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Prevalence of psychiatric morbidity among school-going adolescents in the age group of 13–19 years

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Abstract

Background Adolescent mental health problems are vast and varied and early identification and intervention can be of utmost help. There is sparse data on mental health issues in the adolescent population from India in general and J&K in particular; thus, it was decided to embark on this study.

Results The prevalence of various psychiatric disorders among school-going adolescents was as major depressive disorder 13.7%, obsessive compulsive disorder 4.0%, panic disorder 1.4%, self-harming behavior 2.5%, generalized anxiety disorder 2.5%, social anxiety disorder 2.2%, dysthymia 1.7%, and adjustment disorder 0.8%. There was no statistically significant difference in the overall psychiatric morbidity group among males and females ($P=0.90$). However, panic disorder and borderline personality disorder as a group were more commonly found among females compared to males ($P=0.016$ and 0.001 respectively). Also, 34% from urban and 28% from rural areas met the criteria for any psychiatric disorder ($P=1.38$).

Conclusion Children and adolescents represent a tender part of the human life cycle and they may be at a higher risk of psychiatric disorders. There is a very high prevalence of psychiatric morbidity of any kind among adolescents in Kashmir, many of which are unidentified and thus untreated. Depression is the most common psychiatric illness among adolescents with a higher prevalence in males while anxiety disorders are more common among females. There is a need for further research in this age group and teachers and parents need psycho-education for the identification of such children.

Keywords Adolescents, Kashmir, Mental Health

Background

The term adolescence means “to emerge” or “achieve identity.” It is a relatively new concept, especially in developmental thinking [1]. It has been defined as a period of transition from childhood to adulthood and is best described as a “work in progress” characterized

by an increased ability to master complex challenges of academic, interpersonal, and emotional tasks, while at the same time searching for new interests, talents, and social identities. Adolescents are expected to have a developmental change in the form of increased risk-taking, increased sexual behavior, and a move toward peer affiliation rather than a primary family attachment [2]. The age limits of adolescents have been fixed differently under different programs, WHO define adolescence as the age group between 10 and 19 years [3]. The adolescent age group can be divided into three

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stages: early (12–14 years), middle (14–16 years), and late (17–19 years) adolescence [4].

Adolescents are the future citizens of a country and it is imperative to systematically address their needs and mental health is an essential component of their health and development [5]. Good mental health enables an adolescent to live harmoniously in his community and maintain a good respectable social life [6]. There is a growing consensus that healthy development during adolescence contributes to good mental health and can prevent mental health problems. The behavioral patterns established during this developmental period determine young people's current health status and the risk of developing chronic diseases in adulthood but unfortunately, it is the most underrated and undervalued domain of the adolescent's health [7].

Psychiatric disorders are among the most burdensome of all classes of diseases because of their high prevalence, early age of onset, chronic course, and resulting serious impairment and disability [8]. Such disorders, if untreated, can lead to a significant social and emotional burden on the patient as well as the parents/caregivers of the patient. These disorders can severely influence an adolescent's development, educational attainments, and potential to lead a productive life. Adolescents suffering from psychiatric illnesses face major challenges with stigma, isolation, and discrimination, as well as a lack of access to health care and educational facilities [9]. Adolescent poor mental health is seen to be associated with higher alcohol use, violence, family conflicts, adolescent pregnancy, school dropout, delinquent behaviors, and sometimes suicide [10].

Many studies have identified mental health problems as the largest cause of the burden of disease among young people. Worldwide, the first and main cause of YLDs for 10–24-year-olds was found to be neuropsychiatric disorders [11]. Approximately one in five adolescents have a mental health disorder and nearly one-third have symptoms of depression. Mental health issues are the second leading cause of death in adolescents, in the form of suicide [12]. Most psychiatric disorders start during adolescence or childhood, although the diagnosis and treatment may be delayed for years [13]. Almost half of all mental illnesses begin by the age of 14 and three-quarters begin by the mid-20s [14]. However, according to World Health Organization, there is a paucity of information on the prevalence and burden of major psychiatric and behavioral disorders in all countries, particularly in developing countries [15].

Methods

The study was carried out in two districts of the Kashmir division of the state of Jammu and Kashmir, District Srinagar and District Ganderbal. There are a total of 10 districts in the Kashmir division with district Srinagar being primarily urban and district Ganderbal a primarily rural district. The list of all the schools in both districts was sought from the Directorate of School Education. Schools from the above list and sections from each school were chosen by stratified cluster sampling. Stratified cluster sampling was used considering the type of school as strata and sections of each standard as clusters. Subjects included the students studying in the respective schools in classes 9th–12th and in the age group of 13–19 years, who gave consent/assent for the study. Every 5th roll number was chosen from the sections selected. Modified Kuppaswamy scale was instituted to record the socio-demographic status of the adolescent [16]. MINI KID (13–16 years) and MINI PLUS (16–19 years) were applied to assess the presence of any psychiatric illness [17]. All the diagnoses were made on the basis of DSM-5 criteria [18].

Results

Table 1 shows the comparison of various socioeconomic variables among students with and without psychiatric morbidity. Among the 97 students who had any kind of psychiatric morbidity, 70% were in the age group of 13–16 years and 55% were males. 52% belonged to rural areas and almost 43% had middle socio-economic status. Fifty-four percent belonged to private schools and 26% had a family history of any psychiatric illness.

Table 2 shows the overall prevalence of psychiatric illnesses among the study group with major depressive disorder being the commonest diagnosis seen in around 13.7% followed by obsessive–compulsive disorder in 4%. SAD, GAD, and panic disorder were seen in 2.2, 2.5, and 1.4% of the study sample respectively.

Table 3 shows the sex-wise distribution of psychiatric morbidity with depression seen in 14.8% of the male study sample and 12.3% of the female study sample (P value=0.531, chi-square=0.466). OCD was seen in 5.6% of the male sample and 1.9% of the female study sample (P value=0.102, chi-square=3.048). Self-harm behavior was found in 5.8% of the female population (P value=0.001).

Table 4 shows the psychiatric morbidity across the study sample base on the residence with depression seen among 13.3% of the urban and 14.4% of the rural sample (chi-square=0.039, P value=0.06). 4.6% of the study sample from the urban population and 3.5%

Table 1 Psychiatric morbidity v/s no psychiatric morbidity

Variable		No psychiatric morbidity Mean (SD) (range)/frequency (%)	Psychiatric morbidity Mean (SD) (range)/frequency (%)	Chi-square/ANOVA (p value)
Age	13–16	157 (64.9%)	75 (70.1%)	0.90 (0.39)
	17–19	85 (35.1%)	32 (29.9%)	
Sex	Male	136 (56.2%)	59 (55.1%)	0.03 (0.90)
	Female	106 (43.8%)	48 (44.9%)	
Class	12th	62 (25.6%)	22 (20.6%)	1.04 (0.78)
	11th	70 (28.9%)	33 (30.8%)	
	10th	52 (21.5%)	25 (23.4%)	
	9th	58 (24.0%)	27 (25.2%)	
Residence	Urban	99 (40.9%)	51 (47.7)	1.38 (0.96)
	Rural	143 (59.1%)	56 (52.3%)	
Socioeconomic status	Upper	5 (2.1%)	5 (4.7%)	8.38 (0.6)
	Upper middle	27 (11.2%)	14 (13.1%)	
	Middle	131 (54.1%)	46 (43.0%)	
	Upper lower	66 (27.3%)	29 (27.1%)	
Family type	Lower	13 (5.4%)	13 (12.1%)	2.13 (0.15)
	Joint	42 (17.4%)	12 (11.2%)	
Smoking status	Nuclear	200 (82.6%)	95 (88.8%)	7.10 (0.01)
	Non-smoker	216 (89.3%)	84 (78.5%)	
Family history	Smoker	26 (10.7%)	23 (21.5%)	24.20 (0.000)
	Absent	225 (93.0%)	79 (73.8%)	
Religion	Present	17 (7.0%)	28(26.2%)	0.002 (1.00)
	Muslim	235 (97.1%)	104 (97.2%)	
Co-morbid medical illness	Non-Muslim	7 (2.9%)	3 (2.8%)	5.76 (0.02)
	Absent	230 (95.0%)	94 (87.9%)	
Type of school	Present	12 (5.0%)	13 (12.1%)	8.35 (0.005)
	Private	91 (37.6%)	58 (54.2%)	
	Government	151 (62.4%)	49 (45.8%)	

Table 2 Overall prevalence of psychiatric disorders

Psychiatric disorder	Frequency (%)
MDD	13.7%
OCD	4.0%
Panic disorder	1.4%
Self-harming behavior	2.5%
GAD	2.5%
Social anxiety disorder	2.2%
Dysthymia	1.7%
Adjustment disorder	0.8%

Table 3 Sex-wise distribution of psychiatric diagnosis

Diagnosis	Males n (%)	Females n (%)	Total (n = 349)	Chi-square/ Fisher's test	P value
Depression	29(14.8)	19 (12.3)	48 (13.7)	0.466 ^a	0.531
OCD	11 (5.6)	3 (1.9)	14 (4.0)	3.048 ^b	0.102
Panic Disorder	0	5 (3.2)	5 (1.4)	6.423 ^b	0.016
Self-harming behavior	0	9 (5.8)	9 (2.5)	11.698 ^b	0.001 ^c
GAD	5 (2.5)	4 (2.5)	9 (2.5)	.000 ^b	1.000
Social anxiety	5 (2.5)	3 (1.9)	8 (2.2)	.005 ^b	1.000
Dysthymia	3 (1.5)	3 (1.9)	6 (1.7)	.005 ^b	1.000
Adjustment Disorder	2 (1.0)	1 (0.6)	3 (0.8)	.600 ^b	0.633

^a Chi-square^b Fisher's test

from the rural sample met the criteria for OCD (chi-square = 0.293, *P* value = 0.26). Self-harm behavior was seen in 4.0% of the urban sample and 1.5% of the rural sample (chi-square = 0.293, *P* value = 0.032) which was statistically significant.

Table 4 Psychiatric morbidity between rural and urban school-going adolescents

Diagnosis	Urban (n = 150)			Rural (n = 199)			Chi-square/ Fisher's test
	Male (n = 73)	Female (n = 77)	Total	Male (n = 122)	Female (n = 77)	Total	
Depression	10 (13.6)	10 (12.9)	20 (13.3)	19 (15.5)	9 (11.6)	28 (14.0)	0.039 ^a
OCD	5 (6.8)	2 (2.5)	7 (4.6)	6 (4.9)	1 (1.2)	7 (3.5)	0.293 ^b
Panic disorder	0	2 (2.5)	2 (1.3)	0	3 (3.8)	3 (1.5)	0.018 ^b
Self-harm behavior	0	6 (7.7)	6 (4.0)	0	3 (3.8)	3 (1.5)	2.115 ^b
GAD	2 (2.7)	2 (2.5)	4 (2.6)	3 (2.4)	2 (2.5)	5 (2.5)	0.008 ^b
Social anxiety	1 (1.3)	1 (1.3)	2 (1.3)	4 (3.2)	2 (2.5)	6 (3.0)	0.605 ^b
Dysthymia	2 (2.7)	1 (1.2)	3 (2.0)	1 (0.8)	2 (2.5)	3 (1.5)	0.585 ^b
Adjustment disorder	1 (1.3)	1 (1.3)	2 (1.3)	1 (0.8)	0	1 (0.5)	0.081 ^b

^a Chi-square^b Fisher's test

Discussion

Adolescence is a very critical period in any individual's life. It has been viewed as a time of overwhelming turmoil and thus an increase in psychiatric morbidity is expected. Mental health during adolescence has a direct impact on the achievements of the adolescent, thus affecting the quality of life of the adolescent. It affects the family that the adolescent lives in and thus the community as a whole. Psychiatric disorders in an adolescent can damage self-esteem and relationship with his peers, affect school performance, and reduce the quality of life not only for the adolescent but also for his parents or caregivers and families. Adolescents suffering from psychiatric illnesses face major challenges with stigma, isolation, and discrimination, as well as a lack of access to healthcare and educational facilities [19]. They may also be at an increased risk of conflict with families and feeling alienated from their families. Adolescent poor mental health is seen to be associated with higher alcohol use, violence, family conflicts, adolescent pregnancy, school drop-out, delinquent behaviors, and sometimes suicide.

Adolescent mental health problems are vast and varied and early identification and intervention can be of utmost help. There is sparse data on mental health issues in the adolescent population from India in general and J&K in particular; thus, it was decided to embark on this study. Two districts, one rural and one urban were selected and the list of schools in these two districts was sought. Random cluster sampling was used to identify sections and students within a section were chosen based on roll and roll numbers.

Morbidity ranging from 10 to 40% has been seen among this age group across various studies [20] with such varied prevalence explained by the different settings, sample selection and methodology adopted [20–23].

Research has shown that 1 in 10 children and adolescents suffer from mental health disorders severe enough to cause impairment [23]. There was no statistically significant difference in the overall psychiatric morbidity group among males and females. However, panic disorder, borderline personality disorder and anxiety disorder as a group were more commonly found among females compared to males. Although studies have reported enuresis as one of the commonest diagnoses, however, none was found in our study which may be due to under-reporting by the students. Many studies have found depression to be commoner among females compared to males in this age group but our study failed to demonstrate that, possibly because Kashmir is a conflict zone and males are at higher risk of exposure to trauma and violence.

The mean age of the study sample was 15.7 ± 1.5 years with males representing around 55.8% of the sample, owing to higher literacy among men compared to women. Higher numbers of subjects were from rural areas as the majority of the population is rural. Middle class predominated as has been seen across various studies conducted. Most of the study subjects were Muslims who lived in nuclear families.

Gender difference was prominent across the anxiety disorder group and both biological and environmental factors have been implicated in the observed difference. Differences in gender roles, gender-role stress, social relationships, and exposure to social adversity and socialization process have been attributed to this difference [24].

Thirty-four percent from urban and 28% from rural areas met the criteria for any psychiatric disorder. Urban students having an increased prevalence of psychiatric disorders could be attributed to rapid urbanization and modernization, more school and academic stress, and

less child-friendly spaces which put the adolescent at risk of stress and thus at risk of psychiatric illness [25].

A lower prevalence among joint family students was also seen and could be related to better and less stressful home environments in joint families, more ways of expressing hard-felt emotions and feelings and less burden of work. Our study had only smokers as the substance of use. No cases of cannabis/alcohol/inhalant use were identified which could be explained by the fact the students may not have reported the use of cannabis and other illicit substance because of greater stigmatization. Also, we did not have the facility as well as consent for lab investigation for screening students. The prevalence of psychiatric morbidity among the smoker group was 46.9% in comparison to non-smokers where it was 28%. This significant difference could be due to a bidirectional relationship between smoking and psychiatric disorders among adolescents wherein adolescents with a psychiatric illness already have higher chances of smoking and smokers have higher odds of having psychiatric morbidity [26].

Environmental adversities

The adversities of the environment that may contribute to the vulnerability of children and adolescents to mental health problems can be pervasive/chronic or episodic/event-related. Pervasive adversities include poverty, adverse physical environments, chronic physical illnesses, and problems of biological maturity while episodic adversities include floods and earthquakes.

Environmental adversity in a conflict-ridden area may damage the child biologically, psychologically, and socially: for instance, through under-nutrition, loss of limbs with land mines, losing vision due to pellet guns, being taken from families as child soldiers, childhood rape, and the destruction of means of sustenance, all of these are relevant in our valley of Kashmir as evidenced by various studies from the valley [27, 28].

Our study had students who had been through lots of stress in their lives at a tender age, both chronic and event-related. Many of the students had faced trouble with the police or suffered physical injuries during clashes with the police. Stresses also came from abnormal and broken families with parental separation and discord being a common cause. Relationship issues, not being able to compete with friends academically and losing friends also affected students in our study.

Conclusion

Children and adolescents represent a tender part of the human life cycle and they may be at a higher risk of psychiatric disorders. There is a very high prevalence of psychiatric morbidity of any kind among adolescents

in Kashmir, many of which are unidentified and thus untreated. Depression is the most common psychiatric illness among adolescents with a higher prevalence in males while anxiety disorders are more common among females. Stress plays an essential role in the development of various illnesses. Academic stress, stresses from personal life and environment, as well as the ones arising from conflict may be important.

There is a need for further research in this age group and teachers and parents need psycho-education for identification of such children.

Abbreviations

ANOVA	Analysis of variance
DSM	Diagnostic and Statistical Manual of Mental disorders
GAD	Generalized anxiety disorder
MDD	Major depressive disorder
MINI	Mini-International Neuropsychiatric Interview
OCD	Obsessive compulsive disorder
SAD	Social anxiety disorder
SD	Standard deviation
YLDs	Years lost to disability

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Authors' contributions

UR and AF were responsible for data collection, data analysis, manuscript writing, manuscript editing and manuscript approval. MS and FeR were involved in conceptualization, manuscript editing, and manuscript writing. NY, BB, and SY were involved in manuscript approval and manuscript editing. All authors read and approved the final manuscript.

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Availability of data and materials

All data generated or analyzed during this study included in this published article.

Declarations

Ethics approval and consent to participate

The approval to conduct the study was given by the institutional ethical committee Government Medical College Srinagar. Permission was also taken from the Jammu Kashmir Board of School education as the study was a school-based study.

Consent for publication

Yes.

Competing interests

The authors declare that they have no competing interests.

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References

1. Jaworska N, MacQueen G (2015) Adolescence as a unique developmental period. *J Psychiatry Neurosci* 40:291–293. <https://doi.org/10.1503/jpn.150268>

2. Steinberg L (2005) Cognitive and affective development in adolescence. *Trends Cogn Sci* 9:69–74. <https://doi.org/10.1016/J.TICS.2004.12.005>
3. Gupta I, Verma M, Singh T, Gupta V (2001) Prevalence of behavioral problems in school going children. *Indian J Pediatr* 68:323–326. <https://doi.org/10.1007/BF02721837>
4. UNICEF's flagship 'the state of World's Children 2016: A fair chance to every child'. <https://www.unicef.org/reports/state-worlds-children-2016#:~:text=The%20State%20of%20the%20World%27s%20Children%202016%20argues%20that%20progress,more%20divided%20world%20by%202030>. Accessed 11 May 2023
5. Mishra A, Sharma AK (2001) A clinico-social study of psychiatric morbidity in 12 to 18 years school going girls in urban Delhi. *Indian J Community Med* 26:71
6. McLeod JD, Uemura R, Rohman S (2012) Adolescent mental health, behavior problems, and academic achievement. *J Health Soc Behav* 53:482–497
7. Jurewicz I (2015) Mental health in young adults and adolescents - supporting general physicians to provide holistic care. *Clin Med (Lond)*. 15:151–410
8. Rahi M, Kumavat AP, Garg S (2005) Socio-demographic co-relates of Psychiatric disorders. *Indian J Pediatr* 72:395–398
9. Adolescent mental health (2021) World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>. Accessed 11 May 2023
10. Schlack R, Peerenboom N, Neuperdt L, Junker S, Beyer AK (2021) The effects of mental health problems in childhood and adolescence in young adults: Results of the KiGGS cohort. *J Health Monit* 6:3–19. <https://doi.org/10.25646/8863>
11. Kumar V (2016) A study of pattern of psychiatric disorders and contributing factors among adolescents. *Int J Contemp Med Res* 3:3178–3183
12. Gore FM, Bloem PJ, Patton GC, Ferguson J, Joseph V, Coffey C, Sawyer SM, Mathers CD (2011) Global burden of disease in young people aged 10–24 years: a systematic analysis. *Lancet* 377:2093–2102. [https://doi.org/10.1016/S0140-6736\(11\)60512-6](https://doi.org/10.1016/S0140-6736(11)60512-6)
13. Blakemore SJ (2019) Adolescence and mental health. *Lancet* 393:2030–2031. [https://doi.org/10.1016/S0140-6736\(19\)31013-X](https://doi.org/10.1016/S0140-6736(19)31013-X). (PMID: 31106741)
14. Kessler RC, Avenevoli S, Costello EJ, Georgiades K, Green JG, Gruber MJ et al (2012) Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Arch Gen Psychiatry* 69:372–380. <https://doi.org/10.1001/archgenpsychiatry.2011.160>
15. Geneva: World Health Organization (2001) Mental Health: New Understanding. New Hope The World Health Report 2001:178
16. Wani RT (2019) Socioeconomic status scales-modified Kuppuswamy and UdaiPareekh's scale updated for 2019. *J Family Med Prim Care* 8:1846–1849. https://doi.org/10.4103/jfmpc.jfmpc_288_19
17. Sheehan DV, Sheehan KH, Shytle RD, Janavs J, Bannon Y, Rogers JE et al (2010) Reliability and validity of the Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID). *J Clin Psychiatry* 71:313–326. <https://doi.org/10.4088/JCP09m05305whi>
18. American Psychiatric Association (APA) (2013) Diagnostic and statistical manual of mental disorders, 5th edn. American Psychiatric Publishing, Arlington
19. International Association for Child and Adolescent Psychiatry (2005) Allied Professions Atlas: child and adolescent mental health resources: Global concerns. World Health Organization, Implications for the future
20. Gau SS, Chong MY, Chen TH, Cheng AT (2005) A 3-year panel study of mental disorders among adolescents in Taiwan. *Am J Psychiatry* 162:1344–1350
21. Anita GDR, Vohra AK, Subash S, Khurana H (2007) Prevalence of psychiatric morbidity among 6 to 14 year old children. *Indian J Community Med* 28:7–9
22. Roberts RE, Roberts CR, Xing Y (2007) Rates of DSM-IV psychiatric disorders among adolescents in a large metropolitan area. *J Psychiatr Res* 41:959–967
23. Pahwa MG, Sidhu BS, Balgir RS (2019) A study of psychiatric morbidity among school going adolescents. *Indian J Psychiatry* 61:198–203. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_35_16
24. Bangasser DA, Cuarenta A (2021) Sex differences in anxiety and depression: circuits and mechanisms. *Nat Rev Neurosci* 22:674–684
25. Srivastava K (2009) Urbanization and mental health. *Ind Psychiatry J* 2018:75–76. <https://doi.org/10.4103/0972-6748.64028>
26. Chang G, Sherritt L, Knight JR (2005) Adolescent cigarette smoking and mental health symptoms. *J Adolesc Health* 36:517–522
27. Rather YH, Margoob MA (2006) The children living in orphanages in Kashmir: An exploration of their nurture, nature and needs. *JK-Practitioner* 13(Suppl 1):S49-52
28. Shah H, Mishra AK (2021) Trauma and children: Exploring posttraumatic growth among school children impacted by armed conflict in Kashmir. *Am J Orthopsychiatry* 91:132–148. <https://doi.org/10.1037/ort0000523>

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