

Translation and Adaptation of Disruptive Behaviour Disorder Rating Scale

Mamoona Ismail Loona and Anila Kamal
Quaid-i-Azam University

In the present study, Disruptive Behavior Disorder (DBD) rating scale developed by Pelham, Gnagy, Greenslade, and Milich (1992) was translated and adapted for the assessment of childhood behavioral problems in Pakistani children. The DBD rating scale was translated into Urdu using back-translation technique and validated through factor analysis. Primary class children in the age range of 9 to 13 years ($N = 280$; mean age = 9.98 years), including 179 boys (mean age = 9.98 years) and 101 girls (mean age = 9.97 years) were rated by their class teachers on Urdu DBD rating scale. The alpha coefficients for the subscales of Urdu DBD rating scale ranged from .80 to .91. Exploratory Factor analysis yielded a four-factor solution for the Urdu DBD rating scale.

Keywords: disruptive behavior, oppositional defiant disorder, conduct disorder, exploratory factor analysis, cross-cultural validation

There are a number of current approaches to the description and classification of disruptive behaviour disorders. In the Diagnostic Statistical Manual-IV (DSM-IV) (American Psychological Association; APA, 1994), two diagnostic categories Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) are described as disruptive behavior disorders. For a diagnosis, these behaviors must have a higher frequency than is generally seen in other children of similar developmental level and age. Furthermore, the behaviors must lead to meaningful impairment in academic and social functioning.

Conduct disorder is the most common childhood emotional and behavioral disorders affecting children of preschool and elementary school. These children usually face problems in their families and in school. In early school age peer rejection and academic problems are the most common one (Kazdin, 1997). These children are often engaged in a variety of behaviors that are costly to themselves, their

Mamoona Ismail Loona and Anila Kamal, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.

Correspondence concerning this article should be addressed to Mamoona Ismail Loona, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan. E-mail: mamoona_ismail@yahoo.com

families, and society at large (Webster-Stratton & Reid, 2003). Timely assessment of these children can be proven helpful in solving their behavioral problems and facilitate their everyday life. Another important disruptive behavior is Attention Deficit/Hyperactive Disorder (ADHD), which is viewed as having two factors (a) inattention and (b) hyperactivity/impulsivity. These two factors compose three subtypes of ADHD symptoms: Predominantly Inattentive, Predominantly Hyperactive/Impulsive, and Combined Type. This re-conceptualization of ADHD has been reported in DSM-IV (APA, 1994).

ADHD, CD, ODD, and comorbidity of these disorders in children require proper assessment and diagnosis which can be made possible through teachers' and parents' ratings about the behaviour of their children. Reports by teachers and parents on the behavior-rating scales are helpful in pinpointing the frequency, severity, and duration of the problem behavior (Wolraich & Baumgaertel, 1997). Teachers are often excellent raters because they have a wide basis for comparison. Ratings by parents are also useful because parents have the opportunity to observe the child for long time and in variety of situations. Wolraich and Baumgaertel (1997) in their research about the practical aspects of diagnosing and managing children with ADHD described the importance of information obtained through teachers. Most of the problems with ADHD occur within the school settings; therefore it is extremely important to obtain teacher information. Scheduling differences frequently make direct contact with teachers difficult for health clinicians. In this situation, behavior rating scales become even more important. Teachers play vital role in making a preliminary judgment concerning the child's classroom behavior. She usually has had considerable experience with the range of classroom behaviors that approximate the normal, and also has a sizable group of the child's same age peers as a comparison base for evaluating the intensity and frequency of certain behaviors. She sees the child for a long period of time each day and in a variety of situations (Ross & Ross, 1982). Ross (1980) suggested the diagnostic utility of teacher assessment of symptoms as an adjunct to the much more commonly used parental assessment of child functioning.

Teacher interviews provide important information about the child's behavioral symptoms, social behavior, and academic performance (DuPaul & Stoner, 1994). Teachers should be asked to describe the difficulties that the child is experiencing with behavior, social relationships, and academic performance. They can identify when and in what situations behavioral difficulties occur most often, and what consequences result. The teacher is asked to describe the

child's curriculum, the instructional methods that are used in the classroom, and how well the child is performing as compared to other students in the class. About half of the children who are diagnosed with ADHD are also diagnosed with ODD by age 7 or later; the prevalence ratio of comorbidity of ADHD and ODD is higher for boys. Children with ODD over-react, lashing out at adults and other kids; are stubborn, short-tempered, and combative. About 30 to 50 percent of children with ADHD eventually develop conduct disorder, a more severe condition than ODD (Biederman, Newcorn, & Sprich, 1991). Children with CD violate societal rules and are at high risk of getting into serious trouble at school or with the police. They may fight, cheat, steal, set fires, destroy property, or use illegal drugs. ADHD is one of the most reliable predictors of both ODD and CD (Loeber, 1990).

Lambert, Knight, Taylor, and Achenbach (1994) conducted a study on behavioral and emotional problems among children of Jamaica and the United States and compared parent reported behavior problems of children aged 6 to 11 years. It revealed few differences in individual, total, and internalizing (e.g., fighting) problems as a function of nationality, gender, or age. Findings from similar studies indicate the feasibility of a common methodology in cross national studies of children's problems, but also need further refinement. For instance, Malhi and Singhi (2001) conducted a study aimed at assessing the psychosocial adjustment of children with ADHD and contrast with a matched group of healthy children. ADHD has been estimated to be present in as many as 5% to 10% of all school age children (e.g., Anderson, Williams, McGee, & Silva, 1987; Bhatia, Nigam, Bohra, & Malik, 1991; Wolraich, Hannah, Pinnock, Baumgaertel, & Brown, 1996). Results indicated that as compared to controls, ADHD children had significantly lower self esteem, poorer adjustment, and higher psychopathology.

Conduct disorders are more commonly diagnosed in boys than in girls; a ratio of about 3:1 or 4:1 is typically cited (Loeber et al., 2000). However, ODD and CD are still relatively common diagnoses for girls in clinical settings and are associated with a variety of negative outcomes, such as early pregnancy and criminal records. There is some debate regarding gender and age differences in the prevalence of conduct disorders. This debate is, in part, due to information being available regarding disruptive behavior disorders in girls. Some data do suggest a proportionately greater increase in prevalence for girls during adolescence (Cohen et al., 1993; Offord et al., 1987).

Chen, Faraone, Biederman, and Tsuang (1994) investigated the diagnostic accuracy of the child behavior checklist scales for Attention

Deficit Hyperactivity Disorder. Scores on Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) and clinical and social competence scales of children with ADHD indicated more abnormality than those of children without ADHD; increasing abnormality is indicated by higher scores on the clinical scales and lower scores on the social competence scales. Young children are often stubborn; do not comply with requests or directions of adults, and in a variety of ways exhibit oppositional behavior (Johnston & Ohan, 1999).

The DSM-IV (APA, 1994) includes the diagnostic categories of ADHD with CD and ODD; which means that differential diagnosis needs to be strong enough to establish or to rule out co-morbidity of these three disruptive disorders. The objective of the present study is preparation of a reliable and valid scale in Urdu language for assessment of childhood behavioral problems. Therefore, for empirical assessment of childhood behavioral disorders i.e., ADHD, ODD, CD, and comorbidity of these disorders in Pakistani children, Disruptive Behavior Disorder rating scale (Pelham et al., 1992) has been translated into Urdu language. In addition to that, it is also intended to establish the validity of the said scale.

The Disruptive Behavior Disorder rating scale consists of 42 items with response categories ranging from *not at all* (0) to *very much* (3). DBD Parent/Teacher rating scale includes items related to symptoms of ADHD-Inattention (9 items), ADHD-Hyperactivity/Impulsivity (9 items), CD (16 items), and ODD (8 items). Moreover the ADHD subscale also measures ADHD combined type (items, 9, 18, 23, 27, 29, 34, 37, 42, 44, 1, 7, 12, 19, 22, 25, 30, 33, & 35) in children. If 6 or more items are endorsed for ADHD-Inattentive type, and 6 or more items are endorsed for ADHD-Hyperactive/Impulsive type, then criteria is met for ADHD-Combined Type. Conduct disorder subscale measures symptoms related to aggression towards people and animals, destruction of property, deceitfulness or theft, and serious violation of rules. All items of the DBD rating scale are completely in accordance with the DSM-IV (APA, 1994) diagnostic criteria. Moreover, item no. 10, 14, and 21 were not included in the scoring by following DSM-IV (APA, 1994) criteria for the assessment of childhood behavioral disorders. These items were present in the DSM-III-R (APA, 1987) but were not included in the DSM-IV (APA, 1994).

Method

Objectives

Present study was designed with the following objectives:

(1) To translate Disruptive Behavior Disorder (DBD) rating scale (Pelham et al., 1992) into Urdu language, (2) to determine psychometric properties of Urdu DBD rating scale, and (3) to assess gender-wise and grade-wise prevalence rate of childhood behavioral problems among children of primary grades.

The present study consists of two phases; the first phase relates to translation of the Disruptive Behavior Disorder rating scale. The second phase comprises collection of data to explore the factor structure of the Urdu DBD rating scale and to determine gender-wise and class-wise prevalence rate of childhood behavioral problems in children of primary classes.

Phase I: Translation of DBD Rating Scale into Urdu Language

Step 1: Translation. In this step, translation of DBD rating scale was done by eight bilinguals. There were six Masters of Arts and Masters of Science students, selected from the departments of Urdu, English, and Economics from University of the Punjab, Lahore; Department of International Relations and Computer Sciences from Quaid-i-Azam University, Islamabad; and Department of Usulludin (Islamic Studies) of International Islamic University, Islamabad. Additionally, two M.Phil. students from National Institute of Psychology, Quaid-i-Azam University also participated in the translation phase. Bilinguals from these diverse fields had excellent proficiency in Urdu and English language. All members were requested to translate scale items from English to Urdu with special focus on content equivalence between both versions. Moreover, they were asked to translate every item without any change or substitution of item in the original scale.

Step 2: Evaluation of Translated Items by Committee of Experts. A committee constituting three experts; a professor and two Ph.D. scholars thoroughly analyzed the translated items in Urdu and assessed content equivalence between English and Urdu version. Committee members evaluated the translated items with reference to the context, grammar, and wording. After completing the process of selecting items that conveyed the meaning closest to the original items, these items were enlisted, and given to the bilinguals for back translation.

Step 3: Back-Translation of DBD Rating Scale. To determine the authenticity of Urdu translation it was translated back into English language. Three M.Phil. and six Masters of Arts and Masters of

Science students back-translated the Urdu DBD rating scale; these bilinguals were asked to translate Urdu DBD rating scale into English language as accurately as possible. Only those bilinguals were considered for back-translation who had not been involved in the initial translation of the scale and they were not familiar with the content of original items of DBD rating scale.

Step 4: Evaluation of Back-translated Items by Committee of Experts. A group of experts comprising a professor and two Ph.D. scholars critically assessed back-translated items and selected the final list of items for Urdu DBD rating scale. There was a consensus among all the experts regarding accuracy of translation. Back-translation method is a standardized translation process used for establishing cross cultural validity of measures (Brislin, 1980).

Phase II: Determination of Psychometric Properties of Urdu DBD Rating Scale

The data was analyzed in terms of factorial validity, alpha reliability, correlations, and item-total correlations by using Statistical Package for Social Sciences (SPSS).

Sample. The scale was administered on a sample of 280 children with age range 9 to 13 years (mean age = 9.98). The sample constituted of 179 boys (Mean age = 9.98 years) and 101 girls (Mean age = 9.97 years). Sample was selected from 3rd - 5th grades of Islamabad Model Schools e.g., (Islamabad Model College for Boys F-8/4, G-6/3, & I-10/1; Islamabad Model College for Girls F-7/2, F-11/3, F-6/2, & I-10/4), Bahria College and other Federal Government schools located in the vicinity of Islamabad and Rawalpindi. From each grade, 9 children were rated by their teachers and 27 children were taken from grades 3rd, 4th, and 5th. In schools, where there were more than one sections of 3rd, 4th, and 5th grades; 9 children were taken from each section.

Procedure. Urdu DBD rating scale was presented to class teachers of 3rd - 5th grades to rate children of their respective grades. During this process only those class teachers were approached who were teaching these children for, at least, last one year. They were asked to rate nine children consisting of three top scorers, three average, and three low scorers. Consent form was also presented to teachers along with the Urdu DBD rating scale. Teachers were required to rate these children on the 42 items Urdu DBD rating scale keeping in view their behavior during the last six months in the

classroom and in school setting. As the teachers were quite familiar with the behavior of children in their class, therefore they found no difficulty in rating children.

Results

The 42 items of the Urdu DBD rating scale were factor analyzed and principal components solution was obtained to explore the underlying factor structure of translated DBD Rating Scale in Urdu language. A principal component analysis yielded 4 factors with Eigen values greater than 1.0.

Table 1

Eigen Values and Percentages of Variances Explained by Four Factor in the Factor Solution obtained through Principal Components Analysis (N = 280)

Factors	Eigen Values	Percentage of Variance	Cumulative Percentage
1. CD	13.74	30.54	30.54
2. ADHD-I	3.88	8.62	39.16
3. ADHD-HI	2.87	6.37	45.53
4. ODD	1.40	3.12	48.65

Note. CD = Conduct Disorder; ADHD-I = ADHD inattention type; ADHD-HI = hyperactivity/ impulsivity type; ODD = Oppositional Defiant Disorder.

Eigen values given in Table 1 showed that the first four factors accounted for 48.65 percent of the variance. Factor 1 explained 30.54 percent of variance, whereas Factor 2 and 3 accounted for 39.16 and 45.53 percent of the variance respectively. Overall, the three factors explained 45.53 percent of the total item variance. Factor 4 has Eigen value 1.40 and explained 4.12 percent of variance.

The principal component analysis with varimax rotation conducted on the 42 item DBD rating scale in Urdu language yielded a four-factor solution. These factors were closely analyzed in terms of item content and underlying theme. The four factors were clearly interpretable in the light of DSM-IV-TR (APA, 2000) criteria for childhood behavior disorders. A total of 18 items loaded on the first factor, which included items related to conduct problems in children. It was labeled as Conduct Disorder. Twelve items loading on the second factor reflected the Inattention subtype of Attention Deficit Hyperactivity Disorder. This subtype of ADHD consisted of symptoms related to inattention and child's inability to concentrate on tasks and sustaining attention in various activities. The third factor

consisted of eight items that were about Hyperactivity/ Impulsivity subtype of ADHD. It includes signs of restlessness e.g., children blurt out answers before the questions have been finished.

The last factor consisted of 7 items characterizing Oppositional Defiant Disorder (ODD), i.e., one of the behavioral disorders suffered by children. ODD is characterized by pattern of negativistic, hostile, and defiant behavior. Items 10, 14, and 21 are not considered in the diagnosis while following DSM-IV (APA, 1994) criteria. However, Item 10 and 14 falls in the factor labeled CD and item no. 21 came under second factor that is inattention. The total 42 items representing the four dimensions, collectively accounted 48.65% of the scale variance. The factor loadings of the 42 items with their respective dimensions are presented in Table 2.

Table 2

Factor loadings of the 42 Items DBD Rating Scale in Urdu Language on First Four Factors in the Factor Solution Obtained through Varimax Rotation (N = 280)

S. No.	Items no.	Factor I (CD)	Factor II (ADHD-I)	Factor III (ADHD-HI)	Factor IV (ODD)
1	43	.771			
2	8	.764			
3	40	.757			
4	41	.747			
5	38	.737			
6	45	.720			
7	11	.701			
8	6	.696			
9	2	.675			
10	36	.660			
11	16	.596			
12	17	.521			
13	32	.493			
14	10	.490			
15	5	.458			
16	13	.454			
17	31	.428			
18	39	.420			
19	23		.773		
20	27		.744		
21	37		.693		
22	44		.680		
23	42		.662		
24	21		.658		

Cont...

S. No.	Items no.	Factor I (CD)	Factor II (ADHD-I)	Factor III (ADHD-HI)	Factor IV (ODD)
25	9		.565		
26	29		.559		
27	34		.537		
28	4		.524		
29	18		.426		
30	22		.404		
31	7			.761	
32	1			.684	
33	33			.677	
34	3			.637	
35	19			.635	
36	30			.614	
37	25			.428	
38	35			.426	
39	28				.671
40	24				.622
41	20				.563
42	15				.491
43	26				.486
44	14				.457
45	12				.415

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/ Impulsivity type; ODD = Oppositional Defiant Disorder.

It is noteworthy that some of the items loaded at .30 and above on more than one factor. After a close analysis of the content of items it was decided to include these items in a factor for which they were originally constructed. It was assumed that such items fall in other factors due to their common symptomatology and existence of a thin borderline between symptoms that distinct them from one disorder to another. Items no. 13, 17, and 39 loaded on factor I (CD) instead of factor IV (ODD). Factors loadings indicate that items 13, 17, and 39 of ODD have high loadings on the CD. However, both the disorders are categorized as disruptive behaviour disorders according to DSM-IV (1994) and carry differences mostly over the level of severity of problem behavior. Similarly item 20 and 4 constructed for factor I (CD) loaded on factor IV (ODD) and factor II (Inattention). Items 22 and 12 constructed for factor III (hyperactivity/impulsivity) loaded on factor II (Inattention) and factor IV (ODD) respectively. Item no. 3 constructed for factor IV (ODD) loaded on factor III (Hyperactivity/ Impulsivity). Item 22 phrased as “often has difficulty playing or engaging in leisure activities quietly” was originally constructed for hyperactivity/Impulsivity type but it was loaded on Inattention. Besides few items; most of the factor loadings are in accordance to

their respective factors. ADHD-Combined type is not regarded as a factor because the scores are determined on the basis of Inattention type and Hyperactivity/Impulsivity type.

Table 3

Alpha Reliability Coefficients of Total and Subscales of Urdu and English DBD Rating Scale (N = 280)

Subscales	No. of Items	Alpha Coefficients of DBD Rating Scale	
		Urdu DBD	English DBD
ADHD-I	9	.85	.92
ADHD-HI	9	.80	.91
ADHD-C	18	.86	.92
ODD	8	.84	.87
CD	15	.91	.70
Total DBD scores	42	.94	-*

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/Impulsivity type; ODD = Oppositional Defiant Disorder; DBD = Disruptive Behaviour Disorder rating scale.

*English version of the DBD rating scale does not provide a total score reliability figure.

Table 3 shows initial psychometric analysis, using Cronbach's alpha coefficients yielded an internal consistency coefficient of .94 for the entire 42 items of DBD rating scale. This indicates that the degree of homogeneity among the items is consistent with the degree of homogeneity theoretically expected for the construct of disruptive behavior disorder.

Table 4

Split-half Reliability Coefficients for Urdu DBD Rating Scale and its Subscales (N = 280)

Subscales	No. of Items	Split-half Correlation	Spearman-Brown Correlation
ADHD-I	9	.84	.85
ADHD-HI	9	.78	.78
ADHD-C	18	.61	.61
ODD	8	.81	.81
CD	15	.89	.89
Total DBD scores	42	.91	.91

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/Impulsivity type; ODD = Oppositional Defiant Disorder; DBD = Disruptive Behaviour Disorder rating scale.

Table 4 shows a split-half reliability for the Urdu DBD rating scale and its subscales. A split-half reliability for the 42 items Urdu DBD yielded a split-half reliability of .91 which remained unchanged by the Spearman-Brown formula. The internal consistency was further determined by calculating inter-correlation among total and subscales of Urdu DBD rating scale.

Table 5

Means, Standard Deviations, and Correlation Coefficients of Urdu DBD Rating Scale (N = 280)

Subscales	<i>M</i>	<i>SD</i>	I	II	III	IV	V	VI
I ADHD-I	7.26	5.31	-					
II ADHD-HI	7.46	4.86	.44**	-				
III ADHD-C	14.72	8.64	.86**	.83**	-			
IV ODD	5.05	4.29	.56**	.67**	.72**	-		
V CD	4.97	6.60	.46**	.42**	.52**	.71**	-	
VI Total DBD	26.96	18.61	.76**	.78**	.89**	.89**	.83**	-

** $p < .01$

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/Impulsivity type; ODD = Oppositional Defiant Disorder.

Table 5 shows inter correlations among the total and subscales of Urdu DBD rating scale. There was a positive and significant inter-scale correlation among Inattention, Hyperactivity/Impulsivity, ADHD, ODD, CD, and total DBD significant at ($p < .01$) level. The item total correlations for the translated Urdu DBD rating scale ranged from .248 to .664.

Table 6

Class-wise Prevalence Rate of Children Screened Through Teachers' Rating on Urdu DBD Rating Scale (N = 280)

Subscales	Groups	Grade*			Total
		3 rd	4 th	5 th	
ADHD-I	<i>n</i>	3	9	7	19
	Within group	15.8	47.4	36.8	100
	Within Class	4.0	9.6	6.3	6.8
ADHD-HI	<i>n</i>	2	7	3	12
	Within group	16.7	58.3	25.0	100
	Within Class	2.7	7.4	2.7	4.3

Cont...

Subscales	Groups	Grade*			Total
		3 rd	4 th	5 th	
ADHD-C	<i>n</i>	1	0	3	4
	Within group	25.0	0.0	75.0	100
	Within Class	1.3	0.0	2.7	1.4
ODD	<i>n</i>	1	0	3	4
	Within group	25.0	0.0	75.0	100
	Within Class	1.3	0.0	2.7	1.4
CD	<i>n</i>	11	8	9	28
	Within group	39.3	28.6	32.4	100
	Within Class	14.7	8.5	8.1	10.4
Comorbid	<i>n</i>	5	7	5	17
	Within group	29.4	41.2	29.4	100
	Within Class	6.7	7.4	4.5	6.1

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/Impulsivity type; ODD = Oppositional Defiant Disorder.

*Grade-wise prevalence rates have been expressed in terms of percentages.

Table 6 shows grade-wise prevalence ratio of children exhibiting symptoms of childhood behavior disorders. These children were screened out by their respective class teachers with the help of Urdu DBD rating scale. Via teachers rating on Urdu DBD ($n = 84$) children out of total ($N = 280$) were screened out with significant exhibition of behavioral problems in the school setting only. Grade-wise prevalence ratio of childhood behaviour problems is ($n = 23$) for 3rd grade, ($n = 31$) for 4th grade, and ($n = 30$) for 5th grade. Findings of the Table 6 further indicated that most of the children were screened out by their respective teachers with symptoms related to CD, ADHD-Inattention, and Comorbid type. Present findings also supported notion of Kazdin (1997) that CD is among the most common emotional and behavioral disorders affecting children and youth, occurring in an estimated 10 percent of preschool and early school age children. These children often involved in a variety of behaviors that are costly to themselves, their families and society. Moreover, approximately 40 percent of youth who develop childhood onset CD eventually develops adult antisocial personality disorder as well (Kazdin, 1997).

Table 7

Gender-wise Prevalence Rate of Children Screened Through Teachers Rating on Urdu DBD Rating Scale (N = 280)

Diagnostic Label		Gender*		Total
		Boys	Girls	
ADHD-I	<i>n</i>	18	1	19
	Within group	94.7	5.3	100
	Within Class	8.5	1.4	6.8
ADHD-HI	<i>n</i>	9	3	12
	Within group	75.0	25.0	100
	Within Class	4.3	4.3	4.3
ADHD-C	<i>n</i>	2	2	4
	Within group	50.0	50.0	100
	Within Class	.9	2.9	1.4
ODD	<i>n</i>	3	1	4
	Within group	75.0	25.0	100
	Within Class	1.4	1.4	1.4
CD	<i>n</i>	19	9	28
	Within group	67.9	32.1	100
	Within Class	9.0	13.0	10.0
Comorbid	<i>n</i>	16	1	17
	Within group	94.1	5.9	100
	Within Class	7.6	1.4	6.1

Note. CD = Conduct Disorder; ADHD-I = ADHD Inattention type; ADHD-HI = Hyperactivity/ Impulsivity type; ODD = Oppositional Defiant Disorder.

*Gender-wise prevalence rates have been expressed in terms of percentages.

Table 7 shows gender-wise prevalence rate of symptoms of childhood behavior disorders namely ADHD-Inattention type, ADHD-Hyperactivity/Impulsivity, ADHD-Combined type, ODD, and CD. These children were taken from primary classes specifically 3rd, 4th, and 5th; they were screened out by their respective class teachers with the help of Urdu DBD rating scale. 84 children out of total ($N = 280$) were screened out with significant behavioral problems on Urdu DBD rating scale. Gender-wise prevalence ratio showed childhood behaviour problems are more evident in boys ($n = 67$) as compared to girls ($n = 17$). The findings are similar to the prevalence ratio as per described in the literature review. In general, boys are more likely to begin engaging in overt conduct problem behaviors than girls

throughout the developmental period. During adolescence, gender differences in prevalence decrease dramatically; this seems to be largely accounted for by an increase in the number of girls engaging in covert conduct problems behaviors (Mash & Terdal, 1997).

Discussion

There is scarcity of researches in the area of developmental psychopathology in Pakistan. Consequently, there is a dire need of availability of adequate assessment scales in Urdu language to screen out and diagnose children with childhood behavioral disorders. Present study is carried out to translate Disruptive Behavior Disorder (DBD) rating scale (Pelham et al., 1992) into Urdu language and to determine its psychometric properties. The Urdu DBD rating scale will prove useful for the assessment of children with behavioral disorders with the help of parents and teachers rating. The translated DBD rating scale in Urdu language can be used in educational and clinical setting and for the upcoming researches in the area of developmental psychopathology.

Parent/teacher DBD rating scale is 42 items scale with subscales of ADHD, which further has subscales measuring symptoms related to Inattention, Hyperactivity/Impulsivity, and Combined type. If 6 or more items are endorsed for ADHD-Inattentive type, and 6 or more items are endorsed for ADHD-Hyperactive/Impulsive type, then criteria is met for ADHD Combined Type. The six items may be endorsed on the teacher DBD, the parent DBD, or can be a combination of items from both rating scales (e.g., 4 symptoms endorsed on the teacher DBD and 2 separate symptoms endorsed on the parent DBD). The same symptom should not be counted twice if it appears on both parent and teacher DBD rating scale. For declaring diagnosis of ADHD as per DSM-IV (APA, 1994) criteria some impairment from the symptoms must be present in two or more settings (e.g., school, home). DBD rating scale can be used by parents and teachers and it does not have any separate versions for ratings of parents or teachers. Therefore, Urdu DBD rating scale will prove useful for getting information from parents and teachers both.

Furthermore, DBD rating scale also measures ODD, a total of 4 or more items measuring ODD must be endorsed as "pretty much" or "very much" on either the parent or the teacher DBD to meet criteria for ODD. The third subscale of parent/teacher DBD rating scale measures Conduct Disorder; it has four categories that are aggression to people and animals, destruction of property, deceitfulness or theft,

serious violation of rules. A total of 3 or more items in any category or any combination of categories endorsed as "pretty much" or "very much" on either the parent or the teacher DBD are required to meet criteria for Conduct Disorder.

Limitations and Recommendations

Sample of present study is relatively small and percentages of children who meet disorders via teachers' ratings are an approximation and not representing the prevalence rate of children of Pakistan as a whole. Urdu DBD rating scale can be used for getting information about the behaviour of children via ratings of parents' and teachers'. However, in the present study Urdu DBD rating scale has been administered only in the school setting to obtain teachers' ratings about children. Psychometric properties of Urdu DBD rating scale are also established with the help of teachers' ratings only. Therefore, for the future researches, it is recommended that Urdu DBD should be used in both settings i.e., home and school for taking teachers' and parents' ratings about the behaviour of children. This will further strengthen reliability and validity of the Urdu DBD rating scale. Assessment of Children via Urdu DBD rating scale will not only facilitate diagnosis of children but will also help parents and teachers in resolving behavioral problems of their children.

Conclusion and Implications

Present research is specifically carried out to prepare a diagnostic scale for the assessment of children exhibiting externalizing behavior disorder i.e., ADHD, ODD, CD, and with Comorbidity of these disorders in Pakistan. To establish the psychometric properties of the Urdu DBD rating scale Factorial validity was assessed. The item-total correlation, alpha internal consistency, and split half reliability of the scale was determined. Moreover, class wise and gender wise prevalence rate of children with childhood behaviour disorders was also assessed in the present research. Results of the present study indicates that prevalence ratio of screened out boys is high as compared to girls in almost all categories.

Urdu DBD rating scale is a reliable tool for screening and diagnosis of children with childhood behaviour disorders from home and school settings. This rating scale will prove useful for researchers who are working in the area of developmental psychopathology and it will facilitate screening and diagnosis of children with childhood behavioral disorders in Pakistan.

References

- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed.; rev.). Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: APA.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.; text rev.). Washington, DC: American Psychiatric Association.
- Anderson, J. C., Williams, S., McGee, R., & Silva, P. A. (1987). DSM-III disorders in preadolescent children. *Archives of General Psychiatry*, *44*, 69-76.
- Bhatia, M. S., Nigam, V. R., Bohra, & Malik, S. C. (1991). Attention deficit disorder with hyperactivity among pediatric out patients. *Journal of Child Psychology and Psychiatry*, *32*, 297-306.
- Biederman, J., Newcorn, J., & Sprich, S. E. (1991). Comorbidity of attention deficit hyperactivity disorder with conduct, depressive, anxiety, and other disorders. *American Journal of Psychiatry*, *148*, 564-577.
- Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross-cultural psychology* (Vol. 1, pp. 389-444). Boston: Allyn & Bacon.
- Chen, W. J., Faraone, S. V., Biederman, J., & Tsuang, M. T. (1994). Diagnostic accuracy of the child behavior checklist scales for attention-deficit hyperactivity disorder: A receiver operating characteristic analysis. *Journal of Consulting and Clinical Psychology*, *162*(5), 1017-1025.
- Cohen, P., Cohen, J., Kasen, S., Velez, C. N., Hartmark, C., Johnson, J., Rojas, M., Brook, J., & Streuning, E. L. (1993). An epidemiological study of disorders in late childhood and adolescent-I. Age-and gender-specific prevalence. *Journal of Child Psychology and Psychiatry*, *34*, 851-867.
- DuPaul, G. J., & Stoner, G. (1994). *ADHD in the schools*. New York: Guilford.
- Johnston, C., & Ohan, J. L. (1999). Externalizing disorders. In W. K. Silverman & T. H. Ollendick (Eds.), *Developmental issues in the clinical treatment of children*. Boston: Allyn and Bacon.
- Kazdin, A. E. (1997). Practitioner review: Psychosocial treatments for conduct disorder in children. *Journal of Child Psychology and Psychiatry*, *38*, 161-178.
- Lambert, M. C., Knight, F., Taylor, R., & Achenbach, T. M. (1994). Epidemiology of behavioral and emotional problems among children of

- Jamaica and the United States: Parent reports for ages 6 to 11. *Journal of Abnormal Child Psychology*, 22(1), 113-128.
- Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review*, 10, 31-41.
- Loeber, R., Burke, J. D., Lahey, B. B., Winters, A., & Zera, M. (2000). Oppositional defiant and conduct disorder: A review of the past 10 years. Part I. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 1468-1484.
- Loona, M. I., & Kamal, A. (2002) Gender differences among ADHD children on school social behaviour scale. *Journal of Behavioral Sciences*, 13(1-2), 5-22.
- Malhi, P., & Singhi, P. (2001). Psychological adjustment in children with attention deficit hyperactivity disorder. *Journal of the Indian Academy of Applied Psychology*, 127(1-2), 163-168.
- Mash, E. J., & Terdal, L. G. (1997). *Behavioral assessment of childhood disorders*. New York: Guilford Press.
- Offord, D. R., Boyle, M. H., Szatmari, P., Rae-Grant, J. I., Links, P. S., Cadman, D. T., Byles, J. A., Crawford, J. W., Blum, H. M., Byrne, C., Thomas, H., & Woodward, C. A. (1987). Ontario child health study- II. *Archives of General Psychiatry*, 44, 832-836.
- Pelham, W. E., Gnagy, E. M., Greenslade, K. E., & Milich, R. (1992). Teachers' rating of DSM-III-R symptoms for disruptive behavior disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 31, 210-218.
- Ross, A. O. (1980). *Psychological disorders of children: A behavioral approach to theory, research, and therapy* (2nd ed.). New York: McGraw Hill.
- Ross, D. M., & Ross, S. A. (1982). *Hyperactivity current issues research and theory* (2nd ed.). New York: John, Wiley, & Sons, Inc.
- Webster-Stratton, C., & Reid, J. (2003). Treating conduct problems and strengthening social and emotional competence in young children: The Dina Dinosaur treatment program. *Journal of Emotional and Behavioral Disorders*, 11, 130-143.
- Wolraich, M. L., & Baumgaertel, A. (1997). The practical aspect of diagnosing and managing children with attention deficit hyperactivity disorder. *Clinical Pediatrics*, 36(9), 497-505.
- Wolraich, M. L., Hannah, J. N., Pinnock, T. Y., Baumgaertel, A., & Brown, J. (1996). Comparison of diagnostic criteria for attention deficit hyperactivity disorder in a country wide sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 319-324.

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