Section: Health and Family Welfare

Original Research Article

SOCIO-DEMOGRAPHIC DETERMINANTS OF STRESS, ANXIETY AND DEPRESSION AMONG SCHOOL STUDENTS

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ABSTRACT

Background: Mental health is a crucial factor that enables individuals to reach their full potential to lead a productive and healthy life. Although, study of determinants of mental well-being is important at individual level, a broader view of the same can help improve community as a whole. As children are the harbingers of our future, it is paramount to safeguard their mental wellbeing.
Materials and Methods: A cross sectional study was conducted among students of 9th -12th class of government and private schools of urban and rural areas of Amritsar. Sample size was calculated using formula N > 4pq/ d2. Data was collected during the period of one year. Pre tested, semi structured questionnaire and DASS -21 scale was used. Chi squared tests were applied and statistical analysis was conducted using Epi-Info. P value <0.05 was considered to be statistically significant.
Results: The prevalence of Stress, Anxiety and Depression was found to be 53%, 58% and 54% respectively having significant associations with socio-demographic profile.
Conclusion: Stress, anxiety and depression had significant associations with age, religion and caste among the students who participated in this study. Thus, components of socio-demographic profile were noted to have an effect on student's mental health.
Keywords: Stress, anxiety, depression, students, socio-demographic profile.

INTRODUCTION

The significance of mental health and its role in our survival attests the importance of humans as social beings: levels of social interaction are universal determinants of wellbeing across all cultures. But the unique nature of each person's mental character also reminds us of the power of the individual: "no one survives without community and no community thrives without the individual".[1]
Given the mutual effects of communities and individuals on each other, social and demographic factors are important determinants of mental health for human beings. With vast demographic profile that harbors the largest adolescent population in the world (253 million),[2] India is a hotspot for risk of mental health problems in its thriving adolescent population. Although, the healthiest period of life, transient nature of this phase can overwhelm an adolescent outside his/her coping capacity and put them at an increased risk of mental disorders, most commonly mood disorders like stress, anxiety and depression. It is a ripe stage where the onset of many psychiatric illnesses increases sharply.
Although, stress is the body's reaction to an unpleasant factor, it recedes once the threat is gone and does not impair the lifestyle of an individual. Usually, it is a response to daily pressures or a threatening situation. But if sustained for longer periods, it can give rise to Anxiety which doesn't go away when the threat ceases and can significantly impair social, occupational and other important areas. Various studies done in India report prevalence of stress among school students ranging from 40%-50%.[3,4,5] Whereas Anxiety is an emotion

characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may also have physical symptoms such as sweating, trembling, dizziness or a rapid heartbeat.[6] Various studies in India report anxiety to be 17-59%,[4,7,8] among Indian adolescents. Unrelenting Stress and anxiety lay a foundation stone for Depression. It is estimated that 1 in 20 teenagers, experience an episode of major depression, making it one of the most common medical illnesses young people face.[9] Indian studies conducted on adolescents report prevalence of depression to be 40% – 54%.[4,10]

There are multidirectional linkages between mental health conditions and socio-demographic variables such as age, sex, education, religion, caste, residency, etc. The aim of this study was to provide prevalence estimates of mental health problems in school adolescents using the DASS-21 scale and to analyze the associations between DASS-21 scores and socio-demographic variables in district Amritsar, Punjab.

MATERIAL AND METHODS

Study Population

students studying in 9th-12th class of government and private schools were selected the study population. Students who gave their written assent were included in the study whereas those who did not or who were already suffering from a mental disorder were excluded from the study.

Study Period

1 year (1 st April 2020 – 31st March 2021)

Sample Size and Sampling Technique

Sample size was calculated using the prevalence rate of stress among students, found to be 47% in a similar study conducted at Chandigarh in the year of 20143. Formula N > 4pq/ d2 was used, where p= prevalence of the problem, q = (1-p) and d = absolute error/precision (taken as 5% for the current study)11. A sample of 480 was selected out of which 444 students participated in the study.

Data Collection Tool

a pre-tested semi structured questionnaire to collect the desired information on the socio-demographic profile and contributory factors towards Stress, Anxiety and Depression and a standardized Depression Anxiety and Stress Scale -21 were used for assessment of presence of Depression, Anxiety and Stress. Scores for depression, anxiety and stress are calculated by summing the subscale items individual scores which were marked on a likert scale of 0-312.

Methodology

After required ethical committee's and District Education Officer's approvals, 4 schools as per the selection criteria were randomly selected. Consents of Principals of selected schools were taken and students in equal representations from each class were selected using simple random sampling. Written informed consents were obtained from the parents/guardians of the selected students along with written assent from students themselves. Data was collected over the period of 1 year using self-administered, pre-tested, semi structured questionnaire and DASS -21 scale. Circulation of google forms was done among the students through whatsapp groups during COVID-19 lockdown and personal visits were conducted once restrictions were lifted. Visits to the schools were conducted in such a manner so that school's routine schedule was not disturbed. Students of only one class were studied during a visit and next visit was planned as per the convenience of the school's Principal. Students were sensitized regarding stress, anxiety and depression and instructions related to filing-up the forms were also discussed. After fully ensuring the students regarding the confidentiality of their responses proformas were distributed to be filled. The proformas were collected after an average period of 45 minutes.

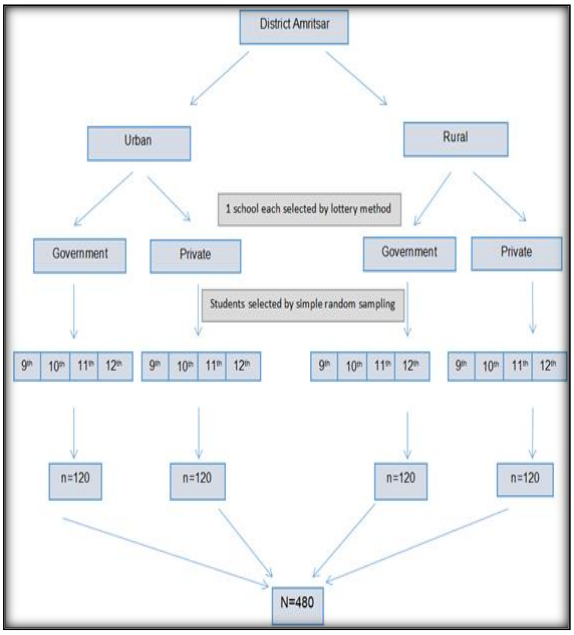

Figure 1: Sampling Technique used for the study

Statistical Analysis

Prevalence of depression, anxiety and stress were calculated by dividing the number of students having score above the respective cut offs of DASS-21 by total students and was compared across various groups. Mean scores of all the subscales were calculated along with standard deviation of the same. Responses of each student were compiled using Microsoft excel and later imported into Epi-Info for the statistical analysis. The distribution of various variables was represented through frequencies and proportions whereas, for continuous variables mean ± standard deviations were calculated. Association of various contributing factors with three subscales was established by using Chi-square test where p-value of less than 0.05 (on both sides) was considered to be statistically significant. If any of the expected cell

value of <5 was found then Fisher's exact test was used. Those who were found to have stress, anxiety and depression were advised to seek counseling and appropriate treatment.

RESULTS

Among the students who participated, 218 (49%) were of 16-17 years of age followed by 138 (31%) of those in the age group of 13-15 years and only 20% (93) were above 18 years of age. A total of 227 (51%) students were male and 217 (49%) students were female. Out of the total 444 study participants, students participating from rural areas were 245 (55%) whereas those from urban areas were 199 (45%). The majority of the students were Sikh by religion (57%; 253) followed by Hindus (37%; 164) whereas only 6% followed Christianity or Islam or Buddhism. Out of the total participants, 96 students (21%) were unaware about their caste, whereas 60% were from general category followed by OBC (13%) and SC/ST (6%).

The overall prevalence of Stress was 53% (233/444) in study participants with majority of them (126; 54%) having mild stress, anxiety was found to be in 257 (58%) students with most (95; 40%) having moderate anxiety and 239 (54%) study participants had depression with high prevalence (108; 46%) of moderate depression. (Figure 2).

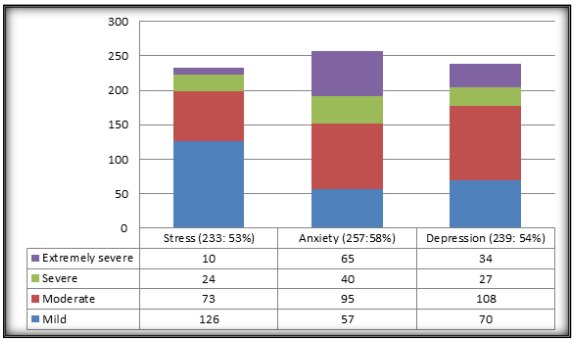

Figure 2: Distribution of depression, anxiety and stress in study participants (N = 444)

Depression and stress were found to be significantly higher among students who were more than 18 years of age. While females were found to have more anxiety and stress i.e 61% and 56% in comparison to males, but this association was not significant.

Those following Hindu religion had least prevalence of depression (46%), anxiety (52%) and stress (43%) whereas prevalence of depression (65%) and stress (58%) was significantly higher among those following Buddhism/Islam and Sikh religion respectively.

Depression and anxiety varied across different castes significantly and they were found to be highest among OBC (68%) and those who did not know about their caste (64%) respectively.

Depression, anxiety and stress were slightly higher in urban population and among those staying in nuclear families but difference was not found to be statistically significant.

Table 1: Association of demographic profile with depression, anxiety and stress in study participants (N = 444)

Variable	Depression(n=239)	Anxiety (n=257)	Stress (n=233)
Age			
13-15 (138)	57 (41)	78 (57)	60 (43)
16-17 (218)	123 (58)	123 (58)	119 (56)
>18 (93)	59 (63)	56 (60)	54 (58)
	χ^2 = 13.48; df2; p = 0.001*	χ^2 = 0.31 df2; p=0.85	χ^2 6.62; df-1; p = 0.03*
Gender			
Male (227)	123(54)	125(55)	110(48)
Female (217)	116(53)	132(61)	123(56)
	χ^2 = 0.02; df1; p=0.8	χ^2 = 1.51; df-1; p = 0.2	χ^2 = 3.00; df-1; p = 0.08
Religion			
Sikh (253)	146(58)	154(61)	147(58)
Hindu (163)	75(46)	86(52)	71(43)
Others (26)	17(65)	16(62)	14(54)
	χ^2 -7.2; df = 2; p=0.02*	χ^2 -3; df-2; p=0.2	χ^2 - 8.7;df-2; p=0.01*
Caste			
General(264)	131(50)	142(54)	127(48)
SC/ST(56)	28(50)	30(53)	30(54)
OBC(28)	19(68)	19(68)	19(68)
Don't know(96)	61(64)	66(69)	57(59)
	χ^2 = 8.0; df=3; p=0.04*	χ^2 =8.0; df=3; p= 0.04*	χ^2 = 6.5; df=3; p=0.08
Area			
Urban (199)	108(54)	119(60)	108(54)
Rural (245)	131(53)	138(56)	125(51)
	χ^2 = 0.02; df=1; p = 0.8	χ^2 = 0.54; df= 1; p = 0.4	χ^2 = 0.46; df=1; p = 0.4
Type of family			

Nuclear(297)	158(53)	173(58)	161(54)
Joint(147)	81(44)	84(57)	72(49)
	χ^2 = 0.14; df= 1; p =0.7	χ^2 = 0.0.4; df=1; p = 0.8	χ^2 =1.07; df=1; p = 0.2

DISCUSSION

Prevalence of anxiety was noted to be highest (58%), which was followed by depression (54%) and stress (53%). Similar results have been reported from different parts of country where the prevalence of stress, anxiety and depression ranged from 19%-49%; 24%-81% and 21%-65%.[3,5,13] In our study, 27% of the anxious, 14% of depressed and 4% of stressed were graded to be suffering from extremes of these conditions.

Although, prevalence of depression in children is low (<1% in most studies) with no sex differences, it rises substantially throughout adolescence.[14] Our study also reflects the increasing prevalence of stress, anxiety and depression with age. It may be due to the effect of puberty on brain and cognitive maturation, which increases social understanding, self-awareness and responses to reward and danger resulting in increased stress levels.

On other hand, studies have also shown that similar to depression among adults, the incidence of depression among adolescents is greater for females than males.[15] However, our study did not show any significant difference among genders. Even though, not many studies have been carried out regarding religion and caste as risk factors for mental illness in adolescents, one research on Indian adult population describes that for both anxiety and depression, Scheduled Caste and Muslim respondents had worse mental health than higher caste Hindu respondents. 16In our study too, stress, anxiety and depression was seen in non-hindu students, with higher significance among those following Buddhism/Islam and Sikh religion respectively. Similar to our study, a study that compared urban, rural, and tribal school students showed that major depressive disorders were more prevalent in students from the urban locality.[8] But studies have also reported high prevalence of depression, among adolescents belonging to rural areas.[17,18] More research needs to be done on this.

CONCLUSION

Mental health is a complex interplay of genetic, environmental, and psychological factors. Understanding contribution of socio-demographic factors to mental health disorders can help in the development of more targeted prevention and intervention strategies to address the needs of specific populations. However, it is important to approach these topics with sensitivity and avoid stigmatizing or stereotyping individuals based on their socio-demographic characteristics.

Conflict of interest: the author declares that there is no conflict of interest

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Ethical Clearance: Clearance granted from Institutional Ethics Committee (IEC), Government Medical College, Amritsar.

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