

To Study Knowledge, Attitudes and Practices Towards Major Depressive Disorder Among Medical Students

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Abstract

Background: Major Depressive Disorder (MDD) is among the most burdensome illnesses worldwide, leading to substantial impairment in one's quality of life. In India, depression is prevalent among medical students. This is attributed to factors ranging from academic pressures and personal challenges to societal expectations. There is a paucity of studies on the knowledge, attitudes, and practices related to MDD among these students, especially from North India.

Material And Methods: A cross-sectional study was conducted among 400 eligible medical students over a period of two months. Following informed consent, a self-structured validated questionnaire, consisting of 20 questions [divided into knowledge (6), attitudes (6), and practices (7) domains; and an open-ended question], was administered to enrolled students. The responses were collected and the data were analyzed primarily using descriptive statistics. A p-value < 0.05 was considered statistically significant.

Results: Of the 400 students, 229 (57.25%) were male. The knowledge scores of participants ranged from 0 to 6, with a mean score of 3.92 ± 1.37 . In the attitude section, most participants believed that individuals suffering from major depressive disorder should seek professional help (88.5%, n=354) as a helpful strategy to manage it. Regarding 'practice', the majority of students (68%, n=272) actively check in with their peers about their mental well-being.

Conclusion: The students demonstrated moderate knowledge, a positive attitude and limited practices to manage major depressive disorder. Therefore, targeted mental health education and awareness programs should be promoted to improve their understanding and encourage supportive mental health practices.

Keywords: medical undergraduates, mental health, depression, KAP

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Introduction

Mental disorders constitute a significant disease burden in India.^[1] Depression is one of the common mental disorders, which results from a complex interaction of social, psychological and, biological factors.^[2,3] Individuals are diagnosed with major depressive disorder (MDD) when they experience at least four symptoms from the list, such as changes in appetite and weight, changes in sleep and activity, lack of energy, feelings of guilt, problems thinking and making decisions, and recurring thoughts of death or suicide, for a period of at least two weeks.^[3] Approximately 5.7% of adults globally, and 2.7% in India are affected by depression.^[1,2] Further, it is estimated that 50% of Indian medical students suffer from depression, with females showing a slightly higher prevalence than males.^[4] Academic pressure, family expectations, relationship issues, parental conflicts, social and emotional isolation, and uncertainty about the future are among the key factors contributing to depression among these students.^[5] Knowledge, attitude, and practice (KAP) surveys serve as an important research tool to evaluate medical students' understanding, viewpoints, and behaviors regarding MDD, which is critical in shaping

their future clinical interactions and patient care practices.^[6,7] Limited data exist on actual understanding, perceptions, and coping strategies followed by medical students regarding MDD.^[4] Additionally, differences in social, cultural, and demographic factors can potentially lead to variations in their attitudes and practices regarding MDD across different regions of the world.^[6,8] Understanding these variations can raise awareness and help local universities and healthcare institutions develop better support systems, ensuring that future healthcare professionals receive optimum care for themselves and for their patients as well. There is a paucity of studies to explore the knowledge, attitudes, and practices toward MDD among the medical students in North India, especially in Punjab. Therefore, this study was conducted to assess the KAP of medical students toward MDD with an aim to uncover the gaps and barriers in mental health literacy among medical students.

Material And Methods

This cross-sectional study was conducted over a period of 2 months after obtaining Institutional Ethical Committee approval (no. Trg.9(310)2025/10051-55). The sample size

calculated was 384 using the standard normal variate (Z) as 1.96 (at 5% type 1 error), an expected proportion of 50%, absolute error or precision of 0.05. MBBS undergraduate students who gave consent to participate in the study were included, while paramedical staff like lab technicians, nurses, pharmacists, postgraduate students, and MBBS undergraduate students who refused to participate, were excluded from the study. A total of 400 eligible medical students were enrolled using a non-probability sampling type, total enumerative sampling technique, in the study. A self-structured questionnaire was developed and validated for content with a content validity index >0.8. The questionnaire consisted of 20 questions, divided into parts assessing knowledge (6), attitudes (6), and practices (7); and an open-ended question, was administered to eligible medical students. The questionnaire, prepared using an online Google Form, was shared via the social media platform, WhatsApp. To enhance awareness about the significance of the study, a custom-made introductory video created using the Canva app, was also circulated along with the form. Following informed consent, the students marked their responses. Participants were given a two-month period to respond, with reminders sent every 15 days to encourage participation and improve response rates. The collected data were compiled in a Microsoft Excel sheet and analysed primarily using descriptive statistics. Qualitative data were expressed in frequency and percentages. Quantitative data were analysed using mean and standard deviation. Comparison between different groups regarding knowledge and attitudes was done using the McNemar test. The p-value < 0.05 was considered statistically significant.

Results

A total of 400 students were enrolled in the final analysis, with a mean age of 21.1 ± 1.79 years. Among the 400 participants, 229 (57.25%) were male.

Knowledge

The knowledge scores of participants ranged from 0 to 6, with a mean score of 3.92 ± 1.37 . The lowest correctness score was observed in K1 (33.5%, n=134) and the highest in K4 (81.5%, n=326). Males (47%) exhibited higher correctness scores as compared to females (38%). The distribution of responses marked by students and the correctness scores of individual questions is represented in Table 1.

Attitude

The majority of the participants believed that people suffering from MDD should seek professional help (88.5%, n=354), followed by discussing mental health issues with family or friends (83%, n= 332) as a helpful strategy to manage it. The responses to other questions pertaining to attitude are shown in Figure 1.

Both male and female participants indicated that, hypothetically, they would prefer managing MDD through

lifestyle changes (45.71%, n=183; 47.36%, n=189 respectively). The gender wise distribution of the responses to question A4 is shown in Figure 2.

Practice

The majority of students (68%, n=272) actively check in with their peers about their mental well-being. However, most of the students (53.5%, n=214) did not ever consult a mental health professional for managing MDD (if any). Distribution of the responses to other questions pertaining to “practice” domain is shown in Table 2.

Although the majority of participants (75.80%, n=303) answered the symptom “sad/empty mood” as one of the symptoms of MDD, “feeling of worthlessness/guilt” and “difficulty to think or concentrate” were the symptoms most of the participants (32.50% each, n=130) reported experiencing (p<0.0001). Another comparison of the MDD symptoms pertaining to knowledge and practice among medical students is shown in Figure 3.

In response to the open-ended question, the students suggested innovative measures like sleep pattern adherence,

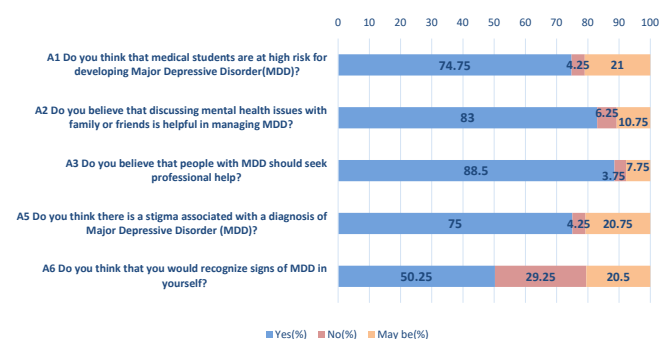


Figure 1: Distribution of responses to questions (A1 to A3, A5, A6) pertaining to “Attitude” domain

A4. Hypothetically, if you were experiencing symptoms of Major Depressive Disorder (MDD), what would be your first priority?

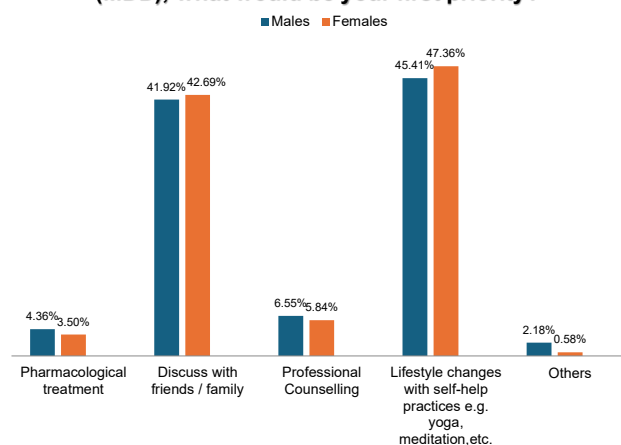


Figure 2: Gender wise distribution of responses to question (A4) under “Attitude” domain

Table 1: Distribution of responses to questions pertaining to “knowledge” domain

Questions	Options					Correctness score (%)
	Option 1	Option 2	Option 3	Option 4	Option 5	
K1. What is the minimum time period required to diagnose Major Depressive disorder (MDD) as per DSM-5 criteria?	4 days 9 (2.3%)	1 week 23 (5.8%)	2 weeks 134 (33.5%)	4 weeks 39 (9.8%)	Not sure 195 (48.8%)	134 (33.5%)
K2. In which season MDD is most common?	Winter 237 (59.3%)	Autumn 59 (14.8%)	Monsoon 33 (8.3%)	Summer 71 (17.8%)		237 (59.25%)
K3. Which of the following is a common risk factor for MDD?	Family history of depression 37 (9.3%)	Chronic illness 17 (4.3%)	Substance abuse 23 (5.8%)	All of the above 323 (80.8%)		323 (80.75%)
K4. According to you, which of the following symptoms should be present to be diagnosed as MDD? (Multiple options can be marked)	Sad, empty mood 303 (75.8%)	Insomnia/hypersomnia 272 (68%)	Psychomotor agitation/retardation 192 (48%)	Feeling of worthlessness 300 (75%)	Flight of ideas 72 (18%)	326 (81.5%)
	Option 6 Expansive or irritable mood 214 (53.5%)	Option 7 Inappropriate guilt 263 (65.8%)	Option 8 Diminished ability to think or concentrate 269 (67.3%)	Option 9 Excessive involvement in activities 40 (10%)	Option 10 Recurrent thought of suicide 280 (70%)	
					Option 11 Increase in goal directed activity 40 (10%)	
K5. What are melancholic (severe) features of MDD?	Loss of pleasure in all or almost activities 54 (13.5%)	Loss of reactivity to usually pleasurable stimuli 37 (9.3%)	Both 290 (72.5%)	None of the above 19 (4.8%)		290 (72.5%)
K6. Which neurotransmitters are responsible for MDD? (Multiple options can be marked)	Dopamine 267 (66.8%)	Serotonin 228 (57%)	Norepinephrine 121 (30.3%)	Histamine 31 (7.8%)	Acetylcholine 57 (14.2%)	146 (36.5%)
	Option 6 GABA 166 (41.5%)	Option 7 Oxytocin 38 (9.5%)				

engagement in sports, screen time control, along with institutional support awareness as additional measures to manage MDD. Other responses to the question are shown in Figure 4.

Discussion

Major depressive disorder (MDD) has been ranked as the third cause of burden of disease worldwide in 2008 by the WHO, with a projection that this disease will rank first by 2030. Being one of the leading causes of disability worldwide, MDD not

only causes a severe functional impairment but also adversely affects interpersonal relationships, thus lowering the quality of life.^[9] Mental health among undergraduate medical students represents an important public health entity worldwide, since it has been shown that their psychological distress was associated with suboptimal quality of patient care, patient safety, and professionalism in the future.^[10] Thus, it is imperative to know the knowledge, attitude, and practices followed by these future healthcare physicians who will be the centre of patient care in the future. The majority of participants in our study were males, in contrast

Table 2: Distribution of responses by students to questions (P1 to P3, P5 to P7) under “Practice” domain

Questions	Options					
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
P1. Do you actively check in with your peers about their mental well-being?	Always 73 (18.25%)	Sometimes 272 (68%)	Never 55 (13.75%)			
P2. What are the effective strategies you follow for managing and reducing stress (if any)?	Overeating 25 (6.25%)	Alcohol intake 7 (1.75%)	Oversleeping 71 (17.75%)	Hangout with friends 154 (38.5%)	Using mobile and other electronic gadgets 88 (22%)	Others 55 (13.75%)
P3. Have you ever consulted a mental health professional for managing symptoms of MDD (if any)?	Yes 31 (7.75%)	No 214 (53.5%)	Not experienced MDD 155 (38.75%)			
P4. Which of the following symptoms have you experienced for a duration exceeding 2 weeks?	Sad, empty mood	Diminished interest/ pleasure in all or almost activities	Insomnia/ hypersomnia	Psychomotor agitation/ retardation	Significant weight loss/gain (5% variation in a month)	Fatigue or loss of energy
	126 (31.5%)	132 (33%)	96 (24%)	24 (6%)	39 (9.8%)	149 (37.3%)
	Option 7	Option 8	Option 9	Option 10	Option 11	
	Feeling of worthlessness or 109 (27.3%)	Diminished ability to think or concentrate 130 (32.5%)	Recurrent thoughts of death/suicide 30 (7.5%)	Not sure about above symptoms 49 (12.3%)	None of the above 114 (28.5%)	
P5. If diagnosed with MDD and undergoing treatment, have you ever skipped your medication?	Regularly skip 3 (0.75%)	Occasionally skip 18 (4.5%)	Never skip 26 (6.5%)	Experienced MDD without using medication 39 (9.75%)	Not experienced MDD 314 (78.5%)	
P6. What prevents you from seeking help for mental health concerns (if any)?	Lack of time 32 (8%)	Fear of stigma 69 (17.25%)	Cost of mental health services 19 (4.75%)	Lack of awareness about resources 41 (10.25%)	Belief that I can handle its own 239 (59.75%)	
P7. If a classmate/friend confides in you about experiencing MDD symptoms, how would you respond?	Listen and offer personal advice 223 (55.75%)	Encourage professional help 148(37%)	Dismiss their concerns 7(1.75%)	Avoid the conversation 15(3.75%)	Others 7 (1.75%)	

to previous studies conducted by Zhang W et al, and Wang X et al, where females predominated the participation.^[6,7] Our study observed that in the inter-group comparison, males exhibited higher correctness scores compared to females, which was in contrast to a previous study conducted by Wang X et al, where females' scores were significantly higher in knowledge about depression than males.^[7] This could be due to the predominance of male participation in the study,

resulting in a higher correctness score percentage for them. The “knowledge” dimension scores in our study highlight a mixed understanding of depression among medical students. A major knowledge gap was noted when 81.5% students were aware of symptoms that should be present to be diagnosed as MDD, but only a few (33.5%) knew the minimum time period required to diagnose MDD as per DSM-5 criteria. The gap could be due to the information overload faced by

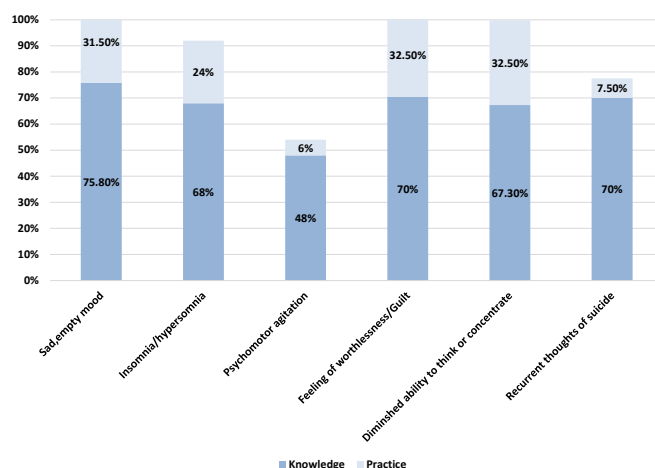


Figure 3: Comparison of MDD symptoms between knowledge and practice among medical students



Figure 4: Responses to an open-ended question "What additional strategies would you recommend for managing Major Depressive Disorder?"

the medical students due to their vast curriculum, which can potentially affect its retention.^[11] It has been recognised in previous literature that a person with sufficient knowledge is more likely to identify the mental disorder and hence will more proactively seek effective treatment. Targeted mental health education should be encouraged to help medical students recognize MDD symptoms and learn measures to adjust to the competitive environment of the medical education.^[11] The "attitude" plays an important role to take decision about any action. The previous research has highlighted negative views by doctors of mental health and related problems.^[12] However, in the present study, the "attitude" dimension scores inclined towards a positive side, with the majority of students believing in seeking professional help and discussing with family or friends if diagnosed with MDD. Interestingly, the majority also believed that there is stigma associated with MDD diagnosis. Thus, despite knowing the MDD management options, stigma, either personal or perceived, emerged as an important barrier to the treatment of depression and other mental illnesses. Discovering the associated factors of stigma may be a critical pathway for

the development of strategies and interventions to reduce stigma in an MDD population.^[13] The "practice" dimension analysis revealed a critical gap. Spending time with family and friends is an important coping strategy to manage MDD since it has been shown to provide social support and can protect from depression and anxiety like mental health disorders.^[14] However, students (22%) reporting using mobile gadgets to reduce stress may be counterproductive, since prolonged screen time can negatively affect health outcome.^[15] It has been observed that three weeks of screen time reduction showed small to medium effect sizes on depressive symptoms, stress, sleep quality, and well-being.^[16] In our study, it is reported that despite having fair knowledge of symptoms of MDD, some medical students experienced the symptoms, highlighting a major knowledge-practice gap. Multiple factors that could contribute to this gap include academic stress, interpersonal conflicts, stigma associated with the disorder, limited parental support, lack of financial support for psychological counselling, etc. Targeted mental health interventions, including stress management workshops, peer support programs, and routine mental health screenings in medical institutions, should be encouraged.^[17] Education plays a pivotal role in demystifying mental health and reducing stigma. Integrating mental health education into school curricula can help young people understand and manage their mental health from an early age. Apart from academic curriculum, the programs that teach students about emotional regulation, stress management, and the importance of seeking help can foster a more supportive environment.^[18] Comparison of knowledge versus practice of symptoms of MDD along with correctness score calculation adds to the strengths of the study. However, key limitations of the study are its single centric cross-sectional design and small sample size due to the non-inclusion of postgraduate medical students, which restricts the generalizability of findings.

Conclusion

The study findings indicate a moderate level of knowledge among medical students and a positive attitude MDD; however, their practical approaches to its management remain limited. These findings underscore the need to destigmatize MDD to enable medical students to address mental health concerns more proactively. Integrating structured mental health awareness programs into the academic curriculum may enhance students' ability to manage MDD effectively and promote the overall well-being of future healthcare professionals.

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Conflicts of Interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

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