Prevalence of Psychiatric Morbidities in School Going Adolescents in a Rural Block of Haryana

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Abstract

Background: Mental health problems have increased considerably among adolescents in the past 20-30 years. According to the present estimates by World Health Organization, mental illnesses are the leading causes of disability adjusted life years globally.

Objectives: To find out prevalence of psychiatric disorders among school going adolescents and to find its association with socio demographic variables.

Methods and Materials: It is a school based, rural community setting with cross-sectional design. Study was conducted in 600 students (300 males and 300 females) studying in class 8th to 12th. A pre-designed, pre-tested tool Symptom Checklist 90 Revised containing 90 items was used to screen these students. The global severity index (GSI) was used to measure the extent or depth of individual’s psychiatric disturbances. Descriptive statistics and chi square test were used for statistical analysis.

Results: Prevalence of psychiatric morbidity was found to be 35%. It increased statistically significantly with age. Females had more problems as compared to males. Maximum number of students with psychiatric morbidity were from class 12 (43%) and class 10 (37%) and from upper middle class (34.5%) followed by middle class (35.3%).

Conclusion: It is concluded that more than one-third (35%) of adolescents who were apparently healthy suffered from unnoticed mental health problems.

Keywords: Adolescents, Prevalence, Psychiatric Morbidity

Introduction

Mental health is a state of wellbeing in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.⁴ Child and adolescent mental health (CAMH) is the capacity to achieve and maintain optimal psychological functioning and wellbeing.⁵ It directly relates to their level and competence in psychological and social functioning.

Psychiatric epidemiology is the study of the distribution and determinants of occurrence of mental illnesses in human beings. In a country like India where people are...
less aware about mental health problems, only patients with major mental illnesses access mental health services and those with minor mental disorders remain in the community without identification and management.² So, the advantages of the epidemiological studies lie at targeting all levels of recognition of the minor cases, missing cases, and of the new cases.

A combination of genetic and environmental factors seems to play etiological role. Social and environmental factors associated with mental ill health are innumerable, including poverty, economic insecurity, cruelty, rejection, neglect, family problems educational difficulties, psychiatric disorder in parent and poor coping ability.

Research shows that most of the psychiatric disorders detected in adulthood often begin in childhood or adolescence.³ ⁴ Mental disorders and mental health problems seem to have increased considerably among adolescents in the past 20-30 years.⁵ Studies have shown that one in 10 children and adolescents suffers from mental health disorders severe enough to cause impairment.⁶ Three to nine per cent of teenagers in schools, studying in 9th standard or above and overtly healthy, meet the criteria for depression at any one time.⁷ As many as 20% of teenagers in India reported a lifetime prevalence of depression. Further, the more frustrating part is that 30-50% of cases were gone unnoticed by general physicians.⁷

Thus, the present study was planned to determine the prevalence of psychiatric disorders among school going adolescents in a rural block of Haryana and also to find out the association of these psychiatric disorders with sociodemographic factors among school going adolescents in a rural block Beri, District Jhajjar.

Materials and Methods

The study was undertaken in rural block in the state of Haryana which is the rural field practice area attached to Department of Community Medicine of Pt. B. D. Sharma PGIMS, Rohtak, Haryana. The study was conducted over a period of one year from October 2016 to September 2017. School going adolescents both boys and girls studying in 8th to 12th standards from both government and private secondary and senior secondary schools in the rural block comprised the study population.

One of recent meta-analysis carried out on school-based studies in the year 2013 on prevalence of child and adolescent psychiatric disorders in India, done by Malhotra S and Patra BN reported the prevalence to be 23.33%.⁸ Taking prevalence to be 23% and allowable error to be 15% of prevalence, the sample size was thus calculated to be 595. So, for the purpose of present study 600 subjects were selected.

List of schools were obtained from DEO (District Education Officer). Prior permission from the DEO was obtained for the present study after briefing him about study purpose and objectives. All the senior secondary schools in that block were stratified into two groups i.e. government and private. A total of 3 schools from each stratum were selected randomly by lottery method from list of all eligible schools.

All the senior secondary schools in Beri block were stratified into two groups i.e. government and private. A total of 3 schools from each stratum were selected randomly by lottery method from list of all eligible schools. [Eligibility criteria for school: All those schools which had strength of more than 100 students from 8th to 12th class and at least 20 students in each of these classes qualified the eligibility criteria for including in the study for the purpose of adequacy of sample size]. So, a total of six schools were selected out of the list of eligible schools. A total of 600 students, 100 from each school and 20 from each class were selected taking both boys and girls from each class in equal proportion. Simple random sampling technique using lottery method was used to select students from each class.

Prior permission was obtained from the concerned principals of the selected schools after briefing them about the study and its objectives. A written informed consent from parents of the selected students was obtained one day prior to conducting the study through principal/class teacher. Verbal assent of students under the age of 18 years and written consent of students aged 18 years & above and of parents in case of minor students was obtained.

Exclusion Criteria

- Those who do not agree for valid consent.
- Those children who are absent on the day of visit to the respective school.
- Subjects having gross hearing impairment diagnosed organic brain pathology or articulation disorders.

Inclusion Criteria

Apparently healthy children fulfilling the above criteria were included in the present study.

Symptom checklist-90 Revised version was used to assess different symptoms and states of the mind.⁹ It comprises of 90 questions. This scale measures somatization, obsessive-compulsive disease, inter-personal sensibility, depression, anxiety, hostility, phobic anxiety, paranoid thoughts, psychotic and additional symptoms on 5-point Likert scale (0=none and 4=too much). The SCL-90 takes between 12 and 20 minutes to complete.

Raw score of SCL 90 R subscales was calculated by dividing the sum of scores for a dimension by number of items in the dimension. The SCL 90 R has 3 global indexes: Global Severity Index (GSI) that measures the extent or depth of the individual’s psychiatric disturbances; Positive Symptom Total (PST) counts the total number of questions rated above 1 point; Positive Symptom Distress Index (PSDI) is calculated by dividing the sum of all items values by the
PST. The global severity index (GSI) for SCL-90 R is calculated as the average score of the 90 items of the questionnaire. The cut off of GSI >0.70 is suggestive of possible psychiatric problem in the individual.\(^\text{10}\)

Additionally, the Modified B G Prasad scale was used to assess socioeconomic status of study population.\(^\text{11}\)

**Tools used**
- Proforma for sociodemographic and Modified B G Prasad scale for socioeconomic status.
- Symptom checklist 90 Revised.

The data was analyzed using SPSS Version 20.0 (Statistical Package for Social Sciences) software. After analysis of the data, individuals with high cut off value was referred to Psychiatrist for detailed evaluation and for further management.

**Results**

Table 1 describes the various socio-demographic details of the study population. There was equal distribution of students between government and private schools in terms of class and gender. Maximum number of students belonged to age group of 13-14 years followed by 15-16 years and 17-18 years in both government and private schools. In government school 40.2% of students were from lower middle class followed by lower class but in private school maximum number of students was from middle class followed by upper middle class. In government school only 0.7% students were from upper class as compared to private schools where 18.7% students were from upper class. In government school mothers of 16% were employed which was slightly less in comparison to private school where 18.3% student’s mother were employed.

Table 2 shows that 35% adolescents suffered from psychiatric morbidity. The percentage distribution of psychiatric morbidity among government and private school students was almost similar and this distribution was found to be statistically non-significant.

| Variables                      | Government Sr. Sec. School (%) n = 300 | Private Sr. Sec. School (%) n = 300 | Total |
|--------------------------------|----------------------------------------|-------------------------------------|-------|
| **Age**                        |                                        |                                     |       |
| 13-14 years                    | 143 (47.5%)                            | 157 (52.3%)                         | 300 (50%) |
| 15-16 years                    | 127 (42.2%)                            | 117 (39%)                           | 244 (40.7%) |
| 17-19 years                    | 30 (10.0%)                             | 26 (8.7%)                           | 56 (9.33%) |
| **Class**                      |                                        |                                     |       |
| 8th class                      | 60 (20%)                               | 60 (20%)                            | 120 (20%) |
| 9th class                      | 60 (20%)                               | 60 (20%)                            | 120 (20%) |
| 10th class                     | 60 (20%)                               | 60 (20%)                            | 120 (20%) |
| 11th class                     | 60 (20%)                               | 60 (20%)                            | 120 (20%) |
| 12 class                       | 60 (20%)                               | 60 (20%)                            | 120 (20%) |
| **Gender**                     |                                        |                                     |       |
| Males                          | 150 (50%)                              | 150 (50%)                           | 300 (50%) |

| Type of school | Psychiatric morbidity present GSI ≥ 0.7 | Psychiatric morbidity absent GSI < 0.7 | Total |
|----------------|-----------------------------------------|----------------------------------------|-------|
| Government school | 110 (36.7%)                            | 190 (63.3%)                           | 300 (100%) |
| Private school   | 100 (33.3%)                             | 200 (66.7%)                           | 300 (100%) |
| **Total**        | 210 (35%)                               | 390 (65%)                             | 600 (100%) |

Test Statistics: \(\chi^2 = 0.733, df = 1, p = 0.392\)
As depicted in Table 3, psychiatric morbidity increased with age ranging from 31% in the age group of 13-14 years to 53.6% in the age group of 17-18 years and this increase was statistically significant. Females seemed to have more psychiatric morbidity as compared to males. But this distribution was statistically non-significant. Further, maximum number of students with psychiatric morbidity was from class 12 (43%) and class 10 (37%) but this difference was statistically not significant. Parents education and socio-economic status did not show any correlation with psychiatric morbidity.

**Discussion**

Adolescence is the time of life when one goes through many changes in life and is associated with high psychiatric morbidity. In the present study, we observed that 36.7% of students of government school and 33.3% of students of private school showed psychiatric morbidity. The findings are in accordance with findings of Sharma A et al (2014) who conducted study in 400 adolescents (200 adolescents each from rural and urban areas) at Dehradun, found that overall prevalence of psychosocial problem was 40.5% with 34.5% in rural area and 46.5% in urban area. Jain V et al (2014) conducted study in rural area of Muzaffarnagar, UP among 210 adolescent girls and boys (10-19 years old) who were interviewed & detailed information was collected on a structured and pre-tested questionnaire and the clinical diagnosis was generated as per the criteria laid down in ICD-10. It was observed that overall prevalence of psychosocial problems was 41.43%. In the study done at Chandigarh by Pathak R et al (2011) in 1150 adolescents (12 to 18 year age group in grades 7 to 12 in 10 co-educational schools (government run and private) were the subjects of the study. Behavioural and emotional problems were assessed using Youth Self-Report (2001) questionnaire and the prevalence was found to be 30.4%. In another study done by Muzammil K et al (2009) at Dehradun in 840 adolescents found that the overall prevalence of psychosocial problems among adolescents was 31.2%. Cholakottil A et al (2017) in his study on 720 school going adolescents (8th, 9th and 10th standards) in Kerala concluded that 38.3% of adolescents had at least one or the other psychiatric disorder and the tool used was Children Behaviour Questionnaire score (CBQ). Kumar KS et al (2017) conducted his study among 800 higher secondary school students at Imphal using DASS tool found that 81.6% of respondents had at least one of the studied disorders (depression, anxiety and stress) and 34.7% had all these three negative states. Many studies conducted by different authors found prevalence of psychiatric morbidity to be lower than our study like Faizi N et al (2017) at Aligarh conducted study among 13–15 years’ age group school going adolescents, employing Strength and Difficulties Questionnaire (SDQ), reported prevalence to be 9.75%; Bista B et al (2016) at Nepal conducted study among 787 adolescent students using a set of structured questionnaire and Y-PSC found prevalence to be 17.03%; Murthy NMR et al (2016) conducted study at Mysore among 683 adolescent students using a set of structured questionnaire and Y-PSC found prevalence to be 17.03%; Murthy NMR et al (2016) conducted study at Mysore among 683 adolescent students using a set of structured questionnaire and Y-PSC found prevalence to be 17.03%; Murthy NMR et al (2016) conducted study at Mysore among 683 adolescent students using a set of structured questionnaire and Y-PSC found prevalence to be 17.03%.
girls (16-19 years) using mini international neuropsychiatric interview, Version 6.0 to diagnose psychiatric morbidity and WHOQOL BREF Questionnaire, reported prevalence to be 15.5%; Kaur S et al (2015) at Faridkot conducted study among 500 children (6th to 12th standard), using tool Childhood Psychopathology Measurement Schedule (C.P.M.S), found prevalence to be 16.8%. This difference in prevalence rates is probably because of different settings, methodology and instruments used for data collection.

Findings of our study suggest that psychiatric morbidity was slightly more among females (36.7%) as compared to males (33.3%) but this association was found to be non-significant. The finding was similar to the study done by Pathak R et al (2011) where prevalence of behavioral and emotional problems was more among girls (33.7%) than boys (27.5%). According to Balgir RS et al (2016), psychiatric morbidity was more among female children (24.12%) as compared to male children (17.50%). This might be because of the fact that adolescence is the period where both boys and girls are generally more anxious, explorative, seek independence and more freedom. However, in Indian scenario there is gender inequality in most of the families, boys were given comparatively more freedom, independence and opportunities to come out with their inherent qualities in comparison to girls. So, girls are unable to express freely about their feelings and problems and thus have more stress. They are also less supported emotionally by family members and thus feel lonely and stressed. This makes them comparatively more prone to develop psychiatric problems.

We also noticed that students of 10th and 12th class had higher morbidity as compared to others. This finding is similar to previous studies Kumar KS et al (2017), Bhosale S et al (2015) and Roy R et al (2014). The probable reasons for this could be tremendous pressure regarding their performance in board exams and in competitive exams as well as stress of deciding regarding career.

Further a trend of increase in prevalence of psychiatric morbidity with increasing age was noticed in our study i.e. 53.6% in age group of 17-19 years, 35.7% in age group of 15-16 years and 31.0% in age group of 13-14 years (p < 0.05). These findings were similar to previous studies Pathak R et al (2011), Bista B et al (2016), Bhosale S et al (2015), Sharma A et al (2014). This finding can be attributed to the reasons mentioned earlier and to the increasing peer pressure and conflicts.

Also, literacy level of mother was found to have a negative relationship with psychiatric morbidity i.e. children of illiterate mothers had more psychosocial problems, though it was not statistically significant. This finding was similar to study conducted by Patil RN et al (2013) This may be explained by the fact that educated mothers could be more aware and perceptive of any developmental and behavioral deviance of the child at an earlier stage where the problem was still amenable for prevention and treatment.

Our study though, an important community-based study has certain limitations. The confirmation of the diagnosis by psychiatrist was not done at the time of interview due to feasibility issues. However, studies have shown that there is concordance in the diagnosis made on the basis of screening instrument and clinical assessment by psychiatrist. Stigma attached to mental health related issues might have affected the responses.

Our study points towards a pertinent issue of mental health problems faced by our youngsters. It tries to dispel the myth that adolescents are immune to mental health problems. It becomes important that parents, teachers and health workers be sensitized to these issues. Adolescents should be encouraged to discuss their psychological problems without shame and guilt.

Conclusion
It might be concluded from the present study that more than one-third (35%) of adolescents who were apparently healthy suffered from unnoticed mental health problems. The risk factors for the same were present in the surrounding of the students, might be at home or at school. The study revealed that the symptoms started in the early adolescents, increased in the mid adolescents and were maximum in the late adolescents. The findings of this study highlighted that any complaint made by the student should be viewed seriously by parents and teachers and their problems and queries should be resolved.

Conflict of Interest: None

References
1. Herrman H, Saxena S, Moodie R. Promoting mental health: concepts, emerging evidence, practice. A report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne. World Health Organization, Geneva. 2005.
2. Math SB, Srinivasaraju R. Indian psychiatric epidemiological studies: learning from the past. Indian J Psychiatry 2010; 52: 95-103.
3. Renouf AG, Kovacs M, Mukerji P. Relationship of depressive, conduct and co-morbid disorders and social functioning in childhood. J Am Acad Child Adolesc Psychiatry 1997; 36: 998-1004.
4. Beautraise AL. Risk factors for suicide among young people. Aust N Z J Psychiatry 2000; 34: 420-36.
5. Michaud PA, Fombonne E. ABC of adolescence, Common mental health problems. BMJ 2005; 9: 330.
6. Drugs and Alcohol Ireland - Second annual child and adolescent mental health service report 2009-2010. Available from: http://www.drugsandalcohol.ie/14281/#.
7. Bansal V, Goyal S, Srivastava K. Study of prevalence of depression in adolescent students of a public school. *Ind Psychiatry J* 2009; 18(1): 43-46.

8. Malhotra S, Patra BN. Prevalence of child and adolescent psychiatric disorders in India: a systematic review and meta-analysis. *Child and Adolescent Psychiatry and Mental Health* 2014; 8(22): 1-9.

9. Derogatis LR, Lipman RS. The SCL 90: An outpatient psychiatric rating scale. *Psychopharmacol Bull* 1973; 9(1): 13-28.

10. Nojomi M, Gharayee B. Medical students and mental health by SCL-90-R. *Medical Journal of the Islamic Republic of Iran* 2007; 21(2): 71-78.

11. Khairnar M, Wadgave U, Shimpri PV. Updated BG Prasad socioeconomic classification for 2016. *J Indian Assoc Public Health Dent* 2016; 14(4): 469-470.

12. Sharma A, Gupta SK, Luthra M et al. Psychosocial problems of adolescents: Influence of age, sex and area of residence. *Journal of Advance Researches in Biological Sciences* 2014; 6(2): 130-133.

13. Jain V, Singh M, Muzammil K et al. Prevalence of psychosocial problem among adolescents in rural areas of District Muzaffarnagar, Uttar Pradesh. *Ind J Comm Health* 2014; 26(3): 243-248.

14. Pathak R, Sharma RC, Parvan UC et al. Behavioural and emotional problems in school going adolescents. *Australas Med J* 2011; 4: 1521.

15. Muzammil K, Kishore S, Semwal J. Prevalence of psychosocial problems among adolescents in district Dehradun, Uttarakhand. *Indian J Public Health* 2009; 53(1): 18-21.

16. Cholakottil A, Kazhungil F, Kunhi KA. Prevalence and pattern of psychiatric disorders in school going adolescents. *International Journal of Indian Psychology* 2017; 4(3): 123-128.

17. Kumar KS, Akoijam BS. Depression, anxiety and stress among higher secondary school students of Imphal, Manipur. *Indian J Community Med* 2017; 42: 94-96.

18. Faizi N, Azmi SA, Ahmad A et al. Assessment of psychological problems in school going adolescents of Aligarh. *Ind Psychiatry J* 2017; 25: 184-188.

19. Bista B, Thapa P, Sapkota D et al. Psychosocial problems among adolescent students: an exploratory study in the central region of Nepal. *Frontiers in Public Health* 2016; 4: 158.

20. Murthy NMR, Smitha MC, Ram D et al. Association of psychiatric morbidity with quality of life among late adolescent girls: exploring the iceberg. *Int J Community Med Public Health* 2016; 3: 1167-1172.

21. Kaur S, Thapar SK, Shandilya V. The prevalence of psychiatric morbidity among school children. *Int J Med and Dent Sci* 2015; 4(2): 834-41.

22. Balgir RS, Sidhu BS, Garg M et al. Distribution of psychiatric morbidity among school going adolescents in a district of North India. *Int J Med Res Health Sci* 2016; 5(5): 1-9.

23. Bhasole S, Singru SA, Khismatrao D. Study of psychosocial problems among adolescent students in Pune, India. *Al Ameen J Med Sci* 2015; 8(2): 150-155.

24. Roy R, Mukherjee S, Chaturvedi M et al. Prevalence and predictors of psychological distress among school students in Delhi. *J Indian Assoc Child Adolesc Ment Health* 2014; 10(3): 150-166.

25. Patil RN, Nagaonkar SN, Shah NB et al. A cross-sectional study of common psychiatric morbidity in children aged 5 to 14 years in an urban slum. *J Family Med Prim Care* 2013; 2(2): 164-168.

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