

Are School-going Adolescents Mentally Healthy? Case Study from Sabarkantha, Gujarat, India

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Abstract

Background: Mental health issues becoming the global public health challenge, especially among the youth (12–24 years of age), although they are often detected later in life. In India, the adolescent population constitutes a quarter of the country's population and burden of disease varies from 9.5 to 102/1000 population. Most of the mental health disorders remain unidentified due to negligence and ignorance of multiple factors. Keeping this in mind and lack of population-based studies with good quality for guiding the mental health policies, this study aims to document the prevalence of emotional and behavioral difficulties among adolescents in Sabarkantha district of Gujarat, India. **Methods:** This is a school-based cross-sectional study conducted among 11–19 years of school-going adolescents during August–September 2016. About 477 adolescents who gave consent to participate were selected from 20 randomly primary and secondary schools. A prevalidated questionnaire for sociodemographic information including global validated standard questionnaire for mental health scoring known as Strengths and Difficulties Questionnaire (SDQ) were administered and self-reported responses were documented. Statistical analysis was conducted through SPSS version 20. **Results:** Mean age of the study population was 14.2 ± 1.4 years. About 14.6% boys and 12.6% of girls had abnormal total SDQ score, while 15.3% boys and 21.9% of girls had borderline SDQ score. Thus, 70.1% of boys compared to 65.6% girls had normal SDQ score. The difference between mean (higher mean score among girls) of total SDQ score of boys and girls was statically significant at the level of $P < 0.05$. Major risk factors for self-reported mental health issues were illiterate mother, occupation of parents, which make them away from family during daytime, nuclear family, severe addiction to alcohol in the family, financial problem in the family, and adolescent getting daily physical punishment. One-seventh adolescents are vulnerable for mental health problems found in this study. About one-fifth adolescents have internalizing (emotional) and about one-sixth have externalizing (conduct) manifestations. **Conclusion:** There is an urgent need to address the emotional and conduct manifestation among school-going adolescents. Rashtriya Kishor Swasthya Karyakram framework needs to address these issues on priority.

Keywords: Adolescents, Gujarat, mental health, Strengths and Difficulties Questionnaire

INTRODUCTION

About 14% of global burden of diseases is attributed for mental health problems in all age groups.^[1] Mental health is complex and is much more than simply the absence of illness. It describes the capacity of individuals to interact with each other and their environment in a way that promotes optimal development and the use of cognitive, affective, and relational abilities, as well as overall well-being.^[2] Rates of mental disorders among young people (12–24 years), ranged from 8% (in the Netherlands) to 57% (for young people receiving services in five sectors of care in San Diego, California, USA).^[3] The Australian National Survey of Mental Health and Well-Being reported that at least 14% of adolescents younger than 18 years were diagnosable with a mental or substance use disorder in 12 months. The

National Mental Health Survey of India 2015–2016 shows 7.3% prevalence of all psychiatric morbidity among 13–17 years age group.^[4] The suffering, functional impairment, exposure to stigma and discrimination, and enhanced risk of premature death that is associated with mental disorders in adolescents has obvious public health, social, and economic significance for any society.^[5]

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Mental health is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. Hence, mentally healthy adolescents are needed for our future nation as well as for their own needful family life.^[6] The poor mental health is strongly related to other health and development concerns in adolescence people, for example, low self-confidence, less socially responsible activities, committing illegal activities, and so on.^[6] It is estimated that around 20% of the world's adolescents have mental health or behavioral problems.^[7] About half of lifetime mental disorders begin before age 14, the prevalence of mental disorders among adolescents has increased in the past 20–30 years; the increase is attributed to disrupted family structures, growing youth unemployment, and families' unrealistic educational and vocational aspirations for their children.

In India, the adolescent population constitutes a quarter of the country's population, which is approximately 243 million, which in turn constituted 20% of the world's 1.2 billion adolescents. As per the National Mental Health Survey 2015–2016 of India, the prevalence of overall psychiatry disorder among 13–17 years age group was 7.3%, however, a systematic review indicates that prevalence of psychiatric disorders among adolescents ranged from 0.48% to 29.40%.^[8] Not much importance is given in India to this branch of medical science; due to multiple factors very starting from medical cause to social causes, resulting into lack of statistical measures of prevalence and details of treatment. Most of the mental health disorders remain unidentified due to negligence and ignorance on the part of parents.^[9] Proper counseling and guidance by parents play an important role in child's life. One more aspect to explore is mental status of caretaker or parents, which play an important role in their overall development.^[10] Keeping this in mind, and lack of population-based studies with good quality for guiding the mental health policies, this study aims to document the prevalence of emotional and behavioral difficulties among adolescents in Sabarkantha district of Gujarat, India.

METHODS

Study type

This is a cross-sectional, school-based study conducted during August–September 2016.

Study setting

The present study was conducted Sabarkantha in one of the 33 districts of Gujarat selected purposefully because of administrative feasibility. It is a diverse district in terms of composition of population with an aggregate population comprising of both tribal and nontribal population, the population of the district is 2,428,589.^[11] This study has been conducted during August–September 2016.

Study sample and sampling

This study was conducted among government schools of Sabarkantha district, Gujarat. Considering the dropout rate of 20%–30%, it was also important to cover out of school adolescents. As this study used a self-reported tool, most of out-of-school adolescents were unable to report the same; therefore excluded from the sample.

A representative samples of adolescents were sampled based on facts such as the reported prevalence of mental health problems among adolescents in India is 15%–20%,^[12] with response rate of 80%.

The sample size for this study was calculated as 470 at 95% confidence interval level, the expected prevalence of 15%, design effect of 2 and non-response rate of 20%. Further as per, Rashtriya Kishor Swasthya Karyakram (RKSK) framework age categorization, this study recruited 235 adolescents in 11–14 years of age and another 235 adolescents in 15–19 years of age group. Considering an average class size of 30, ten schools each from primary section and secondary/higher secondary section were randomly selected from the list of schools obtained from the district education office. All the primary schools were selected from rural area as secondary/higher secondary schools were situated in the urban area. The selected class were administered with the Strengths and Difficulties Questionnaire (SDQ) for assessment of mental health.^[12]

Study instrument

The self-assessment format of SDQ^[13] was used to assess the mental health of the adolescents. The SDQ is a user-friendly screening questionnaire, which can be used to assess behavioral problems and mental health disorders. Goodman, Ford, Simmons, Gatward, and Meltzer reported the scale's internal reliability to be acceptable, with a Cronbach alpha coefficient of 0.73.^[6,13] The questionnaire consists of 25 questions subdivided into five categories: Conduct; hyperactivity; peer problems; emotional; and prosocial, with five questions in each scale. Each of the categories is given a score and then summed to get a total difficulties score, except the prosocial score, which is assigned a separate score. The scores can then be used to make separate predictions for conduct–oppositional disorders, hyperactivity–inattention disorders, and anxiety–depressive disorders. The prevalidated SDQ questionnaire available in Gujarati language was used in the present study.^[14] As per the suggested guidelines for SDQ, cutoff points were derived by classifying approximately 10% of the normative sample with the most extreme scores in the “abnormal” banding, the next 10% in the “borderline” banding, and the remaining 80% in the “normal” banding categories.^[13]

In addition to the SDQ, relevant sociodemographic details were recorded. Perceptions of difficulties in the family domain; for example, physical punishment, parental marital discord, death of a parent, excessive alcohol/drug use by a family member, and financial difficulties in the family were documented through a prevalidated questionnaire in vernacular language.

Study analysis

Descriptive statistics analysis was carried out using SPSS version 20 (Armonk, NY, IBM Corp). For categorical variables, proportion was used to describe, whereas for continuous variables were described as mean \pm standard deviation was used. Further, one sample *t*-test and Chi-square test were used to understand the statistical difference among the groups at level of $P < 0.05$.

Study ethics

Permission to conduct the study was obtained from the Institutional Ethical Committee of Indian Institute of Public Health, Gandhinagar. Verbal consent was obtained from each adolescent before administration of the study questionnaire. List of adolescents with abnormal SDQ scores will be submitted to the school management for further referral.

RESULTS

About 60% of adolescents were in the age group of 11–14 years and 62% of participants were boys. Mean age of the study population was 14.2 ± 1.4 years. Mean age of boys was 14.3 years while that of girls was 14.1 years. The details descriptive are shown in Table 1.

About 9% of fathers of the study participants were unemployed, while majority of them work as labor. Over 40% of mothers of participants were homemakers. Out of the total samples included in the present study, three participants also reported about demise of their parent, six reported demise of mother while, and 16 reported loss of father. Eleven (2.3%) participants reported that their parents were not staying

together (separated and divorced). Around than 7% boys and 8.2% girls reported a history of excessive alcohol consumption by father or grandfather. On inquiring about the issues pertaining to finance, around 11% boys and 13% girls reported financial problems; faced by respective families. Out of all 72% of participants believed that physical punishment is necessary if children are not studying properly on the contrary, only 5.6% participants reported receipt of physical punishment daily.

The present study utilized SDQ, to assess various aspects of mental health of adolescents. About 14.6% of boys and 12.6% of girls had an abnormal total SDQ score and 15.3% of boys and 21.9% of girls had borderline SDQ score. Overall 70.1% of boys and 65.6% of girls had normal SDQ score. The difference between mean (higher mean score among girls) of total SDQ score of boys and girls was statically significant at the level of $P < 0.05$.

In general, SDQ is divided into five subcategories as shown in Table 2. According to that, almost 40% girls had abnormal or borderline Emotional Problem Score (EPS), compared to <30% of boys. The difference in mean EPS among boys and girls is statistically significant. Almost 38% of boys and 33% of girls had abnormal or borderline Peer Problem Score (PPS). However, this observed difference is not statistically significant. Most importantly, girls have higher mean SDQ score compared to boys in EPS, Hypersensitivity Score (HS), Total SDQ score, and Prosocial Score and all these differences are statistically significant. Boys had higher mean score in conduct problem score and PPS; however, these differences were not statistically significant. On application of hierarchical

Table 1: Sociodemographic characteristics of adolescents^a in Sabarkantha, Gujarat

Variable	Category	Total (n=477), n (%)	Boys (n=294), n (%)	Girls (n=183), n (%)
Age (years)	11-14	285 (59.7)	170 (68.3)	115 (62.8)
	15-19	192 (40.3)	124 (49.8)	68 (37.2)
Caste	Other backward class	346 (72.5)	212 (85.1)	134 (73.2)
	Schedule caste	47 (9.9)	26 (10.4)	21 (11.5)
	Schedule tribe	15 (3.1)	14 (5.6)	1 (0.5)
	General	69 (14.5)	42 (16.9)	27 (14.8)
Living in hostel	Yes	54 (11.3)	48 (16.3)	6 (3.3)
	No	423 (88.7)	246 (83.7)	177 (96.7)
Use of mobile	Yes	224 (47.3)	156 (53.2)	68 (37.6)
	No	250 (52.7)	137 (46.8)	113 (62.4)
Mother's education ^b	Illiterate	106 (23.7)	60 (22.2)	46 (26)
	Primary	206 (46.1)	129 (47.8)	77 (43.5)
	Secondary	111 (24.8)	67 (24.8)	44 (24.9)
	Higher secondary or more	24 (5.4)	14 (5.2)	10 (5.7)
Father's education ^c	Illiterate	33 (7.6)	21 (7.8)	12 (7.1)
	Primary	86 (19.7)	53 (19.8)	33 (19.6)
	Secondary	188 (43.1)	114 (42.5)	74 (44)
	Higher secondary	100 (22.9)	60 (22.4)	40 (23.8)
	Graduate or more	29 (6.3)	20 (7.4)	9 (5.4)

^aSampled school-going adolescents who gave consent to participate; ^b21 participants did not provide the information and mother of 9 participants were not alive; ^c22 participants did not provide any information while father of 19 participants were not alive

Table 2: Strengths and Difficulties Questionnaire score and its differential components in relation to gender of adolescents of Sabarkantha, Gujarat

SDQ score category	Gender category (mean±SD)	Abnormal	Borderline	Normal	P
EPS	Boys (3.7±2.6)	49 (16.7)	31 (10.5)	214 (72.8)	0.000***
	Girls (4.7±2.3)	39 (21.3)	32 (17.5)	112 (61.2)	
CPS	Boys (2.5±2.1)	53 (18)	33 (11.2)	208 (70.7)	0.621
	Girls (2.4±1.9)	25 (13.7)	24 (13.1)	134 (73.2)	
HS	Boys (3.1±1.8)	9 (3.1)	18 (6.1)	267 (90.8)	0.029*
	Girls (3.4±1.7)	7 (3.8)	14 (7.7)	162 (88.5)	
PPS	Boys (3.1±1.8)	32 (10.9)	78 (26.5)	184 (62.6)	0.094
	Girls (2.7±1.7)	13 (7.1)	45 (24.6)	125 (68.3)	
PSS	Boys (7.7±2.3)	28 (9.5)	22 (7.5)	244 (83)	0.000***
	Girls (8.6±1.9)	9 (4.9)	7 (3.8)	167 (91.3)	

Significance level: * $P < 0.05$; *** $P < 0.001$. SDQ: Strengths and Difficulties Questionnaire, EPS: Emotional Problem Score, CPS: Conduct Problem Score, HS: Hyperactivity score, PPS: Peer Problem Score, PSS: Prosocial Score, SD: Standard deviation

regression model, a statistically significant difference in mean total SDQ score was observed for gender, mother's education, occupation of mother, occupation of father, type of family, living in the hostel (away from family), severe addiction to alcohol in the family, receiving physical punishment daily, and having some financial problem in the family.

DISCUSSION

The World Health Organization defines mental health as a "state of well-being whereby individuals recognize their abilities, are able to cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities." Applying such adult-based definitions to adolescents and identifying mental health problems in young people can be difficult, given the substantial changes in behavior, thinking capacities, and identity that occurs during the teenage years. The impact of changing youth subcultures on behavior and priorities can also make it difficult to define mental health and mental health problems in adolescents. Although mental disorders reflect psychiatric disturbance, adolescents may be affected more broadly by mental health problems. These include various difficulties and burdens that interfere with adolescent development and adversely affect the quality of life emotionally, socially, and vocationally. There are limitations of available community-based status of mental health among adolescent, published studies largely focus on measures of individual disorder and dysfunction, without consideration of contextual factors that shape mental health and well-being. There are available evidence that have identified contextual factors that place adolescents at greater risk of mental health problems.^[15] The present case study was undertaken to document mental health vulnerability of school-going adolescent in rural Gujarat. The study reveals that 14% of the study population is vulnerable for mental health problems. More than 18% of adolescents have internalizing (emotional) and more than 16% have externalizing (conduct) manifestations. However, only 3% had hyperactivity manifestations as per the study. Bhola *et al.* reported in a study using SDQ tool among preuniversity college

students at Bengaluru, reported 10.1% of adolescents had total difficulty levels in the abnormal range, with 9% at risk for emotional symptoms, 13% for conduct problems, 12.6% for hyperactivity/inattention, and 9.4% for peer problems.^[16] The observed difference between two studies may be due to difference in the age of the study participants where the mean age of study population was 16.4 years compared to 14.2 years in the present study. The same study identified gender differences in patterns of psychopathology among adolescents. Along with other studies using the SDQ,^[17-20] emotional symptoms were predominant among girls and peer problems among boys. This study found out same, but the observed difference for emotional symptoms was statistically significant while observed difference in peer problems was not statistically significant. We also observed that girls were more social compared to boys. Kharod *et al.* reported in a study in rural Gujarat, 33% adolescents with abnormal SDQ scores.^[21] The highest abnormal score was reported for peer problem scores in the study and lowest among the Prosocial Score category.

Interestingly, in contrast to other research, the findings from Bhola *et al.* study and the present study showed that there was no gender difference for conduct problems and hyperactivity problems. This may be due to narrowing gender gap for these problems. This suggests gender-sensitive modification should be made in school- or college-level adolescent mental health programs. The present study also showed a significant higher total difficulty scores where mother is illiterate, occupation of parents which make them away from family during daytime, nuclear family, severe addiction to alcohol in the family, financial problem in the family, and adolescent getting daily physical punishment. However, they were not the predictor of low SDQ score as suggested by very low R^2 value of regression models tried in the study which indicates the need of larger scale study to predict such vulnerabilities. Although these factors suggest vulnerability for mental health problems in adolescents, this is worth to explore with further research studies to prevent the risks in this age group. The existing guidelines of RKSK do talk about the mental issues; however,

it does not suggest methods on how to assess the status of mental health among the adolescent. Limitation of the present study is that it has used self-reported SDQ screening and not matched it with parents or teacher version as suggested by studies using SDQ beyond Europe.^[22] Furthermore, the study could not examine adolescents with abnormal scores with other diagnostic tools used in psychiatry.

CONCLUSION

The present study documents about one-seventh of the adolescents were vulnerable for mental health issues. About one-fifth adolescents have internalizing (emotional) and about one-sixth have externalizing (conduct) manifestations; however, very few (3%) had hyperactivity manifestations. Most common risk factors for self-reported mental health issues were illiterate mother, occupation of parents, away from family during daytime, nuclear family, severe addiction to alcohol in the family, financial problem in the family, and adolescent getting daily physical punishment. It is recommended based on the study to use the SDQ screening tool in Gujarati for screening adolescents in Gujarat and adolescents with abnormal scores should be referred to psychiatrist and counselors at Adolescent Friendly Health Clinics for further diagnosis and treatment if required. SDQ tool can be used in screening for adolescents under Rashtriya Bal Swasthya Karyakram to strengthen the focus on the mental health aspect of the program and linking referral of adolescents with low SDQ scores to adolescent-friendly health clinics for further steps.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. World Health Organization. Mental Health: Strengthening our Response. World Health Organization – Fact Sheet; 2016. Available from: <http://www.who.int/mediacentre/factsheets/fs220/en/>. [Last accessed on 2016 Aug 29].
2. Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare; 1999. National Health Priority Areas Report: Mental Health; 1998. Australian Institute of Health and Welfare.

3. Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare. Canberra.
3. Ghaemi SZ, Khakshour A, Abasi Z, Golchin NA. Effectiveness of school-based program to preventing mental disorders in school age children: review article. *Rev Clin Med* 2015;2:118-24.
4. Murthy RS. National mental health survey of India 2015-2016. *Indian J Psychiatry* 2017;59:21-6.
5. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: A global public-health challenge. *Lancet* 2007;369:1302-13.
6. World Health Organization. Mental Health Atlas; 2014. Available from: http://www.apps.who.int/iris/bitstream/10665/178879/1/9789241565011_eng.pdf. [Last accessed on 2017 Jul 15].
7. Adolescent Mental Health: An Urgent Challenge for Investigation and Investment, UNICEF; 2011. Available from: <https://www.unicef.org/sowc2011/pdfs/Adolescent-mental-health.pdf> 16. [Last accessed on 29 Aug 20].
8. Bholia P, Kapur M. Child and adolescent psychiatric epidemiology in India. *Indian J Psychiatry* 2003;45:208-17.
9. Sivagurunathan C, Umadevi R, Rama R, Gopalakrishnan S. Adolescent health: Present status and its related programmes in India. Are we in the right direction? *J Clin Diagn Res* 2015;9:LE01-6.
10. Stratton KJ, Edwards AC, Overstreet C, Richardson L, Tran TL, Trung LT, *et al.* Caretaker mental health and family environment factors are associated with adolescent psychiatric problems in a Vietnamese sample. *Psychiatry Res* 2014;220:453-60.
11. Census. Office of Registrar General & Census Commissioner, India; 2011. Available from: <http://www.census2011.co.in/census/district/186-sabarkantha.html>. [Last accessed on 17 Jan 20].
12. Nair S, Ganjiwale J, Kharod N, Varma J, Nimbalkar SM. Epidemiological survey of mental health in adolescent school children of Gujarat, India. *BMJ Paediatr Open* 2017;1:e000139.
13. Goodman R. The strengths and difficulties questionnaire: A research note. *J Child Psychol Psychiatry* 1997;38:581-6.
14. Varma J, Nair S, Ganjiwale J, Nimbalka S, Kharod N. Cross cultural adaptation, into Gujarati, of the English version, strengths and difficulties questionnaire. *J Clin Diagn Res* 2018;12:VM01-3.
15. Knopf D, Park MJ, Mulye TP. The Mental Health of Adolescents: A National Profile. San Francisco, CA: National Adolescent Health Information Center, University of California; 2008.
16. WorldHealthOrganization. MentalHealthAtlas;2014. Available from: http://www.apps.who.int/iris/bitstream/10665/178879/1/9789241565011_eng.pdf. [Last accessed on 2017 Jul 22].
17. Reddy BK, Biswas A, Rao H Assessment of mental health of Indian adolescents studying in urban schools. *Malays J Paediatr Child Health* 2011;17:1-10.
18. Greally P, Kelleher I, Murphy J, Cannon M. Assessment of the mental health of Irish adolescents in the community. *RCSI Stud Med J* 2010;3:33-5.
19. Svedin CG, Priebe G. The strengths and difficulties questionnaire as a screening instrument in a community sample of high school seniors in Sweden. *Nord J Psychiatry* 2008;62:225-32.
20. Van Roy B, Grøholt B, Heyerdahl S, Clench-Aas J. Self-reported strengths and difficulties in a large Norwegian population 10-19 years: Age and gender specific results of the extended SDQ-questionnaire. *Eur Child Adolesc Psychiatry* 2006;15:189-98.
21. Kharod N, Kumar D. Mental health status of school going adolescents in rural area of Gujarat. *Indian J Youth Adolesc Health* 2015;2:17-21.
22. Worner W, Fleitlich B, Martinussen R, Fletcher J, Cucchiario G, Dalgalarondo P, *et al.* The strength and difficulties questionnaire overseas evaluations and applications of SDQ beyond Europe. *Eur Child Adolesc Psychiatry* 2004;13:47-54.