CO-MORBIDITY OF SPECIFIC LEARNING DISABILITIES AND DEPRESSIVE SYMPTOMS IN NON-CLINICAL SAMPLE OF ADOLESCENTS

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ABSTRACT

Objective: To determine the comorbidity and relationship between specific learning disabilities and depressive symptoms in non-clinical sample of adolescents.

Methodology: A cross-sectional study was conducted at four government schools of Lahore from March to December 2014. The study comprised of 287 students selected through systematic random sampling technique, age ranges between 11 to 16 years. Demographic information questionnaire, learning disabilities checklist and children depression inventory were administered to obtain data. Descriptive Statistics, crosstab analysis and Pearson relationship were applied.

Results: The mean age of 287 participants was 12.98 ±1.22 years. Overall, 56 (19.51%) of adolescents were identified with mild, 83 (28.94%) with moderate and 40 (13.94%) with severe levels of comorbidity of depressive symptoms and specific learning disabilities. Significant relationships between depressive symptoms and specific learning disabilities were demonstrated (p value=.0001). These relationships were also found significant for sample of boys whereas for girls, only significant relationship was observed on subscale of ineffectiveness (p value=.036)

Conclusion: Significant comorbidity of depressive symptoms and specific learning disabilities was found. Comorbidity of severe level of depressive symptoms and specific learning disabilities was more prevalent for sample of boys.

Key Words: Specific learning disabilities, Depressive symptoms, Non-clinical population, Adolescents

INTRODUCTION

Adolescence is a developmental phase occuring from 11 to 20 years of age and characterized by a period of stressful transition. Frequent and intense transition is hypothesized to explain increased risk of poor mental health outcomes[1]. So, adolescents are comparatively considered to be a more vulnerable population to be identified with several mental health issues. Among these, depressive disorders (DD) are increasingly illustrated as a major problem in school going adolescents. Depressive symptoms (DS) might include feeling low or sad, irritable mood, loss of interest in daily/routine activities, sleep disturbance, poor concentration, low self-esteem, feelings of worthlessness and suicidal ideation[2]. DS become chronic when adolescents face other difficulties and deficits such as learning disability[3].

There is limited understanding that mental health problems could be prevailing in non-clinical population, particularly at school level. Moreover, in developing countries such as Pakistan, these problems could be attributed to other pathological causes such as specific learning disabilities (SLD)[4]. SLD is a term characterized by a heterogeneous group of learning difficulties expressed by significant, specific and persistent difficulties in use and acquisition of reading, writing and mathematical abilities[5]. SLD had been explained in different contextual perspectives such as Rathus[6] classified SLD into three broader categories; reading, writing and mathematics. Earlier prevalence of these disabilities has been reported as 80%, 6.5% and 8% respectively[7-9]. According to provided empirical evidence, the prevalence of these SLD is not rigorously documented in non-clinical samples in Pakistan.

Past research narrates that SLD increases the risk of DD, particularly at a young age. A few previous re-

searches have demonstrated that students with SLD exhibit more DD than any other disorder. The prevalence of DS in school population screened for SLD, ranges from 6% to 20%[10]. In a review of 24 researches, 67% of adolescents identified with SLD reported higher prevalence of DD. Literature suggests that in many cases, SLD and DS are likely to co-occur[11]. Moreover, the prevalence and intensity of DD tend to increase by age and becomes more chronic if left undiagnosed and untreated[12]. In an earlier study, in 53 adolescents identified with SLD from a public school, it was found that 35.9% were depressed and 11% reported suicidal ideation[13]. In another research it was observed as 24%[14]. According to American Psychological Association, comorbidity of SLD in students with DD ranges from 10-20%[4].

Along with co-morbidity, gender is another important aspect as depressive disorders and SLD prevail differently in school going boys and girls. Research manifest that girls screened for SLD manifest more DS and emotional distress than their counterparts[15]. In spite of strong association and comorbidity of SLD with DD, its presence remains unidentified and therefore most of the times left untreated. As this provenance is not generally of clinical level, therefore the non-clinical or sub-clinical group has rarely been focus of attention for researchers. This could be attributed to the fact that main stream schools in Pakistan are mostly overcrowded and parent, teachers and instructors lack awareness[16]. Thus, identifying co-existence of DS and SLD in non-clinical population is important and needed to be examined in local perspective. This unidentified and mistreated aspect of adolescent development is examined in this research. The present study was conducted to determine the comorbidity of DS and SLD across non-clinical samples of boys and girls in schools.

METHODOLOGY

A cross-sectional study was carried out in four public schools of Lahore from March to December 2014. These schools were located in Allama Iqbal Town, Lahore. The study sapmle comprised of 287 students (boys=144, girls=143) who were enrolled from classes 6th to 10th, age ranges between 11 to 16 years. Participants below and above this age range and identified with any other mental or medical condition were excluded because of disproportionate representation in total sample. Through SPSS analysis of identifying outliers, some participants were dropped e.g., students who were within grade criteria (e.g., grade 10) but not within age limits (more than of 16 years).

When selecting study participants, distribution of sample across ages, genders and classes was assured to be well proportionate. Researcher took following steps to make sure data is well distributed: 1)age: it was tried that participants between ages of 11 to 16 remain pro-portionate in all age groups; 2) gender: in govt. schools more or less same strength of students in each gender is kept, so it wasn't hard to manage; and 3) class: more or less same number of students were selected from each grade (most of the times distribution of age and class of participants supplement each other). To avoid researcher's selection bias, participants were selected through systematic random sampling technique and keeping in mind class strength, every 4th student of class was selected to be recruited for study sample.

Self-report measures of learning disabilities checklist[17] and children depression inventory[18] were administered to assess prevalence of SLD and depressive symptoms in study participants. Both of these instruments are constructed on DSM-IV TR guidelines and broadly used to assess SLD and depressive symptoms in school population. To identify participants with mild, moderate and sever depressive symptoms and SLD, the criteria developed by Kovacs[14] (0-19=mild, 20-35=moderate, 36-54=severe), Ashraf & Najam (0-25% symptoms-mild, 26%-50% symptoms- moderate, >50% symptoms- severe)[13] were followed.

All ethical considerations were taken care before the administration of tools. Participants were assured that none of their personal informations i.e., name, school or any other identity illustration will not be revealed and that study findings will only be used for research purpose. Parents and school authorities were briefed about the purpose of study and informed that no physical, emotional or psychological harms are associated to their participations in research. After the verbal consent of parents (in parent-teacher meetings) and school administration, questionnaires were administered. Present study was approved on all possible ethical concerns by Advance Board of Research and Studies, University of the Punjab, Lahore. Crosstab and Pearson relationship analyses were applied to examine the comorbidity and relationship between SLD and depressive symptoms.

RESULTS

Of the total sample of 287, 50% (n=143) comprised of girls and 50% (n=144) of boys adolescents from four local government schools of Lahore. Response rate of participants was 94%, almost 6% of participants were dropped out because of inclusion exclusion criterion of study or incompletion of questionnaires. Overall, comorbidity of depressive symptoms and SLD for mild, moderate and sever levels were 19.51%, 28.9% and 13.94% respectively (figure 1).

Coexistence of depressive symptoms and SLD for sample of girls was 2.79% (mild), 11.18% (moderate) and 17.26 % (severe) as shown in table 1. Statistically significant relationships were observed between depressive symptoms and SLD (p <.001), and all dimen-

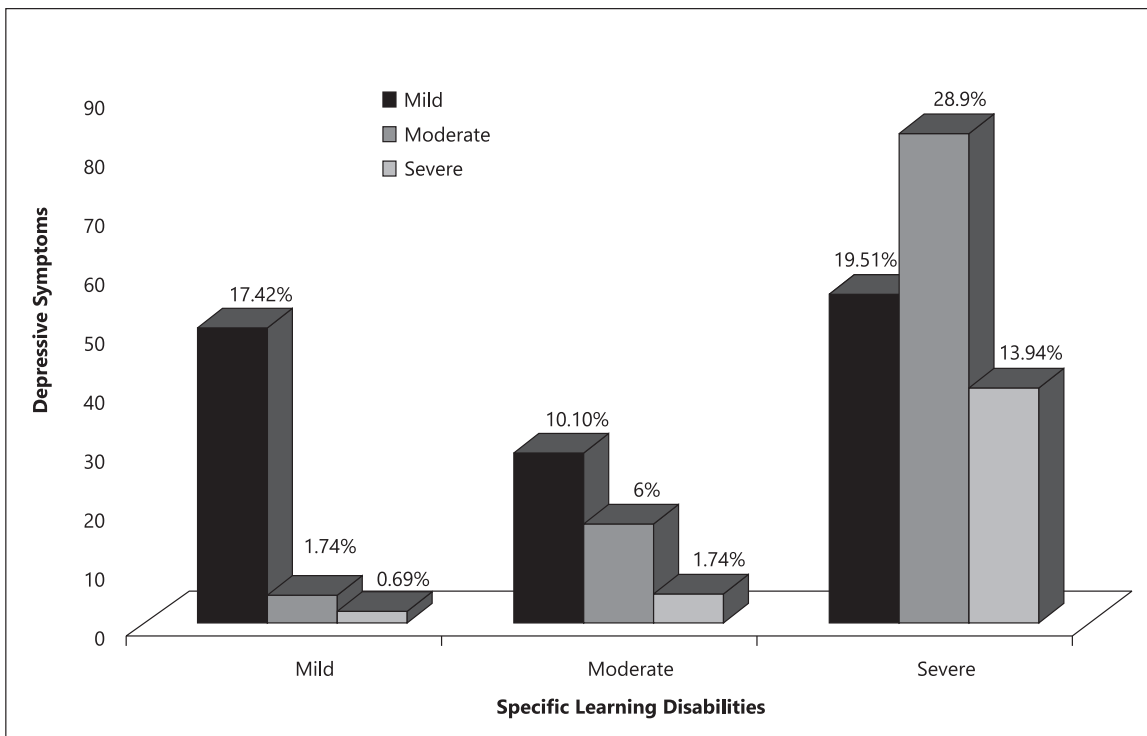**Figure 1: Co-morbidity of depressive symptoms and specific learning disabilities**

Table 1: Comorbidity of depressive symptoms and specific learning disability in boys and girls

Measures	Depressive Symptoms					
	Girls (n= 143)			Boys (n=144)		
Specific Learning Disabilities	Mild f (%)	Moderate f (%)	Severe f (%)	Mild f (%)	Moderate f (%)	Severe f (%)
Mild	4(2.79%)	18(12.58%)	46(32.16%)	46(31.94%)	11(7.63%)	10(6.94%)
Moderate	1(0.69%)	16(11.18%)	40(27.97%)	4(2.77%)	1(0.69%)	43(29.86%)
Severe	0(0%)	3(2.09%)	15(10.48%)	2(1.33%)	2(1.33%)	25(17.36%)

sions of depressive symptoms, i.e., negative mood (p <.05), interpersonal problems (p <.01), ineffectiveness (p <.05), anhedonia (p <.01) and negative self-esteem (p <.01. These relationships were also found significant for sample of boys, whereas for female adolescents only significant relationship was observed on subscale of ineffectiveness (p <.05) (table 2).

DISCUSSION

The present study was carried out in order to examine the comorbidity of depressive symptoms with SLD in non-clinical sample of school going adolescents. From crosstab and relationship analysis, the results of this study manifested significant comorbidity of depressive symptoms with SLD in study sample which signifies the present study objectives. This could be attributed to the fact that in general, adolescents identified with SLD are noticed more vulnerable to develop depressive symptoms. This is strongly supported by the previous studies in which 16 out of 24 studies (67%) reported that the level of depression of those identified with SLD is significantly higher than those with no disability[7]. Previously it has been justified by numerous empirical evidences and theoretical dimensions. Several justifications have been documented illustrating the strong significant relationship between depressive symptoms/disorders and SLD. Cognitive perspective postulated that negative self-schemas and negative attributions styles are strongly related to depressive symptoms[19]. A negative attribution style would be characterized as distinguishing the reasons for negative life occasions as uncontrollable. The negative attribution style would include a negative view of the person/ situation/ incident. It could be inferred that those who experience SLD interpret it in a negative manner. It has been documented that adolescents with SLD are generally aware of stigma as compared to others without SLD[20].

Table 2: Relationships between specific learning disabilities and depressive symptoms

	Specific Learning Disabilities											
	Overall Sample (N=287)				Girls (N=143)				Boys (N=144)			
	r	p	M	SD	r	p	M	SD	r	p	M	SD
Depressive Symptoms	.384	.000***	23.93	7.763	.054	.520	26.55	5.605	.647	.000***	21.33	8.696
Negative Mood	.128	.030*	5.46	1.952	-.114	.175	5.90	1.933	.379	.000***	5.01	1.874
Inter Personal Problems	.303	.000***	4.03	1.847	-.030	.726	4.66	1.678	.645	.000***	3.41	1.799
Ineffectiveness	.425	.000***	4.51	2.314	.175	.036*	5.10	1.840	.632	.000***	3.92	2.580
Anhedonia	.301	.000***	6.05	2.025	.080	.342	6.48	1.846	.505	.000***	5.62	2.109
Negative Self Esteem	294	.000***	3.89	1.980	.058	.491	4.41	1.789	.522	.000***	3.36	2.026

*p<.05, ***p<.001

In addition, significant association between depressive symptoms and SLD could be noted as a risk factor affecting the mental health of adolescents in non-clinical population of adolescents[3]. This could be due to the fact that adolescents lack mature cognitive and psychological structure necessary to experience, understand and manage different problems including learning problems and mental health. Gender differences in SLD disability were insignificant, which is in contrast to the most of previous observations that widely report these differences[21]. These studies reveal that female adolescents are 1.5 to 6 times less likely to be identified with learning disability than their male counterparts. Moreover, these differences range from minor to major, and in some studies learning disability affects male and female adolescents equally[22].

LIMITATIONS

The present research was also subjected to few limitations. There are around 230 government schools in District Lahore. Among these, only four were selected which is representative, but more schools could be included in data for a more efficient picture of the findings. Another limitation of the study was that the tools used in present research are generally used for screening purpose rather than diagnostic. So, administering diagnostic tools and assistance of psychiatrists for more rigorous identification of SLD and depression is suggested for future researches.

CONCLUSION

Significant comorbidity of depressive symptoms and specific learning disabilities was found. Comorbidity of severe level of depressive symptoms and specific learning disabilities was more prevalent for sample of boys.

RECOMMENDATIONS

Significant comorbidity of depressive symptoms with SLD recommends that this issue should be taken care of in mainstream schools of Pakistan. If these issues are left undiagnosed and untreated, may lead to the development of clinical level of depression and learning problems. Further, these may lead to the development of other psychological problems such as poor adjustment, behavioral conflicts, adjustment and personality problems.

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