https://repository.uaeh.edu.mx/revistas/index.php./MJMR/issue/archive

Mexican Journal of Medical Research ICSa

Biannual Publication, Vol. 14, No.28 (2026) 9-16

ISSN: 2007-5235

Risk Factors for Suicidal Ideation in Medical Students: A Literature Review

Factores asociados a la ideación suicida en estudiantes de medicina, una revisión bibliográfica

Citlalli A. Zempoalteca-Buenavista [a], Alfonso Reyes-Garnica [b]

Abstract:

Suicidal ideation among medical students significantly impacts both academic performance and student well-being. Consequently, identifying risk and protective factors is imperative to influence behavioral regulation and reduce suicide rates. This narrative review aims to identify risk factors associated with suicidal ideation in medical students and describe their potential to modify the progression of suicidal behaviors. A literature review of descriptive studies was conducted, encompassing medical students of basic sciences, clinical rotations, and internships globally. Associated factors are categorized according to the three phases of the Integrated Motivational-Volitional Model: the pre-motivational phase, the motivational phase and the volitional phase. Findings indicate that approximately 25% of medical students reported suicidal ideation, with academic dissatisfaction and depressive symptoms identified as the primary risk factors. Thus, developing positive coping strategies among future health professionals is essential.

Keywords:

Suicidal ideation, Suicidal behaviour, Medicine, Students, University

Resumen:

La ideación suicida en estudiantes de medicina constituye una conducta que incide de manera directa en el rendimiento académico y el bienestar de los estudiantes universitarios. Por consiguiente, resulta imperativo identificar los factores de riesgo y de protección que pueden ejercer una influencia positiva en la regulación de dicha conducta, con el propósito de reducir los índices de suicidio. El propósito de la presente revisión narrativa es identificar los factores de riesgo asociados a la ideación suicida en estudiantes de medicina, así como describir su potencial de modificar el viraje entre las conductas suicidas. Se llevó a cabo una revisión bibliográfica de estudios descriptivos realizados en estudiantes de medicina de ciclos básicos, campos clínicos e internado médico a nivel global. Los factores asociados a la generación de los comportamientos suicidas se presentan agrupados bajo el esquema propuesto en el Modelo Motivacional Volitivo en tres fases: la fase premotivacional, la fase motivacional y la fase volitiva. Se encontró que aproximadamente el 25 % de los estudiantes de medicina habían reportado ideación suicida, siendo los factores más asociados la insatisfacción académica y los síntomas depresivos. Por lo tanto, resulta imperativo desarrollar estrategias de afrontamiento positivas entre los futuros profesionales de la salud.

***Palabras Clave**:*

Ideación suicida, Conducta suicida, Medicina, Estudiantes, Universidad

INTRODUCTION

Suicidal behavior encompasses a spectrum of intentional, self-harming actions aimed at ending one's life. The Integrated Motivational-Volitional (IMV) is a theoretical framework that explains the evolution of these behaviors through four distinct constructs: Suicidal Ideation (SI), defined as the emergence of thoughts or desires to die; Suicidal Planning (SP) the phase of

[a] Autor de Correspondencia, Universidad Autónoma del Estado de Hidalgo | Área Académica de Medicina del ICSa | Pachuca de Soto, Hidalgo | México. https://orcid.org/0009-0001-9439-8616. Email: ze392605aeh.edu.mx

[b] Universidad Autónoma del Estado de Hidalgo | Área Académica de Medicina del ICSa | Pachuca de Soto, Hidalgo | México. https://orcid.org/0009-0009-1493-8773. Email: alfonso_reyes@uaeh.edu.mx

Received: 30/09/2025, Accepted: 12/12/2025, Postprint: 30/01/2026, Published: 05/07/2026

DOI: https://doi.org/10.29057/mjmr.v14i28.16185

CC BY NC ND

organizing thoughts without executing an act; Suicidal Attempt, in which a plan is carried out but does not result in death; and Suicide defined as a fatal outcome.[1] It is important to note that the lack of established operational definitions for these behaviors poses a significant challenge for quantitative assessment.[2] In the third section of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) titled "Conditions for Further Study," the criteria for Suicidal Behavior Disorder focus exclusively on suicide attempt −defined as a sequence of self-initiated behaviors with the intentional goal of ending one's life. Crucially, this classification explicitly excludes suicidal ideation (SI) and suicidal planning (SP)[3] from its diagnostic criteria. Conversely, the International Classification of Diseases (ICD-11), under "Symptoms, signs, or clinical findings related to the mind and behavior" describes SI as thoughts, ideas, or reflections regarding the possibility of ending one's life, ranging from the passive belief that one would be better off dead to the formulation of detailed plans. Furthermore, the ICD-11 defines a suicide attempt as a specific episode of self-destructive behavior undertaken with the conscious intent to die.[4]

Globally, suicide ranked as the third leading cause of death among individuals aged 15-29 in 2021[5]. Notably, Latin America experienced a 38.9% increase in suicide mortality rates between 1990 and 2021, according to the Global Burden of Disease Study, Injuries and Risk Factors (GDB) 2021.[6]

Given that suicidal ideation (SI) serves as a critical predictor of completed suicide, there is a profound interest in evaluating risk and protective factors to effectively modulate and mitigate suicidal behavior.[7] This behavior is notably prevalent among medical students, with reported incidence rates ranging significantly from 4% to 70% [8,9]. Such variability underscores the urgency of identifying and characterizing modifiable variables, which are essential for developing predictive models and reducing suicide mortality. However, the persistent social stigma surrounding mental health has hindered the acquisition of consistently reliable data within this population.[10] The predisposing factors strongly associated with university enrollment include: having a diagnosed neuropsychiatric condition, living in environments with high levels of violence, or facing economic hardships and limited access to basic resources. Furthermore, in higher education levels, academic demands represent a significant challenge in terms of completing academic activities, managing time and personal chronotypes, interacting with peers and faculty, and developing the resilience to cope with frustration, among other factors.

To identify risk factors associated with suicidal ideation among medical students, a global bibliographic analysis was conducted, encompassing descriptive studies from preclinical, clinical, and internship stages. Based on this analysis, it was possible to identify the risk factors involved in suicidal behavior and describe the characteristics that enable the modulation of its dynamics. The findings are categorized into the three phases proposed by the Integrated Motivational-Volitional (IMV) Model, providing evidence that behavioral modifications can either precipitate or prevent specific suicidal behaviors.

EPIDEMIOLOGY OF SUICIDAL BEHAVIOR AMONG MEDICAL STUDENTS

Suicidal behavior in academic settings is of considerable importance; statistical records in the United States indicate that suicide is the second leading cause of death in the 14-18 age group. Between 2003 and 2023, the rates of suicidal ideation (SI) and suicide attempts increased from 16.9% to 20.4% and from 8.5% to 9.5%, respectively. Furthermore, approximately one in ten high school students reported a suicide attempt within the previous 12 months. The most frequently associated risk factors include female gender, being in the first year of medical school, identifying as a sexual minority (non-heterosexual orientation), and belonging to a historically marginalized racial or ethnic group.[11,12] Global data through 2024 indicates that among university students, the prevalence rates of suicidal ideation, planning and attempts were 15.9%, 7.7% and 4.9%, respectively. Furthermore, there is a broadening diversification of risk factors; for instance, non-heterosexual orientation is associated with a threefold increase in suicide risk. Other significant stressors include economic hardships, which generate stress and uncertainty, and academic challenges, such as curriculum overload and heightened performance pressure.[13]

Suicidal behavior typically follows a hierarchical prevalence trend: suicidal ideation (SI) is the most frequent, followed by planning, attempts, and finally completed suicide. Regarding medical students, two studies conducted in China identified a distinct pattern where the number of suicide attempts was double the reported rates of suicidal planning. Although neither behavior exceeded the prevalence of SI, it is crucial to consider that this unusual pattern may suggest that the transition from planning to attempt −or directly to suicide− could bypass traditional predictive markers, thereby overriding their diagnostic capacity.[14,15]

The prevalence rate of SI among medical students is estimated at 15% globally[16]; however, significant variations exist across geopolitical regions. For instance, the Middle East reports the highest prevalence at approximately 40%.[17,18] Specifically, a study of 505 medical students in Tehran found that 355 individuals reported experiencing SI at some point in their lives.[9] High figures were also observed in Brazil, with an estimated prevalence of 27.7%. In contrast, Asian countries such as India, Thailand, and China, reported SI rates of 16.3%, 15.8% and 14.1%, respectively. Finally, in the United States, research indicates that an average of 14.4% of medical students have

exhibited this behavior during their lifetime. A significant gap in SI prevalence between genders is often reported; in some contexts, for every ten women expressing suicidal thoughts, only one of their male counterparts reports SI[19]. However, this is not a universal rule. Homogeneous prevalence was observed in two specific studies; the first indicated that 138 men and 136 women had experienced SI, while a smaller cohort found SI in 26 men compared to 29 of their female peers, considering that traditional norms of masculinity often emphasize independence, emotional stoicism, and pain tolerance, which may influence the reporting and manifestation of suicidal behavior.[20-22]

SUICIDE IDEATION AS A PREDICTOR OF SUICIDE

Suicide constitutes a global public health crisis that necessitates the development of foresight and preventive strategies to avoid fatal outcomes. The Integrated Motivational-Volitional (IMV) Model serves as a theoretical framework for studying the evolution of suicidal behavior and the specific factors involved in each of its three distinct phases. The pre-motivational phase addresses the individual's biopsychosocial context, where personal vulnerabilities −when coupled with negative life events− result in an adverse stress response. The motivational phase represents the cornerstone of the model, as it is the stage where suicidal ideation emerges and where potential attempts can be predicted. In this phase, exposure to feelings of defeat or humiliation generates a perception of being trapped with no possibility of escape, a state formally defined as entrapment. And finally, the volitional phase, where previously developed suicidal ideation is joined by the determination to end one's life. The interplay between this intent and the availability of means results in a suicide attempt or the consummation of suicide.[23]

The purpose of the IMV model is to detect the variables involved in the development of each suicidal behavior. At both research and clinical levels, this framework guides the identification of modifiable variables with the potential to positively alter suicidal trajectories. One such variable is the feeling of entrapment, a critical checkpoint in the generation of suicidal thoughts. Its predictive potential is characterized by its intermediate position between feelings of humiliation or defeat −perceived as external adversities− and the emergence of suicidal ideation as a perceived resolution. Furthermore, entrapment exhibits highly fluctuating, bidirectional dynamics over narrow timeframes; within periods of 3 to 12 hours, individuals may experience triggering events, process feelings of defeat, and ultimately reach a state of perceived entrapment.[24] Among medical students with no prior history of suicidal behavior or neuropsychiatric disorders, approximately 6.16% reported experiencing feelings of entrapment to de novo stressful events, which subsequently led to the generation of SI. This position entrapment is a significant predictor of first-time suicidal ideation. However, findings also suggest that the persistence of entrapment is associated with an increased tolerance to adverse situations, indicating a complex adaptation in chronic cases.[13]

RISK FACTORS FOR SUICIDAL IDEATION

The following section details the risk factors associated with the emergence of suicidal ideation in medical students. These factors are organized according to the IMV model framework, categorizing each within its respective phase: pre-motivational, motivational, or volitional

PRE-MOTIVATIONAL PHASE

In the pre-motivational phase, we identify factors associated with individual vulnerability. These encompass genetic, biological, and cognitive characteristics, as well as stressful events, which when interacting, result in a negative response.[23]

1. Individual Vulnerabilities: Diathesis

- Sex and Gender

Sex is a non-modifiable variable; female sex is strongly associated with the development of suicidal ideation. Conversely, male sex is more frequently associated with suicide attempts and completed suicides.[25] In parallel, the constructs through which identity is formed −based on socially constructed roles− attribute specific traits to feminine identity, such as high capacity for social networking and effective communication. In contrast, masculine identity is often shaped by competition and social success. The questioning of masculinity can arise from a sense of perceiving oneself as a burden, which may provoke feelings of failure and self-loathing. If seeking help is avoided to maintain emotional repression, it ultimately results in increased psychological pressure and exacerbation of depressive symptoms. On the other hand, women are often expected to fulfill roles as nurturing, caring and sociable figures −characteristics that typically facilitate help-seeking behaviors. However, if women perceive themselves as excluded or isolated, this sense of social exclusion can trigger profound depressive emotions.[26]

- Sexual orientation

A primary component for the free development of personality is the full expression of sexuality. However, aspects such as sexual orientation and gender identity remain significant sources of social stigma; in certain countries, such expressions are even criminalized, leading to fatal consequences. Consequently, identifying as part of the LGBTQ+ community can generate significant distress for the individual[25,27]. Furthermore, a self-perception as non-heterosexual is strongly associated with a higher prevalence of suicidal ideation within the previous 12 months.[28,29]

- History of Neuropsychiatric Disorders: Depression, ADHD, Anxiety and Others

The neuropsychiatric burden of mental disorders has been documented in 9 out of 10 patients with a history of suicide, with mood disorders −particularly major depressive disorder− being the most prevalent.[30,31]

Depression is a strong predictor of suicide; however, the intensity of depressive symptoms is directly associated with the frequency of SI and SP. [28,32] The prevalence of suicidal ideation among medical students ranges from 2.8% to 58.6%,[27,33] furthermore, 18.1% of these students exhibit clinically significant depressive symptoms. Such symptoms are associated with a 7.43-fold increase in the likelihood of experiencing SI at some point in life. Additionally, the use of antidepressants increased this risk 5.18 times, with non-prescription use being more prevalent among men.[34,35] Other psychiatric comorbidities converge to further increase risk factors; for instance, a higher prevalence of SI was found among students with depressive symptoms who also exhibit autism spectrum traits. This suggests that mental health-related stigma renders these individuals more vulnerable to harassment and increases their propensity for social exclusion.[36]

Anxiety intensity serves as a predictor for the occurrence of suicidal ideation. By fostering distress ruminative thoughts and cognitive biases to perceive reality, anxiety acts as an exacerbator of depressive symptoms.[37]

When evaluating the Big Five personality traits, it was found that students who scored higher for neuroticism reported a higher prevalence of SI and depressive symptoms. This explains how an increased sensitivity to emotions −such as sadness or anxiety−elevates risk. Conversely, high levels of conscientiousness were found to reduce the likelihood of experiencing depression. However, the study suggests a cautious assessment to ensure that the emergence of self-destructive thoughts is not a consequence of an inadequate antidepressant management.[38]

Attention Deficit Hyperactivity Disorder (ADHD) has a prevalence of 3.5% among medical students. The inattentive and combined subtypes are predictors of SI, as inattention fosters cognitive impairment and lower performance. Conversely, the presence of hyperactivity is associated with suicide attempts due to increased impulsivity.[39]

The use of psychostimulant substances such as khat−a non-legalized narcotic popular in the Middle East−among Ethiopian students increased the risk of SI by 4.4-fold. This association is attributed to its long-term effects, which disinhibit behavioral regulation and exacerbate depressive symptoms.[21] Caffeine-induced neurostimulation indirectly increased the occurrence of SI by reducing sleep duration and causing insomnia, particularly in individuals with higher sensitivity to methylxanthine or those with high consumption levels.[28,40] Alcohol consumption was significantly associated with SI. The disinhibition phase potentially triggers impulsive actions and risk-taking behaviors, while the subsequent depressive phase increases the prevalence of suicidal thoughts.[28] Overall, substance use within the previous three months, the initiation of use during high school, or alcohol abuse were strongly correlated with suicide attempts.[25]

The disclosure of suicidal thoughts during a professional consultation was found to be strongly associated with underlying mental health conditions. Students who self-reported a need for psychotherapeutic follow-up−including both those who acknowledged having mental health problems and those who did not−exhibited symptoms of mild to moderate depression.[41]

- Childhood Adversities and Neglectful Parental Care

There are critical periods during childhood in which brain cytoarchitecture and physiology are regulated; consequently, the learning acquired during these stages lays the foundation for behavior and the replication of patterns during adulthood. Exposure to physical, sexual or other forms of abuse−as well as a lack of attention from caregivers− can hinder the development of emotional regulation skills, leading to increased impulsivity or cognitive impairment.[42,43] When evaluating parenting models, the level of care and protection perceived by students from their caregivers was examined. The results indicate that the prevalence of SI and major depressive disorders is high among those who perceive low care combined with high control−a pattern classified as neglect or “affectionless control”. Conversely, high-quality care from both parents serves as a protective factor against SI and depressive symptoms.[43]

- Poor physical activity

A weekly physical activity rate of less than 3 hours was associated with higher persistence of SI, compared to students who reported 3 to 5 hours of weekly exercise. The latter group indicated higher levels of well-being and a reduction in anxiety symptoms. Consequently, it is proposed that a sedentary lifestyle indirectly influences suicidal behavior by exacerbating anxiety symptoms and promoting inflammatory processes.[32]

2. Stressor events

- Prolonged Use of Electronic Devices

Excessive use of digital media is not directly linked to suicidal behavior; however, there is a clear relationship between the manifestation of anxiety and depressive symptoms and daily exposure periods over3 hours[40]. It is crucial to consider that the established addictive processes in young people directly impact quality of life −for instance, by increasing sleep onset latency, reducing sleep cycles, and increasing daytime sleepiness. These factors ultimately alter the circadian rhythm and cause dysfunction in the neuroendocrine axes.[44]

- Financial difficulties

Limited economic income is a significant source of uncertainty, as it may prevent students from meeting their basic needs. Since medical students must dedicate themselves to full-time academic commitments, obtaining financial remuneration through employment is often unfeasible. Consequently, they remain financially dependent on parents or guardians, which is associated with a sense of “burden” that manifests as profound distress.[32,45]

- Violence

Violent acts are defined as actions that threaten the individual’s integrity and well-being, inflicted consciously by an individual or a group through verbal, physical, sexual, threatening, intimidating, abusive, or harassing behaviors. Students in clinical rotations and internships experience higher rates of verbal workplace violence, with a prevalence of 35.2%. This violence is often perpetrated by superiors −perceived as a lack of support− or by patients and their families, often stemming from a strained doctor-patient relationship due to communication barriers.[46] The prevalence of SI was significantly higher among students exposed to workplace violence compared to those without such exposure. This exposure leads to emotional exhaustion, as well as depressive and anxiety symptoms. Consequently, it is imperative for healthcare trainees and professionals to have access to specialized mental health support.

The perception of insecurity among Mexican citizens aged18 and older living in urban areas was 63.2% by June 2025. This involves a high perceived persistence of criminal acts −such as robbery or extortion− and antisocial behaviors, including homicide. The perceived lack of effectiveness by security authorities has resulted in the abandonment of public spaces and a shift in social interaction habits. [46] While exposure to violent environments was not a direct predictor of suicidal behavior among medical students, it serves as a risk factor that increases the complexity of depressive symptoms.[47]

At the educational level, peer-to-peer violence−commonly known as bullying− was directly associated with a suicide attempt rate ranging from 25 to 66%[25]. Conversely, while mistreatment by teachers remains underreported, one study indicated that 19% of students who presented SI also perceived harassment or abuse from their instructors.[48]

A unique situation was the contingency brought about by the COVID-19 pandemic in 2020. The lockdown measures and the global health crisis were major sources of uncertainty for the general population. Essential aspects of life, such as the securing of resources, were no longer guaranteed, leading to widespread concern and psychological distress. [49]

MOTIVATIONAL PHASE

The Motivational Phase represents the point of convergence between life adversities and the emergence of feelings such as defeat and humiliation. These feelings channel the maladaptive response of perceived entrapment; it is from this psychological state that self-destructive ideation begins to take shape.[23]

Perfectionism, ruminative thinking (rumination), and loneliness interact to generate SI. Indirectly, perfectionism is associated with rumination within a context of high internal and environmental demands. This can lead to psychological distress and a perceived loss of control, as a gap emerges between the “ideal self” and the “actual self”. This discrepancy often results in maladaptive coping strategies, as well as cognitive biases of defeat and hopelessness, creating a vulnerable environment for the emergence of SI, depressive symptoms, self-criticism, and low self-esteem. In the interaction between perfectionism and loneliness, students often experience a sense of thwarted belongingness. Approximately 49% of students who presented SI reported difficulties integrating into the university environment[48]. These individuals find it challenging to perceive their existing support networks and are distressed by a self-perceived sense of social isolation.[9,50]

- Dissatisfaction with academic performance

It is estimated that academic dissatisfaction increases the risk of suicidal behavior tenfold.[48] Approximately 27% of all medical students reported feelings of dissatisfaction, with 19% associating this with factors in the school environment. Among undergraduates who presented SI, there is a significant prevalence of academic dissatisfaction, ranging between 46.5% and 72.9%.[25,51] However, only 12.6% expressed regret regarding their choice to study medicine.[48] Notably, 40.73% of students with a history of suicide attempts reported dissatisfaction with their academic performance −a figure that is reduced by half among students who did not exhibit suicidal behavior.[30]

- High academic demand

The academic workload in medical schools can become a significant challenge, particularly during the first years, as recent high school graduates must adapt to a more demanding academic pace. Approximately 6% of students reported experiencing stress due to their workload[19]. Furthermore, 53.3% of students characterized their academic load as moderately demanding, while 38.8% described it as heavy; notably 3.4% of this latter group exhibited suicidal behavior.[40]

Preclinical students also exhibited more severe depressive symptoms, reaching a peak during the first year of their training. This is likely due to the significant adaptive capacity required when facing new academic challenges; when goals are not met, students often experience profound frustration. Conversely, clinical-year students tend to report better psychological outcomes, possibly because their greater autonomy and

independence allow for a more fulfilling performance within hospital-based work.[25]

VOLITIONAL PHASE

The Volitional Phase encompasses factors associated with a family history of suicide, a personal history of suicidal behavior, and access to lethal means.

- History of Suicidal Behavior

Out of a total of 710 students evaluated, 208 presented with SI, 28 had developed suicide plans, and 45 had made suicide attempts. Among the latter, 48.9% reported a firm intent to end their lives, while 46.7% did not. Furthermore, the frequency of attempts showed that 62.2% were first-time attempts, 33.3% had two prior attempts, and 4.4% had more than two. The most frequently used methods were the ingestion of toxic substances, followed by hanging[52]. In this context, a prior history of suicidal behavior serves as a critical baseline, initiating a dynamic that increases both the frequency and lethality of subsequent events. Consequently, it is imperative to identify and refer cases of suicidal behavior to ensure a timely intervention and comprehensive clinical approach.[53]

- Family History of Neuropsychiatric Disorders and Suicidal Behavior

The hereditary burden of neuropsychiatric diagnosis among students with suicidal behavior showed a prevalence ranging from 11% to 18.1%[19,48]. Furthermore, between 7.3% and 11% of students reported a family history of suicide attempts,[48,54] while 4.5% reported that a family member had died by suicide.[54,55]

PROTECTIVE FACTORS AGAINST SUICIDAL IDEATION

It is essential to implement formal mental health training across all educational levels, with a specific focus on medical students, given that factors such as academic stress predispose them to unfavorable behaviors. Conversely, key protective factors identified include high self-esteem and the presence of a robust support network. Interestingly, resilience did not show a direct impact as a protective factor against SI; however, it does exert a regulatory effect on symptoms of depression and anxiety.[53] When assessing strategies to address stress through Cognitive-Behavioral (CBT) and Dialectical Behavioral (DBT) therapies, the most frequently reported coping mechanisms were problem-solving, social support, emotional expression (verbalizing feelings), and self-distraction. Conversely, strategies that showed the lowest prevalence included avoidance, substance use, and self-blame. The final results demonstrated an immediate reduction in stress, which persisted throughout a six-month follow-up. Furthermore, evidence showed that the use of adaptive coping strategies led to improved self-regulation among participants., This enabled them to adopt a proactive approach toward stressors and significantly enhanced their self-perception and self-efficacy.[56]

The gender-sensitive psychotherapeutic approach demonstrated that it is possible to effectively address SI risk factors. Cognitive-behavioral therapy (CBT) in women contributed to the improvement of emotional and depressive symptoms. Conversely, psychological interventions in men helped reduce perceived incompetence and may decrease suicidal ideation. Nonetheless, it is essential to implement cultural adaptations tailored to the specific context of the population.[26]

CONCLUSION

Suicide is a preventable public health issue; therefore, it is vital to address the variables capable of modifying suicidal behavior. Within the academic environment of physicians-in-training, it is essential to integrate mental health education into the curricular framework. This should promote self-care, tolerance for uncertainty and frustration, and the development of adaptive coping strategies. The objective is to empower students to evaluate their own emotional well-being and to provide them with gatekeeper training to detect suicidal behavior among their peers. Ultimately, safeguarding the mental health of future professionals ensures they are prepared to protect the health of the broader population.

REFERENCES

[1] Reeves K, Vasconez G, Weiss S. Characteristics of Suicidal Ideation: A Systematic Review. Arch. Suicide Res. 2022; 26(4): 1736-56

[2] Al-Halabía S, Sáiza PA, Buróna P, Garrido M, Benabarrea A, Jiménez E. Validación de la versión en español de la Columbia-Suicide Severity Rating Scale (Escala Columbia para Evaluar el Riesgo de Suicidio). Rev. Psiq. Salud Mental. 2016; 9(3): 134-42.

[3] American Psychiatric Association. Sección III: Afecciones que necesitan más estudios. En: Manual diagnóstico y estadístico de los trastornos mentales (DSM-5), 5a Ed. Buenos Aires, Argentina: Editorial Médica Panamericana; 2014: 801-3.

[4] Organización Mundial de la Salud(OMS). Clasificación Internacional de Enfermedades Undécima Revisión (CIE-11). Ginebra: Organización Mundial de la Salud; 2022.

[5] Organización Mundial de la Salud. Suicidio. Organización Mundial de la Salud: 2025. [Citado el 3 de septiembre, 2025]. Disponible en: https://www.who.int/es/news-room/fact-sheets/detail/suicide

[6] GBD 2021 Suicide Collaborators. Global, regional, and national burden of suicide, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. Lancet Public Health. 2025;10 (3): e189-e202.

[7] Wang S, Wei T, Zhu R, Li S, Lui X, Cai Y et al. Perceived entrapment predicts first-onset suicidal ideation: A longitudinal study among medical students in China. Frontiers. Public Health. 2023; 10: 1049975.

[8] Kumar V, Mateen A, Aziz T, Singh AK, Singh AK, Mahto M, et al. Prevalence and Various Risk Factors Associated with Suicidal Ideation Thoughts in Medical Students from a Medical College in Northern India. Ann. Afr. Med. 2025; 24(2): 468-73.

[9] Oskouei AH, Sardarzehi R, Zarchi MSZ, Serjouie F, Zavareh SAT, Kianimoghadam AS, et al. Structural equation modeling of suicidal ideation among medical students in Iran: the role of perfectionism, repetitive negative thinking and feelings of loneliness. BMC Psychiatry. 2025; 25(1): 823

[10] Rex M, Waern M, Carlström E, Joneken I, Tell S, Brezicka T, et al. Person-centered suicide prevention: key elements from the perspective of people living with suicidality. Int. J. Qual. Stud. Health Well-being. 2025; 20(1): 2549752

[11] King CA, Harness J, Arango A, Czyz E. Suicide Prevention in Youth. Curr. Psychiatry Rep. 2025; 27(9): 500-8

[12] Centers for Disease Control and Prevention. Youth Risk Behavior Survey Data Summary & Trends Report: 2013–2023. U.S. Department of Health and Human Services; 2024.

[13] Zhao M, Xin Y, Bai X, Zhang S, Liu H, Xu W, et al. Risk factors for suicidality among college students: A systematic review and meta-analysis. J. Affect. Disord. 2025; 382: 567-78.

[14] Shen Y, Chan BSM, Huang C, Cui X, Liu J, Lu J, et al. Suicidal behaviors and attention deficit hyperactivity disorder (ADHD): a cross-sectional study among Chinese medical college students. BMC Psychiatry. 2021; 21(1): 258.

[15] Li J, Zhang Y, Siu Man Chan B, Tan SN, Lu J, Luo X, et al. Associations between anxiety, depression, and risk of suicidal behaviors in Chinese medical college students. Front. Psychiatry. 2022; 13: 1012298.

[16] Peng B, Hu N, Guan L, Chen C, Chen Z, Yu H. Family functioning and suicidal ideation in college students: a moderated mediation model of depression and acceptance. Front. Public Health. 2023; 11: 1137921.

[17] Nakhostin-Ansari A, Akhlaghi M, Etesam F, Sadeghian MH. Suicidal Ideation and Its Associated Factors in Medical, Dental, and Pharmacy Students: A Cross-Sectional Study during COVID-19 Pandemic. Psychiatry J. 2022; 2022: 8139351.

[18] Hossein Sadeghian M, Etesam F, Nakhostin-Ansari A, Akbarpour S, Akhlaghi M. Association Between Hopelessness And Suicidal Ideation In Iranian Medical Students: A Cross-Sectional Study. Health Psychol Res. 2021; 9(1): 27579.

[19] Desai ND, Chavda P, Shah S. Prevalence and predictors of suicide ideation among undergraduate medical students from a medical college of Western India. Med. J. Armed Forces India. 2021; 77(Suppl 1): S107-S114.

[20] Gui Z, Ren X, Li X, Zhou C, Sun L. Parents' parenting styles differences are associated with lifetime suicidal ideation: Evidence from Chinese medical college students. J. Health Psychol. 2022; 27(10): 2420-34.

[21] Desalegn GT, Wondie M, Dereje S, Addisu A. Suicide ideation, attempt, and determinants among medical students Northwest Ethiopia: an institution-based cross-sectional study. Ann. Gen. Psychiatry. 2020; 19: 44.

[22] Nordin T, Degerstedt F, Granholm Valmari E. A Scoping Review of Masculinity Norms and Their Interplay With Loneliness and Social Connectedness Among Men in Western Societies. Am. J. Mens Health. 2024; 18(6): 15579883241304585.

[23] O'Connor RC, Kirtley OJ. The integrated motivational-volitional model of suicidal behaviour. Philos. Trans. R. Soc. Lond. B. Biol. Sci. 2018; 373(1754): 20170268

[24] van Ballegooijen W, Littlewood DL, Nielsen E, Kapur N, Gooding P. The temporal relationships between defeat, entrapment and suicidal ideation: ecological momentary assessment study. BJPsych. Open. 2022; 8(4): e105

[25] Marcon G, Massaro Carneiro Monteiro G, Ballester P, Cassidy RM, Zimerman A, Brunoni AR, et al. Who attempts suicide among medical students? Acta Psychiatr Scand. 2020; 141(3): 254-64.

[26] Peng J, Ren L. Gender differences in the network of suicidal ideation, interpersonal needs and depressive symptoms among Chinese college students. Sci. Rep. 2025; 15: 10507.

[27] Capdevila-Gaudens P, García-Abajo JM, Flores-Funes D, García-Barbero M, García-Estañ J. Depression, anxiety, burnout and empathy among Spanish medical students. PLoS One. 2021; 16(12): e0260359.

[28] Schad A, Layton RL, Ragland D, Cook JG. Mental health in medical and biomedical doctoral students during the 2020 COVID-19 pandemic and racial protests. Elife. 2022; 11: e69960.

[29] Suárez DE, Cardozo AC, Villarreal ME, Trujillo EM. Non-Heterosexual Medical Students Are Critically Vulnerable to Mental Health Risks: The Need to Account for Sexual Diversity in Wellness Initiatives. Teach Learn Med. 2021; 33(1): 1-9.

[30] Franklin JC, Ribeiro JD, Fox KR, Bentley KH, Kleiman EM, Huang X, et al. Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. Psychol. Bull. 2017; 143(2): 187-232.

[31] Bernal M, Haro JM, Bernert S, Brugha T, de Graaf R, Bruffaerts R, et al; ESEMED/MHEDEA Investigators. Risk factors for suicidality in Europe: results from the ESEMED study. J. Affect. Disord. 2007; 101(1-3): 27-34.

[32] Oh H, Landré B, Yon DK, Frajerman A, Gyasi RM, Jacob L. Physical activity and suicidal behavior in medical students from the United States. J Affect Disord. 2024; 367658-67.

[33] Kumar V, Mateen A, Aziz T, Singh AK, Singh AK, Mahto M, et al. Prevalence and Various Risk Factors Associated with Suicidal Ideation Thoughts in Medical Students from a Medical College in Northern India. Ann. Afr. Med. 2025; 24(2): 468-73.

[34] Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. JAMA. 2010 Sep 15;304(11):1181-90.

[35] Pinzón-Amado A, Guerrero S, Moreno K, Landínez C, Pinzón J. Ideación suicida en estudiantes de medicina: prevalencia y factores asociados. Rev. Colomb. Psiquiatr. 2013; 43(Suppl 1): 47-55.

[36] Çelikkol Sadiç Ç. An examination of levels of depression, the probability of suicide, and autistic traits in medical faculty students: A cross-sectional study. Medicine (Baltimore). 2024; 103(46): e40607.

[37] Li J, Zhang Y, Siu Man Chan B, Tan SN, Lu J, Luo X, et al. Associations between anxiety, depression, and risk of suicidal behaviors in Chinese medical college students. Front Psychiatry. 2022; 13: 1012298.

[38] Pitanupong J, Sa-I A, Sathaporn K, Jiraphan A, Ittasakul P, Karawekpanyawong N. The personality traits with depression and suicidal ideation among Thai medical students: a university-based multiregional study. BMC Psychol. 2024; 12(1): 223.

[39] Shen Y, Chan BSM, Huang C, Cui X, Liu J, Lu J, Patel M, Verrico CD, Luo X, Zhang XY. Suicidal behaviors and attention deficit hyperactivity disorder (ADHD): a cross-sectional study among Chinese medical college students. BMC Psychiatry. 2021 May 18;21(1):258.

[40] Wen LY, Zhang L, Zhu LJ, Song JG, Wang AS, Feng Y, et al. Latent class analysis on mental health and associated factors in medical and non-medical college students. J. Affect. Disord. 2025; 388: 119593.

[41] Atienza-Carbonell B, Balanzá-Martínez V. Prevalence of depressive symptoms and suicidal ideation among Spanish medical students. Actas Esp. Psiquiatr. 2020; 48(4): 154-62.

[42] Herrera J, Nuñez M. ¿Qué efectos tiene en nuestro cerebro el maltrato? UNAM, Global Revista: 2023 [Citado el 11 de septiembre, 2025]. Disponible en: https://unamglobal.unam.mx/global_revista/que-efectos-tiene-en-nuestro-cerebro-el-maltrato/

[43] Tugnoli S, Casetta I, Caracciolo S, Salviato J. Parental bonding, depression, and suicidal ideation in medical students. Front Psychol. 2022; 13: 877306.

[44] Salmerón-Ruiz MA, García de Ribera C, Sebastián Barberán V, Eddy Ives L, Álvarez-Pitti J. Impact of digital media on development and physical health. An. Pediatr. (Engl. Ed). 2025; 102(6): 503876.

[45] Wang X, Peng P, Liu Y, Yang WF, Chen S, Wang Y. Workplace violence inflicted by patients or their family members/visitors and its relationship with suicidal ideation among undergraduate medical students during clinical training in China. Ann. Med. 2023; 55(2): 2295027.

[46] Instituto Nacional de Estadística y Geografía (INEGI). Encuesta Nacional de Seguridad Pública Urbana (ENSU). INEGI: 2025. [Citado el 13 de septiembre, 2025]. Disponible en: https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2025/ensu/ENSU20205_07_RR.pdf

[47] Escobar-Padilla B, Márquez-González H, Consejo y Chapela C, López-Sepúlveda AC, Sepúlveda Vildósola AC. Social Violence Increases the Risk of Suicidal Ideation Among Undergraduate Medical Students. Arch. Med. Res. 2019; 50(8): 577-86.

[48] Garg S, Kharb A, Bansal K. What covariates drive medical students to the brink of suicidal ideation, plan, and attempt? A double-centric cross-sectional study in a resource-constrained rural setting in North India. Indian J. Psychiatry. 2023; 65(4): 431-42

[49] Pelissier C, Viale M, Berthelot P, Poizat B, Massoubre C, Tiffet T, Fontana L. Factors Associated with Psychological Distress in French Medical Students during the COVID-19 Health Crisis: A Cross-Sectional Study. Int J Environ Res Public Health. 2021; 18(24): 12951

[50] Hosseinzadeh Oskouei A, Sardarzehi R, Zamani Zarchi MS, Tavallaei Zavareh SA, Shams J, Kianimoghadam AS, et al. The mediating role of feelings of hopelessness and repetitive negative thinking in the relationship between perfectionism and depressive symptoms among medical students with suicidal ideation. Front. Psychiatry. 2025; 16: 1560653.

[51] Atreya A, Nepal S, Menezes RG, Marhatta A, Ghimire S, Shah P. Suicidal Ideation Among Medical and Nursing Students. J. Nepal Health Res. Counc. 2023; 20(4): 852-8.

[52] Asfaw H, Yigzaw N, Yohannis Z, Fekadu G, Alemayehu Y. Prevalence and associated factors of suicidal ideation and attempt among undergraduate medical students of Haramaya University, Ethiopia. A cross-sectional study. PLoS One. 2020; 15(8): e0236398.

[53] Seo EH, Yang HJ, Kim SG, Yoon HJ. Ego-resiliency moderates the risk of depression and social anxiety symptoms on suicidal ideation in medical students. Ann. Gen. Psychiatry. 2022; 21(1): 19.

[54] Koushik M, Veeramani P, Vaishali LPM, Charumathi B, Jain T. Suicidal ideation and its associated risk factors among students of a medical college in Chennai-A cross-sectional study. J. Family Med. Prim. Care. 2025; 14(1): 62-9.

[55] van Ballegooijen W, Littlewood DL, Nielsen E, Kapur N, Gooding P. The temporal relationships between defeat, entrapment and suicidal ideation: ecological momentary assessment study. BJPsych. Open. 2022; 8(4): e105.

[56] Nguyen T, Pu C, Waits A, Tran TD, Ngo TH, Huynh QTV, et al. Transforming stress program on medical students' stress mindset and coping strategies: a quasi-experimental study. BMC Med Educ. 2023; 23(1): 587.