



Prevalence of Behavioral Disorders among School Going Male Adolescents in Khanpur: A Cross-Sectional Survey

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Received: January 4, 2018

Accepted: March 1, 2018

ABSTRACT

The present study aims to identify the prevalence and types of behavioral difficulties among children in an under-resourced setting in Pakistan. This cross-sectional study was conducted in January, 2017 at two all-boys elementary and high schools in districts of Khanpur, Punjab, Pakistan. In this study, data was collected from 550 students through convenience sampling. Self-report measures comprising demographic characteristics and Urdu version of the strengths and difficulties questionnaire were used to assess the behavioral health among these students. SPSS v.20 (IBM, Illinois) was used to analyze the data. Mean age of the respondents was 14.74 years (1.40). All of the respondents were boys (n= 499, 100%) with their mothers being full time home makers (n= 499, 100%). A total of 390 (78.20%) of the boys belonged to rural areas as compared to 109 (21.80%) from urban areas. According to the SDQ, a total 178 boys (35.70%) scored in the abnormal range. On subscales of SDQ, a total of 72 (14.4%) scored abnormal on the emotional subscale, 215 (43.1%) conduct problems, 51 (10.2%) hyperactivity, 139 (27.9%) peer problems, 108 (21.60%) poor social skills and 185 (37.80%) reported distress in their life. This survey reports a high prevalence of behavioral disorders among school going children in Khanpur, Pakistan. These disorders yielded significant association with rural background of the children.

KEYWORDS: Strengths and difficulties questionnaire, Khanpur, School, Children, adolescents, Pakistan

INTRODUCTION

Research on child mental health has gained momentum in recent years, with its recognition as a global health research priority[1]. However, most of the research literature has focused on high income settings with poor representation from the low and middle income countries (LAMIC). This is evident in a recent scientometric study on child psychiatry, demonstrating that most of the top contributing authors, research institutions and funding agencies are located in high income Western countries[1].

The prevalence estimates of childhood mental disorders (CMDs) vary with different nations, sociocultural and anthropological backgrounds. A recent meta-analysis quantifying the prevalence rates of CMDs by Polanczyk et al. show a global prevalence of 13.4%[2]. However, this systematic review and meta-analysis had a low representation of studies from LAMIC. In context of Pakistan, most of the indigenous studies exploring mental health of children and adolescents report data from urban areas and large cities. For instance, Syed et al reported that as many as 35% of primary school going children have behavioral difficulties as assessed by the Strengths and Difficulties Questionnaire (SDQ)[3]. These rates are higher than those conducted in other South Asian countries such as India (12.5%) and Bangladesh (15%)[4,5]. Syed et al. also reported a higher burden of overall behavioral difficulties, conduct and hyperactivity disorders among male adolescents than their female counterparts[3].

In addition to poor research output in the LAMIC, significant disparities are also evident in clinical burden and practice areas. More than 80% of the global population lives in these countries accounting for less than 20% of global resources to manage mental illnesses[6,7]. In a similar vein, Pakistan has less than 400 trained psychiatrists, 3145 social workers and 478 psychologists to manage of mental illnesses[8,9]. These illnesses account for 11.9% of the overall burden of diseases in Pakistan[8,9]. As a consequence of this drastic scarcity of resources and workforce as well as public and self-stigma, less than 35% of the psychiatric patients seek mental healthcare in Pakistan[9–11]. Keeping in view above facts, it is important to evaluate the prevalence of emotional difficulties and their predictors to chart out effective policies. This can help the stakeholders to direct public health and financial resources to areas of need in child and adolescent mental healthcare in Pakistan.

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Most of the studies exploring the prevalence of pediatric behavioral disorders have been conducted in context of high income countries. And there is a paucity of data on prevalence of behavioral disorders among school-going children in Pakistan. Therefore, this study was designed to delineate the prevalence and types of behavioral difficulties among children in an under-resourced setting in Pakistan.

MATERIALS AND METHODS

This cross-sectional study was conducted in January, 2017 at two public and one privately run all-boys elementary and high schools in city of Khanpur, Pakistan. These schools cater to students from urban as well as adjoining rural areas. A total of 550 students enrolled in eight to tenth grades in these schools were conveniently recruited to participate in the study. Demographic characteristics included age, gender, and mother's profession, background and Urdu translation of the strengths and difficulties questionnaire.

Strengths and difficulties questionnaire has been cross-culturally validated in Pakistan as well internationally [12]. It has been found to be valid and reliable for assessing behavioral difficulties including emotional, conduct, hyperactivity, peer problems, prosocial behavior and externalizing and internalizing symptoms among children ranging from 4 to 17 years old. In previous validation studies, it has yielded good sensitivity and specificity and strong correlation with child behavior checklist in Pakistan [13]. It also yields global scores summative of all aforementioned subscales with increasing scores indicating higher severity of psychopathologies. Ethical approval for this study was obtained from research review committee at the Peoples University of Medical and Health Sciences for Women, Nawabshah (Shaheed Benazirabad). Prior to starting the study, teachers and administrative staff at these schools were contacted to seek their permission to conduct the study at their premises. The parents of the participants were either telephoned regarding the survey or mailed informational brochures to receive their informed assent. All children and adolescents enrolled in this study also provided with informed consent verbally. Participation in this study was anonymous and all respondents were ensured of anonymity and that only group finding would be reported. A team of three local researchers and teachers employed at schools collected data using a pretested questionnaire comprising questions on demographic characteristics and strengths and difficulties questionnaire. SPSS v.20 was used to analyze the dataset. Age of the respondents and their scores on SDQ were presented as mean (SD) and gender, background, mother's occupation and categories of responses on the SDQ as frequencies (%). Pearson correlation (r) was used to assess correlations between quantitative variables and point-biserial (r_{pb}) between dichotomous and quantitative variables. P -value < 0.05 was considered statistically significant.

RESULTS

Out of 550 respondents, a total of 499 valid questionnaires were returned (response rate= 90.73%). Mean age of the respondents was 14.74 years (1.40). All of the respondents were boys ($n= 499$, 100%) with their mothers being full time home makers ($n= 499$, 100%). A total of 390 (78.20%) of the boys belonged to rural areas as compared to 109 (21.80%) from urban areas.

According to the SDQ, a total 178 boys (35.70%) scored in the abnormal range. On subscales of SDQ, a total of 72 (14.4%) scored abnormal on the emotional subscale, 215 (43.1%) conduct problems, 51 (10.2%) hyperactivity, 139 (27.9%) peer problems, 108 (21.60%) poor social skills and 185 (37.80%) reported distress in their life. None of the subscales correlated significantly with age of the respondents while total scores on the SDQ, emotional problems, conduct problems and hyperactivity correlated negatively with their rural background. Peer problems, pro-social behavior and distress in life yielded non-significant associations with background of respondents. Detailed results and mean scores on the SDQ and subscales are presented in Table 1.

The participants had a mean score of 8.04 (3.41) on externalizing subscale and 8.81 (2.97) on internalizing subscale. Age of the respondents was not associated significantly with externalizing subscale ($r= 0.06$, $P=0.18$) and internalizing subscale ($r=-0.002$, $P=0.97$). While rural background was associated positively with both externalizing ($r= 0.15$, $P=0.001$) and internalizing symptoms ($r=0.13$, $P=0.003$).

According to the SDQ impact supplement scale, a majority of the respondents were suffering from these difficulties for less than a month ($n= 335$, 67.1%), felt upset by these difficulties ($n= 305$, 61.10%), felt distressed in home life ($n = 218$, 43.70%), friendships ($n= 265$, 53.10%), classroom learning ($n= 256$, 51.30%) and leisure activities ($n= 245$, 49.10%). A total of 158 boys (31.70%) felt themselves to be a burden on their family. Detailed results on subcategories of impact supplement of the SDQ are presented in Table 2.

Table 1: Mean scores and prevalence of strengths and difficulties among school going boys in Khanpur (n= 499)

Strengths and difficulties	Subcategory	Range	Frequency (n)	Percentage (%)	Mean (SD)	Age (r)	Background (r _{pb})
Total difficulties	Normal	0-15	191	38.3%	16.85 (5.39)	0.04 ^d	-0.17 ^a
	Borderline	16-19	130	26.1%			
	Abnormal	20-40	178	35.7%			
Emotional problems	Normal	0-5	340	68.1%	4.52 (1.89)	-0.03 ^d	-0.17 ^a
	Borderline	6	87	17.4%			
	Abnormal	7-10	72	14.4%			
Conduct problems	Normal	0-3	191	38.3%	4.16 (2.05)	0.06 ^d	-0.11 ^c
	Borderline	4	93	18.6%			
	Abnormal	5-10	215	43.1%			
Hyperactivity	Normal	0-5	386	77.4%	3.89 (2.02)	0.04 ^d	-0.15 ^b
	Borderline	6	62	12.4%			
	Abnormal	7-10	51	10.2%			
Peer problems	Normal	0-3	177	35.5%	4.28 (1.90)	0.03 ^d	-0.04 ^d
	Borderline	4-5	183	36.7%			
	Abnormal	6-10	139	27.9%			
Pro-social behavior	Normal	6-10	294	58.9%	5.85 (1.72)	0.02 ^d	0.02 ^d
	Borderline	5	97	19.4%			
	Abnormal	0-4	108	21.6%			
Impact and distress	Normal	0	263	53.8%	1.57 (2.33)	0.02 ^d	-0.08 ^d
	Borderline	1	41	8.4%			
	Abnormal	2-10	185	37.8%			

a denotes P < 0.001, b denotes P < 0.01, c denotes P < 0.05, d denotes P ≥ 0.05

Table 2: Prevalence of distress among the school going boys in Khanpur (n= 499)

Distress	Frequency (n)	Percentage (%)
Chronicity	Less than a month	67.1%
	1-5 months	14.2%
	6-12 months	11.6%
	Over a year	7.0%
Do these difficulties upset you?	Not at all	38.9%
	A little	40.5%
	A medium amount	16.0%
	A great deal	4.6%
Home life	Not at all	56.3%
	A little	25.1%
	A medium amount	11.4%
	A great deal	7.2%
Friendships	Not at all	46.9%
	A little	35.5%
	A medium amount	13.0%
	A great deal	4.6%
Classroom learning	Not at all	48.7%
	A little	24.8%
	A medium amount	14.8%
	A great deal	11.6%
Leisure activities	Not at all	50.9%
	A little	27.3%
	A medium amount	11.8%
	A great deal	10.0%
Burden on others	Not at all	68.3%
	A little	22.4%
	A medium amount	4.6%
	A great deal	4.6%

DISCUSSION

Our survey revealed a high prevalence of behavioral disorders among school going children in Khanpur, Pakistan. A surprisingly high percentage of children reported having behavioral difficulties (35%), emotional problems (14.4%), conduct problems (43.1%), hyperactivity disorders (10.2%), peer problems (27.9%) and poor social skills (21.6%). Moreover, 37.80% of the children and adolescents reported feeling distress in their daily lives. A higher proportion of adolescents from rural areas reported behavioral difficulties than those belonging to urban areas.

The present study reports a high prevalence of behavioral disorders among 35% of school going children and adolescents in Khanpur. Previous studies conducted by Syed et al and Shahzad et al, in Karachi have reported similar prevalence rates among their study samples[14,15]. This high prevalence of behavioral problems are higher than reported in studies conducted in other middle income countries such as Egypt (18.5%), India (12.5%) and Bangladesh (15%)[4,5,16]. Moreover, this figure becomes even more striking when compared with statistics reported in developed countries such as the UK (prevalence= 7.3%)[17]. No time-specific differences in prevalence rates could be obtained for the city of Khanpur because of the lack of published data. Nevertheless, this high prevalence of pediatric behavioral disorders in Pakistan is a public health concern. This high prevalence of behavioral difficulties in Pakistani schools might be due to different socio-cultural factors, unstable socio-political conditions, prevailing terrorism, poor academic practices and lack of guidelines and training on screening pediatric issues in Pakistani schools.

These behavioral difficulties in children are often left untreated due to lack of clinical services in Pakistan. This can have hazardous effects on the overall health of children and academic performance. Previous studies have reported several physical health problems, poor eating behavior, risky sexual behavior, poor academic performance, criminality, unemployment and inability to form good social relationships and quality of life[17,18]. Interestingly, childhood mental health problems are also one of the strongest predictors of development of psychopathologies in adulthood [19]. Therefore, early screening and management of childhood mental health problems should be a public health priority in all schools.

The present survey also revealed a higher proportion of conduct disorders, peer problems and externalizing disorders as compared with other symptoms assessed with the SDQ. This higher preponderance to these behavioral problems among male adolescents has been well-documented in previous research studies[2]. For instance, according to Syed et al, compared with Pakistani female adolescents, a significantly higher proportion of male adolescents report conduct (48.7% vs 35.2%) and hyperactivity (23.6% vs 13.3%) disorders [14]. However, no gender specific differences were found on emotional disorders, peer problems and prosocial skills in their study sample[14]. Similar, statistics have been reported in previous studies using SDQ scale that report higher likelihood of externalizing disorders among male adolescents and internalizing disorders among female adolescents[3,14].

In present study, age was not associated with any subscales of the SDQ which is inconsistent with previous studies[3,14]. This insignificant association might be driven by various confounding factors specifically a narrow age range and exclusion of female adolescents in present study sample. However, our results are corroborated by Polanczyk et al, who reported that age is not a significant predictor of psychiatric illnesses among pediatric populations[2].

Children and adolescents belonging to rural areas were found to score higher on overall behavioral difficulties as well as emotional, conduct and hyperactivity disorders than their urban counterparts. These findings are corroborated by Marryat et al. who reported that socioeconomic inequalities can lead to development of behavioral disorders among children belonging to deprived areas[17]. We opine that this association is driven by differences in socioeconomic class, treatment seeking practices and educational level of parents. Children belonging to poor households are exposed to parents experiencing greater psychosocial stress, having fewer resources including books, optimal diet, leisure activities, good access to health and domestic abuse, thus, hampering their physical and mental health and developmental trajectory[20,21].

CONCLUSION

This study reports a high prevalence of behavioral disorders among school going male adolescents in Khanpur, Pakistan. These behavioral difficulties were more evident in adolescents belonging to rural background and lower socioeconomic classes. Conduct disorders and externalizing symptoms were more evident than internalizing disorders in present study.

Limitations & Future Research

This study has several strengths including a large sample size based in school setting of cities reporting a paucity of data in the area of pediatric mental health. This study employed the SDQ questionnaire that allowed statistical comparisons with indigenous as well as international studies.

However, the results of this study should be interpreted with caution. The results of this study cannot be generalized to the whole Pakistani population due to its geographical limitation to one city. Moreover, these interviews were limited to all-boys community and private schools only. The use of self-report questionnaires may add reporter's bias and the cross-sectional nature of this study limits temporality and causality of associations between variables.

Disclosure statement:

This study has not received any funding. No conflict of interests have been reported by the authors.

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Authors' contributions:

AM, MSZ and ASJ conceived the idea of the study, collected data, interpreted data analysis and wrote the final draft of the manuscript. AW and SN performed and interpreted data analysis, critically reviewed and edited the article and drafted the manuscript. All authors approved the final submission of the manuscript.