Research Report

PREVALENCE AND CORRELATES OF DEPRESSIVE SYMPTOMS AMONG CHILDREN WITH SPECIFIC LEARNING DISORDER ATTENDING A TERTIARY CARE CENTRE

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ABSTRACT

Background: Children with Specific learning disorders are highly likely to manifest concurrent social, emotional and mental health problems.

Objectives: To assess the prevalence of depressive symptoms among children with Specific learning disorders.

Methods: The study was conducted in the Institute of Mental Health and Neurosciences (IMHANS), Kozhikode. The cross-sectional study design was used for the study. The sample consisted of 100 children with Specific learning disorders between the age group of 8 -15 years and was selected by purposive sampling. We used a semi-structured interview schedule for collecting socio personal variables and clinical variables. The short version of standardised Mood and feelings questionnaire both child self-report and parent report on child to assess depressive symptoms. Prevalence of depressive symptoms was expressed in percentages and association of this with other variables was analysed using the chi-square test.

Results: 23% of children with Specific learning disorders had depressive symptoms as per the child self-report, and as per parent report, 14 % of children with Specific learning disorders had depressive symptoms. About 9% of the parents were not recognising their children's depressive symptoms; there is a significant association between impairment in writing an expression and depressive symptoms (chi-square value =18, P value< 0.001)

Conclusions: There is a high prevalence of depressive symptoms in various subtypes of Specific learning disorders. Depressive symptoms are often undetected, and there is a need for early identification.

Keywords: Depressive symptoms; Specific learning disorders, prevalence

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INTRODUCTION

Specific Learning disorder (SLD) is a disorder that inhibits or interferes with the skills of learning. It is one of the major problems due to which many children drop out from schools at an early age. One it affects the brain's ability to receive, process, store and respond to information. SLD denotes a significant impairment in the acquisition and use of the academic skills of reading, writing, spelling and arithmetic, in the background of the child having normal and above normal intelligence.[2]

Children with SLD constitute the largest and fastest-growing population of children with special needs in schools. If left untreated or ignored, SLD can undermine a child's success during the school years. The stress and frustrations of living with SLD can trigger depressive episodes, and academic difficulties lead to low self esteem[1]and these negative self-perceptions contribute to their problems in social and functional areas.

Recognition and appropriate treatment of childhood depression are important. Early detection, acceptance by parents and broad awareness among the academic community and above all, mature handling of the problem is needed. With a proper diagnosis, appropriate education, hard work and support from family, friends, teachers and others, an individual with SLD can lead a successful and productive life.

The investigator feels that identifying the symptoms of depression at an early stage is a crucial step to prevent the worsening of the condition. So, there is a felt need to assess the depressive symptoms among children with SLD.

OBJECTIVES

- Assess the prevalence of depressive symptoms among children with SLD.
- Find out the association between depressive symptoms and selected variables.

MATERIALS AND METHODS

The study was cross-sectional and was conducted at the Institute of Mental Health and Neurosciences, Kozhikode. The sample consisted of 100 children in the age group of 8-15 years, with SLD attending the outpatient unit. SLD was diagnosed after a detailed assessment by psychiatry and clinical psychology units at IMHANS. IQ was assessed by the clinical psychology unit using Malin's intelligence scale. Detailed diagnoses of cases along with comorbidities were done by the treating team comprising of psychiatrists and psychologists. These children, while reporting for treatment, was seen by the primary investigator and data collection was done. Techniques used for data collection were interview method, and record review as the primary investigator was a nursing professional.

Subjects were selected by purposive sampling technique. The sample size was calculated based on formula $4pq/d^2$($4x40x60/10^2$where d is 25% of P)where the prevalence of a previous study was 40%.[3] We have collected subjects consecutively as it is the only possible option to sample subjects from the hospital in order to have some generalisability.

Measurement Instruments

1. Semi-structured interview schedule for the socio personal and clinical data

It consisted of two sections.

Section A: Included 18 items to collect socio-personal data of children with SLD

Section B: Clinical data of children with SLD, which Included six items such as diagnosis, duration of diagnosis, IQ score, psychiatric co-morbidities, Physical co-morbidities, and history of treatment.

2. Mood and Feelings Questionnaire-Short version (SMFQ).[4] It is a standardised screening tool for depression in children and adolescents. It has both a self-report version and parent version. The child self-report version is a 13-item questionnaire consisting of a series of descriptive phrases regarding how the subjects were feeling or acting recently. Each item is to be rated on a three-point Likert scale. The responses are Not True (0), Sometimes (1), True (2) with respect to the events of the past two weeks. The score range is from 0- 26. A total score of 12 or higher may signify that a child is suffering from depression. If the child experienced any difficulty in reading out the questionnaire, then appropriate assistance was given. This tool has been used by several researchers previously. The parent report version also includes 13 item asking parents to rate whether the provided phrase is indicative of their child's feelings and actions ("Not True", "Sometimes", or "True") over the timeframe of the previous two weeks. A total score of 12 or higher may signify that a child is suffering from depression. The tool was converted to the local language by the investigators.

Data Collection Procedure

The study was conducted after getting approval from the Institutional Ethics Committee of Government College of Nursing, Kozhikode and administrative sanction from the Institute of Mental Health and Neurosciences (IMHANS), Kozhikode. The data was collected during the period 09.02.2016 to 15.03.2016. The investigator approached each subject individually, introduced herself and rapport established. The research objectives were clearly explained to the children, and the parents and confidentiality were ensured. Verbal assent was taken from children less than 12 years and written assent from children for more than 12 years and informed consent were obtained from the parent.

The socio personal and clinical data of the children were collected from the parent who accompanied the child by using an interview schedule and record review. The time taken for collecting socio-personal and clinical data were 10 to 15 minutes. Then Tool 2 was given to the participants and to the parent who accompanied the child. Instructions were given to complete the questionnaire by themselves. It took around 20 minutes for data collection from each sample. Investigator has not confronted with any difficulties during the data collection. Quantitative variables were summarised as mean and standard deviation, while qualitative variables were summarised as frequencies and percentages. Association of socio-demographic variables with depressive symptoms was tested using the chi-square test. P value<0.05 was considered statistically significant.

RESULTS

Table 1 Indicates that 34% of the participants were in the group of 8-9yrs, 79% were boys. More than half (52%) of the participants belong to the Hindu religion. Most of the participants (64%) were living in a rural area. 59% of the participants were elder children.

56% of the participants had one sibling. Most of the participants (66%) were maintaining peer interaction.

Table 1. Distribution of background variables

Characteristics	frequency	%
Age (in years)		
8-9	34	34
10-11	32	32
12-13	26	26
14-15	8	8
Gender		
Male	79	79
Female	21	21
Religion		
Hindu	52	52
Muslim	46	46
Christian	2	2
Place of residence		
Urban	36	36
Rural	64	64
Birth order		
First	59	59
Second	31	31
Third	6	6
Fourth and above	4	4
Number of siblings		
Nil	20	20
1	56	56
2	18	18
3	6	6
Peer interaction		
Maintains	66	66
Not maintains	34	34

Table 2 shows that 46% of the children diagnosed as learning disorder for <1yr.84% of the participants had IQ between 90-100.47% of the children presented with psychiatric co-morbidities, 1% of them have co-morbid ADHD, six %had depressive disorder, 10% reported co-morbid physical illness, six %of them have seizure disorders. These data were collected with the help of record review.

Table 2. Distribution of participants based on the duration of diagnosis, Intelligence Quotient, psychiatric co-morbidities, and physical co-morbidities.

Characteristics(N=100)	Frequency	%
Duration of diagnosis(year)		
0-1	46	46
2-3	35	35
4-5	15	15
>5	4	4
Intelligence quotient		
90-100	84	84
>100	16	16
Psychiatric co-morbidities	47	47
Attention Deficit	31	6
Hyperactivity Disorder	8	17
Conduct disorder	6	13
Depressive Disorder	2	4
Anxiety disorder		
Physical comorbidities	10	10
Seizure	6	60
Hypothyroidism	4	40

Figure 1 shows that the majority of children had reading impairment (83%), and 74% of children had writing impairment.

Figure 2 shows that 23 % of the children had depressive symptoms, reported by children.

Figure 3 shows that14% of the children had depressive symptoms, reported by parents.

Figure 1. Distribution of participants based on the diagnosis

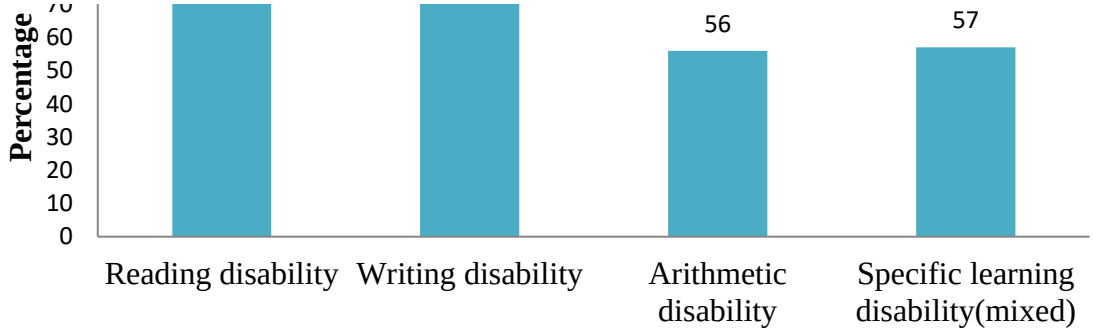
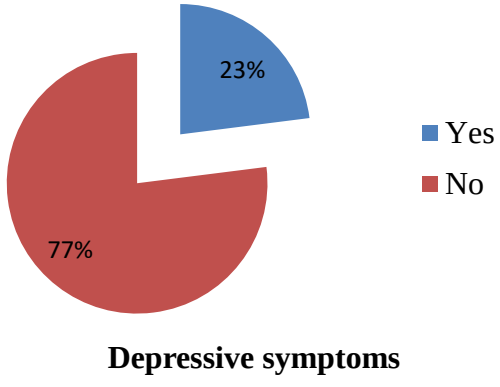


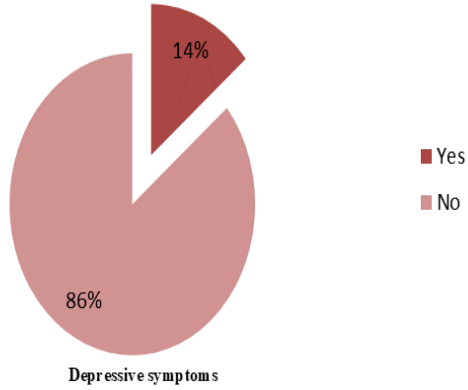
Table 3 shows that the mean score of depressive symptoms reported by children was 8.7 and a standard deviation of 4.8. Mean score of depressive symptoms reported by parents was the 6.9and standard deviation of 4.7.

Figure 2. Distribution of participants based on depressive symptoms reported by children with learning disorders.



From table 4, it is evident that the calculated p-value is statistically significant at 0.05 levels for the variable writing impairment. There is a significant association between writing impairment and depressive symptoms.

Figure 3. Distribution of participants based on mean and standard deviation scores of depressive symptoms among children with learning disorders.



The finding is important because we generally expect depressive symptoms in mixed LD. It was found that 47% of the children presented with psychiatric co-morbidities, 31% of them have co-morbid ADHD, and 6% had already received a diagnosis of depression from the treating team. However, in the light of the current study we need to understand that more vigilant monitoring of children with SLD is required as more kids were detected to have depressive symptoms. Among the participants, 10% reported co-morbid physical illness, 6% of

Table.1. Distribution of participants based on mean and standard deviation scores of depressive symptoms among children with learning disorders.

Variable	Minimum score (0-11)	Maximum score (12-26)	Mean	Standard deviation
Depressive symptoms– Reported by children	1	22	8.7	4.8
Depressive symptoms- Reported by parents.	1	21	6.9	4.7

Table.3. Association between depressive symptoms and selected clinical variables.

Variables	df	χ^2	P-value
Diagnosis-reading impairment	3	3.1	0.38
Writing impairment	3	18	0.001*
Arithmetic impairment	3	2.6	0.45
Mixed	3	4.6	0.20
IQ Score	1	0.73	0.3
Duration of diagnosis	9	11	0.28
Co morbid-ADHD	3	0.80	0.84

them have seizure disorders. The study revealed that all the children (100%) were getting remedial training, and 52% of the children were treated by combined interventions. The mean score of depressive symptoms reported by children was 8.8 and a standard deviation of 4.8. Mean score of depressive symptoms reported by parents was 6.9 and a standard deviation of 4.7.

DISCUSSION

In the present study, child self-report revealed that 23 % had depressive symptoms, and as per parents reports on child 14% of the children had depressive symptoms. Children were assisted while taking up the test if they had reading difficulties, as explained earlier; hence this finding is important and shows the delay in diagnosis and intervention. These findings are consistent with a study conducted on the prevalence of depressive symptoms in children with learning disabilities in a sample of 53 children which showed that 35.85% scored in the depressed range on the Children's Depression Inventory. Comparison of the

children's self-reports and parents reports of depressive symptoms in their children was not significant.[5] The findings are also supported by a study conducted to investigate the prevalence of depression amongst LD children, 103 completed the Children's Depression Inventory and 14% of the sample scored at or above the critical cut-off, more than in the general population.[3] The important data which needs further research is the association between writing impairment and depressive symptoms because we know that writing especially in an academic setting and structured classroom setting is an essential part of learning, when there is an impairment in that area it might lead to comparison with peers, easy criticisms resulting in stress in child, we, however, need further research comparing domains of SLD and resulting behavioural and psychological symptoms in children.

The present study showed that 47 % of the children have a co-morbid psychiatric illness. The findings are also supported by a study result that 21 out of 88 children with learning disorder had a co-morbid psychological diagnosis.[6]

The present study revealed that 31% of the children had co-morbid ADHD. The findings are consistent with the study to assess the association between LD and ADHD. The result showed that there is an increased prevalence of both LD and ADHD among children with early speech/language impairments.[7]

Presence of SLD can be extremely frustrating for a school child. Considering the amount of competitiveness in present-day schools, a child's academic prowess is many times taken as a gold standard by which he or she is judged, regardless of his or her other non-academic talents. These academic challenges, combined with an unsupportive social and familial atmosphere will only add further burden for a child with an SLD and can lead to stress and depresion.14.2%was found to have depression in a study by Panicker in 2016.[8] Our study showed 6% of the sample had received a previous diagnosis of depression.

In the present study, IQ profile of children shows that despite good intelligence, children have academic impairment due to LD. The findings are supported by a cross-sectional study on learning disorder in rural primary school children where it was observed that 12.97 % of those having IQ greater than or equal to 90 were found to have poor achievement in arithmetic test and teacher's assessment.[10]

LIMITATIONS AND FUTURE RESEARCH

Indian studies are less at present in this area; studies regarding this topic should be encouraged. The result of one study opens a new opportunity for further studies. As the present study is limited to 100 children with SLD, a generalisation of the findings is limited. The study included children with SLD from a single setting, i.e., IMHANS, Kozhikode. As this was a tertiary care hospital-based cross-sectional study SLD subjects selected may not represent SLD cases in the general population. We have done a case-control analysis to find out important risk factors which are associated with depressive symptoms. Odds ratio generated from a cross-sectional study may not reflect the true association between the risk factors and depressive symptoms.

Further studies on a larger sample and multiple settings are needed. School-based studies and community-based studies are also essential. Analytic studies with cases and controls are also required. Here parents were included, for data collection, input from teachers will also be helpful for research aspects.

CONCLUSION

The study revealed the prevalence of depressive symptoms among children with SLD. Most of the parents were unaware that their children are suffering from depression. Necessary steps must be taken to make aware of the parents regarding depressive symptoms in children with learning disorders. Early diagnosis and intervention in children with SLD make a substantial improvement in self-confidence and social competence which help them in opening windows of opportunity.

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