Research Article

Emotional and Behavioural Difficulties in Students of a High School in Udupi, South India

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Abstract:
Background/Context: India is having the largest population of adolescents who are at risk of mental illness. Screening of probable psychiatric disorders in them would be helpful. Such an attempt is done here in a high school of Udupi district in Karnataka using Strengths and Difficulties (SDQ) questionnaire. *Aims:* The objective of this study is to assess for emotional and behavioural difficulties in high school students and compare them between boys and girls. *Settings and Design:* 249 students who were comparable for age participated in the study in a cross-sectional study design. *Methods and Materials:* SDQ-Self Report Version (SRV) and Impact Supplements (IS) with newer 4 band categorisation was used. Boys and girls were compared in the 'abnormal band' for United Kingdom (UK) cut-offs and cut-offs derived from this study sample. *Statistical Analysis used:* IBM SPSS software' was used for independent samples t test and chi-square analysis. *Results:* 27% of the students in this study had high emotional and behavioural difficulties. Peer problems, emotional and conduct problems were the commonest seen problems. Though no statistically no gender difference was seen, girls having higher hyperactivity and conduct problem scores were an unusual finding. Chi-square analysis in the 'abnormal' band revealed statistical gender difference for UK cut offs but not for cut-offs derived from this study sample. *Conclusions:* Girls in this study sample had higher scores and thus need further detailed assessment to identify underlying psychiatric illnesses. Socio-demographic data along with validity and factor analysis would help in knowing cross-cultural variations on SDQ ratings and differences in the cut-off scores.

Keywords: Boys, Girls, Strengths and Difficulties Questionnaire (SDQ)

Introduction:

The adolescent population in India is the largest in the world having about 243 million[1]. In India the prevalence of mental illness in adolescents is about 7.3% in the community and 23% in schools[2]. Adolescence is associated with higher problems in realms of behavioural, emotional, social, family and sexual contexts[3,4].

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Submitted on 05.11.2020 | Accepted on 12.11.2020

Thus screening by use of standardized screening tools can help in management of mental health disorders[5]. Previously studies in schools using several screening tools like GHQ-12 and BDI[6]; CBCL, CBQ, DISC[7]; SDQ[8,9] were done on the prevalence of behavioural and emotional disturbances in Indian adolescents. The SDQ is a validated useful tool for screening problematic behaviours in children both for epidemiological, non-clinical and clinical purposes[10-12]. SDQ with 3-band categorisation with a gender comparison of varying effects was done in Gujarat[1], Bangalore[2], China[13], Tehran[14] by using the UK cut-off scores or alternative cut-off points. Gender comparison analysis is important coz gender does moderate

behavioural/emotional problems and also in externalising or internalising problems[15]. As an extension of this, using SDQ with newer 4-band categorisation a study between boys and girls in a High School of Udupi district of Karnataka has been done here.

The primary objective of this study was to assess and compare the emotional and behavioural problems of high school boys and girls using SDQ (11-17 years) SRV with IS and newer 4-band categorisation. A secondary objective of comparison between the UK cut-off scores and cut-off scores computed from this study sample was also done.

Materials and Methods:

Sample

An English medium school in Udupi district, Karnataka was the source of adolescent high school students. Institutional ethical clearance was obtained and then consented permission was taken from the principal and respective class teacher[1]. 249 high school students studying in 10th standard/grade volunteered for the study and informed written assent was taken from them. The students were divided into two groups based on gender with one group having 124 boys and another group of 125 girls. Students were then handed over printouts of the SDQ (11-17) with IS. Students were given 30 minutes to answer the questionnaire and then papers were collected back. The data so obtained was put into statistical analysis using IBM SPSS v.22.

Materials

Strengths and Difficulties Questionnaire (SDQ) with Impact Supplements (IS) for age group of 11-17years[16].

The SDQ questionnaire is freely accessible and downloadable with no copyrights required. The SDQ (11-17) SRV with IS scale provides useful information about psychopathological symptoms in children aged as young as 8 years[11]. The validity of the self-report version has already been studied and proven[17].

The 25 items in the SDQ comprises 5 scales of 5 items assessing emotional problems, conduct problems, hyperactivity, peer problems and pro-social behaviour. 'Impact Supplement' measures the distress and impairment due to the emotional and behavioural problems. Each item of these subscales is scored as 1 for reply of 'Somewhat True' but varies for reply of 'Not True' and 'Certainly True'. For each of the 5 scales the score can range from 0 to 10, if all items were completed. All the subscales are scored first and then the total difficulties score computed by summing up scores of subscales excluding prosocial scale. In the 'impact supplement', on overall impairment is computed to create an impact score that ranges from 0 to 10.

Newer 4-band Categorisation of SDQ Scores:

Based on a larger United Kingdom (UK) community sample, a newer 4-fold classification has been devised into 4 categories (80% 'close to average', 10% 'slightly raised', 5% 'high' and 5% 'very high' for all subscales; whereas for pro-social scale it is (80% 'close to average', 10% 'slightly lowered', 5% 'low' and 5% 'very low'). The UK cut-off scores of the top 'abnormal' category for individuals still remains the same as with the previous 3-band categorisation[1,9]. For this study sample size of 249 students, cut-off scores above 90th percentile for total difficulties score and above 92.5th percentile for all the other subscale scores were computed to be in the 'abnormal band'[9,13]. A comparison between the UK cut-off scores and this study cut-off scores were done.

Results:

In this study, there were a total sample of (N=249) students studying in 10th grade with 124 being boys and 125 being girls. The distribution in the two groups of boys and girls were sufficiently normal for purpose of conducting independent sample t-test (i.e. skew<2.0 and kurtosis<9.0)[18]. The mean age (in years) of boys (M=15.07, SD=0.38) and girls (M=15.02, SD=0.15) was not statistically different (F (160.73) =26.11, p=0.19).

Using the United Kingdom (UK) Cut-off Scores:

The scores of the subscales, total difficulties score and general impact scores with independent samples t-test statistics between the two groups are mentioned in the (Table-1). This shows that the girls had statistically significant higher scores in all subscales of the questionnaire. The total number (N), percentages(total) and Chi-Square test have been computed in (Table-2), wherein the top abnormal category bands have been combined[1]. Chi-Square test showed gender difference in the prosocial, emotional problems, peer problems, total difficulties and general impact scores but not in hyperactivity and conduct problem scores.

Comparison between UK(original) and This Study Cut-offs in the 'Abnormal' band

The cut-offs for this study sample were higher than the UK cut-offs for girls in all scale scores than for boys (except for hyperactivity scores), as shown in the (Table 3). A comparison was done of Number (N), Percentages(Total) and Chi-Square test in the 'abnormal' category for cut-offs of this study sample and UK cut-offs (Table 4). Chi-square test in the 'abnormal band' for UK cut-offs showed similar results across the subscales as in (Table 2). However, no such statistical differences were seen in any of the subscales within in the 'abnormal category' with respect to the Indian cut-off scores.

Discussion:

This study gives an outlook of the strengths and difficulties of adolescent students in a high school in Udupi district. Overall the scores were significantly higher in girls than boys in all the subscales, total difficulties and impact scores. About 27% of the students had high SDQ (total difficulties) scores (7% boys, 20% girls) as seen in (Table2). Adolescents with high SDQ scores are found to have higher rates of existing psychiatric disorders in comparison to those with low SDQ scores[19]. Hence, girls who participated in this study would require either serial screening or detailed assessment for identification of potential emotional and behavioural difficulties.

Peer problems (36%), emotional problems (29%) and conduct problems (16%) were the commonest problems. These findings are similar to the prevalence done in previous studies[1,7,9,20,21]. However respectively girls more than boys, having higher conduct problems (9.2%, 6.8%); hyperactivity scores (5.6%, 4.4%) are unique findings and differ from previous studies[1,22,23]. Emotional and behavioural difficulties are a part of the broader phenotype of emotional dysregulation[24] which can manifest as either externalising or internalising

Table 1: Mean, Standard Deviation and Independent Samples t test statistics of Scale Scores of the Strengths and Difficulties Questionnaire

Subscales Scores (Mean and Standard Deviation)	**Boys**	**Girls**	**t Test**	
			F Value	**p (<0.05)**
Pro-Social Score	7.33±1.85	7.83±1.69	4.78	**0.03**
Hyperactivity Score	3.90±1.85	4.50±1.87	6.45	**0.01**
Conduct Problem Score	2.83±1.50	3.21±1.48	3.96	**0.04**
Emotional Problems Score	3.30±2.26	4.93±2.46	29.50	**0.00**
Peer Problems Score	2.39±1.46	3.61±1.68	37.12	**0.00**
Total Difficulties Score	12.44±4.95	16.27±5.0	36.58	**0.00**
General Impact Score	0.84±1.41	1.26±1.63	4.62	**0.03**

1) Total Difficulties Score computed as summation of hyperactivity, conduct problem s, emotional problems and peer problems scores (excluding pro-social score)
2) p value set at < 0.05 is considered to be statistically significant

Table 2: Number(N), Percentages and Chi-Square Test of Sub-scales of SDQ as per United Kingdom(UK) 4-band categorisation				
Subscale Scores (Number(N), Mean, Standard Deviation)		**Boys**	**Girls**	**Chi-Square**
				P (0.05)
Prosocial Score	Close to Average Slightly lowered Low + Very Low	84(33.7%) 18(7.2%) 22(8.8%)	98(39.4%) 19(7.6%) 8(3.2%)	**0.02**
Hyperactivity Score	Close to Average Slightly raised High + Very High	102(41%) 11(4.4%) 11(4.4%)	92(36.9%) 19(7.6%) 14(5.6%)	0.2
Conduct Problem Score	Close to Average Slightly raised High + Very High	91(36.5%) 16(6.4%) 17(6.8%)	76(30.5%) 26(10.4%) 23(9.2%)	0.09
Emotional Problems Score	Close to Average Slightly raised High + Very High	92(36.9%) 12(4.8%) 20(8%)	57(22.9%) 16(6.4%) 52(20.9%)	**0.001**
Peer Problems Score	Close to Average Slightly raised High + Very High	74 (29.7%) 26(10.4%) 24(9.6%)	26(10.4%) 33(13.3%) 52(26.5%)	**0.001**
Total Difficulties Score	Close to Average Slightly raised High + Very High	83(33.3%) 24(9.6%) 17(6.8%)	46(18.5%) 30(12%) 49(19.7%)	**0.001**
General Impact Score	Close to Average Slightly raised High + Very High	78(31.3%) 16(6.4%) 30(12%)	59(23.7%) 25(10%) 41(16.5%)	**0.04**
p value set at < 0.05 is considered to be statistically significant				

Table 3: Cut-off Scores of 'Abnormal' Banding for Data of this Study and United Kingdom (UK) Cut-offs			
	This Study		UK Cut-Offs
	Boys	Girls	Overall
Pro-Social Score	5	6	5
Hyperactivity Score	7	7	7
Conduct Problems Score	5	6	5
Emotional Problems Score	7	9	6
Peer Problems Score	5	6	4
Total Difficulties Score	19	23	18
General Impact Score	3	4	2

behaviours. Generally externalising behaviour problems like hyperactivity or conduct are more in boys than girls[7,21]. In the SDQ, hyperactivity and conduct score is summed up to give externalising behaviour score[16] and hence thus girls having greater externalising behaviour scores are an unusual finding. However, there was no statistical difference between boys and girls even in the 'abnormal' bands in both UK cut-offs and this study cut-offs. Girls having high scores can be that externalising behaviour patterns in girls can be considered more deviant from gender typical and socially accepted behaviours than identical behaviour patterns seen in boys[25]. Other reasons can be due to various protective

Table 4: Number(N), Chi-Square Test of Sub-scales of SDQ in the Abnormal Band between Cut-Offs derived from this Study Sample and UK Cut-Offs

	This Study Cut-Offs			Chi Square	UK Cut-Offs			Chi Square
	Boys	Girls	Total		Boys	Girls	Total	
Pro-Social Score	22 (8.8%)	27 (10.8%)	49 (19.7%)	0.4	22 (8.8%)	8 (3.2%)	30 (12%)	**0.01**
Hyperactivity Score	11 (4.4%)	14 (5.6%)	25 (10%)	0.5	11 (4.4%)	14 (5.6%)	25 (10%)	0.5
Conduct Problems Score	17 (6.8%)	12 (4.8%)	29 (11.6%)	0.3	17 (6.8%)	23 (9.2%)	40 (16%)	0.3
Emotional Problems Score	12 (4.8%)	12 (4.8%)	24 (9.6%)	0.9	20 (8%)	52 (20.9%)	72 (28.9%)	**0.01**
Peer Problems Score	11 (4.4%)	16 (6.4%)	27 (10.8%)	0.3	24 (9.6%)	66 (26.5%)	90 (36.1%)	**0.01**
Total Difficulties Score	14 (5.6%)	13 (5.2%)	27 (10.8%)	0.8	17 (6.8%)	49 (19.7%)	66 (26.5%)	**0.01**
General Impact Score	14 (5.6%)	14 (5.6%)	28 (11.2%)	0.9	30 (12%)	41 (16.5%)	71 (28.5%)	**0.1**
p value set at < 0.05 is considered to be statistically significant								

and risk factors[26] like parenteral factors[27,28], early childhood developmental characteristics[29], personality factors[30] etc. Hence data on these parameters would help in further analysing the above findings.

While screening for psychiatric disorders, adolescents in the 'abnormal band' are the target population for further assessment and intervention. Hence a comparison between cut-off scores for UK and this study sample in the 'abnormal band'[9] was done. Such a comparison is warranted because prevalence of difficulties can vary in populations either due to actual differences or due to cultural biases or expectations as the concept of "normal" can vary on the part of raters with differing backgrounds[13]. The cut-offs calculated for this study were higher than the UK cut-offs which was similarly found in previous Non-UK studies[9,13,14,31] and as postulated by Goodman et al[32]. For the original UK cut-off scores, gender differences were seen in all scale scores and impact scores (except for hyperactivity and conduct scores). However, cut-off s derived from this study sample showed no statistical difference between boys and girls in any of the scale or impact scores.

Lack of other socio-demographic details were limitations of this study which could have helped in the explanation of such differential findings between UK cut-offs and this study sample cut-offs[9]. Also such a knowledge would have helped in knowing the impact of cross-cultural variations on the rating and caseness indicators of SDQ[32].

Conclusion:

Adolescents are at risk of mental illness both in schools and in the community, thus making assessment of their mental health a top priority. SDQ questionnaire was used in this regard to screen for probable psychiatric disorders in a high school at Udupi. The girls in this study had higher emotional and behavioural difficulties in compared to boys and thus would need further assessment. Girls having higher externalising behaviour scores

compared to boys is a unique finding but were not statistically significant. Gender comparison across cut-off scores in the 'abnormal band' between UK and this study revealed variations. Additional socio-demographic data, larger community sample, validity and factor analysis of SDQ would help in further understanding.

Conflict of Interest: Nil
Ethical Permission: obtained from IEC
Funding: Nil

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