ORIGINAL ARTICLE

MATERNAL STRESS AND BEHAVIORAL-EMOTIONAL PROBLEMS IN THE CHILDREN WITH DYSLEXIA

SAIRA KHAN[1], FARAH MALIK[2]

[1]Assistant Professor, Department of Applied Psychology, G C Women University Faisalabad Madina Town 38000-Faisalabad, Pakistan

[2]Professor, Director of Institute of Applied Psychology, University of the Punjab, Quaid-i-Azam Campus Lahore, Pakistan

CORRESPONDENCE: SAIRA KHAN, E-mail: sairakhan2003@gamil.com

Submitted: December 13, 2017
Accepted: February 06, 2018

ABSTRACT

OBJECTIVE
To assess the behavioral-emotional problems in children as determinant of stress in the mothers of children with dyslexia.

STUDY DESIGN
Correlational Research Design

PLACE AND DURATION OF STUDY
The study was conducted in Lahore and Faisalabad, and the duration of the study was one year.

SUBJECTS AND METHODS
Children of 7-12 years (M = 9.7 SD = 1.66) were recruited from English medium schools and their mothers were participated in the study. Urdu version of Comprehensive Behavior Rating Scale of Children (Neeper, Lahely, & Frick, 1990) was rated by the class teachers to indicate the behavioral-emotional problems in children. Urdu version of PSI was administered to mothers of children with dyslexia to measure their stress.

RESULTS
The results suggested that children with dyslexia showed significant elevated behavioral-emotional problems i.e. 2 standard deviations above the mean. Children with dyslexia showed significantly higher scores on inattention-disorganization, oppositional conduct disorder, anxiety, sluggish tempo and motor hyperactivity sub scales of CBRSC. Results also indicated significant gender difference; with boys being higher on behavioral-emotional problems than girls. Mothers of children with dyslexia showed higher rate of stress which was mainly related to their children's disability Mothers with less educational level and belonging to lower socioeconomic class reported high stress.

CONCLUSION
It was concluded that children with dyslexia showed a wide range of behavioral-emotional problems that could be mainly attributed to maternal stress. The findings of the current study might be helpful for the parents and the school teachers to get acquainted with the issue of dyslexia in school population and its impact on their academic performance.

KEY WORDS
Dyslexia, Behavioral-Emotional Problems, Maternal Stress.

INTRODUCTION

Dyslexia is an unpredicted reading difficulty in individuals who have the intelligence, schooling, and motivation, considered essential for fluent and accurate reading[1]. In particular dyslexia is classified as a disability in learning process which is manifested in the form of difficulties of reading, writing and spelling etc. It is separated and dissimilar from the problems in reading, resulting from other causes, such as deficiencies with hearing and vision, intellectual deficits, or from inadequate or poor instructions for learning how to read[2].

As described in DSM-V the essential feature of dyslexia is reading achievement (reading accuracy, speed, and comprehension) that falls substantially below as measured by the administration of standardized individual tests, which expected given the individual's measured intelligence, chronological age, and age appropriate education[3].

Researches indicate that the most of preschooler children with dyslexia are well adjusted and happy[4]. Their emotional and behavioral problems begin to develop when early reading instruction does not match their learning style[4]. Inability to meet expectations creates the frustration in the children with dyslexia. Adults with dyslexia frequently report most of the symptom of anxiety. Because of their constant frustration and confusion in school, children with dyslexia become fearful. Social psychologists have frequently observed that frustration produces anger. According to a research, care givers (mothers) of children with learning disability reported that learning disability adults have significantly higher prevalence of physically aggressive behavior towards others. Learning disabled people frequently compete with a lifetime of adversity, insufficient social support and poor coping skills. These factors play very important role to increase their vulnerability to stressful life events which may trigger anxiety disorders[5].

According to Borthwick-Duffy, (1994) people with intellectual disability are vulnerable group with a relatively higher prevalence of mental disorders[6]. Frustration becomes the cause of many of the emotional problems in school or social situations. It is often observed by Social scientists that frustration produces anger and this is very much true in the case of many people with dyslexia. Teachers and school would be the noticeable target of the

dyslexic's anger[7]. The children with dyslexia frequently have problems with social relationships. Children with dyslexia have problem retrieving the sequence of letter or words. They may narrate a different sequence of events each time he tells the tale. Parents, teachers, and psychologists may conclude that he is either pathological liar or a psychotic[7].

Ryan (2004) posited that depression could be a frequent complication in dyslexics. According to him Children with dyslexia having low self-esteem usually scared to turn their anger toward their environment and instead turn it toward them. Depressed children and adults tend to have three characteristics; firstly, they tend to have negative judgment about themselves means a negative self-image. Secondly, they tend to have negative views about the world. They were usually jumped to negative conclusion by ignoring good events and thus less likely to enjoy the positive experiences in life. This situation makes it difficult for them to have fun. Finally, the majority of depressed youngsters have great trouble imagining anything positive about the future. The depressed children and adults with dyslexia not only feel great pain in his present experiences, but also foresee continuing failure throughout the life[8].

McDowell, Saylor, Taylor, Boyce, and Stokes (1995) posited that when providing services for children and their families, parenting stress was a considerable variable, for example, mothers appeared to be more abusive, punitive and controlling reported high levels of stress from life events than mothers who had lower levels of stresss[9]

There are many factors that appear to be involved in moderate parenting stress. Gender (boys are perceived as more stressful); socioeconomic status (strongly but negatively associated with levels of parenting stress[10]; age (the older child is more stressful for parents); and maternal characteristics, such as education (the less educated, the more stress is experienced); age (the older the parent, the more stress), appear to be considerable moderators of parental stress[11].

Mahoney, O'Sullivan, and Robinson, (1992) indicated that mothers reported more stress than their spouses, this elevated maternal stress might be associated with inadequate spousal support and might negatively related to family cohesion[12]. Mothers of children with learning disorders reported to experience greater depression, more levels of stress, poorer coping ability than their spouses[13], perhaps because of less paternal involvement[14] or maternal internalization of their child's inability as their own fault and failure reading[15].

A recent study conducted by Keller and Honig (2004) however, posed that raising a child with a disability might cause similar stress levels in both fathers and mothers. However, path analyses showed that fathers were more worried about the social acceptance of his child and the mothers were more stressed by children's neediness and demandingness[16].

Reading disorder (dyslexia) is a well-researched area in the developed countries but rare in developing countries like Pakistan. In Pakistan parents are completely unaware even about the existence of such disorder in children and even teachers are not much more aware of this problem. Educational, emotional and behavioral problems of the children with reading disorder become an issue for the children, parents and the teachers. When this problem is reported to the parents they often blame the teachers and the school. Parents show their dissatisfaction about the performance, efficiency and ability of the teacher and school and often try to change the school of the children with reading disorder. The situation is worsened by the fact that frequently the mother and father having a child with dyslexia child may be involve in different and conflicting stages at the same time for example, blame vs. denial: anger vs. guilt. The mothers raising a child with dyslexia often experience an elevated level of stress and this maternal stress consequently leads to behavioral and emotional problems in the children with dyslexia. The present study has been designed to identify the patterns of behavioral and emotional problems in children with dyslexia, to examine the effect of behavioral/emotional problems on the mothers of the children with reading disorder. Objectives of the study are as follows;

1. To determine the behavioral/emotional problems in children with reading disorder.
2. To determine the level of stress in the mothers of children with reading disorder.
3. To investigate the relationship between behavioral/emotional problems in the children with dyslexia and the maternal stress.
4. To examine the interplay among maternal stress, and behavioral problems in children with reading disorder.

Hypotheses

1. Children with dyslexia are likely to have behavioral/emotional problems.
2. Maternal stress is likely to be predicted by behavioral-emotional problems in children with dyslexia.
3. Education of the mother would determine stress in mothers and behavioral-emotional problems in children with dyslexia.

SUBJECTS AND METHOD

Participants

A purposive sample of 60 children with dyslexia with age range of 7-14 (M = 9.7 SD = 1.66) included 24 girls and 36 boys was drawn from different private English medium schools in Faisalabad.

The second part of the sample was consisted of 60 mothers of these children with dyslexia. Mother's age was ranged from 24-45 (M = 34.87, SD = 4.59) and belonged to different SES groups and educational levels. A detailed description of the demographic characteristics of two samples of the current study i.e. mothers of children with dyslexia and children themselves, is given in Table 1.

Instruments

A brief interview with children (having reading problems) and their teachers was conducted to identify the children having reading problems (confusion with before/after, right/left, difficulty learning the alphabet, mixing up sounds, transpose letters, confusion with combinations of words). Identified children were then screened with the help of Bangor Dyslexia Test.

Bangor Dyslexia Test (BDT)[17]

Bangor Dyslexia test was used as a quick screening device for finding

out whether the subject's difficulties are or are not typically dyslexic. BDT is intended to operationalize the concept of dyslexia by indicating who dyslexic is, by definition. It offered as a contribution towards further understanding of the subject's difficulties, not as a mean of definitive diagnosis.

It is also suitable for use by educational and clinical psychologists as a part of wider assessment. It is offered as a contribution towards further understanding of the subject's difficulties in reading. Author suggested not to be used with subjects aged less than 7[15].

Comprehensive Behavior Rating Scale of Children (CBRSC)[18]

The Comprehensive Behavior Rating Scale of Children is a 70 items teacher rating scale to assess behavioral-emotional problems in children. The teachers have to rate the children as they typically behave by circling the appropriate number (0-5) for each behavior listed on the rating scale. Each item in scale describes a particular behavioral or cognitive attribute of the child. The scale includes following subscales, Instrumental- Disorganization (ID), Reading problems (RP), Cognitive Deficits (CD), Oppositional-Conduct disorder (OP), Motor Hyperactivity (MH), Anxiety (AN), Sluggish Temp (ST), Daydreaming (DA), and Social Competence (SC).

Raw scores are transferred to standard score (T Scores) with a mean of 50 and a standard deviation of 10. T scores that are elevated at least 1.5 standard deviation units above the mean. Or 65T are significant.

The author has reported high estimates of test-retest reliability ranging from .84 to .94. CBRSC was also translated in Urdu while employing standardized translation procedure[19].The item to item correlation was computed for both (Urdu and English) versions of CBRSC which were ranging from .53 to .97.

Parenting Stress Index (PSI)[20]

Parenting Stress Index is an instrument with primary value to assess parent-child interactions which are under stress and at the risk for the development of dysfunctional parenting behaviors or behavior problems in the child involved. For the present study Urdu version of PSI was used[21]. The PSI is a questionnaire, consists of 120 items; assess seven parental characteristics and six child characteristics. The measure has significant psychometric properties with different samples. The internal consistent reliability of PSI was .70 to .83 for child domain, .70 to .84 for parent domain and for total .90 or greater[20]. Reliability of Urdu version scale was estimated by computing Cronbach's alpha coefficient which was .87[21].

Procedure

The formal permission was sought from the school authorities for data collection. Informed consent both from parents and children was taken with the help of school authorities.

Stage I: Screening of Children with Dyslexia

At the first stage screening procedure was carried out. After getting permission from the principal of the schools the class teachers having at least one year contact with students were requested to refer the children having reading problems. Then a brief interview with children (having reading problems) and their teachers was conducted to identify the symptoms of dyslexia as per DSM-V criteria (confusion with right/left, before/after, mixing up sounds, difficulty learning the alphabet, transpose letters, confusion with combinations of words). These children were then screened with the help of Bangor Dyslexia Test. A score of 6 'pluses' for age group 7-9, 5 'pluses' for age group 10-11, and 4 'pluses' for age group 12-14 was taken as criteria of screening the children with dyslexia.

Stage II: Data Collection from Teachers

In the next phase teachers having at least one year contact with the children with dyslexia were requested to rate the identified children as he or she typically behaves by circling the appropriate number (1-5) for each behavior listed on the CBRSC.

Stage III: Data Collection from Mothers

In the last stage mothers of the selected children were contacted by inviting them in the school or contacted at their home places (according to their convenience) and requested to complete the Parenting Stress Index. Mothers were also requested to provide required demographic information like family income, profession of mother, age of mother and education of mother.

RESULTS

The data were analyzed with the help of SPSS. The data /results are presented by finding Pearson correlation, conducting Regression analysis for different measures and relationship of demographic variables with maternal stress, behavioral-emotional problems of children with dyslexia.

Table 1
Demographic Information of Participants

Mothers (n=60)		*Children (n=60)*	
Age in years		**Age in years**	
Mean (SD)	34.87 (4.59)	Mean (SD)	9.7 (1.66)
Range	24-45	Range	7-13
Education		**Gender**	
Below-Metric	8(13)	Boys	36 (60)
F.A-B.A	41(69)	Girls	24 (40)
MA\MSc and above	11(18)		

Figure 1
Mean Scores, T scores and Percentiles of Teacher's Rating on Comprehensive Behavior Rating Scale for Children (CBRSC)

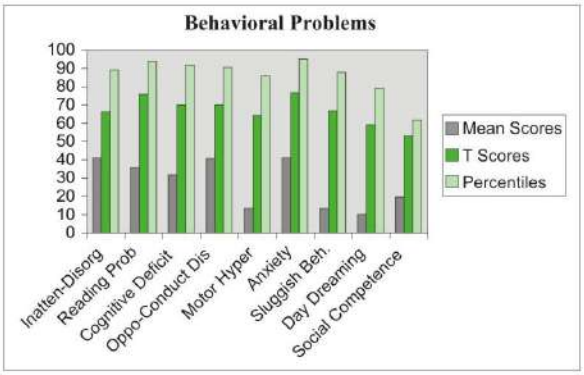

Figure 1 represents the T scores and percentiles of mean scores (N = 60) for all subscales of CBRSC. T score is standard score with a mean 50 and SD of 10. Several of T scores were extremely elevated i.e. more than two standard deviation above the mean. T score on Reading problem and anxiety were 76 and 77 respectively which were extremely elevated. T scores on subscales of Oppositional conduct disorder, Cognitive Deficits, Sluggish behavior, Inattention-disorganization and motor hyperactivity were also elevated. All these high scores indicated the presence of behavioral-emotional problems in the children with dyslexia.

Table 2
Predictors of Maternal Stress

Variables	B	SE	β	t	P
Step 1 *(R=.876, R^2=.768)*					
Child Domain Stress	1.51	.12	.88	13.85	.0001
Step 2 *(R=.953, R^2=.908)*					
Child Domain Stress	.97	.09	.56	10.74	.0001
Parent Domain Stress	.80	.09	.49	9.32	.0001
Step 3 *(R=.959, R^2=.920)*					
Child Domain Stress	.91	.08	.53	10.45	.0001
Parent Domain Stress	.78	.08	.48	9.61	.0001
Beha-Emotional Problems	.10	.03	.12	2.94	.001
Step 4 *(R=.962, R^2=.926)*					
Child Domain Stress	.88	.09	.51	10.21	.0001
Parent Domain Stress	.80	.08	.49	10.09	.0001
Beha-Emotional Problems	.10	.03	.12	3.03	.001
Age of Child	3.16	1.52	.08	2.84	.05

Step1: F (58) = 191.87, p<.0001. Step2: F (57) = 281.27, p<.0001. Step3: F (56) = 215.45, p<.0001. Step4: F (55) = 172.31, p<.0001.

Stepwise Multiple Regression Analysis was performed for predicting maternal stress while using Behavioral-Emotional Problems, Age & gender of child and socioeconomic status as Predictors (Table 2). Child domain of PSI emerged as the strongest predictor of maternal stress that accounted 77 % of variance in total maternal stress, β =1.51, t = 13.85, p < .0001. Parent domain of PSI and behavioral-emotional problems also emerged as the predictor for maternal stress, β =.80, t = 9.32, p < .0001; β =.10, t = 2.94, p < .001. The excluded variables were age of child, gender and socioeconomic status.

Table 3
Correlational Matrix of Predictors

	Variable	2	3	4	5
1.	Total Maternal Stress	.88****	.85****	.45***	.22*
2.	Child Domain Stress	-	.64****	.36***	.13
3.	Parent Domain Stress	-	-	.29**	-.03
4.	Beh-Emo Problems	-	-	-	.03
5.	Age of Child	-	-	-	-

**p<.05. **p<.01. ***p<.001. ****p<.0001.*

Correlational matrix of predictors strengthens our results (Table 3). Maternal stress showed positive significant and strong relationship with child domain and parent domain (r = .88; r = .85). Table 4 also shows significant positive relationship of maternal stress with behavioral-emotional problems (r = .45).

Table 4
One Way ANOVA on PSI and CBRSC of Children with Dyslexia for Education of Mother

Source of Variance	SS	df	MS	F
Parent Stress Index (PSI)				
Between Groups	7434.29	2	3717.14	4.40*
Within Groups	481754.44	57	845.17	
Total	55608.73	59		
Comprehensive Behavior Rating Scale for Children (CBRSC)				
Between Groups	11327.76	2	5663.88	4.90*
Within Groups	65962.83	57	1174.98	
Total	77290.58	59		

**p<.01, (N=60)*

Table 5
Mean and SD of the Scores of PSI and CBRSC as Reported by Mothers and Teachers

Groups	n	M	SD
Parent Stress Index (PSI)			
Below-Metric	8	342.00	34.49
F A-BA	41	320.19	28.95
MA/MSc and above	11	302.00	25.12
Comprehensive Behavior Rating Scale for Children (CBRSC)			
Below-Metric	8	253.00	29.69
F A-BA	41	246.44	34.47
MA/MSc and above	11	212.45	35.03

The table 4 indicates that mother's education is a significant contributory factor towards their level of stress F (2, 57) = 4.40 p< .01 and the child's behavioral problems F(2, 57)=4.90 p < .01.

The table 5 indicates that the mothers of children with dyslexia having less education had higher mean scores (M = 342, SD = 34.49) as compared with highly educated mother (M = 302.00, SD = 25.12) on Parent Stress Index. Children with dyslexia having less educated mothers had higher mean scores (M = 253, S D= 29.69) as compared with children having highly educated mothers (M = 212.45, SD = 35.03) on Comprehensive Behavior Rating Scale for Children.

DISCUSSION

The present study was designed to investigate the relationship of child's reading disorder (dyslexia) with severity of behavioral-emotional problems and maternal stress being the mothers of children with dyslexia. Difficulty in phonological awareness, mixing up sounds in multiple-syllabic words, transpose letters and difficulty learning alphabets contribute a lot in producing behavioral problems[22], Behavioral-emotional problems, and difficulty in reading interns create stress in the mothers of children with dyslexia[23].

The first hypothesis of the present study was that the children with dyslexia would have behavioral-emotional problems and in the present study the teachers of the children with dyslexia reported that most of their students with dyslexia had emotional problems like anxiety and tension and behavioral problems like inattention-

disorganization, oppositional conduct disorder, motor hyperactivity and sluggish behavior. Results of the present study indicated that the children with dyslexia were anxious is consistent with the findings of the study conducted by Hales (1994) who indicated that at primary school children with dyslexia were tensed and frustrated, with low motivation and high anxiety. These results suggested that children with dyslexia become frustrated because of their constant failure and suffer a lot with confusion in the school. This situation intensified because of the consistent problems of dyslexia. Children with dyslexia cannot anticipate failure because every new situation becomes extremely anxiety provoking[24]. The results also depicted that children with dyslexia had behavioral problems like oppositional conduct disorder, motor hyperactivity, inattention and sluggish behavior, which is in accordance with the research conducted by Heiervang, Stevenson, Lund, and Hugdahl (2001) who suggested that pre-adolescent children with dyslexia had a wide range of behavioral problems that cannot be attributed to developmental background or social variables[25].

Results further suggest that mothers of children with dyslexia were under great stress are consistent with the study conducted by Bailey, Golden, and Robert (2007) that the reading disable child's behavioral problems were consistently associated with maternal depression and stress[26]. Maternal stress was already examined by Little (2002) who indicated that mothers of learning disorder had higher rates of stress, had more use of antidepressant, and also had frequent therapy use than did fathers[27]. Results also indicated that the mothers of children with dyslexia experienced stress which is mostly related with the child domain of PSI. Although the correlation analysis indicated that maternal stress was highly correlated with child domain of PSI, it was also strongly related to parent domain of PSI but less than child domain.

Data were further explored through stepwise regression analysis and the results indicate child domain of PSI emerged as the strongest predictor of maternal stress that accounted 77 % of variance in total maternal stress. Behavioral-emotional problems and age of the child also had positive strong relationship with maternal stress. These results are complimenting many studies examining maternal stress among the mothers of children with dyslexia, Little (2002) who noted that child's age was also related to maternal stress and coping variables[27] and Bailey, Golden, and Robert who noted that child's behavioral problems, maternal stress, and coping style were consistently associated with depressive symptoms of mothers[26].

In the present study demographic variables were explored along with the main variables of the study and the result suggested that the less educated mothers of children with dyslexia reported elevated stress in them as Casey, Levy, Brown, and Brooks - Gunn, J. (1992) noted that the low educational level of the mothers badly affected the behavior of the children with dyslexia[28].

CONCLUSION

The present study suggests that dyslexia has a far greater impact on behavior development beyond reading. Children with dyslexia are at risk of emotional-behavioral problems. The mostly reported emotional problem by children with dyslexia is anxiety. Children with dyslexia also have behavioral problems such as hyperactivity, inattention, oppositional conduct disorder and sluggish tempo. These reading difficulties also affect adversely the children with dyslexia. It may also be suggested that mothers raising a child with dyslexia often experience an elevated level of stress. This maternal stress in turns negatively affects the behavior of the children with dyslexia. Present analysis strongly suggests that children with dyslexia have significant behavioral-emotional problems. These problems have negative impact on learning process along with reading problem.

IMPLICATIONS OF THE STUDY

The current findings contribute to what is known to behavioral-emotional problems in the children with dyslexia and have implications for these children and for the teachers and parents interacting with them. The present study has provided a basic understanding about very common learning disorder dyslexia that can help the teachers and the parents to prevent or at least alleviate the other related problem of dyslexia specially which were studied in this study. Furthermore, it is suggested that professional and parental awareness about the disorder and their support can reduce the negative impacts of any disorder, it is important that teachers and parents are well aware of dyslexia to deal with it effectively.

LIMITATIONS AND SUGGESTIONS

There are many limitations of the present study that should be considered in any attempt to generalize the findings of the present study.

1. The study was limited to the age group of 7-12 years.
2. Only the mothers of the children with dyslexia were included in sample, inclusion of fathers might give clearer picture of parental stress.
3. Behavioral problems were only rated by teachers for the present study; these problems should also be rated by mothers that might give the clearer picture of behavioral problems, recommended for the future research.
4. Further research into how children with dyslexia cope with their disability is suggested.

REFERENCES

1. Shaywitz SE. Dyslexia. New England. Journal of Medicine 1998; 338, 307-12.
2. Stanovich KE. Explaining the differences between the dyslexic and the garden-variety poor reader: The phonological-core variable-difference model. Journal of learning disabilities 1998; 21(10): 590-604
3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders: DSM-V (5th ed.). Washington D.C: Author. 2013
4. Orton ST. Reading, Writing and Speech Problems in Children. New York, 1937 Norton and Co.
5. Cooray SE, Bakala A. Anxiety disorders in people with learning disabilities. Advances in Psychiatric Treatment 2005; 1: 355-361.
6. Borthwick-Duffy SA. Epidemiology and prevalence of psychopathology in people with mental retardation. Journal of Consulting and Clinical Psychology 1994; 62: 17-27.
7. Ryan M. Social and Emotional Problems Related to Dyslexia. International Dyslexia Association Fact Sheet series.©

Copyright 2004, The International Dyslexia Association (IDA).
8. Ryan M. Unlocking the Social and Emotional Enigmas of Dyslexia. Perspectives 2004; 30: No. 4: 1-4.
9. McDowell AD, Saylor CF, Taylor MJ, Boyce GC, Stokes SJ. Ethnicity and parenting stress change during early intervention. Early Child Development and Care 1995; 111, 131–140.
10. Kazdin AE, Stolar MJ, Marciano PL. Risk factors for dropping out treatment among White and Black families. Journal of family psychology. 1995; 9: 402-417.
11. Tunali B, Power TG. Creating satisfaction: A psychological perspective on stress and coping in families of handicapped children. Journal of Child Psychology and Psychiatry 1993; 34: 945-957.
12. Mahnoey G, O' Sullivan P, Robinson C. The family environments of children with disabilities: Diverse but not so different. Topics in Early Childhood Special Education 1992; 12: 386-402.
13. Little L. Middle-class mothers' perceptions of peer and sibling victimization among children with Asperger's syndrome and nonverbal leaning disorders. Issues in Comprehensive Pediatric Nursing 2002; 25: 43-57.
14. Kwais-Sang, Yau M, Li-Tsang WP. Adjustment and adaptation in parents of children with developmental disability in two-parent families: A review of the characteristics and attributes. British Journal of Disabilities 1999; 45: 38-51.
15. Jacobs E. Parenting the child with learning disabilities: The challenge of mothering and fathering. Learning Disabilities Journal 1996; 6: 1-6.
16. Keller D, Honig AS. Maternal and paternal stress in families with school-aged children with disabilities. American Journal of Orthopsychiatry 2004; 74: 337-348.
17. Miles TR. Dyslexia: the Pattern of Difficulties. Oxford: Blackwell. 1983
18. Neeper R, Lahey BB, Frick JP. Comprehensive Behavioral Rating Scale for Children: Manual. NY: Psychological Corporation. Harcourt Brace & Co. 1990
19. Malik F, Gul A, Humphreys G. Behavioral and emotional problems in abused and non-abused children in a Pakistani cohort. Pakistan Journal of Psychological Research 2010; 25(2): 179-202.
20. Abidin RR. Parenting Stress Index Manual, (3rd edition). Odessa, FL:Psychological Assessment Resources. 1995
21. Anjum N, Malik F. Parenting practices in mothers of children with ADHD: Role of stress and behavioral problems in children. Pakistan Journal of Social and Clinical Psychology 2010; 8 (1):18-38.
22. Willcutt EG, Pennington BF. Comorbidity of reading disability and attention –deficit /hyperactivity disorder: Differences by gender and subtype. Journal of Learning Disabilities 2000; 33(2): 179-191.
23. Antshel KM, Joseph GR. Maternal stress in nonverbal learning disorder: A comparison with Reading disorder. Journal of Learning Disabilities 2006; 39: 194-205.
24. Hales G. The human aspects of dyslexia. In G. Hales (Ed.), Dyslexia Matters. London, Whurr. 1994
25. Heiervang E, Stevenson J, Lund A, Hugdahl K. Behavior problems in children with dyslexia. Nordic Journal of Psychiatry 2001; 55: 251–256.
26. Bailey Jr DB, Golden RN, Roberts J, Ford A. Maternal depression and developmental disability: Research critique. Mental Retardation and Developmental Disabilities 2007; 13: 321-329.
27. Little L. Differences in stress and coping for mothers and fathers of children with Asperger's syndrome and nonverbal learning disorders. Pediatr Nurs 2002; 28(6):565-70.
28. Casey R, Levy S, Brown K, Brooks - Gunn J. Impaired emotional health in children with mild reading disability. Developmental and Behavioral Pediatrics 1992; 13: 256 - 260.