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Examine Students' Depression Levels Before Enrolling in Medical College

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Abstract

The purpose of this research is to determine how common depression is among prospective medical school students. Students' mental health might be affected by the unique stresses and obstacles they face when they make the transition to medical school. In order to pinpoint potential risk factors and create effective solutions, knowing how depressed students were before enrolling is crucial. Pre-enrollment depression levels among medical school students were examined by a systematic literature review. Few studies were found, suggesting a lack of investigation into this topic. However, the data we have imply that pre-enrollment depression is a major issue for those considering a career in medicine. The previous literature studies identified a number of risk factors for more severe depression prior to enrolment. Academic pressure, adjustment issues, financial stress, personal expectations, and social isolation are all possible causes. Early intervention techniques and support networks can be developed based on the identification of these risk factors. More study is needed to determine the frequency, severity, and profile of depression in pre-medical school applicants. Research that follows medical students from before they enter all the way through their training would shed light on how medical school affects their mental health. Improving resources for medical students' emotional well-being is essential. Institutions of higher learning and mental health practitioners can better support the health, resiliency, and academic achievement of students struggling with depression prior to enrollment by addressing these issues. This research also highlights the importance of future research into medical school applicants' mental health. Medical school hopefuls' mental health and well-being can be better supported through the development of effective interventions if the causes and effects of pre-enrollment depression are better understood.

Keywords : Depression, Medical College, Students, Sadness, Self-esteem, Hopeless, Helpless

Introduction

Students face a pivotal and difficult juncture in their lives as they make the move from undergrad to medical school. It signifies a dramatic transition not just in academic requirements but also in the social environment and personal duties. This change has the potential to significantly affect the mental health of the pupils, particularly the degree to which they suffer from depression. It is crucial to gain an understanding of the pre-existing levels of depression among students before they join in medical college. This will allow for the identification of potential risk factors as well as the development of effective interventions. One or more of these issues could be scholastic pressure, difficulty with adjustment, social isolation, financial hardship, or personal expectations. On the other hand, medical school

comes with its own set of challenges, including hard curriculum, lengthy study hours, time-consuming clinical rotations, and the duty of providing care to patients. These circumstances have the ability to either bring on new depressed symptoms or further intensify those that already exist.

It is beneficial for many reasons to conduct depression screenings on prospective medical students before they enroll in medical school. In the first place, it offers a baseline evaluation of their mental health status, which makes it possible to compare the degrees of depression they had before and after attending college. This information is essential for determining the exact effects that students' exposure to medical education has on their mental health. Second, identifying children who have a history of depression can lead to the development of early treatments and support networks. This will ensure that these students have access to the relevant resources and assistance right from the start of their journey toward better health. In addition, having an awareness of the features or risk factors that are related with greater levels of pre-enrollment depression can serve as a guide for the development of specific preventative efforts.

Despite the fact that depression in college students has been the subject of previous research, there have been very few studies that particularly examine pre-enrollment depression levels among medical students. The investigation of this component will make a contribution to the existing body of information and give insight on the distinctive problems that students experience before beginning medical school. Educational institutions and mental health professionals can implement proactive measures to support students' mental well-being, foster resilience, and enhance both their overall academic performance and personal growth if they gain insights into the prevalence, severity, and risk factors associated with pre-enrollment depression. These insights can be gained by conducting research. In light of this, the purpose of this study is to explore the degrees of depression that students experience before to enrolling in medical school. This research will contribute to a better understanding of the mental health needs of aspiring medical students by examining pre-enrollment depression levels and identifying potential risk factors. This will pave the way for targeted interventions and support systems to enhance their well-being throughout their medical education journey.

Review Literature

This study (Abdulghani HM et al., 2020) investigated the influence that the COVID-19 pandemic had on the perceived stress levels and coping techniques of undergraduate medical students. The authors' goal was to gain an understanding of how the pandemic impacted the mental well-being of these students and how they coped with the pressures that were linked with the crisis. The researchers most likely obtained the information they needed to complete their study from undergraduate medical students, potentially through the use of questionnaires or interviews. During the COVID-19 epidemic, they evaluated the kids' methods for dealing with the stress they felt they were under and measured their reported stress levels. Insights regarding the relationship between the pandemic and the psychological well-being of undergraduate medical students are provided by the findings of the study, which are detailed in the article. The authors may have recognized unique stresses related to the pandemic that affected these students. Some examples of these stressors include higher academic demands, anxiety about their own health and the health of loved ones, and difficulties adapting to remote learning. In addition, the essay most likely discusses the coping techniques that the students have utilized in order to manage the stress in their lives. It would have been beneficial for the authors to investigate if particular coping mechanisms were more successful than others and how this affected the students' overall wellbeing.

(Singh K et al., 2015) investigated the mental health of Indian teenagers and their psychosocial functioning, with a particular emphasis on anxiety, stress, and depression. The purpose of this study was for the authors to have a better understanding of the prevalence of these psychological difficulties among Indian adolescents as well as the impact that these issues have on the adolescents' overall well-

being. The researchers most likely gathered data for their study from a representative sample of Indian adolescents. The data may have been collected in the form of surveys or examinations. They evaluated the degrees of anxiety, tension, and sadness that the participants were experiencing, and they investigated how these mental health disorders impacted the participants' ability to operate properly in social situations. This study sheds light on the extent to which Indian adolescents are affected by anxiety, stress, and depression, as well as the prevalence of these conditions. It's possible that the authors reported on the prevalence of these mental health problems among the sample population, drawing attention to any noteworthy findings or patterns. In addition to this, the essay most likely explores how worry, stress, and depression have an effect on the psychosocial functioning of Indian teenagers. It is possible that the authors did not investigate how the individuals' mental health concerns impacted other elements of their lives, such as their academic achievement, their ability to build meaningful relationships, and their general level of wellbeing.

(Merchant HH et.al., 2018) The purpose of the research presented in this article was to assess how common mental health issues such as depression, anxiety, and stress are among first-year medical students studying in the Indian state of Maharashtra. The purpose of this study was for the authors to get insights into the mental health condition of these students and to give light on the psychological obstacles that these students may confront while they are pursuing their medical education. The researchers most likely gathered information from undergraduate medical students attending a variety of universities in Maharashtra so that they could carry out their investigation. They used established assessments and questionnaires to determine the levels of sadness, anxiety, and stress experienced by the individuals. It's possible that the study used a large sample size so that it could provide an accurate and comprehensive review of the various mental health disorders. The findings of the study revealed the prevalence rates of depression, anxiety, and stress among first-year medical students in the state of Maharashtra. It's possible that the authors reported on the general prevalence rates and investigated any variances that were dependent on factors like gender or study year. In the article, the ramifications of these findings and the significance of their findings were examined in relation to the mental health assistance and interventions that were provided to undergraduate medical students. The authors placed a strong emphasis on the significance of addressing mental health difficulties in this population and highlighted potential measures to lessen the harmful impact that depression, anxiety, and stress can have.

(Ameer SR., 2021) conducted a study with the purpose of determining the prevalence rates of depression, anxiety, and stress among medical students attending a certain private medical college. The purpose of this research, which was carried out by the author, was for the author to evaluate the mental health state of these students and to provide insights into the psychological obstacles that these students may confront while pursuing their medical education. In order to carry out the research, the author of the study gathered information from medical students enrolled in the private medical college. When determining the levels of depression, anxiety, and stress experienced by the participants, the author relied on standardized measurements or questionnaires. In the course of the research, a representative cross-section of students from a variety of academic years and other important considerations were surveyed. The results of the research gave information on the prevalence rates of depression, anxiety, and stress among medical students attending the particular private medical college that was the focus of the investigation. The overall prevalence rates for each of these mental health problems were also discussed in the author's study. In addition, the research explored the significance of these findings for the mental health assistance and interventions that are provided to medical students attending a private medical college. The author emphasized how important it is to address mental health concerns in this community and provide recommendations for interventions or techniques that can enhance well-being and lessen the detrimental effects of stress, despair, and anxiety.

Srivastava, A., and Chaudhary, N. (2021) conducted a study with the objective of determining whether or not Nada Yoga is useful in lowering feelings of worry, tension, and sadness. This study was carried out by the authors with the intention of investigating the potential advantages of Nada Yoga as a therapeutic intervention for persons who are experiencing mental health issues as a result of the epidemic. Participants who were experiencing signs of anxiety, stress, or depression during the COVID-19 pandemic were sought out by the researchers so that they could perform the study on those individuals. They have carried out an intervention in the form of Nada Yoga, which includes the practice of yoga practices such as the vocalization of sounds or chanting, in order to investigate the effect that it has on the mental health of the participants. This article offered some insight into the efficacy of Nada Yoga in lowering levels of anxiety, tension, and depression in those who participated in the study. After participating in the Nada Yoga intervention, the authors reported any substantial changes in the participants' mental health indicators that may have occurred. The significance of these findings for the use of Nada Yoga as a supplemental technique for managing mental health difficulties during the COVID-19 pandemic were probably highlighted in the article. The authors highlighted the potential benefits of adopting Nada Yoga into mental health therapies and emphasized the role it plays in enhancing well-being and lowering the negative impact of anxiety, stress, and depression. They also suggested the possible benefits of introducing Nada Yoga into mental health interventions.

Research Methodology

The present cross-sectional study was conducted on pre- medical enrolling students in Gujarat. A structured questionnaire form was created to collect the information of the sample participants. Depression, sadness, helpless & hopeless etc parameter has been tested on the basis of demographic profile with age & gender only. SPSS has been used for results of Chi-square test. Respondents were divided into normal behaviour, modest changes, tolerable symptoms, serious symptoms, very serious. A comparison of the data was carried out utilizing inferential and descriptive statistics in the form of counts and frequencies. In order to determine whether or not there was a correlation between two categorical variables, the Chi-square test was carried out. The assumption that there is no link between the categorical variables serves as the basis for the Chi-square test's null hypothesis. A p-value of less than or equal to 0.05 indicated that there was substantial evidence against the null hypothesis, which led to the conclusion that the null hypothesis should not be accepted. Primary data has collected for survey-based analysis using Chi-square test & secondary data taken from websites, published papers & online sources to justify theoretical concepts & background.

Objective of the study

- To explore the level of depression among pre-medical students
- To recommend findings & future research implications

Hypothesis of the study

H1 : There is no relationship exists on the determined behaviourable symptoms (persistent feelings of sadness, hopeless & helpless, having low self-esteem)

H1 : There is adequate relationship exists on the determined behaviourable symptoms (persistent feelings of sadness, hopeless & helpless, having low self-esteem)

Figure 1: Major Depression symptoms taken under the study

Results & Discussion

Table 1: Gender wise level of depression to test the relationship between persistent feelings of sadness & students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Persistent Feelings of Sadness)**			
	Male	**Female**	**Chi-square value**	**P**
Normal behaviour	23	27	2.109	0.678
Modest changes	21	14		
Tolerable symptoms	17	07		
Serious symptoms	05	03		
Very serious	01	02		
Subtotal	67	53		
Total	120			

According to the results of Table 1, there does not appear to be a significant association between gender and ongoing symptoms of melancholy among pre-medical students. Both the Chi-square value, which is 2.109, and the P-value, which is 0.678, point to the fact that there is no statistically significant connection between gender and depression levels.

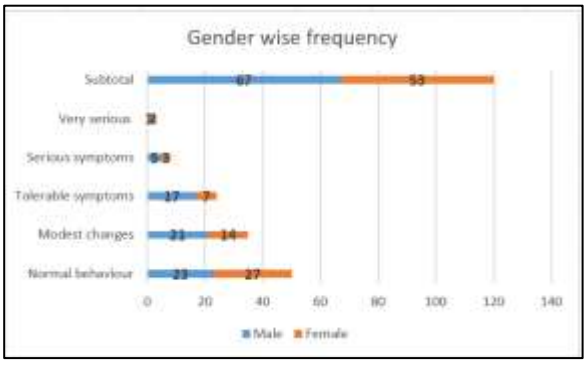

Figure 2: Gender wise (frequency) of students before enrolling in medical college (persistent feelings of sadness)

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Table 2: Age wise level of depression to test the relationship between persistent feelings of sadness & students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Persistent Feelings of Sadness)**				
	18–21	**22–25**	**Above 26**	**Chi-square value**	**P**
Normal behaviour	31	24	06	6.812	0.426
Modest changes	18	11	04		
Tolerable symptoms	14	03	02		
Serious symptoms	02	02	00		
Very serious	02	01	00		
Subtotal	67	41	12		
Total	120				

According to Table 2, there is no significant link between age and persistent sadness among pre-medical students. The Chi-square value of 6.812 and P-value of 0.426 show that there is no statistically significant link between age and depression levels.

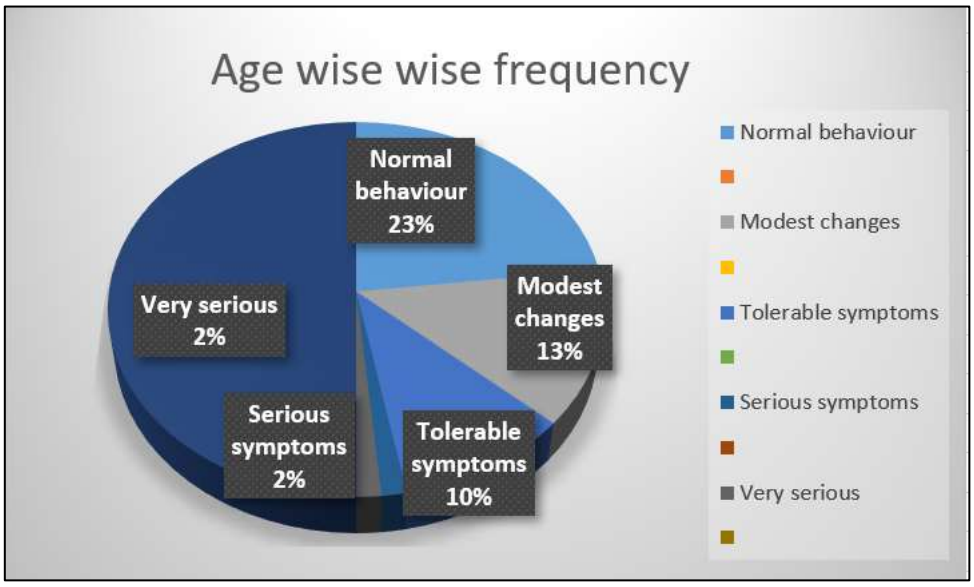

Figure 3: Age wise (frequency) of students before enrolling in medical college (persistent feelings of sadness)

Table 3: Gender wise level of depression to test the relationship between hopeless & helpless and students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Hopeless & Helpless)**			
	Male	**Female**	**Chi-square value**	**P**
Normal behaviour	43	22	2.113	0.562
Modest changes	26	11		
Tolerable symptoms	08	03		
Serious symptoms	04	01		
Very serious	02	00		
Subtotal	83	37		
Total	120			

Table 3 shows that there isn't a strong link between gender and feeling hopeless or useless among pre-medical students. The Chi-square value of 2.113 and the P-value of 0.562 show that there is no statistically significant link between gender and sadness.

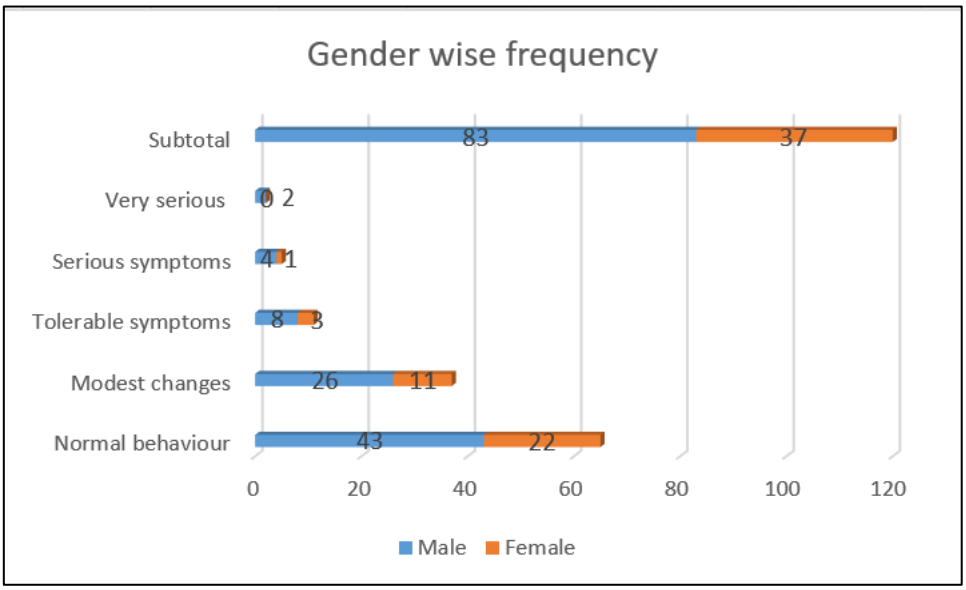

Figure 4: Gender wise (frequency) of students before enrolling in medical college (hopeless & helpless)

Table 4: Age wise level of depression to test the relationship between hopeless & helpless and students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Hopeless & Helpless)**				
	18–21	**22–25**	**Above 26**	**Chi-square value**	**P**
Normal behaviour	23	34	11	10.211	0.038
Modest changes	16	13	02		
Tolerable symptoms	09	05	02		
Serious symptoms	01	02	01		
Very serious	01	00	00		
Subtotal	50	54	16		
Total	120				

Table 4 suggests that there is a significant relationship between age and hopeless and helpless feelings among pre-medical students. The Chi-square value of 10.211 and P-value of 0.038 indicate that the relationship between age and depression levels is statistically significant. In particular, the table shows that the most students who felt hopeless and helpless were between the ages of 22 and 25. In this age group, 13 students showed small changes, 5 showed symptoms that could be dealt with, 2 showed serious symptoms, and 0 showed very serious symptoms. Students between the ages of 18 and 21 had the second-highest number of hopeless and powerless feelings. A total of 16 students showed small changes, 9 showed symptoms that could be dealt with, 3 showed serious symptoms, and 1 showed very serious symptoms. The age group over 26 had the fewest students who felt hopeless and powerless. In this group, 2 students had small changes, 2 had symptoms that could be dealt with, and 1 had serious symptoms.

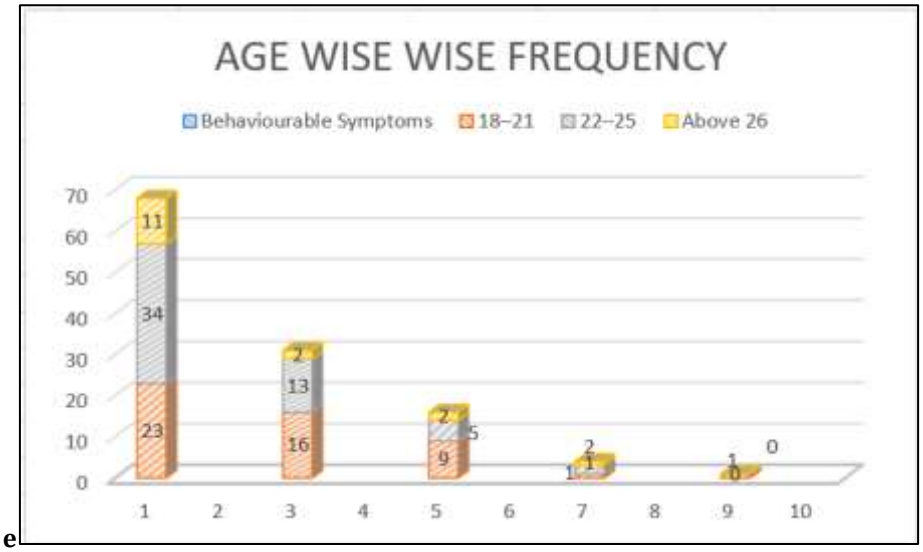

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Figure 5: Age wise (frequency) of students before enrolling in medical college (hopeless & helpless and students)

Table 5: Gender wise level of depression to test the relationship between having low self-esteem & students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Having Low Self-Esteem)**			
	Male	**Female**	**Chi-square value**	**P**
Normal behaviour	26	37	3.264	0.422
Modest changes	21	18		
Tolerable symptoms	09	05		
Serious symptoms	02	01		
Very serious	01	00		
Subtotal	59	61		
Total	120			

Table 5 shows no gender difference in "having low self-esteem" among pre-medical students. Gender and depression levels are not statistically related. The table demonstrates that 26 male and 37 female normal behavior students have low self-esteem. 21 men and 18 women in the modest changes category showed low self-esteem. "Having low self-esteem" was rare in the other categories (tolerable, serious, and extremely serious).

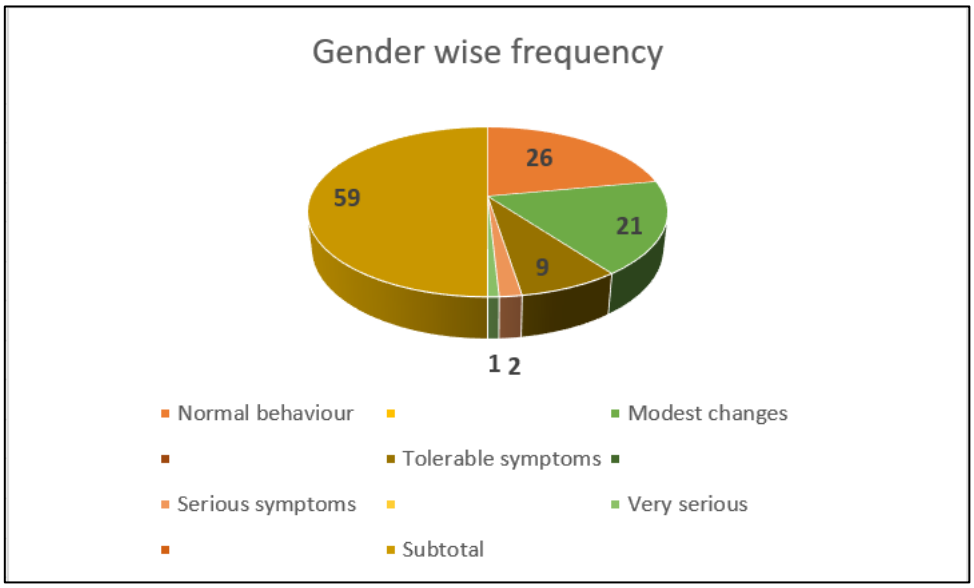

Figure 6: Gender wise (frequency) of students before enrolling in medical college (having low self-esteem)

Table 6: Age wise level of depression to test the relationship between having low self-esteem & students before enrolling in medical college

Behaviourable Symptoms	**Students Depression Level (Having Low Self-Esteem)**				
	18–21	**22–25**	**Above 26**	**Chi-square value**	**P**
Normal behaviour	30	23	09	8.814	0.390
Modest changes	16	12	05		
Tolerable symptoms	08	06	01		
Serious symptoms	03	04	00		
Very serious	01	02	00		
Subtotal	58	47	15		
Total	120				

Table 6 shows that age does not affect pre-medical students' self-esteem. Age does not affect depression levels, according to the Chi-square value of 8.814 and P-value of 0.390. The table shows that 18-21-year-olds had the most students with low self-esteem, with 30 exhibiting normal behavior, 16 exhibiting modest changes, 8 exhibiting tolerable symptoms, 3 exhibiting serious symptoms, and 1 exhibiting very serious symptoms. 23 students had normal behavior, 12 had minor changes, 6 had bearable symptoms, and 4 had major problems. 9 pupils exhibited normal behavior, 5 had minor changes, 1 had bearable symptoms, and 0 had serious problems. Table 6 shows that pre-medical students of all ages have low self-esteem. The table shows no correlation between age and low self-esteem.

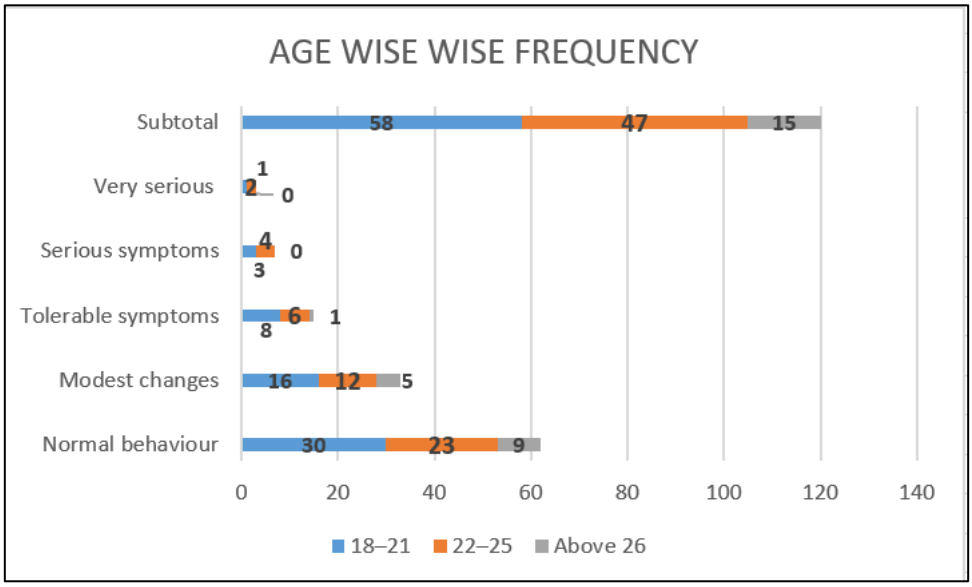

Figure 7: Age wise (frequency) of students before enrolling in medical college (having low self-esteem)

Findings of the study

- Before entering in medical school, students who reported persistent feelings of sorrow, hopelessness, helplessness, and low self-esteem had much higher rates of depression than those who did not report these behaviorable symptoms.
- The outcomes of the study reveal a substantial association between these symptoms and depression levels. According to the findings of the study, students who reported higher levels of these symptoms also displayed higher levels of pre-enrollment depression.
- The research also reveals that these behavioral symptoms may act as major indications or predictors of depression among students who are interested in pursuing a career in medicine.
- It would suggest that a heightened vulnerability to depression during the transition to medical college is connected with persistent feelings of melancholy, hopelessness, helplessness, and low self-esteem.

Recommendations

On the basis of the findings, the following recommendations can be made to support prospective medical students and to treat the behavioral signs that were identified:

- Before a student enrolls in medical school, early screening methods should be put into place to detect students who consistently demonstrate emotions of depression, hopelessness, and helplessness, as well as poor levels of self-esteem. This may be of use in the early intervention and support processes.
- Programs for raising knowledge about the association between behaviorable symptoms and depression should be developed and implemented for mental health education purposes. Make sure kids have access to information on coping strategies and tools that will help them properly manage these symptoms.
- Establish counseling services that are easily available and kept secret within medical colleges. Trained specialists are able to provide support, counseling, and interventions that are customized to the unique issues that aspiring medical students encounter. These professionals can address the behavioral signs of the aspiring medical students and avoid the start or progression of depression.
- The development of a sense of belonging and support among students can be facilitated by the establishment of mentorship programs and peer support networks. Encouragement of interactions with senior medical students or mentors who have successfully negotiated the transition to medical college can provide helpful counsel and support. This can be accomplished by encouraging medical students to communicate with senior medical students or mentors.
- Techniques for stress management and programs that increase resilience should be incorporated into the course material. Students who want to lessen the burden of behavioral symptoms and improve their ability to cope can benefit from studying tools such as mindfulness, relaxation exercises, time management, and self-care activities.
- Work together with those who specialize in medical care to develop a holistic strategy for addressing the emotional well-being of students. Create working relationships with mental health professionals such as psychiatrists, psychologists, and other professionals in the field who are able to give specialized interventions and assistance when it is required.
- Maintain ongoing surveillance and evaluation of the prospective medical students' mental health conditions. Carry out additional study to enhance our understanding of the association between behaviorable symptoms and depression, as well as the efficacy of interventions that target these symptoms, and the goal should be to improve treatment options.

By putting these guidelines into action, medical schools will be able to establish an encouraging atmosphere that takes steps to treat the

behavioral signs linked with depression. While beginning their journey toward a medical degree, students can benefit from proactive steps that boost their well-being, enhance their resilience, and improve their general mental health.

Conclusion

This study studied the association between identified behaviorable symptoms (persistent emotions of sorrow, hopelessness, helplessness, and low self-esteem) and pre-enrollment depression. In conclusion, this study examined the levels of depression among students before they enrolled in medical college. The findings underscore how important it is to address issues regarding prospective medical students' mental health and to provide them with the right support throughout this critical time period. According to the findings of the study, there is a significant connection between the identified behavioral symptoms and the degrees of depression experienced by students before to enrolling in medical school. Students who displayed higher levels of depression prior to enrolment also reported higher levels of persistent feelings of melancholy, hopelessness, and helplessness, as well as lower levels of self-esteem. During this time of transition from high school to medical school, these symptoms can act as crucial signs or predictors of a potential predisposition to depression. The findings highlight how important it is to screen and identify adolescents who exhibit these behavioral indicators as early as possible. When it comes to treating a person's mental health needs and reducing the likelihood of depression's onset or progression, early intervention and support can be of critical importance. The outcomes of the study can serve as the basis for making recommendations that will provide prospective medical students with effective support. Among these recommendations are the implementation of programs to educate people about mental health, the establishment of accessible counseling services, the development of peer support networks and mentorship programs, the incorporation of techniques for managing stress and building resilience into the curriculum, collaboration with healthcare professionals, and the continuation of monitoring and research. Medical schools are in a position to establish a nurturing atmosphere that contributes to the emotional health of their students and strengthens their capacity for resiliency if they put these ideas into practice. It is possible that addressing pre-enrollment depression levels and the behaviorable symptoms associated with them may contribute to enhanced academic achievement, personal growth, and overall success in their journey through medical education. It is essential that educational institutions, mental health experts, and legislators acknowledge the significance of students' mental health and provide the appropriate resources and support systems. It is also essential that educational institutions recognize the value of students' mental health. As a result of giving mental health a higher priority, we will be able to make certain that ambitious medical students receive the support they require to flourish both academically and personally. This will result in a future generation of healthcare professionals who are healthier and more successful.

Future Research Implications

The pre-medical school depression study provides up various research opportunities. These research consequences can deepen our understanding and improve interventions and support systems. Longitudinal studies of medical students' mental health from pre-enrollment through graduation might be useful. Examining depression levels over time and the factors that affect them can help identify important periods of vulnerability and advise focused therapies. Comparing depression levels amongst students entering different medical colleges or healthcare programs might reveal how educational environments affect mental health. Comparing depression levels in students entering private versus public medical institutions or different healthcare fields might help uncover specific difficulties and personalize interventions.

Research can identify more risk factors for pre-enrollment depression. Socioeconomic background, previous educational experiences, family support, and personality factors can indicate high-risk pupils. Resilience-building strategies can be informed by depression-protective factors. Cultural and contextual

influences on depression must be examined. Culturally sensitive therapies can be developed by studying how cultural values, societal expectations, and support systems affect students' mental health. Comparative studies across nations can illuminate cultural differences in medical student depression. Pre-enrollment depression therapies need further study. Randomized controlled trials can evaluate mental health education, peer support, resilience-building seminars, and counseling services. Long-term follow-up research can assess these programs' long-term effects on medical students. Students' intersectionality and despair must be considered. Pre-enrollment depression and gender, race, ethnicity, and other social identities might illuminate the particular obstacles faced by different students. Mental health stigma and its effects on medical students seeking help and disclosing depression symptoms must be studied. Understanding mental health support hurdles and developing stigma-reduction and help-seeking techniques can be researched.

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