



## RESEARCH ARTICLE

# Resilience and Stress in Children and Adolescents with Specific Learning Disability

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## Abstract

**Objective:** Presence of Specific Learning Disorder (SLD) can be extremely frustrating for a child. The present study aimed to assess the levels of resilience, depression, anxiety and stress among children and adolescents having SLD and to compare with those having Borderline Intellectual Functioning (BIF). It also aimed to evaluate the parental awareness about their child's learning disorder. **Methodology:** Eighty two children and adolescents, diagnosed as having SLD (N=41) and BIF (N=41) were selected for the present study. The participants completed Resilience Scale-14 and Depression, Anxiety and Stress Scales and parents completed the Parent Interview Profroma. **Result:** Low level of Resilience was found in 75% of the children and adolescents with SLD. Severe Stress (16.6%), severe Depression (14.2%) and severe Anxiety (23.8%) were seen in this sample. The level of Resilience was lower among participants with SLD as compared to those with BIF. Ninety percent of parents were aware that their child had SLD, however, only 39% gave individual attention for assisting them in their studies. **Conclusion:** The present study emphasizes the importance of individualized interventions dealing not only with remedial training, but also for incorporating components including parental awareness of the emotional consequences of SLD as well as individual interventions for children, focusing on strengthening their coping and Resilience.

**Key Words:** anxiety, depression, parent awareness, Specific Learning Disorder, Borderline Intellectual Functioning, resilience, stress

## Résumé

**Objectif:** La présence d'un trouble d'apprentissage spécifique (TAS) peut être extrêmement frustrante pour un enfant. La présente étude visait à évaluer les niveaux de résilience, de dépression, d'anxiété et de stress chez les enfants et les adolescents ayant un TAS, et à les comparer avec ceux ayant un fonctionnement intellectuel limite (FIL). Elle visait également à évaluer la connaissance parentale du trouble d'apprentissage de leur enfant. **Méthodologie:** Quarante-vingt-deux enfants et adolescents, ayant reçu un diagnostic de TAS (N = 41) et de FIL (N = 41) ont été sélectionnés pour la présente étude. Les participants ont rempli la Resilience Scale-14 et les Depression, Anxiety and Stress Scales, et les parents, la Parent Interview Profroma. **Résultat:** Un faible niveau de résilience a été constaté chez 75% des enfants et des adolescents ayant un TAS. Le stress sévère (16,6%), la dépression sévère (14,2%) et l'anxiété sévère (23,8%) ont été observés dans cet échantillon. Le niveau de résilience était plus faible chez les participants ayant un TAS comparativement à ceux ayant un FIL. Quarante-vingt-dix pour cent des parents étaient conscients que leur enfant avait un TAS, cependant, seulement 39% d'entre eux leur accordaient une attention individuelle pour les aider dans leurs études. **Conclusion:** La présente étude souligne l'importance d'interventions individualisées qui s'occupent non seulement de formation de rattrapage, mais aussi d'incorporer les composantes, y compris la connaissance parentale des conséquences émotionnelles du TAS ainsi que les interventions individuelles auprès des enfants, qui mettent l'accent sur le renforcement de leur adaptation et de leur résilience.

**Mots clés:** anxiété, dépression, connaissance des parents, trouble d'apprentissage spécifique, fonctionnement intellectuel limite, résilience, stress.

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## Introduction

Specific Learning Disorder (SLD) is a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. These deficits will be present in spite of having average or above average level of intellectual functioning. Resilience can be defined as an individual's ability to overcome adversity and continue his or her normal development (Brooks, 1991).

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 a SLD.

Research had indicated that children with SLD found that most were burdened by feelings of low self-worth and incompetence and that many believed that their situation would not improve. Not surprisingly, this sense of hopelessness served as a major obstacle to future success. Thus, a negative cycle is often set in motion, intensifying feelings of defeat and despair (Brooks, 1991). The stress of having a Learning Disorder is often exhibited overtly through school maladjustment, clinical maladjustment, emotional symptoms index and Depression (Martínez & Semrud-Clikeman, 2004), resulting in subsequent behavioural problems (Kempe, Gustafson, & Samuelsson, 2011). Another finding in a population-based birth cohort study was that the risk for Reading Disability is significantly greater among children with ADHD compared with those without ADHD (Yoshimasu et al., 2010). At school, teachers tend to perceive pupils with SLDs as less co-operative, less attentive, less socially acceptable and less desirable to have in class (Palmer, Drummond, Tollison, & Zinkgraff, 1982). Apart from the stress faced due to academics, many parents are also unaware of the presence of SLD, and tend to over-pressurize the child, adding more stress to the child. Diagnostic and Statistical Manual of Mental Disorders—DSM-IV (American Psychiatric Association, 2000) has defined Borderline Intellectual Functioning (BIF) (slow learners) as having Intelligence Quotient (IQ) in the range between 70 and 84, i.e. between -2 and -1 standard deviations (SD). This intellectual level is part of the normal variation, but in today's complex society individuals with BIF run the risk of shortcomings both at school and in working life (Fenning, Baker, Baker, & Cmic, 2007).

This study also aimed to compare the levels of Resilience, Depression, Anxiety and Stress of children and adolescents with SLD with those with BIF.

There is a lacunae of research looking into the relationship between Stress and Resilience in children and adolescents with SLD. The current study was done for exploring the relationship between Resilience and amount of Stress experienced, as well as the mental health of children and adolescents with SLD.

## Aims

The aims of the present study were:

1. To assess the Resilience of children and adolescents with SLD.
2. To assess the level of Stress among children and adolescents with SLD.
3. To assess the level of Depression and Anxiety among children and adolescents with SLD.
4. To compare the levels of Resilience, Depression, Anxiety and Stress between children and adolescents with SLD and those with BIF.
5. To determine the awareness about SLD among parents.

## Methodology

### Design

The sample for this cross sectional study was selected by consecutive sampling. The participants consisted of children and adolescents within the age range of 7-17 years, diagnosed as having SLD in the Psychiatry Outpatient Department of a tertiary care hospital. Children with any psychiatry or medical comorbidity, which could have interfered with test performance, were excluded from the study.

Diagnosis of SLD was established by a qualified Clinical Psychologist by administering the NIMHANS Index for Specific Learning Disabilities (Level II) (John, Rozario, Oommen, & Hirisave, 2011). This is a tool for assessing for Learning Disorder in Reading, Writing, Spelling and Mathematics. A child who performs two standards below their current academic level at school, in spite of having normal range of intellectual functioning, will be diagnosed as having Learning Disorder in the respective sphere. If a child's performance is below average, but within two standards below their current academic level, then they are diagnosed as having Learning Difficulty in the respective sphere.

The presence of any comorbid Axis I diagnosis was determined following a detailed evaluation of the child and family member by a qualified Psychiatrist or Clinical Psychologist.

For comparison, a sample of children and adolescents diagnosed as having BIF were also included. For the present study, the selection of participants in the BIF group was restricted to those with IQ scores ranging between 75-79. In order to avoid erroneous results due to poor comprehension,

Table 1. Socio-demographic characteristics of sample				
Variable	SLD (N = 41)	BIF (N = 41)	Test statistic	<i>p</i>
Age (Mean)	12.15 (±2.78)	12.36 (±2.84)	<i>t</i> = .358	.766
Gender (Male)	37 (90%)	32 (78%)	$\chi^2 = 2.29$	.131
Years of Education	7 (±2.68)	6 (± 2.84)	$\chi^2 = .80$	.427
Comorbidity present	17 (41%)	11 (27%)	$\chi^2 = 1.95$	.162

of test instructions and questions, in the BIF group, children with IQ below 75 were excluded. The Intellectual level of the participant was determined by a qualified Clinical Psychologist after administering the Binet Kamat Test of Intelligence (Kamat, 1967). This is a tool used for the assessment of intellectual functions and is the Indian adaptation of the Stanford Binet scale of intelligence.

The study proposal was approved by the Institutional Human Ethics Committee (IHEC).

## Tools

### 1. Parent Interview Proforma

This tool was designed for the present study. This included questions related to the parents' socio-demographic details as well as details of the parental awareness about SLD.

### 2. Depression, Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1995)

The DASS is a 42-item questionnaire which includes three self-report scales designed to measure the negative emotional states of Depression, Anxiety and Stress. Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. A score of 7 and above indicates moderate to severe Depression. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational Anxiety, and subjective experience of anxious affect. A score of 6 and above indicates moderate to severe Anxiety. The Stress scale is sensitive to levels of chronic non-specific arousal. A score of 10 and above indicates moderate to severe Stress.

### 3. Resilience Scale – 14 (RS-14; Wagnild, 2009)

The Resilience Scale (RS), measures the capacity to withstand life stressors, and to thrive and make meaning from challenges. It is a 14-item questionnaire. This scale comprises of five essential characteristics of meaningful life (purpose), perseverance, self-reliance, equanimity and existential aloneness. A score of 64 and below indicates low level of Resilience. A score of 82 and above indicates high level of Resilience.

### 4. Conner's Abbreviated Rating Scale (CARS; Conners, 1973)

This is a 10-item screening tool which assesses the presence of symptoms of Attention Deficit Hyperactivity Disorder (ADHD). A score of 15 or above indicates the presence of ADHD.

## Procedure

The study participants were selected consecutively from the Psychiatry Outpatient Department of a tertiary care hospital. As the study participants were minor, written informed consent was taken from the parent. Assent was taken from the participants. The parent was then administered the Socio-Demographic questionnaire and Conner's Abbreviated Rating Scale. Following this, the study participant was administered the Resilience Scale-14 (RS-14) and the Depression, Anxiety and Stress Scale (DASS).

## Results

Statistical Package for Social Sciences – Version 19 (SPSS-19) was used for analysis. Independent sample t-test and Chi square test were used for comparing the socio demographic data between the SLD and BIF groups. Multivariate Analysis of Variance (MANOVA) was used to determine the difference between the two groups in scores of Resilience, Depression, Anxiety and Stress. Multiple regression analysis was done to determine the correlation between age and these outcome variables.

### 1. Sample Description and Socio Demographic Details

The sample consisted of 82 participants [SLD (N= 41) and BIF (N= 41)]. There were no statistically significant differences in the socio demographic characteristics of the SLD and BIF groups. A comparison of the two groups is given in Table 1.

The mean age of the participants was 12.15 years (SD=2.78), among which 56.1% (N=23) were children and 43.9% (N=18) were adolescents. Majority of the sample consisted of boys (92%; N=37). Among the mothers, 58.5% were homemakers and 51.2% had completed higher secondary schooling. Among the fathers, 22.0% were professionals and 51.2% were graduates. Psychiatric comorbidity was present in 41% (N= 17) of the participants with SLD and in

**Table 2. Details of comorbidity in sample**

Comorbidity	SLD (N=41) N (%)	BIF (N=41) N (%)
Nil	24 (58.5)	30 (73.2)
ADHD	13 (32)	5 (12.2)
Conduct disorder	5 (12.2)	1 (2.4)
Depression	3 (7.3)	1 (2.4)
Anxiety	2 (4.9)	1 (2.4)
Somatoform	6 (14.6)	2 (4.9)
Dissociative	1 (2.4)	6 (14.6)
Schizophrenia	0 (0)	1 (2.4)

27% (N=11) of the participants with BIF. The details of the Axis I diagnosis of are given in Table 2.

The mean IQ of the SLD sample was 87.02 (SD=7.67), among which 63.4% had Low Average Intelligence (IQ= 85-89) and the remaining 36.6% were Intellectually Average (IQ= 90-110). A majority of this group had Spelling Disorder (46.3%) and Writing Disorder (36.6%). Twenty seven percent of the participants had Reading Disorder and 31.7% had Mathematics Disorder.

## II. Parental Awareness, Parental Reaction and Training

The mothers of 41.5% (N=17) of the participants with SLD had rated them as having 'very poor' quality of academic performance and 90% of the parents were aware that their child had a SLD. This level of awareness was not related to the parents' education and/ or occupational status. In spite of this awareness, 68.3% attributed the poor academic performance to laziness, stubbornness, inability to understand and lack of interest (Figure1) and 51% would reprimand (verbally/ physically) the child for their poor academic performance. Only 39% of the parents gave individual attention to the child for assisting them in their studies. Ninety eight percent of the children in the SLD group were attending mainstream school, among which only 2.4% received remedial training specifically for SLD.

## III. Resilience, Depression, Anxiety and Stress Levels

Among the participants with SLD, 75% had low level of Resilience and only 9% had a high level of Resilience. It was also found that 16.6% of these participants were experiencing severe Stress, 14.2% had severe Depression and 23.8% had severe Anxiety. A comparison of the Resilience, Depression, Anxiety and Stress levels of the SLD and BIF groups is shown in Table 3.

Multivariate Analysis (MANOVA) indicated that there was a statistically significant difference in Resilience, Depression, Anxiety and Stress Scores between the participants with SLD and BIF [ $F(4, 77) = 8.12, p < .0005$ ; Wilk's

$\Lambda = 0.703$ , partial  $\eta^2 = .297$ ]. The participants of the BIF group had significantly higher Resilience ( $F(1, 80) = 9.04; p < .005$ ; partial  $\eta^2 = .102$ ). The participants of the SLD group had significantly higher Anxiety scores ( $F(1, 80) = 9.32; p < .005$ ; partial  $\eta^2 = .104$ ).

One way Analysis of Variance (ANOVA) was done to determine the differences in the Resilience, Depression, Anxiety and Stress scores among participants with SLD having Reading Disorder, Reading difficulty and those who did not have any Reading difficulty. Tukey post-hoc test indicated that participants with Reading difficulty were statistically significantly more depressed (8.76 + 5.17) than those with Reading Disorder (4.36+2.80) [ $F(2,38) = 4.416, p = .021$ ]. It was also found that children with Reading difficulty had statistically significantly higher levels of Anxiety (7.94+ 5.01) as compared to those without any Reading difficulty (4.23+ 3.63) [ $F(2, 38) = 3.66, p = .035$ ].

There was no significant difference in Resilience, Depression and Anxiety scores between participants having Difficulties/ Disorders in Spelling, Writing and Mathematics and those who did not have these difficulties.

Figure 1 represents a comparison of the Resilience Scores of the SLD and BIF groups between Child and Adolescent age groups.

There was also no statistically significant difference between these scores with other outcome variables, viz., Intellectual level, receiving special training for SLD, parental awareness, type of parental reaction and attribution for the reason for academic difficulties.

## IV. Age and Resilience, Depression, Anxiety and Stress Levels

Multiple regression analysis was done to determine if age can predict the Resilience, Depression, Anxiety and Stress levels among participants with SLD and BIF. As can be seen from Table 4, age was positively and significantly correlated with Depression and Anxiety, indicating that as age increases, children with SLD would have higher level of Depression and Anxiety. There was also a trend for significant correlation age and Resilience and Stress levels in this group.

There was also a strong positive association between age Resilience and Anxiety levels in children with BIF. There was also a positive and significant correlation between age and Depression and Stress levels in this group.

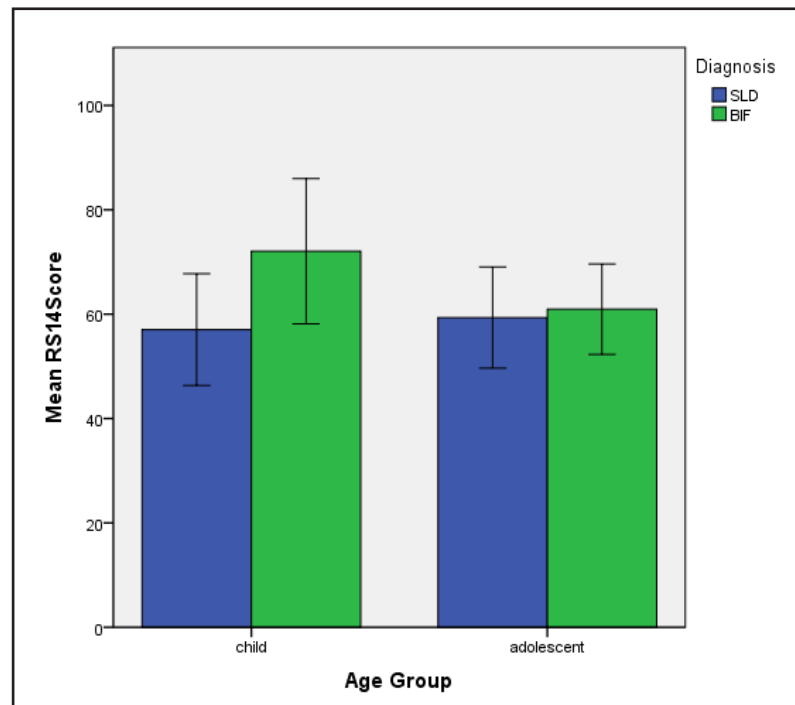
## Discussion

The present research aimed to study the levels of Resilience, Depression, Anxiety and Stress among children and adolescents with SLD and to compare the same among children with BIF. It also aimed to evaluate the level of parental awareness about the child's Learning Disorder.

Table 3. Comparison of resilience, depression, anxiety and stress scores between participants with SLD and BIF								
Variable	Group	Normal N (%)	Mild N (%)	Moderate N (%)	Severe N (%)	Total score Mean (SD)	F	p
Resilience	SLD	-	-	-	-	58.05 (10.22)	9.04	.004**
	BIF	-	-	-	-	66.56 (12.31)		
Depression	SLD	16 (38)	6 (14)	13 (31)	6 (14)	6.51 (4.51)	0.1	0.753
	BIF	10 (24)	16 (39)	11 (27)	4 (9)	6.24 (3.02)		
Anxiety	SLD	13 (31)	8 (19)	10 (24)	10 (24)	5.83 (4.48)	9.32	.003**
	BIF	25 (61)	8 (20)	3 (7)	5 (12)	3.37 (2.57)		
Stress	SLD	24 (57)	6 (14)	4 (10)	4 (17)	7.02 (5.31)	0.593	0.443
	BIF	18 (44)	11 (27)	10 (24)	2 (5)	7.78 (3.36)		

\*\*  $p < .005$

**Figure 1. Comparison of Resilience Scores of participants with SLD and BIF between different age groups**



The current study found that a majority of the participants with SLD (75%) had low level of Resilience, indicating they had inadequate coping skills and less inner resources to fall back on in stressful situations.

In spite of 90% of parents being aware that their child has SLD, 51% of the participants with SLD were reprimanded for not performing well academically. Incidentally, only 39% of parents gave individual attention to the child. Majority of the participants (82.93%) did not receive any special training for SLD. These findings disprove the popular beliefs that parents with a high educational background and awareness of the presence of SLD are positive factors for

helping the child. Parents require education on the mode of approach, need for emotional support and necessity of remedial training for these affected children and adolescents. However, there was no relation between the level of parental awareness, type of parental reaction and attribution for the reason for academic difficulties and the participants' Resilience, Depression, Anxiety and Stress levels.

An interesting finding was that participants with Reading difficulty were found to be more depressed than those with Reading Disorder. There was no significant difference in Resilience, Depression, Anxiety and Stress scores between participants having difficulties/ Disorder in Spelling,

Table 4. Correlation of age with resilience, depression, anxiety and stress						
Variable	Group	R	R <sup>2</sup>	$\beta$	<i>t</i>	<i>p</i>
Resilience	SLD	0.286	0.082	0.286	1.86	0.070
	BIF	0.514	0.265	-0.514	-3.7	.001**
Depression	SLD	0.434	0.189	0.434	3.01	.005**
	BIF	0.354	0.125	0.354	2.36	.023*
Anxiety	SLD	0.504	0.254	0.504	3.64	.001*
	BIF	0.609	0.371	0.609	4.79	.0001**
Stress	SLD	0.298	0.089	0.298	1.95	0.058
	BIF	0.357	0.127	0.357	2.39	.022*
* <i>p</i> < .05						
** <i>p</i> < .01						

Writing and Arithmetic and those who did not have these difficulties. These findings indicate that children with Reading difficulties were more emotionally affected by their academic difficulties. Children and adolescents with Reading difficulty could be aware of their reading skill deficits. They can also realize that their reading deficits do not amount to a severe problem, yet they are unable to match to the reading abilities of their peers. Perhaps Reading deficits are more visible outwardly as compared to Writing, Spelling and Arithmetic skills, particularly in a classroom situation, where the child is asked to stand up and read a portion out loud before the teachers and peers, resulting in significant Anxiety. Apart from this, the child's Anxiety and Stress would only increase further when the parents adopt an un-supportive and overcritical approach. This could explain the current finding that participants with Reading difficulty were found to be significantly more anxious than those without any Reading Disorder. These findings were independent of their levels of intelligence. This correlates with a previous study in which students with SLD in higher education showed Anxiety levels well above what is shown by students without Learning Difficulties. This Anxiety is not limited to academic tasks but extends to many social situations (Carroll & Iles, 2006).

In the SLD group, it was found that Depression and Anxiety levels tend to increase as age increases. This was also seen in previous studies, which indicated that adolescents with Dyslexia tend to be more dissatisfied with their lives (Miller, 2002) and their self-esteem and self-concept is lower than their typically developing peers (Alexander-Passe, 2006; Gans, Kenny, & Ghany, 2003). As a child approaches adolescents, the natural needs for self-esteem and peer acceptance tend to become stronger. This association can be explained by their explicit self-esteem, which reflects their conscious and reflective self-evaluation (Jong, Sportel, Hullu, & Nauta, 2012). Being perceived as a good academic performer is a major source of self-respect for school students. Adolescents with SLD tend to acquire a negative halo, due to the society's tendency to judge a student based on the quality of their academic performance. Because of

this, their non-academic skills and talents often go unnoticed and unappreciated. When they are unable to perform well academically, adolescents tend to lose their self-image and feel different from their peers. Previous studies indicate that children with SLD experience rejection by their peers and are perceived as unpopular (Siperstein & Goding, 1983). This would result in an internalizing of their emotions, expressed as Depression and Anxiety, as seen in the present study.

Children with BIF have high rates of academic problems, behavioral problems and grade retention (Karande, Kanchan, & Kulkarni, 2008). In the present study, Anxiety and Resilience levels increased as age increased in the BIF group. Younger children with BIF may not have the cognitive capacity or maturity level to compare themselves with their peers and feel compromised by their poor performance in academics. They may be too young to perceive this difference, because of which they feel more hopeful and positive about their experiences, strengths and future, resulting in higher levels of Resilience. In contrast, older children with BIF may have reached a level of cognitive maturity in which they can perceive that their abilities are substandard as compared to their peers, which is objectively reflected through higher levels of Depression, Anxiety and Stress.

An interesting finding was that the participants with BIF had higher levels of Resilience when compared to those with SLD. A child with a SLD is frequently has equal or even better ability for grasping new concepts and analytical skills when compared to their typically developing peers, as their Intelligence is intact. However, due to SLD, this intelligence is not reflected in their academic skills, viz., Reading, Writing, Spelling and Mathematics. This discrepancy, combined with inadequate coping and Resilience can induce significant Anxiety. On the contrast, a child/ adolescent with BIF, though stressed about their poor academic performance, may not face such a dissonance, as they are unable to perform adequately academically due to their compromised intellectual functioning. It can also be explained by the limited intellectual capacity of the children

with BIF to comprehend the extent and impact of their difficulties, thereby perceiving adequacy in their coping skills for handling the same.

The findings of the present study throw light on several important areas in children with SLD. Physical support, in terms of providing remedial training for these children, is important for helping these children to improve academically. However, it is also important that emotional and parental support be provided for these children. Poor mental health can also influence children's coping and quality of academic performance. The steps taken at this young age will play an important role in helping these children to develop into fully functioning persons in the future.

The present study had certain limitations. The sample size was limited and was restricted to a hospital based sample. The results would have been more generalizable had this been a school or community based sample. Another limitation is that any difficulty in comprehension of the tools by the participants in the child age group as well as BIF group could have influenced the findings in the present study. Yet another limitation was that certain extraneous variables, apart from academic difficulties secondary to SLD and BIF, which were not taken into consideration in the present study, viz., family stressors, medical comorbidity, peer related factors, could have also contributed to the Depression, Anxiety and Stress levels found in the study.

In contemporary society, education is highly valued and competitiveness among students is on the rise. In such a situation, children and adolescents with SLDs are at a higher risk for development emotional problems. For a comprehensive intervention program for children and adolescents with SLD, along with remedial training, it is required to incorporate aspects focusing on parental awareness of the emotional consequences of SLD and individual interventions for children, focusing on strengthening their coping and Resilience.

## Acknowledgements / Conflicts of Interest

The authors have no conflicts of interest to declare.

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