

Dual-Informant Ratings of Emotional and Behavioral Problems among Primary School Children

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This study was conducted to determine the prevalence of emotional and behavioral problems among primary school children in Karachi, Pakistan. Assessment of children's mental health was conducted using parent and teacher versions of Strength and Difficulties Questionnaire (Goodman, 1997). Sample was collected from seven private and government schools and eight community schools. Data was collected from 968 parents and 793 teachers. Parents rated 48.5 % of children under the "abnormal category". Slightly higher estimates (51.6 %) were reported by the teachers. Prevalence of behavioral and emotional problems was higher amongst boys and those attending community schools.

Keywords: Child mental health, dual-informants, community schools, private schools, government schools

The World Health Organization (WHO, 2001) estimated that about 10-20 % of children worldwide have mental or behavioral problems. Furthermore, many of the affected children are neglected and do not have access to appropriate resources for recognition, support, and treatment. In several studies, the overall prevalence of mental health problems among children in high income countries like Great Britain (see for example, Meltzer, Gatward, Goodman, & Ford, 2000) varies around 10-20%. Similar rates have been reported in lowincome developing countries such as India (Malhotra, Kohli, & Arun, 2002).

Patterns of disorder commonly differ across gender, age, and informant source and are influenced by the culture in which one lives grow (Weisz, Sigman, Weiss, & Mosk, 1993). Epidemiological and clinical studies consistently show major differences between males and females in the rates of many forms of psychopathology (Rutter,

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Caspi, & Moffitt, 2003). Behavioral disorders are markedly higher in males (Moffitt, Caspi, Rutter, & Silva, 2001) in contrast, emotional and mood disorders are common in females (Wade, Cairney, & Pevalin, 2002). Similar findings have been reported in both developing and developed countries (Fleitlich & Goodman, 2004; Ford, Goodman, & Meltzer, 2003). In many epidemiological studies, information about health outcomes, risk factors, and service use is obtained from multiple sources (or informants). Contemporary psychiatric epidemiologic studies of children commonly use two or three informants as data sources, since assessment of psychopathology is inherently difficult (Verhulst, 1995), and there is often lack of reproducibility.

It is also accepted that informants might differ in the types of child psychopathology they observe and therefore, different informants should be included when studying child and adolescent psychopathology. For example, in the general population, teachers were found to recognize depressive problems in pre-adolescents better than parents (Mesman & Koot, 2000). De Los Reyes and Kazdin (2005) suggest that discrepancies exist because of differences between informants in attribution of problem behavior and in their perspective on the child. Informants are likely to remember and, therefore, report problems, which are consistent with their perspective of a child.

There is minimal knowledge of the mental health of children in Pakistan and help is not readily available. The research presented here provides part of a series of systematically obtained, valid, and reliable information about the type and prevalence of emotional and behavioral problems in Pakistani children (Syed & Hussein, 2007; Syed, Hussein, & Mehmood, 2007). The central aim of this paper is to report the dual-informant's rates and distribution of emotional and behavioral problems in a sample of school aged children in Pakistan and to identify the frequency of child mental health problems according to gender and type of school attended. No specific hypotheses were proposed regarding these influences.

Method

Sample

The sample of the study was collected from seven private and government schools and eight community schools. One thousand and three parents agreed to participate in the study, thirty five were excluded due to missing data or over or under age. Information from

nonrespondents was not collected in this study. Final data analysis was carried out on information collected from nine hundred and sixty eight ($n = 968$) parents and seven hundred and ninety-three ($n = 793$) primary school class teachers.

The mean age of the children in the study sample was 8.4 years with SD of 1.85 years. About 28% children were going to private while 38.1% were going to the community schools, and 33.9% attended government schools. Mean age of the mothers of these children was 35 years ($SD = 7$ years); 61.1% of mothers and 35.1% fathers were uneducated; only 7.9% of mothers and about 16.2% of fathers had graduate/higher education. Majority of the mothers were housewives (74.9%) and belonged to lower socioeconomic status (81.3%). Most of the teachers had at least an intermediate degree (32.9%), while a small number had a postgraduate degree (11.0%). The majority of teachers had more than five years of teaching experience (38.6%) and, about 10% had less than one year teaching experience (see Table 1).

Table 1
Profile of Parents and Teachers in Relation to Gender and School Type

School Type	Parents ($n = 968$)		Teachers ($n = 793$)	
	Fathers	Mothers	Boys	Girls
Private schools	140	132	65	77
Government schools	178	150	177	169
Community schools	197	171	187	118

Instruments

Socio-demographic Parent Performa (SDPP). This 13-item performa was developed based on existing literature. It elicited details like, child age, gender, type of school being attended, parental education and occupation, parents' age, residential neighborhood, and head of the household, family income, family type, physical illness/disability, and ethnicity. The socioeconomic status was determined on the basis of the categories provided by the Federal Bureau of Statistics, Pakistan (Government of Pakistan, 2001).

Demographic Teacher Performa (DTP). This was designed to provide information about the child, derived from the teacher and

included a four-point rating scale on the child's school performance and attendance. Based on the education system of Pakistan, in the present study teachers qualification was grouped into four categories including Matric (10 years of schooling), Intermediate (12 years of schooling), Bachelors degree (including above 12 years of education and/or completed bachelor's degrees), and Postgraduate (or higher). Teaching experience was also categorized into four, including less than 1 year, two to five years experience, six to ten years of teaching experience, and ten or more years of experience.

Strengths and Difficulties Questionnaire (SDQ). This a brief mental health screening questionnaire that measures 25 attributes, some positive and others negative (Goodman, 1997). The items are grouped into five sub-scales of five items each, generating scores for conduct, hyperactivity, emotional, peer problems, and pro-social behavior. The response for each item is scored between 0 and 2. The scoring is as follows: 0 for *Not True*, 1 for *Somewhat True*, and 2 for *Certainly True*. The score for each category ranges from 0 to 10. To generate a 'total difficulties' score, the scores for the four problems subscales (conduct, emotional, hyperactivity and peer problems) are summed without including the pro-social. SDQ can be completed by the parents or the teachers of 4-16 year olds. The present study used reports the findings on the total scores as well as the conduct problems, emotional problems and hyperactivity subsets of SDQ. The pro-social and peer problems sub-scales were not part of this analysis.

The SDQ has been shown to be of acceptable reliability and validity, performing at least as well as other screening tools like the Rutter Questionnaires and Child Behaviour Checklist (Goodman & Scott, 1999). Originally published in English (Goodman, 1999) the SDQ has subsequently been translated into over 60 languages, including Urdu, the National language of Pakistan. The Urdu version of SDQ has been validated on a clinical population in Pakistan (Samad, Hollis, Prince, & Goodman, 2005).

Procedure

The sampling unit was schools selected from the various districts in Karachi. The educational setup in Pakistan comprises of public or government run schools, community (NGO) schools, and private school. Seven private, 7 government schools, and 8 community primary level schools agreed to participate. Two of the private and three community schools selected declined to take part in the study,

asserting that the topic might upset parents or was irrelevant to their pupil.

From each school 100 children were selected, 20 from each class (grades 1-5). If there were less than 20 children in a class all were selected and if there were more than 20 then 20 were selected from the class attendance register using alternate odd-even serial number to select children from each class (grades 1-5).

A total of 2188 children were selected and consent forms and information sheets were sent to their parents. Active parental consent was required before a child could be considered for inclusion in the study. Consequently, children of those parents who did not give consent were excluded. Information on non-respondents was not collected, therefore, is not part of the analysis. Children were eligible for the study if they were over 5 year of age and had not yet reached their 12th birthday. This age range was chosen mainly as this represents age for compulsory schooling in Pakistan according to *Compulsory Primary Education Ordinance* (Government of Pakistan, 2001). The consent forms were collected by the teachers. Parents who agreed to participate in the study were called on a later date to the school for data collection. One thousand and three ($n = 1003$) parents agreed to participate in the study, 35 were excluded due to missing data and being over or under age.

Results

Parents rated on SDQ, 34.40% as *normal* (range 0-13), 17.30% as *borderline* (range 14-16), and 48.50% of children as falling under the *abnormal* (range 17-40) category on SDQ, whereas teachers rated 25.70% as *normal* (range 0-11), 22.70% *borderline* (range 12-15), and 51.60% of children as *abnormal* (range 16-40) on SDQ (see Figure 1).

Figure 1. Comparison between ratings by parents ($n = 968$) and teachers ($n = 793$) on SDQ.

Table 2 presents frequency of parent and teacher SDQ scores according to gender and school type, focusing on the problems that are of greatest clinical interest, namely emotional, conduct, and hyperactivity scores, along with the total difficulties score:

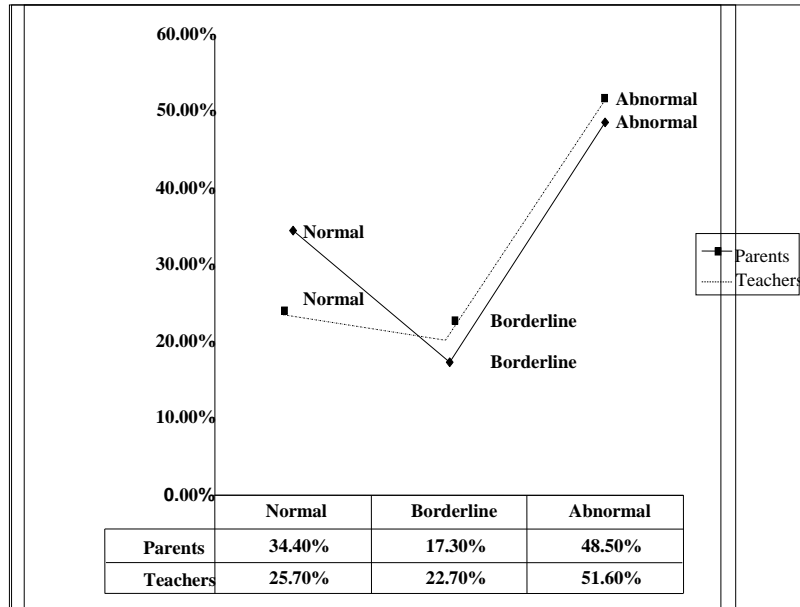


Table 2

Parents and Teacher SDQ Ratings According to Child's Gender and School Type (Parents = 968; Teachers = 793)^a

Report	Gender		School Type		
	Boys <i>n (%)</i>	Girls <i>n (%)</i>	Private <i>n (%)</i>	Comm. <i>n (%)</i>	Gov. <i>n (%)</i>
*Parent	515	453	272	368	328
*Teacher	429	364	142	346	305
<i>Total Behavioral Problems</i>					
Parents	272 (52.8)	198 (43.5)	72 (26.2)	149(40.4)	249(75.9)
Teachers	238 (56.6)	168 (44.7)	30 (49.1)	144(50.5)	232(53.9)
<i>Emotional Problems</i>					
Parents	190 (37.7)	178 (39.7)	86 (31.4)	150(41.7)	132(41.2)
Teachers	110 (8.9)	91 (21.1)	13 (23.4)	76 (24.0)	112(28.7)

Cont...

<i>Conduct Problems</i>					
Parents	188 (49.5)	128 (41.2)	50 (29.5)	137(51.8)	129(52.1)
Teachers	185 (44.1)	136 (36.1)	27 (34.9)	132(43.4)	162(41.7)
<i>Hyperactivity</i>					
Parents	123 (23.6)	66 (14.6)	44 (15.9)	77 (20.9)	68 (20.7)
Teachers	88 (19.9)	43 (12.5)	14 (12.8)	49 (18.7)	68 (16.9)

Note. ^aThe figures relate to only those children rated in the Abnormal SDQ category by parents and teachers. Comm. = Community; Gov. = Government.

Gender wise analysis of SDQ scores indicates overall higher rating for boys than female children. Conduct problems were the most common presentation in both genders. Emotional problems were more common in girls, although a substantial proportion of boys were also rated with significant emotional symptoms. Comparison of SDQ ratings between children attending different school types showed high abnormal ratings for government schools, followed by community (NGO) and private schools.

As SDQ total data was approximately normally distributed, Analysis of Variance test was carried out to determine whether there were significant differences between schools and SDQ scores, and following these, overall ANOVAs and post-hoc tests were conducted to determine where any differences lay. Table 3 provides a summary of the mean and SD of the three school groups for the total sample.

Table 3
Mean and SD on SDQ for Three School Groups According to Parents and Teachers^a

School Type	Parents (<i>n</i> = 968)			Teachers (<i>n</i> = 793)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Private schools	272	13.09	6.04	142	16.77	8.16
Community schools	363	15.40	5.60	346	16.77	9.09
Government schools	328	22.04	7.27	305	17.28	9.48

Note. ^aThe figures relate to total sample of children rated on the SDQ by parents and teachers.

For parents, the overall ANOVA was significant ($F(2,965) = 167.2, p < .001$). Post hoc tests showed that all pair-wise differences were highly significant (public vs. private, $p < .001$; public vs.

community $p < .001$; private vs. community, $p < .001$). Categorical SDQ data was also analyzed using chi-square tests. There were significant differences in the frequency of children rated in the three SDQ categories according to parents (chi-square = 183.7, $df = 4$, $p < .001$); 26.2% of private; 40.4% of Community; and 75.9% of Government school children were rated within the clinical range.

For teachers, overall ANOVA was nonsignificant, $F(2,790) = 1.12$, $p = .33$, for the teachers. Chi-square test confirmed there was no significant difference between the SDQ ratings of cases for the three school groups (chi-square = 2.61, $df = 4$, $p = .63$). Percentages for abnormal classifications were 49.1% for private, 50.5% for community, and 53.9% for government school children. Gender differences in SDQ ratings were calculated using independent t-tests and chi-square tests. For parent SDQ scores, there was a significant difference between boys and girls, with boys scoring higher than girls ($F(1,966) = 2.41$, $p = .02$). The mean (95% CI) male score was 17.5 [16.9 to 18.2] and the mean female score was 16.4 [15.7 to 17.1]. A chi-square test showed that there was a significant difference in the proportions assigned to the different SDQ categories by parents: 52.8% of boys were rated as abnormal compared to 43.5% of girls (chi-square = 8.0, $df = 2$, $p = .02$). For teachers, there was a significant difference between boys and girls, with boys scoring higher than girls, $F(1,791) = 3.2$, $p = .0014$, on SDQ total problems scale. The mean (95% CI) male score was 17.7 [95% CI = 16.8 to 18.5] and the mean female score was 15.6 [95% CI = 14.7 to 16.6]. A chi-square test also confirmed that there was a significant gender difference in the total SDQ cases (chi-square = 13.4, $df = 2$, $p = .00$).

The correlation between parents' and teachers' SDQ ratings was investigated using Pearson's Product Moment Correlation coefficient. There was a significant correlation between parent and teacher total SDQ scores ($r = .41$, $p < .00$). The correlation remained significant for the subscales, although this was low for emotional ($r = .13$, $p < .00$), moderate for conduct ($r = .31$, $p < .00$), and high for hyperactivity scores ($r = .56$, $p < .00$).

Discussion

There is little research data available concerning child and adolescent emotional and behavioral problems in Pakistani children. The current study is part of a two stage epidemiological survey of child mental health problems among Pakistani school children. This paper discusses the initial screening phase results and provides an

estimate of the type and frequency of emotional and behavioral problems based on parent and teacher ratings.

Research has shown that parents and teacher differ in their identifications of various disorders. Teachers are good informants about school behavior and performance, where as parents are informative about home life (Williams, Michael, & Kerfoot, 2005). The findings of this study suggest a striking difference between parent and teacher identified problems. In the present study, both parents and teachers reported a higher rating for male than female children. Conduct problems was the most common disorder in both gender according to both parents and teachers. Consistent with western studies (Ford et al., 2003) and in other developing countries (Goodman & Santos, 2004), parents rated more female children with emotional difficulties and male children with hyperactivity. Overall compared to parents, teachers reported a much larger number of scores in the borderline range implying hesitation in classifying these behaviors as abnormal, while reporting that they were not normal. Emotional problems were most common problems identified by parents in all three school groups, whereas teachers reported conduct problems as most common amongst the school children.

The findings of this study are consistent with other studies. Male gender has been consistently reported in literature as a predictor of externalizing disorders. A higher prevalence among boys was found in most studies except the one conducted in Al Ain (UAE) which found a female preponderance (Eapen & Abou-Saleh, 2003). School type has not so far been reported in the literature searched by the authors except one study carried out in Brazil, where similar to our findings the most striking difference by school type was the substantially higher prevalence of psychiatric disorders as a whole among children attending public schools as opposed to private schools (Fleitlich & Goodman, 2004).

In Pakistani setting, government and community schools are generally overcrowded and underfunded thus leading to poor quality education and lack of discipline which may result in expression of behavioral problems. The lack of adequate expenditure on any aspect of education and the very low pay and status accorded to teachers contributes to and exacerbate all these problems. An insufficient number of teachers to keep pace with the growing number of children, resulting in unmanageable large classes, often severally handicap teachers' performance, other factors include the poor quality of teachers' education, poor supervision with little attention to performance in the classroom, and chronic shortage if teachers in rural schools (Rahman, 2005).

In present study, parents of government schools children rated higher estimates of mental health problems amongst their children compared to children attending private schools. Nearly half of the government school children were rated by their teacher with conduct problem. The same trend is also seen in the Brazilian study where children attending public schools had a higher prevalence of oppositional – conduct disorders (Fleitlich & Goodman, 2004). Lupton (2004, 2005) found a strong relationship between levels of deprivation and the ‘quality’ of schools in an area. This is especially important in developing countries, where education systems are already challenged by inadequate resources, crowded classrooms, and inconsistent quality. Research has found that the quality of school environment can serve as a risk factor for learning and emotional problems, and increase the risk for early drop outs (Patel & De Souza, 2000).

It is essential to point out that over-reporting of symptoms by the both informants in this study could be due to a number of factors, such as parental stressors due to adverse social conditions including family problems, financial crises, low income, and general stressful quality of life. There is also a social stigma attached to mental health issues in our society (Mubbashar, 2003), and there is a lack of awareness regarding the presence of child psychiatric disorders. These factors can be responsible for parents and teachers over-rating of children either due to their own frustrations or personal values and expectations of acceptable behavior, thus psychiatric disturbances may be psychological responses to stressors (Ahmed, 2007) or because they are unaware of normal and age appropriate behavior therefore rating child’s behavior as *extreme*.

Conclusion

This exploratory study of emotional and behavioral problems among Pakistani school children suggests that estimates of child mental health problems were higher than reported in studies from other countries. Higher rates of child mental health problems were reported among boys and children attending government and community schools. The differences in the nature of problems identified points to the need for different types of services required at the various educational institutions. There is also an urgent need to train teachers to be able to identify child mental health issues, and apply school based management techniques and make appropriate and timely referrals as needed.

Limitations and Suggestions

The sampling unit for the present study was schools, which was most feasible method of recruiting and assessing children in Pakistan, similar to studies in many other developing countries. However, it must be noted that children in developing countries including Pakistan do not have access to formal education; therefore, the generalizability of findings of this study is limited only to school attending children. Most parents in private schools were able to fill out the questionnaires, however parents in community and government schools were assisted by the researcher in filling out the forms this could have resulted in bias.

Although attempts were made to educate the participating parents about mental health problems among children, the low response rate of the study could be due to the stigma, low literacy levels, and a lack of awareness amongst the general population.

A major drawback of the study is the use of screening tools as a measure to determine prevalence as opposed to a diagnostic interview, resulting in higher prevalence rates. Similar findings were reported in other studies (Zakrison, Shahen, Mortaja, & Hamel, 2004; Margot, Shanya, & Diana, 2005).

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