

ORIGINAL ARTICLE

PREVALENCE AND PROTECTIVE FACTORS OF SUICIDAL IDEATION AMONG MEDICAL STUDENTS IN KARACHI: THE IMPACT OF RELIGIOUS BELIEFS AND SOCIAL SUPPORT

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ABSTRACT

Objectives: Suicidal ideation, a precursor to suicide attempts, poses a significant risk to individuals, particularly among medical students. Despite its importance, research on suicidal ideation among medical students in developing countries, including Pakistan, remains limited. The aim of study is to find prevalence and protective factors of suicidal ideation among medical students in Karachi.

Methods: Conducted between 2017 and 2018, this study surveyed undergraduate medical students from three institutions in Karachi, Pakistan. Data were collected through a questionnaire, and analysis was performed using Statistical Package for Social Sciences (SPSS) software. The study assessed the prevalence of suicidal ideation and identified associated factors such as academic pressure, relationship issues, social isolation, and financial difficulties. Additionally, the role of religion, family support, and friend networks in mitigating suicidal ideation was examined.

Results: Among 522 undergraduate medical students surveyed, 161 (31.0%) reported experiencing suicidal ideation. Factors contributing to suicidal ideation included academic burden, relationship issues, lack of social engagement, adjustment difficulties, and financial constraints. However, religiosity emerged as a protective factor, with religion serving as a significant deterrent against suicidal thoughts. Moreover, strong familial and social support networks played a crucial role in alleviating suicidal ideation among students.

Conclusion: This study identified study burden as a significant risk factor for suicidal ideation. Notably, emotional support from family members and friends was found to be a predominant protective factor, alleviating the suicidal thoughts. In contrast, religious beliefs did not exhibit a substantial impact on coping with suicidal ideation.

Key words: Suicidal Ideation, Suicide, Medical students, Karachi.

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INTRODUCTION

Suicide is a global public health concern, claiming the lives of approximately 800,000 individuals

worldwide every year, equating to one person every 40 seconds. Moreover, suicide attempts far outnumber completed suicides, making it a significant issue across populations. Particularly alarming is the prevalence of suicide among young people, with it being the second leading cause of death among 15-29 year olds globally. Medical students, undergoing rigorous training and facing intense academic and personal pressures, are not immune to the mental health challenges associated with suicide risk. Constant stress, including academic

workload, social isolation, clinical demands, and competitive environments, contribute to heightened vulnerability among this population. While many students successfully navigate these challenges, some may struggle to cope, increasing their risk of depression and suicidal ideation. Moreover, studies have indeed documented that stress levels increase over the course of medical school, peaking either in the second year [1] or when students enter the medical wards as students encounter real-life patient care and the associated responsibilities [2].

Research conducted in various countries sheds light on the multifaceted nature of suicidal ideation among medical students after facing significant mental health challenges. Various factors contributing to increased suicidal ideation among this population. Substance abuse, including elevated rates of alcohol and drug use, has been strongly linked to heightened suicidal thoughts [3]. Furthermore, psychiatric disorders such as depression and anxiety are common, with a substantial number of students experiencing these issues throughout their medical education [4,5]. The chronic stress associated with the rigorous demands of medical training exacerbates these mental health struggles, often leading to suicidal ideation [3].

Cultural factors can also play a significant role in either heightening or alleviating mental health risks among medical students. In some regions, such as the UAE, higher levels of religiosity are thought to offer a protective effect against suicidal thoughts, potentially due to the moral and communal support structures provided by religious practices [6]. Similarly, strong social networks are essential, as they provide emotional support and can buffer the impact of stress and mental health challenges, ultimately reducing suicidal ideation [7]. Together, these intersecting factors of substance abuse, mental health disorders, chronic stress, and cultural influences underscore the complex landscape of mental health among medical students.

Suicidal ideation is recognized as a significant risk factor for suicide attempts and completions. While it is the most prevalent of all suicidal behaviors,

only a minority of individuals with suicidal ideation engage in overt self-harm [8]. Understanding the factors contributing to suicidal ideation among medical students is crucial for developing targeted interventions and support systems to promote mental health and well-being in this vulnerable population. Among medical students, suicidal ideation is often precipitated by anxiety and stress related to the competitiveness of medical education and feelings of inadequacy. Additional factors include adjustment problems, financial issues, unemployment, family and relationship problems, and sexual abuse. The rigorous academic demands on medical students, which leave little time for relaxation or leisure, further exacerbate their vulnerability.

More than 720,000 people die by suicide every year, making it a major global health concern. It is the third leading cause of death among 15–29-year-olds, with 73% of cases occurring in low- and middle-income countries with a higher incidence in males (10.5) compared to females (4.1). Medical students, subjected to continuous stress due to academic pressures, social life deprivation, clinical stress, sleep deprivation, competition, and peer pressure, are particularly at risk of depression and suicidal ideation [9].

A study conducted on Pakistani students in 2014 found that 35.6% of 331 students had experienced suicidal ideation in the past year, with 13.9% having planned suicide and 4.8% having attempted it. Substance abuse, parental neglect, and psychiatric disorders are significant risk factors [10]. Research in Poland highlighted the link between chronic stress, anxiety, and suicidal thinking among medical students, who coped using music, sports, and social interactions [11]. In China, second-year medical students exhibited higher suicidal ideation rates than first-years, with socioeconomic background and sleep disorders being notable risk factors. Depression strongly correlated with suicidal ideation, with 30% of depressed students reporting such thoughts. According to a study conducted in China, around 5.9 % of students have tried to commit a suicide [12].

In Serbia, previous suicide attempts and depression correlated with GPA, age, relationship status, gender, mental illness, and drug use [13]. A study in western Nepal indicated that family-related issues were the primary cause of suicidal ideation among 10% of the study population [14]. Cultural factors influenced suicidal ideation rates in Turkish and Austrian students, with higher lifetime ideation in Austrians but more suicide attempts in Turks [15]. Conversely, the prevalence of suicidal ideation among UAE medical students was low, attributed to religiosity and strong social support. Lifetime suicidal ideation was reported by 17.5%, and attempts by 1.8% of the 115 medical students studied [16].

This study aims to determine the frequency of suicidal ideation among Karachi medical students, examine the impact of medical school admission on their mental health, identify key risk factors, assess available support systems, and explore attitudes towards seeking professional help. This study aimed to address the significant gap in research regarding the prevalence of suicidal ideation among medical students in Karachi, Pakistan. Further, to understand the contributing risk factors and the protective factors which help them to cope with such cases.

METHODOLOGY

This study employed a cross-sectional descriptive design to determine the frequency of suicidal ideation among medical students in Karachi, targeting MBBS students enrolled in three medical institutes: Jinnah Medical and Dental College, Jinnah Sindh Medical University, and Liaquat College of Medicine and Dentistry, from January 1st, 2017, to October 31st, 2017. It employs a non-probability convenience sampling, including all MBBS students from the mentioned institutes from first year to final year who provided informed consent and were capable of understanding and responding to the questionnaire. The exclusion criteria comprise students not currently enrolled in MBBS program, those from other disciplines, like Dentistry, Pharmacy, and Nursing, students with cognitive or language impairment, and individual who declined consent. This approach ensured a focused sample of MBBS students, enabling the exploration of suicidal ideation and its

correlates within this specific population. Data analysis was performed using SPSS software version 21.0.

To estimate the sample size, a finite population correction and a 95% confidence interval were applied, resulting in an estimated sample size of 384 using OpenEpi. The researchers designed a questionnaire consisting of both open and close-ended questions related to suicidal thoughts, risk factors of suicidal ideation, and the extent of support available to the students during their suicidal phases. The researchers personally visited each medical college/university to obtain research approval and distribute the questionnaires, which included consent forms, during lunch and tea breaks. In total, 151 students from JMDC, 246 from JSMU, and 125 from LCMD participated, with most participants being 3rd and 4th-year students as others were on semester breaks.

Our questionnaire incorporated items that inquired about symptoms of anxiety, depression, and sadness, which were based on established criteria for these conditions. Students' responses to those questions were used to estimate the prevalence of these emotional states and their association with suicidal ideation. Questionnaire used in present study was designed to capture relevant aspects of these conditions as they relate to suicidal thoughts. The collected data were then entered and analyzed using Statistical Package for Social Sciences (SPSS) version 21.0, with descriptive analyses performed and frequencies calculated. Ethical considerations were strictly followed; permission was obtained from all institutions before the study, and consent was obtained from the students via a consent form accompanying the questionnaire. The data collected were used solely for research purposes; ensuring privacy was maintained throughout the study.

RESULTS

In our study, 522 undergraduate medical students from both government and private medical colleges in Karachi were included. The socio-demographic characteristics of the study sample are shown in Table 1. The majority of participants were from

Jinnah Sindh Medical University (47.1%), followed by Jinnah Medical and Dental College (28.9%) and Liaquat College of Medicine and Dentistry (23.9%). Most students were in their 4th year (65.0%), with a predominance of females (76.1%) over males (23.9%). Monthly family income varied, with 50.3% of students reporting an income of over Rs. 100,000.

Table 1: Sociodemographic Characteristics of Study Participants (n= 522)

Characteristics	n %
Institute	
JMDC	151(28.9)
JSMU	246 (47.1)
LCMD	125 (23.9)
Year	
1 st	3 (0.6)
2 nd	2 (0.4)
3 rd	137 (27.7)
4 th	321 (65.0)
5 th	31 (6.3)
Gender	
Male	113 (23.9)
Female	360 (76.1)
Monthly Family Income (Rs.)	
<50,000	56 (12.6)
50,000-1,00,000	165 (37.1)
>1,00,000	224(50.3)

A significant portion of students, 392 (75.5%), reported experiencing feelings of sadness, depression, or anxiety at various times in their lives. To cope with these feelings, they adopted various strategies, which are detailed in Figure 1.

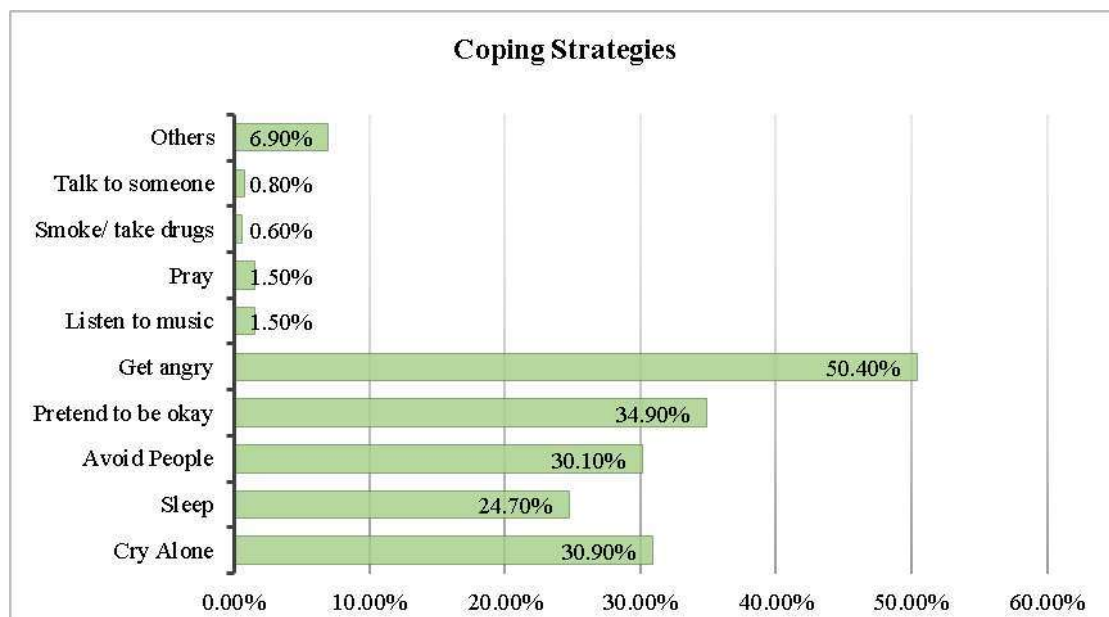


Figure 1: Coping Strategies Used by Students

Out of the total responses, 161 (31.0%) reported having suicidal ideation at some point in their life, with 72 (44.7%) of these individuals experiencing

an increase in such thoughts since they first occurred. The frequency of suicidal thoughts among participants is outlined in Table 2.

Table 2: Frequency of Suicidal Thoughts Among Medical Students

Frequency of suicidal thoughts among students	n %
Once a Year	67 (13.8)
Once Month	36 (7.4)
Once a Week	18 (3.7)
Daily	5 (1.0)

Of the 522 students, 67(13.8%) were those having suicidal thoughts once a year. Moreover, 72 (13.9%) acknowledged having suicidal ideation before starting medical school, while 91 (17.6%) reported experiencing suicidal ideation for the first time after beginning their medical studies. Additionally, more

students, 84 (16.3%), reported an increase in suicidal ideation after starting medical school, whereas it decreased for 33 (6.4%) and remained the same for 42 (8.2%). The most common issues leading to an increase in suicidal ideation among the participants are illustrated in Figure 2.

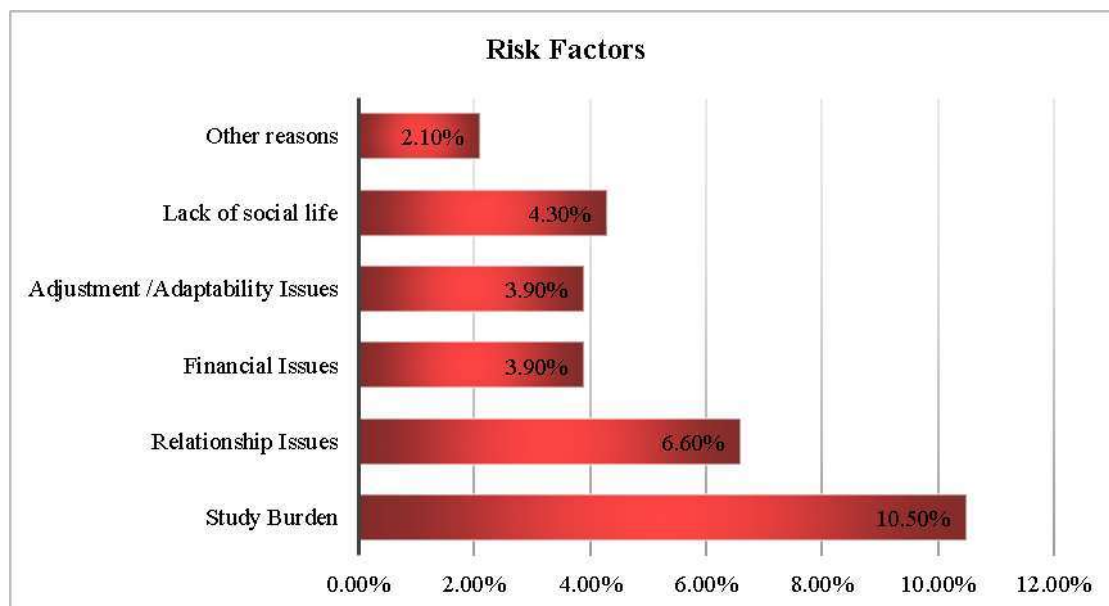


Figure 2: Causes and Risk Factors for Suicidal Ideation

Out of the total 522 participants, 10.50%) reported attempting suicide due to study burden with most

having tried only once. The number of times students admitted to attempting suicide is shown in Fig.3.

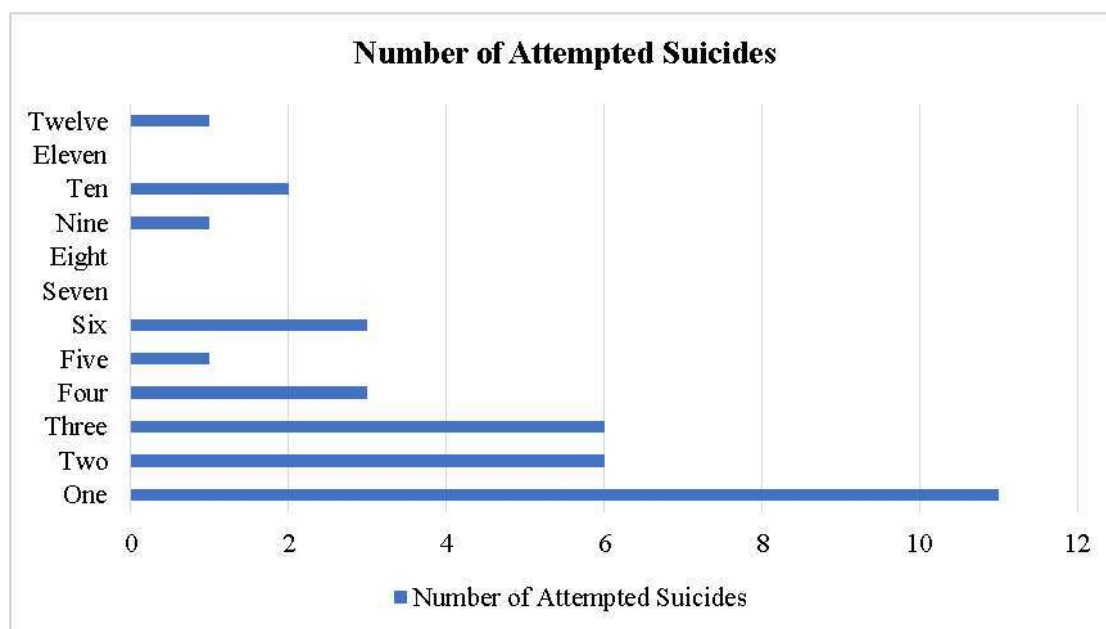


Figure 3: Number of Attempted Suicides

It was found that 350 (85%) students agreed that the prohibition of suicide in their religion had prevented them from attempting suicide. In contrast, 42 (9.2%) acknowledged a definitive chance of suicide if it was not prohibited in their religion,

while 282 (61.6%) reported otherwise, with 134 (29.3%) being unsure. Overall, 357 (72.3%) students acknowledged having emotional support from various sources, as described in Table 3, while 127 (25.7%) reported not having any such support.

Table 3: Sources of Emotional Support

Source of support in times of need	n %
Friends	195 (43.3)
Family	261 (59.3)
Self	7 (1.6)
Prayers	9 (2.0)
Others	17 (3.9)
No support	127 (25.7)

Table 3 shows the sources of emotional support for medical students in times of need. The majority of students rely on family and friends for support, with a smaller proportion finding solace in self, prayers,

or other means. The attitudes towards seeking professional help for suicidal thoughts and the benefits of therapy or medications are shown in Figure 4.

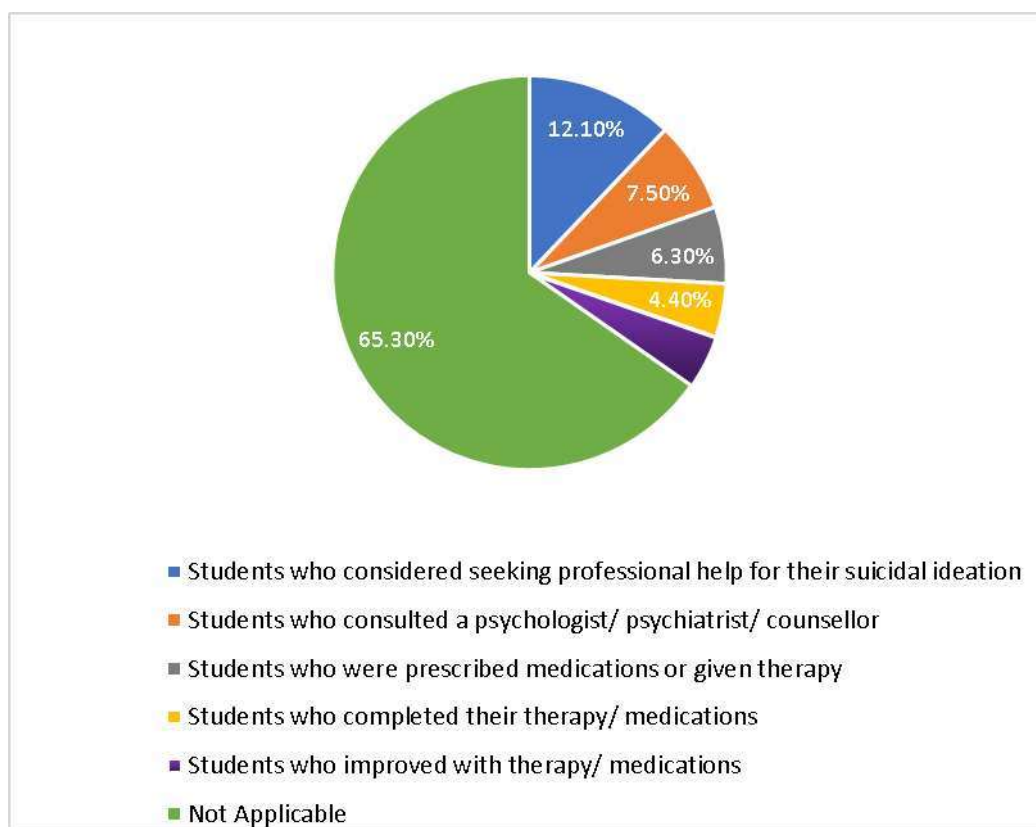


Figure 4: Attitudes Toward Seeking Professional Help

Figure 5 illustrates the various attitudes and actions taken by students towards seeking professional help for their suicidal ideation. The majority (65.30%) of the students did not consider seeking professional help, while smaller percentages took steps such as consulting a psychologist or psychiatrist and completing prescribed therapies.

DISCUSSION

In light of the high prevalence of psychological distress and suicidal ideation among undergraduate medical students, it is crucial to investigate the underlying factors contributing to these issues. The present study aimed to evaluate the prevalence and factors associated with suicidal ideation among undergraduate medical students in Karachi. Our findings indicate a significant prevalence of psychological distress, with 75.5% of students reporting feelings of sadness, depression, or anxiety at various times in their lives. These findings are parallel with the study of Medical students in which self-reported mental distress experience was reported

among 116/224 (51.8%) undergraduate students at the University of Dodoma in Tanzania [17]. These high levels of distress underscore the urgent need for mental health support and interventions within medical educational settings. Such importance of incorporating psychological support programs and mental health education in curricula is highlighted in a previous study [18].

A notable 31.0% of participants reported having suicidal ideation at some point in their lives. This finding is aligned with previous research suggesting high rates of suicidal thoughts among medical students globally due to the unique pressures they face in the form of intense academic workloads, leading to high levels of stress and burnout [19]. The transition into medical school appears to exacerbate these thoughts for many students, with 17.6% experiencing suicidal ideation for the first time after starting their studies and 16.3% reporting an increase in such ideation since beginning their medical education. These findings are also supported

by a study conducted in Bangladesh reports that 48% of medical students significantly experienced moderate to severe mental distress, with 34% experiencing anxiety and 28% reporting depressive symptoms [20]. Another study supported this notion by reporting the prevalence of depression at 48%, anxiety at 54%, stress at 50%, and suicidal ideation at 21% among undergraduate medical students in India [21]. In such a way, the frequency of suicidal thoughts in present study varied with 13.8% experiencing them annually, 7.4% monthly, 3.7% weekly, and 1.0% daily. This variation highlights the differing levels of severity and chronicity of suicidal ideation among the student population. The most common causes and risk factors for increased suicidal ideation included academic pressure, personal issues, and lack of support, which are consistent with findings from similar studies.

Such problems become aggravated when unconsidered as despite gaining knowledge about psychiatric distress and how to treat it, depression as an illness is often not regarded by medical students that requires treatment [22]. Thus, in response to these psychological challenges, various coping strategies are observed to be adopted by students, such as seeking support from friends (43.3%) and family (59.3%), or relying on self-measures and prayers. However, a significant proportion (25.7%) reported not having any emotional support, which could contribute to the persistence and exacerbation of suicidal thoughts. Emotional support systems are crucial in mitigating the impact of stress and preventing the progression from ideation to attempts.

Despite the high prevalence of suicidal ideation, only a small percentage of students sought professional help. The majority (65.3%) did not consider it, indicating potential barriers such as stigma, lack of awareness, or availability of mental health services. Those who did seek help reported various outcomes, with some finding therapy and medications beneficial. Enhancing the accessibility and acceptability of mental health services in medical schools could improve help-seeking behaviors and outcomes. Moreover, the role of religion in

preventing suicide was significant, with 85% of students agreeing that religious prohibition deterred them from attempting suicide. This finding underscores the influence of cultural and religious beliefs on mental health behaviors and highlights the potential for religious counseling as part of a comprehensive mental health strategy.

CONCLUSION

The study highlights the urgent need for comprehensive mental health support for medical students. Institutions should focus on reducing academic pressure, providing emotional support, and promoting professional mental health services to address the high prevalence of suicidal ideation. Integrating mental health education and support systems into medical curricula could help mitigate the risks and improve overall student well-being. Further research is needed to explore the most effective interventions and support mechanisms tailored to the specific needs of medical students in different cultural contexts.

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Author's Contributions:

SMAH: Concept & design, manuscript writing, statistical analysis, editing of manuscript, final approval of manuscript and responsible for integrity of research.

HS: Edited and review

SKKJ: Data collection, manuscript writing and responsible for integrity of research

MA, AN, SKF: Data collection and editing of manuscript

SMN: Data collection and statistical analysis

NH: Editing the manuscript

REFERENCES

1. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A longitudinal study of students' depression at one medical school. *Academic*

- med 1997;72(6):542-546. DOI: <https://doi.org/10.1097/00001888-199706000-00022>
2. Nair M, Moss N, Bashir A, Garate D, Thomas D, Fu S, et al. Mental health trends among medical students. *Baylor University Medical Center Proceedings*; 2023: Taylor & Francis. DOI: <https://doi.org/10.1080/08998280.2023.2187207>
3. Ghaffari E. A systematic review of suicide among Iranians physicians, etiology and solutions. *Inter J Sci and Res Arch*. 2024;12(2):1582-93. DOI: <https://doi.org/10.30574/ijrsra.2024.12.2.1243>
4. Jayasudha J, Padmasri Y, Mounika R. IJCM_334A: The struggle within: suicidal ideation and its risk factors among the undergraduate medical students. *Indian J Communit Med*. 2024;49(1):96. DOI: https://doi.org/10.4103/ijcm.ijcm_abstract334.
5. Gomez S, White B, Browning J, DeLisser HM. Medical students' experience in a trauma chaplain shadowing program: a mixed method analysis. *Medic educat online*. 2020;25(1):1710896. DOI: <https://doi.org/10.1080/10872981.2019.1710896>.
6. Nelson G, Hanna R, Houry A, Klimes-Dougan B. Protective functions of religious traditions for suicide risk. *Suicidol Online*. 2012;3(1):59-71. Weblink: <http://www.suicidology-online.com/pdf/SOL-2012-3-59-71.pdf>
7. Abraham ZK, Sher L. Adolescent suicide as a global public health issue. *Inter J adolescent med healt*. 2019;31(4):20170036. DOI: <https://doi.org/10.1515/ijamh-2017-0036>
8. McAuliffe CM. Suicidal ideation as an articulation of intent: a focus for suicide prevention? *Archives of Suicide Res*. 2002;6(4):325-38. DOI: <https://doi.org/10.1080/13811110214524>
9. Rosiek A, Rosiek-Kryszewska A, Leksowski Ł, Leksowski K. Chronic stress and suicidal thinking among medical students. *Inter J environment res public healt*. 2016;13(2):212-217. DOI: <https://doi.org/10.3390/ijerph13020212>
10. Osama M, Islam MY, Hussain SA, Masroor SMZ, Burney MU, Masood MA, et al. Suicidal ideation among medical students of Pakistan: a cross-sectional study. *J forensic and legal med*. 2014;27:65-8. DOI: <https://doi.org/10.1016/j.jflm.2014.08.006>
11. Koziarska-Roęciszewska M, Tchórzewska K, Tchórzewski J, Roęciszewski P, Widawska M, Kopacz K, et al. Mental well-being among students of selected medical universities in Poland. The role of a family physician. *Family Med Prim Care Rev*. 2022;24(3):1-6. DOI: <https://doi.org/10.5114/fmPCR.2022.118282>
12. Slabadiene M, Lygnugaryte-Griksiene A. Suicidal thoughts, intentions and suicide attempts by Lithuanian medical students of the Lithuanian University of Health Sciences. *Biological Psychiatry & Psychopharmacology/Biologinė Psichiatrija ir Psichofarmakologija*. 2020;22(1). Weblink: <https://biological-psychiatry.eu/wp-content/uploads/2020/06/BPP>.
13. Miletic V, Lukovic JA, Ratkovic N, Aleksic D, Grgurevic A. Demographic risk factors for suicide and depression among Serbian medical school students. *Social psychiatry and psychiatric epidemiol*. 2015;50:633-638. DOI: <https://doi.org/10.1007/s00127-014-0950-9>
14. Menezes RG, Subba SH, Sathian B, Kharoshah MA, Senthilkumaran S, Pant S, et al. Suicidal ideation among students of a medical college in Western Nepal: a cross-sectional study. *Legal Med*. 2012;14(4):183-187. DOI: <https://doi.org/10.1016/j.legalmed.2012.02.004>
15. Eskin M, Voracek M, Stieger S, Altinyazar V. A cross-cultural investigation of suicidal behavior and attitudes in Austrian and Turkish medical students. *Social psychiatry and psychiatric epidemiol*. 2011;46:813-23. DOI: <https://doi.org/10.1007/s00127-010-0254-7>
16. Amiri L, Voracek M, Yousef S, Galadari A, Yammahi S, Sadeghi M-R, et al. Suicidal behavior and attitudes among medical students in the United Arab Emirates. *Crisis*. 2013;2(1):1-6. DOI: <https://doi.org/10.1027/0227-5910/a000513>
17. Rweyemamu LP, Mbotwa CH, Massawe JI, Mramba RP. Mental distress and associated factors among undergraduate students: evidence from a cross-sectional study at the University

- of Dodoma, Tanzania. *Discover Mental Health*. 2024;4(1):44-49. DOI: <https://doi.org/10.1007/s44192-024-00098-x>
18. Makie³a M, Marcinowicz P, Wiêd³ocha M, Szulc A. Zdrowie psychiczne ma znaczenie: rozszyfrowanie stanu psychicznego studentów medycyny. *J Psychiatry and Clinic Psychol*. 2024;24(2):159-67. DOI: <https://doi.org/10.15557/pipk.2024.0020>
 19. Mateen A, Kumar V, Singh AK, Yadav B, Mahto M, Mahato S, et al. Suicide and Suicidal Ideation in Medical Students: A Systematic Rev. *Cureus*. 2024;16(7):1-6. DOI: <https://doi.org/10.7759/cureus.65246>
 20. Begum A. The Prevalence of Mental Distress and the Role of Social Support among Medical Students in Bangladesh: A Cross-Sectional Study. *Sch J App Med Sci*. 2024;11(1):1458-66. DOI: <https://doi.org/10.36347/sjams.2024.v12i11.005>
 21. Dutta G, Rajendran N, Kumar T, Varthya SB, Rajendran V. Prevalence of depression among undergraduate medical students in India: A systemic review and meta-analysis. *Cureus*. 2023;15(1):1-6. DOI: <https://doi.org/10.7759/cureus.33590>
 22. Suwalska J, Suwalska A, Szczygie³ M, Łojko D. Medical students and stigma of depression. Part 2. Self-stigma. *Psychiatria polska*. 2017;51(3):503-513. DOI: <https://doi.org/10.12740/pp/onlinefirst/67373>