

ORIGINAL ARTICLE

An epidemiological study of depression among college students in district Faridkot, Punjab, IndiaPreeti Padda¹, Sanjay Gupta², Gaganpreet Singh³, Lakhwinder Singh⁴, Narail Chawla⁵¹Associate Professor, ²Professor, ³Assistant Professor, ⁴Medical Social Worker, ⁵Sanitary Inspector, Department of Community Medicine, Guru Gobind Singh Medical College, Faridkot, Punjab, India

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|--------------------------|------------------------------|-----------------------------|-------------------------|----------------------------|----------------------------|--------------------------|----------------------------------|
| Abstract | Introduction | Methodology | Results | Conclusion | References | Citation | Tables / Figures |
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Abstract

Background: Depression is one of the most under diagnosed and under reported in primary health settings. Depression is highly common and according to WHO by 2020, it would be the second-most prevalent condition worldwide. Physical illnesses and bio-psychosocial factors are common determinants of depression. **Aims & Objectives:** 1. To estimate prevalence of depression, 2. To determine associated factors among college going students. **Material & Methods:** A descriptive cross-sectional study conducted among college going students. Half of the colleges were selected randomly and sample size was distributed on the basis of probability proportional to size (PPS). Assigned number of students from each college was selected by simple random sampling. Sample size of 1300 was calculated using formula $(n) = (Z_{1-\alpha})^2 P(100 - P) / \epsilon^2$. General Health Questionnaire (12 items) was used to diagnose psychiatric morbidity and those with this were administered Becks Depression Inventory II (21 items) scale for assessing the prevalence and level of depression. Both the scales were translated in local language and self-administered. The data was compiled and analyzed using Epi Info™. **Results:** A total of 1300 students were enrolled, psychiatric morbidity was present in 35% and prevalence of depression was 33%. Mild depression was found in 87% of the students with depression. Depression was higher among those aged >25 years, females, residing in nuclear families and studying science stream. **Conclusion:** Family support and adequate treatment are most important pillars of management.

Keywords

College students; GHQ scale; BDI II scale; Prevalence; Depression

Introduction

Mental Health is an important part of Health definition as a mental health component, which relates directly or indirectly to broad array of activities of humans. High prevalence rate, under diagnosis, associated social stigma, poor management and tendency to become chronic makes mental health problems a major public health issue. (1) Depression is the most common mental disorder, with lifetime prevalence of 16.2% and 12-

month prevalence of 6.6% in the general population. (2) Presently, no country or community is spared and it is affecting 350 million people (estimated). (3) By year 2020 it is estimated that depression will increase to 5.7% of total burden of the disease if current demographic and epidemiological transition continues. Further it is expected to be the largest contributor to disease burden by 2030. (4,5) In India, studies among college students found prevalence of depression ranging from 21.5% to 71.25%. (6,7,8)

Depression is widely distributed in general population and it disrupts normal life of the affected people. College students who are undergoing a transition (from adolescence to adulthood), form a special group of people. During this period, they have to make important decisions of life because of which they are more prone to depression. Depression becomes a major concern among college going student's /university students, as depressive symptoms affect their academics, are related to health, and in extreme cases may lead to suicide (9,10). Depression along with other mental disorders seem to be under detected and under treated. Most of the earlier studies have focused on the depression among adolescents but studies on young adults are very few.

Aims & Objectives

1. To estimate the prevalence of depression among college going students.
2. To determine the various factors associated with it among college going students of district Faridkot.

Material & Methods

A descriptive cross sectional study was conducted among the students aged more than 18 years enrolled in government and private colleges of the district Faridkot over a period of five months (1st June to 31st October 2014).

Sample size: was calculated using the formula, $Sample\ size\ (n) = (Z_{1-\alpha})^2 P(100 - P) / \epsilon^2$, where $Z_{1-\alpha}$ is confidence level at 95% (standard value of 1.96), where 'P' is estimated prevalence of depressed in the previous study (taken as 23% from a pilot study) and 'ε' is the allowable error (Relative precision) taken as 10%. Therefore, $N = 3.84(23 \times 77) / 2.32$ i.e., $N = 1286$. This sample size was rounded off to 1300 for convenience.

Sampling: There were a total of 16 government & private colleges in district Faridkot out of which half (8 colleges) were randomly selected and sample size was distributed using PPS for which the total strength of students in the selected colleges was obtained. Prior permission from the principal of the selected colleges was taken (figure 1). For the purpose of selecting students a line list of students enrolled was obtained from the principals of the respective colleges. A random number was assigned to each student of the college starting from 1, and students were further selected by simple random sampling (lottery method). If the selected student

failed to give the informed consent or was absent on the day of visit of the investigators, immediately next student in the random number list was chosen to complete the sample size of that respective college.

Study tools: A self-structured baseline questionnaire was prepared in local language (Punjabi) to record sociodemographic information of the participants, history of substance abuse, any chronic medical illness and family history of mental disorders if any. Two rating scales i.e. General Health Questionnaire (12 items) and a 21 item Becks Depression Inventory scale II were used. Beck's Depression Inventory II (BDI - II), a mood-measuring device has been originally developed by Dr. Aaron T Beck. (11) BDI-II consists of 21 groups of statements with score ranging from 0-3 for each statement and total score of 63. For classification following criteria based on score was used: 0-13 is normal; 14-19 as mild depression; 20-28 as moderate depression; 29-63 as severe depression.

Methodology: Each selected college was visited according to a pre-fixed day wise schedule. The selected students were made to sit in the assigned classroom and baseline questionnaire and 12 item GHQ were self-administered. The GHQ were given scores and any student who recorded score of more than three were considered to be having psychiatric morbidity. BDI (21 item scale) was given to these students to diagnose and grade depression. This was applied as per the standard psychiatric norms and procedures. The students who were diagnosed to be suffering from depression (mild and moderate) were referred to the psychiatrist at the medical college and those with severe depression were subjected to treatment on urgent basis.

Statistical analysis: The data was entered and compiled using Microsoft excel 2013 version and analyzed using Epi Info™ (free software from CDC). For calculation of Odds Ratio (OR), participants diagnosed with different grades of depression were combined and named "with depression" and compared with those "without depression".

Ethical considerations: Prior approval of the study protocol was obtained from the Institutional Ethical Committee (GGS/estd/2014-11734).

Results

A total of 1300 participants, participated in the study of which 57% were females and 43% were males. Median age of the participants was 24 years ranging from 18-32 years. Maximum belonged to the age

group of 18-25 years (57%). Majority of the students resided in rural area (66%) and similar proportion were living in joint families (65%). Most of the study participants were unmarried (80%), following Sikh religion (59%) and belonged to upper middle (50%) socio-economic status. Among the study sample, 48% were studying in arts stream followed by commerce (33%) and majority were enrolled in private colleges (63%). Only 3% were suffering from any chronic illness and 12% gave a positive family history of depression.

On the basis of GHQ, 35% (n=458) were found to be suffering from psychiatric morbidity. Among those with psychiatric morbidity (based on BDI scale), 7% had no depression, 87% had mild depression and 5% and 1% were suffering from moderate and severe depression ([Table 1](#)). The overall prevalence of depression was calculated to be 33%.

[Table 2](#) shows the association of depression with various socio-demographic factors. Prevalence of depression was 43% among those aged between 25-32 years age group and were at two times greater risk of suffering from depression. Depression was higher among females (36%) than males (29%) and the difference was statistically significant. Living in urban area and in nuclear families were also associated with higher risk of depression. Unmarried participants were at 5.7 times higher risk of developing depression when compared to married. Religion and type of college were not identified to be the risk factors for depression among the study population. Students of science stream and from scheduled caste or other backward class were twice at risk of suffering from depression in comparison to those perusing arts/ commerce stream and those belonging to general category. Prevalence of depression among participants who were suffering from one or another chronic disease was as high as 78% with an OR of 7.9 (3.7-16.6).

The various social factors found to be significantly associated with depression were dispute in the family, loss of one or both the parents, dissatisfaction with study stream as well as grades achieved and a recent breakup with a close friend. Participants with a positive history of depression in the family had 3.4 (2.4-4.8) times' higher chances of developing depression when compared to those with negative family history ([Table 3](#)).

Discussion

The present study shows that overall prevalence of depression was 33% among the college going students. This figure is well supported by various studies carried out in similar populations, where rates of depression varied from 10% to 44%. (12,13,14,15,16) A much higher prevalence (79.2%) was reported in a similar study conducted at Mangalore, while a lower prevalence (16.5%) has been reported by a study done in same region. (17,18)

Among those with psychiatric morbidity, mild depression was most common and severe depression was seen only in 1% of the participants, which was not similar to the other study done in similar setting where moderate depression was the most common (41.2%) and severe depression was 11.4%. (18)

Prevalence of depression increased with increasing age and similar results have also been reported by other studies (18,19) which focuses on the need of counselling among older students of colleges as they are more susceptible to depression.

Females (36%) were more affected with depression in comparison to males (29%) which could be due to hormonal changes during puberty and different coping style. (20). This result is well supported by several other studies. (21,22,23,24,25)

Students studying science were at higher risk of having depression in comparison to those studying commerce or arts which is attributed to the higher burden and level of difficulty of study on the students. This result was opposite to the one reported by a study conducted among college going students of Mangalore. (17)

Depression levels were similar among the students studying in the government and private college which was in contrast to another study which reported higher levels among students of private colleges because of lack of facilities, social activities and lesser quality of educational systems. (17)

Participants residing in joint families had lower levels of depression because of the social security and support these families provide to the young individuals and nuclear families fail to provide family support.

Dispute in family, lack of good friends, loss of one or both the parents, dissatisfaction with grades and recent breakup with close friend have been identified as the social factors which increase the

chances of depression among young adults because they increase the level of stress among them. These are similar to those reported by other studies. (18)

Conclusion

Psychiatric morbidity and depression was found to be high in our study. Depression was more in those aged between 25-32 years and female sex. The various factors associated with depression were dispute in family, lack of good friends, loss of one or both the parents, dissatisfaction with grades and recent breakup with close friend. Counseling services and mentorship could be the essential core components in providing support to the college students. More emphasis should be laid on family support as the rates of depression are lesser among those living in joint families.

Recommendation

Based on the above findings it is recommended that training and sensitization of medical and paramedical staff about identification and management of depression should be carried out among those attending college and school health clinics. Suitable IEC activities should be conducted at regular intervals.

Limitation of the study

In the present study only depression was taken into account excluding other common mental health problems like anxiety. Previous mental status of the participants was not taken into account.

Relevance of the study

As depression is one of the major concern in the transitional period of college going students, this study was conducted as scarce information is available on this issue especially in our region.

Authors Contribution

PP: developing the concept and writing the protocol and manuscript along with data compilation and analysis. SG: giving full support for field staff along with help in seeking permission from various college principals. Also contributed in manuscript writing. GS: translation of tool in to local language and helped in coordinating the conduction of study. LG & NC: data collection.

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Tables

TABLE 1 DISTRIBUTION OF STUDY PARTICIPANTS WITH PSYCHIATRIC MORBIDITY ACCORDING TO LEVEL OF DEPRESSION IDENTIFIED WITH BDI SCALE

| Level of depression | BDI score | Number | Percentage |
|---------------------|-----------|--------|------------|
| No depression | 0-13 | 34 | 07 |
| Mild depression | 14-19 | 401 | 87 |
| Moderate depression | 20-28 | 21 | 05 |
| Severe depression | 29-63 | 02 | 01 |
| Total | | 458 | 100 |

TABLE 2 VARIOUS SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH DEPRESSION

| Socio-demographic factor | No Depression (n=876) | With depression (n=424) | Total (N=1300) | OR (95% CI) |
|-------------------------------|-----------------------|-------------------------|----------------|---------------|
| | | | | P value |
| Age group (age in yrs) | | | | |
| 18-25 | 555 (75) | 186 (25) | 741 | 2.2 (1.7-2.8) |
| 25-32 | 321 (57) | 238 (43) | 559 | 0.000 |
| Sex | | | | |
| Male | 399 (71) | 160 (29) | 559 | 1.4 (1.1-1.7) |
| Female | 477 (64) | 264 (36) | 741 | 0.007 |
| Place of residence | | | | |
| Urban | 255 (59) | 181 (41) | 436 | 1.8 (1.4-2.3) |
| Rural | 621 (72) | 243 (28) | 864 | 0.000 |
| Type of family | | | | |
| Nuclear | 265 (58) | 193 (42) | 458 | 1.9 (1.5-2.4) |
| Joint | 611 (73) | 231 (27) | 842 | 0.000 |
| Religion | | | | |
| Hindu | 357 (67) | 176 (33) | 533 | 1.0 (0.8-1.3) |
| Sikh | 519 (68) | 248 (32) | 767 | 0.07 |
| Caste | | | | |
| General | 502 (73) | 183 (27) | 685 | 1.8 (1.4-2.2) |

| | | | | |
|-----------------------------------|----------|----------|------|----------------|
| SC/OBC | 374 (61) | 241 (39) | 615 | 0.000 |
| Marital status | | | | |
| Unmarried | 646 (62) | 399 (38) | 1045 | 5.7 (3.7-8.7) |
| Married | 230 (90) | 25 (10) | 255 | 0.000 |
| Stream | | | | |
| Science | 153 (57) | 114 (43) | 247 | 1.8 (1.3-2.3) |
| Arts/commerce | 743 (71) | 310 (29) | 1053 | 0.000 |
| Type of college | | | | |
| Government | 327 (67) | 158 (33) | 485 | 0.9 (0.7-1.3) |
| Private | 549 (67) | 266 (33) | 815 | 0.982 |
| History of chronic illness | | | | |
| Yes | 09 (22) | 32 (78) | 41 | 7.9 (3.7-16.6) |
| No | 867 (69) | 392 (31) | 1259 | 0.000 |

Figures in parenthesis in column 2 and 3 are percentages

TABLE 3 VARIOUS SOCIAL FACTORS ASSOCIATED WITH PRESENCE OF DEPRESSION

| Social factor | No Depression (n=876) | With depression (n=424) | OR (95% CI) | P value |
|---|-----------------------|-------------------------|---------------|---------|
| Presence of friend circle | 858 (98) | 404 (95) | 3.0 (1.5-6.1) | 0.001 |
| Dispute in the family | 102 (12) | 87 (21) | 1.9 (1.4-2.6) | 0.000 |
| Loss of one or both the parents | 200 (23) | 128 (30) | 1.4 (1.1-1.9) | 0.004 |
| Dissatisfied with his/her grades or stream | 212 (24) | 189 (45) | 2.5 (1.9-3.2) | 0.000 |
| Family history of depression | 65 (07) | 91 (21) | 3.4 (2.4-4.8) | 0.000 |
| Recent breakup with close friend | 48 (05) | 59 (14) | 2.9 (1.9-4.2) | 0.000 |

Figures in parenthesis are percentages

Figure

FIGURE 1 SAMPLING TECHNIQUE USED TO REACH THE DESIRED SAMPLE SIZE (N=1300)

