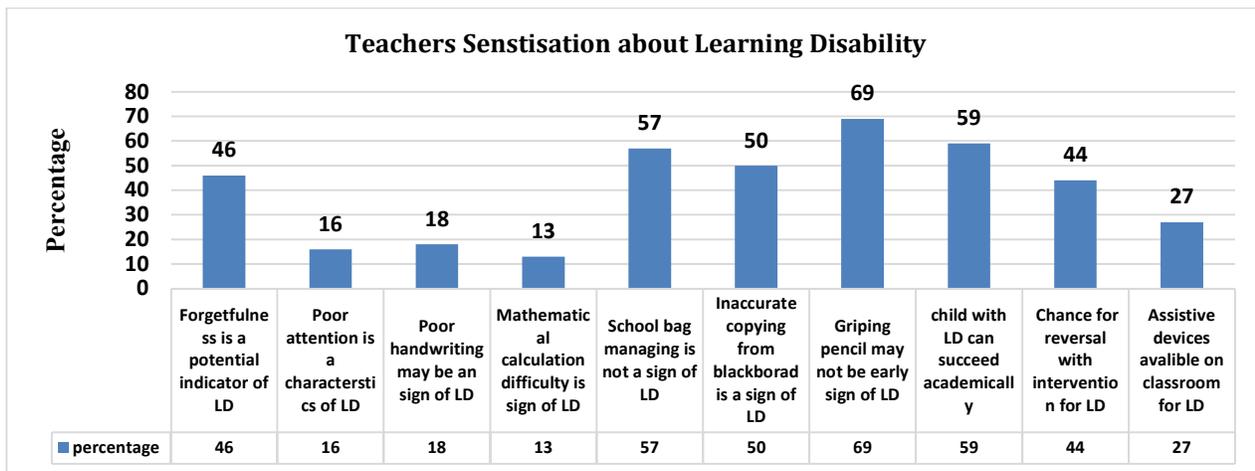
Overview:

This study aimed to assess parents' understanding and teacher sensitisation about Specific Learning Disability through a mobile-based application called **Learning Disability ONE**. Data was collected from 100 parents and 100 teachers from nearby communities. The data analysis focused on parental understanding and teacher sensitisation.

Table 1: Teachers sensitisation about Learning Disability

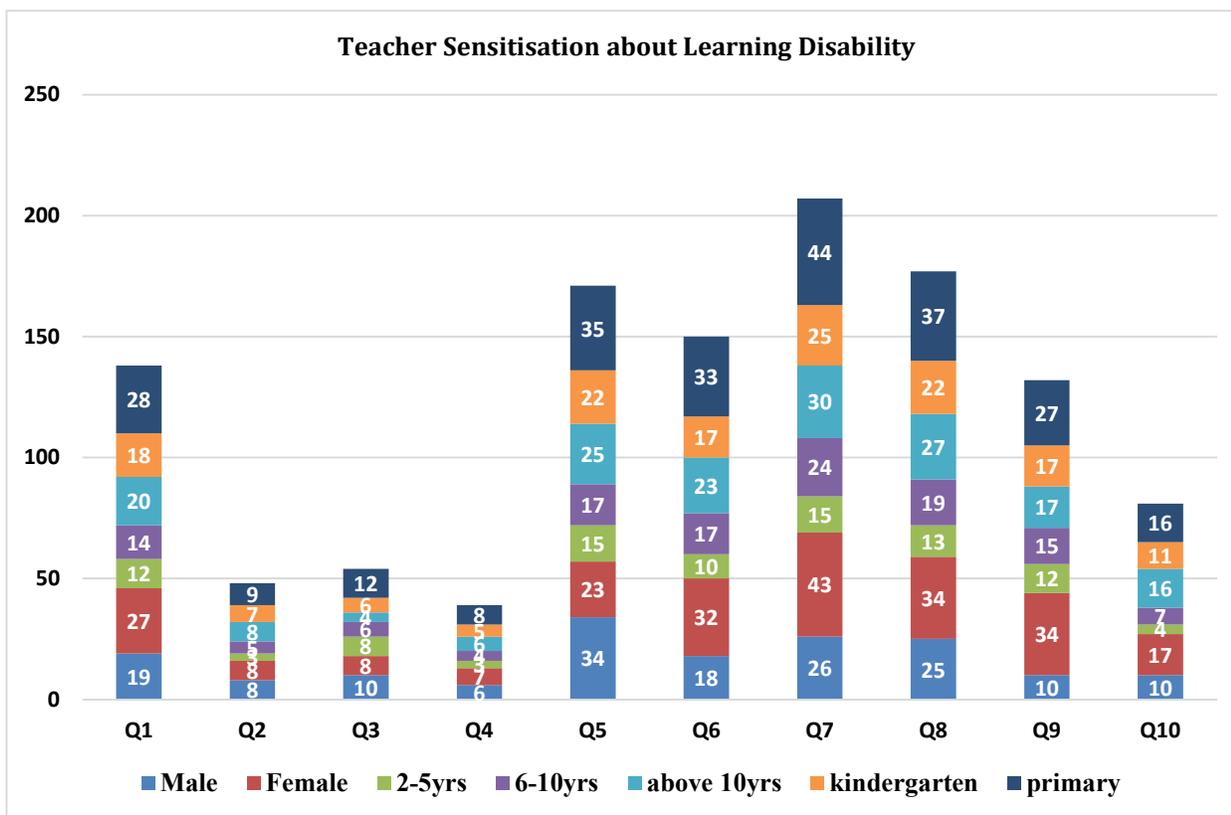
Questions	Number of teachers having knowledge about LD (n=100)	Percentage %
1. In your opinion, forgetfulness is considered as a potential indicator of Learning Disability	46	46
2. In your view, is poor attention span recognised as a characteristic of a child with Learning Disability	16	16
3. In your view, is it commonly believed that poor handwriting in a child may be an early sign of Learning Disability	18	18
4. In your opinion, if the child is facing difficulty during mathematical calculation, it is a sign of a Learning Disability	13	13
5. In your view, the child facing persistent difficulty in managing their school bag is an early sign of Learning Disability	57	57
6. In your view, inaccurate copying from the blackboard may be an early sign of Learning Disability	50	50
7. In your opinion, facing difficulty in gripping pencil may be an early sign of Learning Disability	69	69
8. Do you believe that a child with Learning Disability can't succeed academically	59	59

9. Do you believe there is a chance for reversal with guided academic intervention for Learning Disability	44	44
10. Are you aware that there is a provision of assistive devices based on the classroom for the Learning Disability	27	27



GRAPH.1 - A bar graph showing teacher sensitisation about Learning Disability

We analysed teachers' awareness of Learning Disabilities. According to Table 1 and Graph 1, most responses indicate teachers' awareness is below average for most questions. Specifically, out of 10 questions, teachers demonstrated below-average knowledge in 8. Among these 8 questions, their knowledge was particularly poor in 3 areas: attention, handwriting, and mathematical calculation. However, some teachers showed average knowledge in 3 questions related to clinical features and interventions for Learning Disabilities, such as managing a school bag, accurately copying from the blackboard, and believing that children with Learning Disabilities can succeed academically.



GRAPH.2 - Bar graph showing teacher sensitisation based on variables of Learning Disability

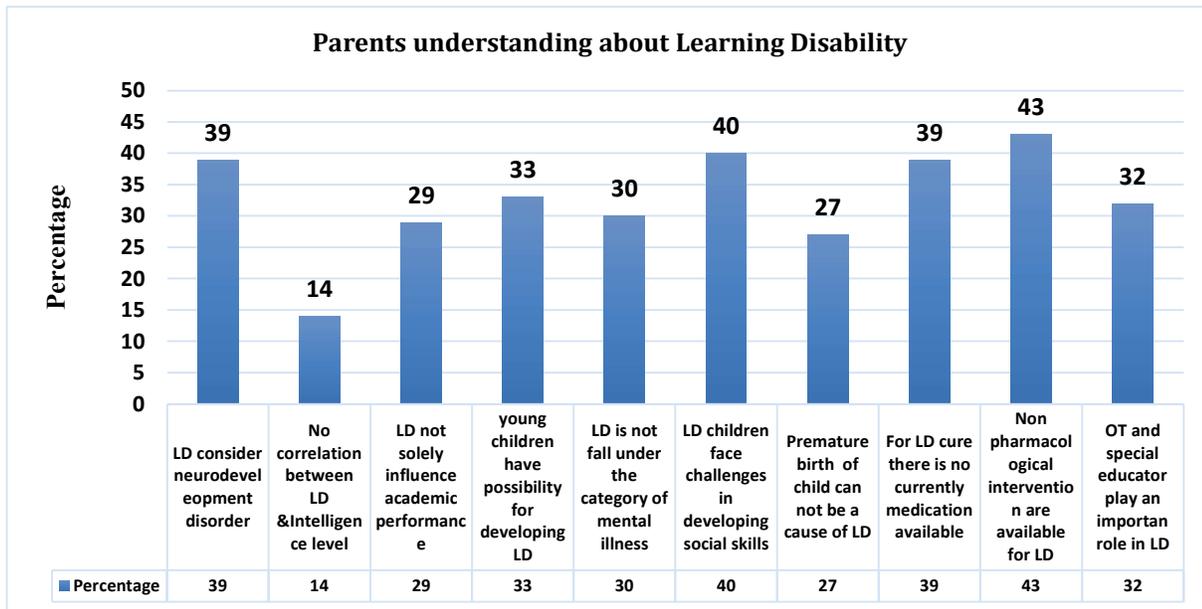
In Graph 2, the subsequent analysis examines teachers' awareness of Learning Disabilities based on gender, experience, and qualifications. Regarding gender, female teachers demonstrated greater knowledge than male teachers in most questions. However, out of 10 questions, male teachers showed better knowledge in 2 questions related to the clinical features of Learning Disabilities, specifically in managing a school bag and mathematical calculations. Concerning experience, teachers with over 10 years of experience displayed average knowledge, whereas those with less than 10 years of experience showed lower levels of awareness.

Based on qualifications, primary school teachers demonstrated more excellent knowledge about Learning Disabilities than kindergarten teachers in most questions. They showed good knowledge in 2 out of 10 questions, particularly those related to clinical features and interventions, such as pencil grip and the belief that children with Learning Disabilities can succeed academically. However, primary teachers exhibited poor knowledge in 3 out of 10 questions, specifically regarding the correlation between Learning Disabilities and intelligence levels, the impact of Learning Disabilities solely on academic performance and not on social skills, and the potential for young children to develop Learning Disabilities. Additionally, the results indicate that teachers with 2-5 years of experience have the slightest awareness about Learning Disabilities.

Table 2: Parents Understanding about Learning Disability

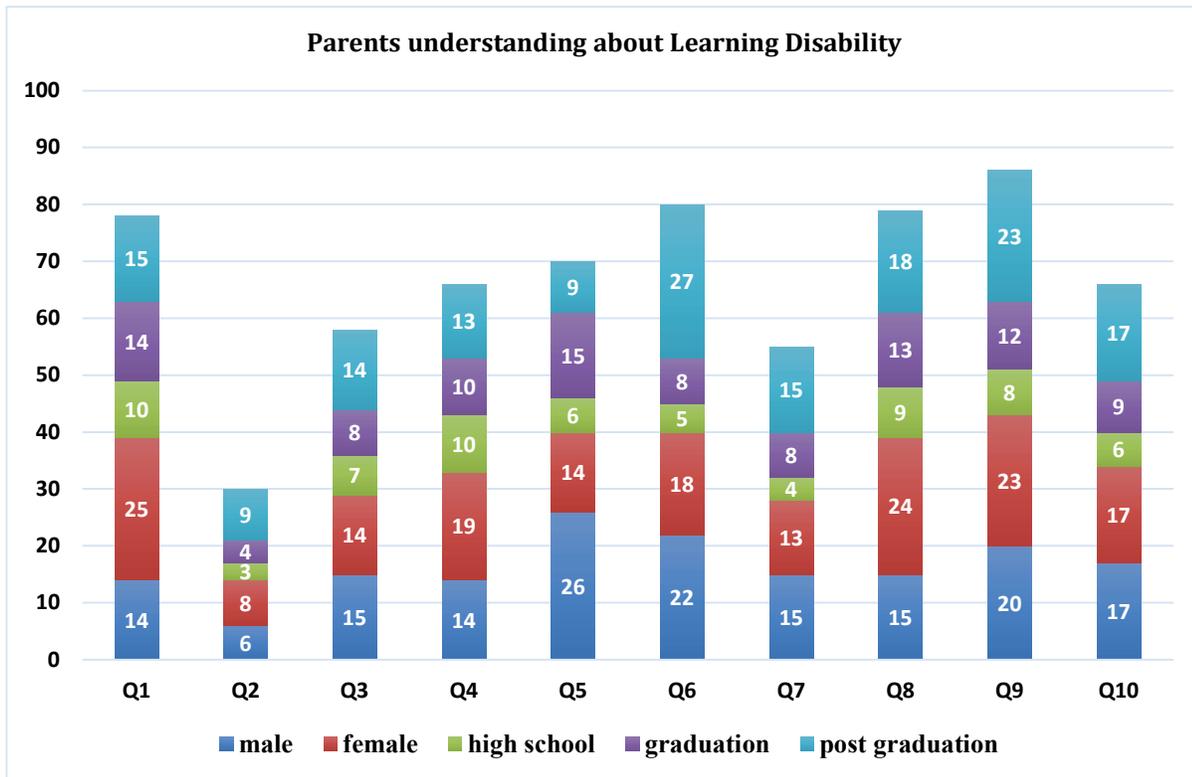
Questions	Number of parents having knowledge about LD (n=100)	Percentage (%)
1. In your opinion, is a learning Disability considered a Neurodevelopment disorder	39	39
2. Are you aware that there is a consistent correlation between Learning Disability and Intelligence level	14	14
3. Do you believe that Learning Disability solely influence academic performance and not social skills	29	29
4. Are you aware that young children have a possibility of developing a Learning Disability	33	33
5. In your view, does a learning disability fall under the category of Mental or Psychiatric illness	30	30
6. Do you believe that children with Learning Disability frequently face challenges in developing social skills	40	40
7. In your opinion, premature birth of a child can be a cause of Learning Disability	27	27
8. In your opinion, is there any medication currently available for Learning Disability cure	39	39
9. In your opinion does any non-pharmacological intervention or support system are available for children with Learning Disability	43	43
10. In your opinion, do Occupational Therapists and Special Educator play an essential role in learning disabled child	32	32

We analysed parents' understanding of Learning Disabilities. Table 2 presents the data, showing parents' knowledge of Learning Disabilities in percentage terms based on various questions. Both Table 2 and Graph 3 indicate that parents' understanding is below average for the majority of questions. Parents displayed poor knowledge in several areas, such as the correlation between Learning Disabilities and intelligence levels, the impact of Learning Disabilities solely on academic performance and not on social skills, the misconception that Learning Disabilities fall under the category of mental illness, and the role of premature birth as a potential cause of Learning Disabilities. They showed the least knowledge on question number 2.



GRAPH.3 - Bar graph showing parents understanding about Learning Disability

For questions 1, 3, and 5, which pertain to Learning Disabilities being considered as a neurodevelopmental disorder, the impact on academic performance but not social skills, and the misconception of Learning Disabilities as a mental or psychiatric illness, parents had 40% and 43% knowledge. Although this is below average, it is the highest level of understanding compared to other questions. Notably, parents exhibited the most knowledge regarding non-pharmacological interventions or support systems available for children with Learning Disabilities and the frequent challenges these children face in developing social skills.



GRAPH.4 - Bar graph showing parents understanding based on variables about Learning Disability

In graph 4, the following analysis is prepared to check parents' understanding based on other variables like gender and the qualifications of the parents. Based on gender, the understanding of female parents is higher than that of male parents. The data shows that they have an understanding of Learning Disability in 25%, 24%, and 23% of questions 1,8 and 9, which is related to the learning Disability considered a Neurodevelopment disorder. There is no medication currently available for a Learning Disability cure, and no non-pharmacological intervention or support system is available for children with Learning Disability. But in 4 out of 10 questions, they have poor knowledge regarding Learning Disability.

Based on parental qualifications, postgraduate parents have more knowledge than graduate and high school-level parents. According to the data, there is a huge difference in understanding between postgraduate and high school parents, but between graduate and high school levels of knowledge parents don't have much difference. The parents with high school qualifications have the least knowledge in questions 2, 7 and 6, which are related to a correlation between Learning Disability and Intelligence level; premature birth of a child can be a cause of Learning Disability, and children with Learning Disability frequently face challenges in developing social skills. The parents with postgraduate qualifications have more knowledge in 1 question out of 10, which is related to the premature birth of a child, which can be a cause of Learning Disability.

DISCUSSION

This is a first-of-kind mobile application to parental and teacher guides for children with Learning Disability. During our clinical exposure, we believe that the awareness about Learning Disability among teachers and parents is very poor and needs improvement. So, there is a need for our society to empower them with sufficient knowledge. This type of knowledge already exists in our society through different platforms to spread the knowledge about Learning Disability among parents and teachers. Apart from all existing strategies from various stakeholders, these app-based strategies are unique. This mobile-based application is much better in technology to assess the parents' understanding and teacher sensitisation about Learning Disability and provide remedial strategies also. The benefit of application-based technology is that it can spread awareness via questions. The content developed is based on existing literature.

Teacher sensitisation regarding learning disabilities among children

The above study concluded that the knowledge of teachers about Learning Disability is below average, consistent with a descriptive study carried out in 2015 to evaluate teachers' attitudes and knowledge of particular learning difficulties in children by Bhavya et.al; Fifty teachers from chosen Mangalore schools participated in the study. Convenient sampling was the method employed, and attitude scales and structured knowledge questionnaires were utilised to gather data. According to the results, most teachers (64%) had below-average knowledge about specific learning disabilities.

The result of this study is that the knowledge of teachers about Learning Disability is below average, which is consistent with a study by Princy R. et.al; (2005) that evaluated teachers' attitudes and understanding about learning difficulties in students in particular Bangalore schools. This descriptive study involved 60 primary school teachers who were chosen from certain Bangalore schools using the convenient sampling technique. A standardised attitude scale and knowledge questionnaire were employed to assess attitudes. The findings showed that 41.67% of instructors had average knowledge of learning disabilities, most teachers (58.33%) had low knowledge of the issue, and none had excellent knowledge.

Parent understanding regarding learning disabilities among children

This study's result is consistent with Anjaly Johny and Anu Philip (2015), who evaluated parents' knowledge regarding Learning Disability. This descriptive study involved 100 parents selected by using a convenient sampling technique. For the purpose of assessing the level of knowledge of parents regarding Childhood Specific Learning Disabilities in children, the Structured Knowledge Questionnaire was used for the study. The findings of the study have shown that the level of knowledge of parents regarding Childhood Specific Learning Disabilities is below average after assessing the given Structured Knowledge Questionnaire.

The result of this study is that the parents have an overall lack of understanding or knowledge about learning disability, which is consistent with a study by Dalia Ibrahim Mustafa Abdel-Azem, Lamiaa Abd El Hakeem Ali Ahmed (2024) that evaluated the parents' knowledge and attitudes regarding dyslexia among their children. The study involved 952 parents selected by using a convenient sampling technique for the purpose of assessing knowledge and attitudes regarding dyslexia among their children with a dyslexia knowledge questionnaire and attitude scale. The finding of the study showed that more than half of parents had an unsatisfactory level of knowledge of the children.

CONCLUSION

The study aims to check the knowledge and teacher sensitisation we found. Parents have a lack of knowledge in some questions, but they have some idea about Learning Disability as compared to the teachers. In the domain of parts, has a consistent correlation between Learning Disability and Intelligence level. Learning disability solely influences academic performance and not social skills and has bad knowledge. In the future, we should continue this kind of initiative through the same medium. We plan to provide this mobile application for free to our population.

In conclusion, research on primary school teachers' understanding of specific learning disorders (SLD) has shown that these teachers don't know enough about Specific Learning Disability. Teachers are the ones who may encounter children's academic issues for the first time. Thus, their knowledge is crucial for early diagnosis of particular learning disorders. The findings of the study can be summarised as follows:

- Based on gender, female teachers are more sensitive than male teachers.
- Based on the qualification, the primary-level teacher has better sensitisation than the kindergarten teacher.

The current study concluded that more than half of parents had unsatisfactory or below-average levels of knowledge or understanding regarding Specific Learning Disability. Female parents have more knowledge as compared to male parents. However, based on the qualifications, the highly educated parent has more understanding than the low-level parent.

REFERENCES

- [1] Anamika Sahu, Rachna Bhargaw, Department of Psychiatry, All India Institute Medical Science, New Delhi; Asian Journal of Psychiatry, Published by Elsevier
- [2] American Psychiatric Association. DSM-IVTR 4th ed. New Delhi: Jaypee Publishers; (2000)
- [3] Sheila Saravanabhavan, R. Saravanabhavan. Knowledge of learning disability among pre and in service teachers in India
International journal of Special Education vol25 no.3 (2010) pp.132
- [4] Demonet JF, Taylor MJ, Chaix Y *et al.* Developmental dyslexia. *Lancet* (2004); 363: pp. 1451-60
- [5] Chacko D, Vidhukumar K. The prevalence of specific learning disorder among school-going children in Ernakulam District, Kerala, India. *Indian J Psychol Med* 2020; 42: pp. 250-5
- [6] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders, fifth edition.* 5th ed. American Psychiatric Publishing, 2013
- [7] Li, Y., Li, Q., Zheng, J., Zeng, X., Shen, T., Chen, Q. and Yang, W., 2023. Prevalence and trends in diagnosed learning disability among US children and adolescents from 1997 to 2021. *JAMA pediatrics*, 177(9), pp.969-972.
- [8] Lyon GR. Special education for students with learning disabilities (1996)
pp. 54-76
- [9] Padhy SK, Goel S, Das SS, *et al.* Prevalence and Patterns of Learning Disabilities in School Children. *Indian J Pediatr.* (2016) Apr;83(4): pp. 300-6
- [10] Ukumaran TU. Poor scholastic performance in children and adolescents.
Indian Pediatric. (2011);48(8): pp. 597-8.

- [11] Dakin KE. Educational assessment and remediation of learning disabilities. *Semin Neurol* 1991;11: pp. 42-49
- [12] Kelly DP. Learning disorders in adolescence: the role of the primary care physician. *AdolescMed State Art Rev.* (2008) Aug;19(2): pp. 229-41
- [13] Agarwal KN, Agarwal DK, Upadhyay SK, *et al.* Learning disability in rural primary school children. *Indian J Med Res.* (1991) Apr; 94: pp. 89-95.
- [14] Karande S, Bhosrekar K, Kulkarni M *et al.* Health-related quality of life of children with newly diagnosed specific learning disability. *J Trop Paediatr.* 2009; 55: pp. 160–9.
- [15] Karande S, Mehta V, Kulkarni M *et al.* Impact of an education program on parental knowledge of specific learning disability. *Indian JMedSci.* (2007) pp. 398-406
- [16] Sally E. Shaywitz. Dyslexia. *The New England Journal of Medicine* (1998); 338: pp. 307-12
- [17] Snowling, M., Muter, V., *et al.* Children at family risk of dyslexia: A follow-up in early adolescence. *Journal of Child Psychology and Psychiatry* (2007). 48(6), pp. 609-618.
- [18] Moll K, Kunze S, Neuhoff N *et al.* Specific learning disorder: Prevalence and gender differences. (2014). *journal. pone.* 9(7): e103537
- [19] Hill C, Rose J. Parenting stress in mothers of adults with an intellectual disability. *Journal of Intellectual Disability Research* (2005) 49(Pt 6): pp. 405-18
- [20] Chien WT, Lee IY. An exploratory study of parents perceived educational needs for parenting a child with learning disabilities (2013) *Asian Nursing Research*: pp.16- 25
- [21] Karande, S. Current challenges in managing specific learning disability in Indian children. *Journal of Postgraduate Medicine* (2008) 54(2), pp. 75-77
- [22] Malliga, T. Awareness of learning disabilities among primary school teachers. *International Journal of Educational Research*, (2020)
- [23] Department of School Education and Literacy. Ministry of Human Resource Development, Govt. of India. *Sarva Shiksha Abhiyan: A Programme for Universalization of Elementary Education*, (2001)
- [24] Langa Claudiu, Cristina Tabacaru Dumitru. Teachers' readiness to support effective inclusion of students with specific learning disorders in higher and adult education (2024) Vol. XII (LXXIV) No. 2/2022 pp. 18 – 33
- [25] Bitalo J. U. Leveraging Technology for Supporting Students with Learning Disabilities (2024) 3(3): pp. 123-133,
- [26] Rod Galloway, Bronwyn Reynolds and John Williamson. Strengths-based teaching and learning approaches for children: *Journal of Pedagogical Research*, (2020) Volume 4, Issue 1,
- [27] [Dianne Joy Chambers](#). Assistive Technology Supporting Inclusive Education: Existing and Emerging Trends. (2020) pp. 1-16