Original Article

A cross-sectional study to assess the magnitude of depression among young adults at selected higher educational institutions in Tamil Nadu, India: A study protocol

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Abstract:

BACKGROUND: One in ten young adults aged 20 to 24 years was diagnosed as suffering from DSM-IV disorder with associated impairment. Depression is a major challenge to public health around the world. The main aim of this project is to estimate the burden of depression among young adults and this is the first kind of study in nature that tends to establish a depression prevention resource center for young adults.

MATERIALS AND METHODS: A descriptive cross-sectional study will be conducted among 6922 young adults. A simple random sampling strategy will be used to obtain the study sample. The semi-structured tool will be used to obtain the result. Descriptive statistics and frequency percentages will be determined for categorical variables. Mean, median, and range will be calculated along with standard deviations (SD) and interquartile range (IQR). Percentage prevalence will be calculated for each categorical variable with a 95% confidence interval (CI). The P-value of <0.05 will be considered as statistically significant. A semi-structured questionnaire was developed and the questionnaires were translated into Tamil (for local relevancy), and back translated into English. Data regarding socio-demographic and mental health-related information, such as coping ability, problem-solving, personal history, academic performance, and treatment history will be collected.

ETHICS AND DISSEMINATION: The study was authorized by the Institutional Review Board (IRB), School of Public Health, SRMIST, and Institutional Ethics Committee (IEC) in Chengalpattu, Tamil Nadu, with the IEC Protocol Number: P0/2020/10/02. The ethics committee evaluated and rated the methods and tools used to assess depression among young adults.

Keywords:

Depression, health, mental health, prevalence, young adults

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Introduction

Depression is a major challenge to public health around the world. It is a widespread psychiatric disorder that affects how people feel, think, and act.[1] Depression manifests itself as unhappiness and perhaps a lack of enthusiasm for previously enjoyed activities.[2] Depression can lead to multiple mental and physical problems, as well as a decline in one's ability to work and care for one's family. Adolescence is a period of susceptibility impacted by many predictors that have an impact on people's health and well-being.[3] According to the World Health Organization (WHO) data, 5.0% of adults are assessed to be depressed around the world.[4] Depression is a leading cause of morbidity worldwide, and it is often linked to a reduction in social, occupational,

and interpersonal functioning. Today, it is estimated that 280 million individuals worldwide struggle with depression.[4] A study conducted by Sibnath among 717 students states that 37.7%, 13.1%, and 2.4% of the students had moderate, severe, or extremely severe depression, respectively.[5] Mental disorders that go undiagnosed and untreated can affect a person's ability to succeed at school or at work, manage with daily tasks, and lead to serious psychiatric disorders and consequences later in life.[1] Loneliness, drug use, bullying, and a lack of parental supervision have all been linked to depression among teenagers; higher degrees of depression have been linked to a stronger external domain of control and a propensity to credit outcomes to intrinsic, consistent, and environmental variables.[6] Depression was found to be linked to adolescents' demographic details, life circumstances, physical molestation, abusive behavior, and conflict exposure.[7] Adolescent depression has been linked to sexual behavior, parental control of adolescent behavior, and family affection and support.[8] Depression can impact people of various ages, cultures, and races.[9,10] Since late adolescence and early adulthood are the most vulnerable periods for depression, particularly related to key decisions in a variety of fields.[11] The hurdles include exploring or growing their identity, such as making job decisions, negotiating the move from full to semi-dependence on their parents, and forming social contacts in a new environment. It may be linked to authoritative parenting, parental support, and parental vigilance; young people may become depressed as a result of harsh punishment or autocratic decision-making.[12] Academic pressures are increasing day by day and at each consecutive level at the college level.[6] Extensive use of communication and information technology, such as computers and cell phones, is also a risk factor for depression.[12] Recognizing depression as soon as feasible could be a crucial step in lowering the prevalence of depression among young people, improving depression management, and avoiding severe consequences.[13]

Study novelty
To our knowledge, prevalence data specifically on young adults rely on standardized psychiatric interviews and operationalized diagnostic criteria are very less, this is the first study which establish the let to let out resource center. The main aim of this project is to estimate the burden of depression among young adults and this is the first kind of study in nature that aims to establish the *Let to Let out Depression Resource Center for Young Adults In selected Higher Educational Institutions in Tamil Nadu.* The cross-sectional study is the most appropriate design to investigate the magnitude of depression and mental illness, and further prospective cohort studies can be conducted in the population.

Study objectives
(i) To estimate the magnitude of depression among young adults in selected higher educational institutions.
(ii) To study the determinants of depression among young adults in selected higher educational institutions.
(iii) To evaluate the feasibility of Let to Let out Depression Resource Center for young adults.

Materials and Methods

Study design
This is a cross-sectional study with interventions among selected young adults in higher educational institutions in Chennai, Tamil Nadu.

Rationale for selecting cross-sectional study design
The cross-sectional study design is one of the most common, well-known study designs; it is a type of observational study design.[14] Usually, the cross-sectional study design is used to investigate the prevalence of a given population, as well as help to find associations. In addition, a cross-sectional study is commonly used for the purposes of public health planning.

Sample size and sampling strategy
Simple random sampling will be used to attain the required sample subject from selected institutions. The students will be listed based on the roll numbers.

A large population-based study from South India by Poongothai *et al.*,[15] which includes more than 25,455 study subjects in Chennai using the Patient Health Questionnaire (PHQ)-12 reported the overall prevalence of depression to be 15.1% after adjusting for age using the 2001 census data.

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

The prevalence of depression 15%, 98% CI (confidence Interval), and the error term of 1%, 6922 samples, and the overall weightage of 7.32.

Study duration
The research will last for two years (2021–2022).

Selection of the institution
We have been permitted by five higher educational institutions to conduct the survey and establish the counseling center on their premises. To justify the probability proportional to size (PPS) sampling method, with respect to the population of higher educational institutions, we have scaled up the sample size. Some

institutes permitted us to conduct the survey for particular departments, while others permitted us to list all their departments.

A total cumulative method in the PPS sampling technique is used to select the study population and simple random sampling is used to attain the required sample subject from selected institutions. The number of samples that need to be collected from each institute is given below [Table 1].

Inclusion criteria
- Individuals aged 18 and above will be included in the study
- Individuals who are willing to participate in the study
- Individuals who are studying in higher educational institutions in Chennai and Thiruthani region.

Exclusion criteria
Individuals who did not give informed consent and are not willing to participate will be excluded from the study.

Study tool
A semi-structured questionnaire was developed and the questionnaires were translated into Tamil (for local relevancy), back translated into English, and pilot testing was done. Further, the interview will be conducted privately among the individuals. At the start of data collection, the institutes were operating full-fledged adhering to the COVID-19 norms that need to be followed. During the months of December to January, the colleges had a complete shutdown. During that period for the purpose of pilot testing, we conducted a telephonic survey; they followed the same procedure as a direct survey except for the mode of data collection. The researchers initiated the survey by getting a prior appointment from the student through email communication by furnishing the student with information regarding the survey and a brief introduction about the respondent. The participant accepts the survey by signing the consent form in electronic mode, and finally, receives a gratitude mail for their valuable time. From February 2022, the colleges started to function with 50% occupancy following COVID-appropriate

measures. From that time, we have started collecting the data through the direct method. An appointment will be set for a meeting at the relevant higher educational institution's head based on the student's convenience and willingness. After describing the study's goal and contents, they will give their informed permission. During their visits to the counseling resources center, students who require counseling treatment will also be contacted. The assessment of study tools is now completed.

The questions have been framed after reading works of literature on similar topics based on the literature from Indian and International Contexts. The questions were also formulated based on expert opinions under various domains [Figure 1]. The questionnaire has been designed beginning with basic contact details of the participants and the purpose of the study followed by a series of questions under the following headings such as demography, health, financial, friends, teachers/academics, family, social or community issues, personal factors, substance abuse, and COVID-19 related.

Study variables, data collections, and sources
Socio-demographic data of age, education, sex, personal and family income, and marital status will be collected. Mental health-related information, such as coping ability, problem-solving, personal history, academic performance, and treatment history has been included. Students will be requested to make a free list of the moral, financial, emotional, and spiritual support, instrumental or practical support, and livelihood

Table 1: Total cumulative method in PPS sampling technique

Total cumulative method in probability proportional to the sampling technique		
Institute	Population	No. of samples from each institution
Institute 1	30000	4096
Institute 2	10000	1365
Institute 3	3000	410
Institute 4	4695	641
Institute 5	3000	410
Total	50695	6922

Figure 1: Identified domains of depression

support, which they required during their distress time. The severity of depression among young adults at selected higher educational institutions was classified as severe depression, moderate depression, and mild depression. Risky habits, such as boozing and smoking as well as comorbidities, will be gathered. Information about the student's needs and obstacles in overcoming depression will be obtained. There were around 27 questions coded with scoring for the index, each with five scale indicators such as always, most of the time, sometimes, occasionally, and never. The questions of students for determinants of depression generated include, i.e., Do you face financial issues at home? And the problems faced by friends?, Have you been harassed by your friends?, Do you have the feeling of not having good friends?, Do you have any family issues or family burdens?, Do you have any known mental health issues?. Some of the questions were generated by assessing the depression of students, i.e. Do you feel sad when you are at home?, Do you feel like you are useless to your family or friends?, Do you feel at being risk physically in lonely places?. The level of response was coded as always, most of the time, occasionally, seldom, and never.

Patient and public involvement

Before interviewing students with depression about their out-of-pocket expenses and the coping techniques they employed to deal with financial, friend, and health-related stress, the investigators were instructed about the study's research question and purpose. We held numerous informal interactions with students from various higher educational institutions who had experienced depression and needed counseling throughout the creation of the proposal.

Reliability and validity of the questionnaire

The intensity of a young person's psychological distress was assessed with the help of a semi-structured questionnaire. This study is heavily reliant on student data. To ensure accuracy and reliability, we will simply use the methods and actions listed below.

Respondents were asked to write a free-form list of their difficulties. Determinants of depression include the type of relationship with the people, financial, personal, and academic. There will be no pre-determined categories in which the participant will be questioned. This tried-and-true method was utilized to avoid respondent bias.

Assessment tool for depression

To assure reliability and validity obtained in the study, Cronbach's alpha statistic was used to determine the scale's dependability, which was 0.912 (98% CI 0.906-0.922). For each of the 27 items, the item-to-total correlation was determined as a reflection of how closely each item's response corresponded to the scale's total score. The item "*Whenever you are engaged with activities you felt restless and exhausted*" was discovered to have the highest item-to-total correlation (0.655). The least was seen for the item "*Do you feel sad when you are at home.*"

Ethics and dissemination

The study was authorized by the Institutional Review Board (IRB), School of Public Health, SRMIST, and Institutional Ethics Committee (IEC) in Chengalpattu, Tamil Nadu, with the IEC Protocol Number: P0/2020/10/02. The ethics committee evaluated and rated the methods and tools used to assess depression among young adults. As well as we have cleared all the ethical issues that were raised during the IEC meeting.

The survey's data was collected at several higher educational institutions in Chennai and Thiruthani, with the target demographic being young adults from various undergraduate and postgraduate (PG) departments. Before data collection, permission from the department head will be sought. Before the data collection begins, each student will be given an informed concern. Students are provided with a full explanation of the study. Students are assured that their personal information will be kept private. If students refuse to reveal their personal information, they will not be forced to do so. Participants will have the option of opting out of the survey. This study's key findings will be published in a journal. After the study has been finished and the main findings have been published, data requests could be performed.

Statistical analysis plan

The database will be maintained and the researcher will generate statistical reports. The information collected will be transferred to Microsoft Excel developed by Microsoft for Windows software for cleaning and coding purposes. Descriptive statistics and frequency percentages will be determined for categorical variables. Mean, median, and range will be calculated along with Standard Deviations and IQR. Percentage prevalence will be calculated for each categorical variable with a 95% CI. The *P*-value of < 0.05 will be considered as statistically significant.

Discussion

The main aim of this project is to estimate the burden of depression among young adults and this is the first kind of study in nature that aims to establish the *Let to Let out Depression Resource Center for Young Adults In selected Higher Educational Institutions in Tamil Nadu*. India in the new millennium has hence termed its report as "Prevalence, Patterns and Outcomes" and "Mental Health Systems."[16]

Depression is one of the leading causes of mental illness in India. Because late adolescence and early adulthood

are the times of life devoted to making critical choices in numerous life arenas, young people in their transition to maturity are more vulnerable to mental disorders and despair. Depression is treatable, however, 50% of the population goes untreated, and those who are treated are not treated adequately. This occurs due to neglect, lack of services, societal stigma, and/or an undiagnosed condition.

A study conducted by Guo *et al.*,[17] among undergraduate students in North China shows that high level (M = 3.65, SD = 0.60) and there is a causal relationship between social support and psychological wellbeing among undergraduate students in North China. Ramón-Arbués *et al.*[18] aimed to assess the prevalence of symptoms of depression, anxiety, stress, and associated factors in a population of college students. Similar to above-mentioned study, our study also will measure the prevalence of depression and its associated risk factors.

This project is something that is not related to theory development and surveillance. However, we are going to create awareness on stigma, policy advances, and broad partnerships with renewed commitment and reduce the misbelief about mental illness among young adults. As mentioned above, efforts to reduce lag time in reporting of mortality data are under way.

Our project has some other limitations. There may be a chance of recall and information bias because the information on depression and depressive disorder will be based on self-reported. Here we will work to bridge the gap of existing bias by limiting the time period and giving training to the selected field investigator.

Conclusion

Young adults suffering from major depression frequently show broad-based psychosocial dysfunctioning, psychiatric comorbidity, and suicidal ideation. They also continue to have an increased risk of depression and other mental disorders, attempted and completed suicide, as well as poor psychosocial outcomes later in life. This project has its own unique strengths. In many studies on depression in adults that have been examined, implementing training programs and resource center perspective seems to be very rare. There is an urgent need to identify the force multiplier for mental health among young adults because depression stays as an *"ice-berg phenomenon" many cases of depression are undiagnosed and/or under diagnosed*.[19] A dedicated Mental Health Policy and the new mental health care bill are definitely the right steps in this direction. Even though several studies point to the growing burden, the extent, pattern, and outcome of these mental, behavioral, and substance use disorders are not clearly known. Though unmeasured, the social and economic impact of these conditions is huge. It is also acknowledged that mental health programs and services need significant strengthening and/or scaling up to deliver appropriate and comprehensive services for the millions across the country who are in need of care.

Abbreviations

CI: Confidence Interval; PPS: Probability Proportional to the Size; PHQ: Patient Health Questionnaire; SD: Standard Deviations; ICMR: Indian Council of Medical Research; IQR: Interquartile Range.

Recommendation

Same study can be conducted in different setting. Interventional study can be done among young school going adults.

Student consent for publication

Not applicable.

Provenance and peer review

Not commissioned; externally peer reviewed.

Conflicts of interest

There are no conflicts of interest.

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