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Mental Health Disorders Among Urban Adolescents In Gujarat: A Cross-Sectional Study

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ABSTRACT

Background: Adolescence is a critical developmental stage marked by rapid physical, emotional, and social changes, making individuals susceptible to mental health disorders. Mental health issues can impact academic performance, social relationships, and overall well-being. Despite increasing awareness of adolescent health, mental health remains an underexplored domain in many parts of India, including Gujarat.

Aims & Objective: This study assessed the prevalence of mental health issues among urban adolescents in Gujarat and examined their association with demographic, lifestyle, and behavioural factors.

Materials & Methods: A cross-sectional study was conducted involving 400 adolescents aged 11–17 years from urban schools in Gujarat. The Strengths and Difficulties Questionnaire (SDQ) was used to assess mental health status. Participants were selected using stratified random sampling from government and private schools. Data were collected on sociodemographic characteristics, lifestyle factors and behavioural factors.

Results: Among the 400 adolescents, 16.0% had abnormal SDQ scores, with emotional symptoms (15.0%), peer problems (12.5%), hyperactivity (12.0%), and conduct problems (8.0%) being most common. Higher abnormal scores were noted in older adolescents (16–17 years), those from lower socioeconomic backgrounds, and with mothers having only primary education. Excessive screen time, poor sleep, inactivity, lack of hobbies, academic stress, bullying, and substance use were significantly associated, with higher abnormal scores.

Conclusion: This study reveals a significant burden of mental health issues among urban adolescents in Gujarat, influenced by age, socioeconomic status, maternal education, and lifestyle factors. The findings emphasize the need for targeted mental health interventions for high-risk groups.

Keywords: Adolescents, Conduct problems, Mental health, Peer problems, Screen time, The Strengths and Difficulties Questionnaire (SDQ)

INTRODUCTION

Adolescence is a critical period of psychological, emotional, and social development, during which individuals undergo rapid changes and face increasing demands from academic, familial, and social spheres. These challenges make adolescents particularly vulnerable to mental health disorders, including depression, anxiety, conduct issues, attention-deficit hyperactivity disorder (ADHD), and emotional dysregulation.[1] According to the World Health Organization, approximately 10–20% of adolescents globally experience mental health conditions, many of which go undiagnosed and untreated.[2]

The prevalence of child psychiatric disorders in India has been found to be 7% in the community and 23% in schools.[3,4] However, mental health remains a low-priority area in adolescent healthcare, particularly in urban settings where changing lifestyles, academic competition, and digital exposure have been associated with rising psychological distress.[3] Recent evidence has indicated an increase in emotional and behavioural problems among Indian school-going adolescents, further emphasizing the need for early detection and preventive strategies.[5,6]

Urban adolescents in India, including those in the state of Gujarat, are increasingly exposed to modern stressors such as screen overuse, peer pressure, reduced physical activity, substance experimentation, and social isolation—all of which are potential risk factors for mental health disturbances. If untreated, these conditions severely influence children's development and their potential to live fulfilling and productive lives.[7]

Despite growing national attention to adolescent health through initiatives like the Rashtriya Kishor

Swasthya Karyakram (RKSK), mental health continues to be an underprioritized area, particularly within school and community settings. Community-based data on adolescent mental health remains scarce, limiting effective policy and programmatic responses. Given the lack of region-specific data and the growing need for early identification and intervention, this study was undertaken to assess the prevalence of emotional and behavioural difficulties among urban adolescents in Gujarat using the Strengths and Difficulties Questionnaire (SDQ), and to examine associated demographic, behavioural, and psychosocial factors.

MATERIALS & METHODS

Study design and Setting: This cross-sectional study was conducted among school-going urban adolescents in selected government and private schools in Gujarat.

Study duration: The data collection was carried out over a period of six months from JUNE to December 2024.

Study population and sampling: The study included a total of 400 adolescents aged between 11 and 17 years. A stratified random sampling technique was used to ensure adequate representation from different school types. Schools were first stratified based on their management type—government and private. From each category, two schools were randomly selected. Subsequently, 100 students were randomly chosen from each of the four selected schools, thereby ensuring proportional representation and minimizing selection bias.

Determination of sample size was done using the formula,

$$n = \frac{z^2 pq}{L^2}$$

Z = 1.96 at 95% confidence level,

p = prevalence of mental health problems was reported to be approximately **31.2%** (p = 0.31) in the study of Muzammil K et al.[8]

q = 1-p = 68.6% = 0.688

L - Absolute precision/margin of error (5%=0.05).

On using the formula and above values, calculated sample size was 330. The Sample size was further inflated by 20% to take care of nonresponse, incomplete response, refusals and withdrawals. Minimum sample size was 396 which was rounded to 400 to ensure adequate power and representativeness.

Inclusion Criteria:

- Adolescents aged between 11–17 years.
- Studying in selected urban schools in Gujarat.
- Provided assent along with parental/guardian consent.

Exclusion Criteria:

- Students with known psychiatric diagnoses under treatment.
- Those unwilling to participate or absent on the day of data collection.

Data collection tool: Data were collected using a structured questionnaire divided into four sections:

- Section A: Sociodemographic information (age, gender, family type, parental education, socioeconomic status using Modified BG Prasad classification).
- Section B: Lifestyle and behavioural factors (screen time, physical activity, sleep duration, hobby/extracurricular activities, substance use, academic stress, bullying experience).
- Section C: Mental health status assessed using the Strengths and Difficulties Questionnaire (SDQ)[9] – a validated screening tool comprising 25 items divided into five domains: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behaviour. Each item was scored on a 3-point Likert scale (0 = Not True, 1 = Somewhat True, 2 = Certainly True). Scores were calculated for each domain and categorized into Normal, Borderline, and Abnormal as per established SDQ scoring guidelines. The Total Difficulties Score was computed by summing the first four domains (excluding prosocial behaviour).
- Section D: Help-seeking behaviour (previous sharing of emotional concerns, preferred person to talk to, willingness to approach a counsellor).

Ethical considerations: Ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent from parents and assent from participants were obtained prior to data collection. Privacy and confidentiality of data were strictly maintained.

Statistical analysis: Data were entered into Microsoft Excel and analyzed using SPSS version 22. Descriptive statistics were used to summarize frequencies and percentages. Univariate analysis using Chi-square test was applied to assess the association between sociodemographic and behavioural variables with abnormal SDQ scores.

A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 400 urban adolescents were studied. Most participants were aged 11–13 years (150, 37.5%), followed by 14–15 years (130, 32.5%) and 16–17 years (120, 30.0%). Males constituted 210 (52.5%) and females 190 (47.5%). A majority studied in private schools (240, 60.0%) and belonged to nuclear families (260, 65.0%). Regarding maternal education, 32 (8.0%) were illiterate, 80 (20.0%) had primary, 130 (32.5%) secondary, and 158 (39.5%)

higher secondary or above education. For fathers, 20 (5.0%) were illiterate, 60 (15.0%) had primary, 130 (32.5%) secondary, 100 (25.0%) higher secondary, and 90 (22.5%) were graduates or above. Socioeconomically, 150 (37.5%) belonged to the middle class, 112 (28.0%) to lower-middle, 70 (17.5%) to upper-middle, 48 (12.0%) to lower, and 20 (5.0%) to the upper class (Table 1).

Table 1: Characteristics of study participants

Characteristic	**Frequency (%)**
Age group (in years)	
11–13	150 (37.5%)
14–15	130 (32.5%)
16–17	120 (30.0%)
Gender	
Male	210 (52.5%)
Female	190 (47.5%)
Type of School	
Government	160 (40.0%)
Private	240 (60.0%)
Family Type	
Nuclear	260 (65.0%)
Joint	120 (30.0%)
Extended	20 (5.0%)
Mother's Education	
Illiterate	32 (8.0%)
Primary	80 (20.0%)
Secondary	130 (32.5%)
Higher Secondary & Above	158 (39.5%)
Father's Education	
Illiterate	20 (5.0%)
Primary	60 (15.0%)
Secondary	130 (32.5%)
Higher Secondary	100 (25.0%)
Graduate and above	90 (22.5%)
Socioeconomic Class *(Modified BG Prasad)*	
Lower	48 (12.0%)
Lower-middle	112 (28.0%)
Middle	150 (37.5%)
Upper-middle	70 (17.5%)
Upper	20 (5.0%)

Among the 400 adolescents, a majority (218, 54.5%) reported daily screen time between 1–3 hours, while 110 (27.5%) spent more than 3 hours and 72 (18.0%) spent less than 1 hour on screen. Regular physical activity of at least 30 minutes per day was reported by 190 (47.5%) participants, whereas 210 (52.5%) did not engage in such activity. Sleep duration was 6–8 hours for most adolescents (240, 60.0%), followed by less than 6 hours in 90 (22.5%) and more than 8 hours in 70 (17.5%). A total of 260 (65.0%) adolescents reported having a hobby or participating in extracurricular activities, while 140 (35.0%) did not. Use of tobacco, alcohol, or other substances was reported by 24 (6.0%) participants. Academic stress in the past 6 months was experienced by 170 (42.5%) adolescents. Additionally, 96 (24.0%) reported being victims of bullying either at school or online (Table 2).

Table 2: Distribution of participants based on lifestyle and behavioral factors (n = 400)

Factor	Frequency (%)
Daily Screen Time	
<1 hour	72 (18.0%)
1–3 hours	218 (54.5%)
>3 hours	110 (27.5%)
Physical Activity (≥30 min/day)	
Yes	190 (47.5%)
No	210 (52.5%)
Sleep Duration	
<6 hours	**90 (22.5%)**
6–8 hours	240 (60.0%)
>8 hours	70 (17.5%)
Hobby or Extracurricular Activity	
Yes	260 (65.0%)
No	140 (35.0%)
Use of Tobacco/Alcohol/Substances	
Yes	24 (6.0%)
No	376 (94.0%)
Academic Stress (Past 6 Months)	
Yes	170 (42.5%)
No	230 (57.5%)
Experienced Bullying (School/Online)	
Yes	96 (24.0%)
No	304 (76.0%)

Out of 400 adolescents, 220 (55.0%) reported that they had shared their emotional or mental health concerns with someone, while 180 (45.0%) had not. Among those who did share (n = 220), the most common confidant was a friend (110, 50.0%), followed by a parent (62, 28.2%), teacher (24, 10.9%), counsellor or doctor (10, 4.5%), and others such as siblings or relatives (14, 6.4%). When asked about their willingness to consult a counsellor in the future if needed, 188 (47.0%) expressed willingness, 86 (21.5%) were not willing, and 126 (31.5%) were unsure (Table 3).

Table 3: Help-seeking behavior among study participants (n = 400)

Help-seeking behaviour	Frequency (%)
Shared emotional/mental concerns with someone	
Yes	220 (55.0%)
No	180 (45.0%)
If yes (n = 220), whom did they talk to?*	
Friend	110 (50.0%)
Parent	62 (28.2%)
Teacher	24 (10.9%)
Counsellor/Doctor	10 (4.5%)
Other (e.g., sibling, relative)	14 (6.4%)
Willingness to talk to a counsellor in the future if needed	
Yes	188 (47.0%)
No	86 (21.5%)
Not sure	126 (31.5%)

Table 4: Prevalence of difficulties based on SDQ score categories (n = 400)

SDQ Domain	Normal n (%)	Borderline n (%)	Abnormal n (%)
Emotional symptoms	260 (65.0%)	80 (20.0%)	60 (15.0%)
Conduct problems	310 (77.5%)	58 (14.5%)	32 (8.0%)
Hyperactivity/inattention	280 (70.0%)	72 (18.0%)	48 (12.0%)
Peer relationship issues	270 (67.5%)	80 (20.0%)	50 (12.5%)
Prosocial behaviour	290 (72.5%)	60 (15.0%)	50 (12.5%)
Total difficulties	260 (65.0%)	76 (19.0%)	64 (16.0%)

Based on the Strengths and Difficulties Questionnaire (SDQ), 64 (16.0%) adolescents had abnormal total difficulty scores, while 76 (19.0%) were borderline and 260 (65.0%) fell in the normal range. Among individual domains, emotional symptoms were abnormal in 60 (15.0%), conduct problems in 32 (8.0%), hyperactivity/inattention in 48 (12.0%), and peer relationship issues in 50 (12.5%). Additionally, prosocial behaviour was found to be abnormal in 50 (12.5%) of participants. These findings indicate notable emotional and behavioural concerns among urban adolescents (Table 4).

Table 5: Factors associated with abnormal SDQ Scores among urban adolescents (n = 400)

Variable	Abnormal SDQ (n=64)	Normal/Borderline (n=336)	p-value
Age Group (in years)			
11–13 (n=150)	16 (10.7%)	134 (89.3%)	0.018
14–15 (n=130)	22 (16.9%)	108 (83.1%)	
16–17 (n=120)	26 (21.7%)	94 (78.3%)	
Gender			
Male (n=210)	28 (13.3%)	182 (86.7%)	0.121
Female (n=190)	36 (18.9%)	154 (81.1%)	
Type of School			
Government (n=160)	30 (18.7%)	130 (81.2%)	0.26
Private (n=240)	34 (14.2%)	206 (87.5%)	
Family Type			
Nuclear (n=260)	40 (15.4%)	220 (84.6%)	0.682
Joint/Extended (n=140)	24 (17.1%)	116 (82.9%)	
Mother's Education			
≤Primary (n=112)	26 (23.2%)	86 (76.8%)	0.005
>Primary (n=288)	38 (13.2%)	250 (86.8%)	
Father's Education			
≤Secondary (n=210)	38 (18.1%)	172 (81.9%)	0.092
>Secondary (n=190)	26 (13.7%)	164 (86.3%)	
Socio-economic Status			
Lower (n=48)	14 (29.2%)	34 (70.8%)	0.003
Lower-middle (n=112)	18 (16.1%)	94 (83.9%)	
Middle (n=150)	18 (12.0%)	132 (88.0%)	
Upper-middle (n=70)	10 (14.3%)	60 (85.7%)	
Upper (n=20)	4 (20.0%)	16 (80.0%)	
Daily screen time >3 hrs (n=110)	28 (25.5%)	82 (74.5%)	<0.001
Physical inactivity (n=210)	38 (18.1%)	172 (81.9%)	0.045
Sleep <6 hrs/day (n=90)	26 (28.9%)	64 (71.1%)	<0.001
No hobby/extracurricular activity (n=140)	30 (21.4%)	110 (78.6%)	0.031
Academic stress (last 6 months) (n=170)	32 (18.8%)	138 (81.2%)	0.048
Experienced bullying (n=96)	28 (29.2%)	68 (70.8%)	<0.001
Use of substances (n=24)	8 (33.3%)	16 (66.7%)	0.018

Out of 400 participants, 64 (16.0%) adolescents had abnormal SDQ scores. A significantly higher prevalence of abnormal scores was observed among the 16–17 years age group (21.7%) compared to younger age groups (p = 0.018). Female adolescents had a higher proportion of abnormal scores (18.9%) than males (13.3%), though not statistically significant (p = 0.121). Abnormal SDQ scores were comparable among students from government schools (18.7%) and private schools (14.2%) (p = 0.26). Adolescents from families where mothers had education up to primary level had significantly more abnormal scores (23.2%) compared to those with higher educated mothers (p = 0.005). Similarly,

abnormal scores were more prevalent in the lower socio-economic group (29.2%) compared to middle (12.0%) and upper-middle groups (14.3%) ($p = 0.003$).

Among lifestyle and behavioral factors, adolescents with daily screen time >3 hours showed a significantly higher prevalence of abnormal scores (25.5%) ($p < 0.001$). Those with physical inactivity (18.1%, $p = 0.045$), sleep duration <6 hours/day (28.9%, $p < 0.001$), no hobby or extracurricular activity (21.4%, $p = 0.031$), academic stress in the past 6 months (18.8%, $p = 0.048$), and experience of bullying (29.2%, $p < 0.001$) also had significantly higher abnormal SDQ scores. Furthermore, substance use was associated with the highest proportion of abnormal scores (33.3%) ($p = 0.018$).

DISCUSSION

This study assessed the mental health status of urban adolescents in Gujarat using the Strengths and Difficulties Questionnaire (SDQ). Among the 400 adolescents surveyed, the prevalence of abnormal SDQ scores in our study (16.0%) is consistent with findings by Pillai et al.[10] in Kerala, who reported a 14.3% prevalence of mental health problems among school-going adolescents using the SDQ tool. A meta-analysis by Malhotra S et al.[3] from North India also estimated that 15–20% of adolescents experience emotional and behavioral issues, reinforcing our findings. Nair S et al.[9] from Gujarat reported a slightly lower prevalence of 6%.

This study identified emotional symptoms (15.0%), peer problems (12.5%), hyperactivity (12.0%), and conduct problems (8.0%) as the most prevalent mental health concerns among urban adolescents, highlighting adolescence as a vulnerable period for emotional and behavioural disturbances. In contrast, Nair S et al.[9] reported lower prevalence rates, with peer problems (8.0%) and conduct issues (9.0%) being the most common, followed by emotional problems (6.0%), hyperactivity (3.0%), and prosocial difficulties (4.0%).

In this study, abnormal SDQ scores were significantly higher among adolescents aged 16–17 years, those with mothers having only primary education, and those from lower socio-economic backgrounds. Key associated factors included excessive screen time, physical inactivity, inadequate sleep, lack of hobbies, academic stress, bullying, and substance use. Similarly, Nair S et al.[9] found that academic difficulties, vision problems, and poor parent–child communication were linked to higher SDQ scores, while physical activity and strong peer relationships appeared protective.

The present study found a significantly higher prevalence of mental health difficulties among adolescents aged 16–17 years compared to younger age groups ($p = 0.018$). This age-related trend is supported by findings from a study in Delhi by Arora et al., which showed that older adolescents were more likely to report emotional difficulties due to increasing academic and social pressures.[6] Gender-wise, although females had a higher proportion of abnormal SDQ scores (18.9%) compared to males (13.3%), the difference was not statistically significant. This is consistent with previous research by Bansal et al., who noted a similar trend, suggesting that girls may be more likely to internalize distress, though cultural and familial factors may modulate this.[11] Socio-demographic factors played a significant role. Adolescents with mothers having primary or less education, and those belonging to lower socio-economic classes had a significantly higher prevalence of abnormal SDQ scores. These findings echo the results from studies by Sharma et al. and Latif M et al., who emphasized the impact of socio-economic adversity, parental education, and limited access to mental health resources on adolescents' mental well-being.[5,12]

Behavioural factors such as screen time >3 hours/day, physical inactivity, insufficient sleep, lack of hobbies, and academic stress were significantly associated with abnormal SDQ scores. Similar associations were observed in studies by Devi KA et al. and Parida D et al., which reported that digital overuse and lack of physical or creative engagement contributed to heightened stress, poor attention, and emotional instability among adolescents.[7,13]

Importantly, bullying and substance use emerged as strong predictors of mental health problems. Adolescents experiencing bullying had a 29.2% prevalence of abnormal scores ($p < 0.001$), while 33.3% of substance users had significant difficulties ($p = 0.018$). These observations align with global evidence on the detrimental psychological consequences of peer victimization and early substance experimentation.[14,15]

These findings highlight the need for school-based mental health interventions, early screening using validated tools like SDQ, and targeted support for high-risk groups. The results underscore the importance of integrating mental health into adolescent health programs and fostering a supportive environment both at home and school.

CONCLUSION

This study highlights a considerable burden of emotional and behavioural problems among urban adolescents, with 16% exhibiting abnormal SDQ scores. Emotional symptoms, hyperactivity, peer problems, and conduct issues were the most frequently reported concerns. Older age, lower maternal education, and lower socio-economic status were significantly associated with higher mental health difficulties. Unhealthy lifestyle habits such as prolonged screen time, inadequate sleep, physical inactivity, lack of extracurricular involvement, academic stress, bullying, and substance use were

also important contributors. These findings underscore the urgent need for school-based mental health interventions, parental awareness, and early screening to address adolescent mental well-being.

LIMITATIONS

The study was cross-sectional; hence, causal relationships could not be established. Data were self-reported, which may have introduced reporting or recall bias. Additionally, the study was conducted within a specific urban adolescent population from selected schools, limiting the generalizability of the findings to rural or out-of-school adolescents. Furthermore, mental health assessment was based solely on the Strengths and Difficulties Questionnaire (SDQ), without corroborative clinical diagnostic evaluation.

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