The International Journal of Indian Psychology ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print) Volume 10, Issue 4, October- December, 2022



https://www.ijip.in

Review Paper



Understanding Suicide in Medical Students: A Narrative Review

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ABSTRACT

Background: Suicide is death caused by injuring oneself with the intent to die. There are multiple factors involved in increasing the likelihood of a suicidal attempt. It is important to review such risk factors to understand the most common and universal factors responsible for it. Medical students are at higher risk to commit suicide as compared to the general population. Tracking these factors are useful indicators to prevent such acts in the right time window. Objectives: The current review of literature aims at bringing together multiple researches on suicide in a specific population of medical students. It further explores various studies estimating prevalence rates of suicide among medical students, prevalence rates of suicide across the stratified groups of medical professions. It also aims at understanding the most common risk factors associated with suicide among the population. Methods: Using various electronic databases, a literature review was conducted (PubMed, Science Direct, Research gate and specific journals). Publications listed using the search term "suicide", "suicidal ideation", "suicidal attempt", "prevalence", "risk factors", "medical students", "medical professionals", "suicide risk", were screened. Corresponding studies in Indian context were also searched. Result: It was found that the most commonly associated risk factors with suicide was substance use, lower socio-economic status, academic stress, depression and anxiety. Conclusion: Hence, bringing together literature the researchers finally provide future clinical implications, possible interventions and prevention strategies based on the data found after reviewing the literature.

Keywords: Medical Students, Prevalence Rates of Suicide, Risk Factors of Suicide, Suicidal Attempt, Suicidal Ideation

Suicide refers to death as a result of injuring oneself with the intention to die. Suicide attempt refers to when individuals harm themselves with any intention of ending their life, but they do not die due to their actions (Centre for disease control, 2022). Many factors play a role in increasing or protecting against the risk for suicide. Suicide is also tied to other kinds of injury and violence. For instance, people who have undergone violence, such as child abuse, bullying, or sexual violence have a higher risk of suicide. Having support from family and community and having effortless health care can decrease suicidal thoughts and behaviors. (CDC, 2022)

Received: November 17, 2022; Revision Received: December 27, 2022; Accepted: December 31, 2022

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Suicidal ideation and attempt are much more prevalent among medical students compared to the general population. Suicidal thought negatively impacts the quality of life, physical, and mental well-being of the students. (Getachew, 2020). There are various contributing factors for suicidal attempts in medical students. Approximately six out of ten applicants are able to obtain an admission at a medical college, and students often have an endless and exhausting schedule of hospital postings, examinations and having to balance the emotional strain of seeing sick patients and maintain professional standards. A survey done on the general population in 2007 found that nearly 17% of them had thought about committing suicide at some time in their lives. Around a quarter of the general population are thought to suffer from a mental health problem over a year. A survey done on medical students indicates that one in four people binge drink each week – compared to 18 percent of all 16 to 24-year-olds – and more than one in 10 said they had taken class A, B, or C drugs at least once. (Cooper, 2015)

A report on completed suicide by allopathic medical students, residents and physicians from India was as comprised indicating total of 358 suicide deaths among medical students; with academic stress among medical students (45.2%) and residents (23.1%), and marital discord among physicians (26.7%) were the most apparent reasons for suicide. Mental health concerns were the next most common reason in medical students (24%) (Chal, 2022). Another survey which was web-based on medical students wad done on 4840 participants identified several critical aspects associated with a history of suicide attempts among medical students. (Marcon, 2020)

Chronic stress is a subject which is broad and there are multiple ways of dealing with it and managing it. A study analysed stress and anxiety among medical students and how they influence suicidal thinking. A study was conducted in the years 2014 to 2015 in Poland, at the Medical University—Nicolaus Copernicus University, Collegium Medicum where the was to assess chronic stress and suicidal thinking among students and how students cope with this concern. Results indicated that students experience multiple stressors. Students cope better with stress at the end of their education than students at the beginning of their studies. The impact of chronic stress on mental health and suicidal thinking among students is quite strong (Anna, 2016).

The current review aims at compiling data and suggesting possible clinical implications in this widely concerning area of suicide in the specific population of medical professionals.

Rationale for the study

The current study compiles the data across geographical locations like Middle East, Asia, Canada, Germany, Austria, Switzerland etc. This will provide further information if there are any differences in the epidemiology of medical students committing suicide. This also sheds light in understanding whether the risk factors are different across the locations. The risk factors help in gauging whether a particular group of people should be a primary and the foremost target of designing an intervention. There are limited number of researches done in India; especially that provides further clinical implications on the topic. This review paper will further lend support in formulating possible clinical implications for suicide in medical students.

Literature Search

Using various electronic databases, a literature review was conducted (PubMed, Science Direct, Research gate and specific journals) to pertain "Understanding suicide in medical

students" for relevant publications between the years 2012 to 2021. Publications listed using the search term "suicide", "suicidal ideation", "suicidal attempt", "prevalence", "risk factors", "medical students", "medical professionals", "suicide risk", were screened. Corresponding studies in Indian context were also searched. Additionally, more published material was screened from the bibliography of the studies on the related topics.

REVIEW LITERATURE

A cross sectional pilot study on suicide ideation was conducted on second year medical students from South India which. Questionnaires assessed baseline characteristics, habits, thoughts of suicide ideation, and thoughts of life as a burden. who filled the questionnaire 119 were males and 186 were females out of 305 students, with a response rate of 87%. They were admitted for causes which include alcohol intake, smoking, and substance abuse. More than half of them were disappointed with their academic scores, 34 students had drifted from their close friends, and 20 felt ignored by their family members. 20% of respondents experienced suicide ideation, 24 had were serious about committing suicide, and 28 believed that their life is a burden. (Jain et al., 2012)

Another study which evaluated risk factors of suicidal ideation in medical students suggested that several groups are at a great risk for suicidal ideation, and hence need a substantial amount of support. Suicide intervention plans and counselling for depression need to target older students and students hailing from lower socioeconomic status. Students availing services of university clinics with complaints of non-inflammatory joint pain, headache, and/or sleep disorders should be assessed for any form of suicidal tendencies (PC Fan, 2012).

Prevalence of depression, depressive symptoms, and suicidal ideation among medical students was reviewed systematically using a meta-analysis. The prevalence of depressive symptoms was seen to be relatively constant over the period of study (baseline survey year range of 1982-2015; slope, 0.2% increase per year. Nine longitudinal studies were checked that measured depressive symptoms before and during medical school (n = 2432), the median absolute increase in symptoms was found to be13.5%. Prevalence estimates did not significantly differ between studies of only preclinical students and studies of only clinical students. The data prevalence of suicidal ideation was extracted from 24 cross-sectional studies ($n = 21\ 002$) from 15 countries. All studies except one used self-report instruments. The overall pooled crude prevalence of suicidal ideation was found to be 11.1% (Rotenstein, 2016).

A study in 2013 was conducted among medical students to study the prevalence and associated factors of suicidal ideation with a study sample of 963 medical students, of which 57% of the participants were women. The average age was found to be 20.3 years. They had at least one episode of serious suicidal ideation in their lifetime which was reported by 15.7% of the students, with 5% of the students reported having made at least one suicide attempt. Antidepressants use during their medical training was reported by 13.9% of the students (Pinzon Amado, 2013).

A case series was conducted on suicide in medical students in various areas incuding Germany, Austria and Switzerland. This was analyzed using Medline and Google search engines, and information from insurance companies, public institutions, statistical agencies, and leading scientists in these areas. The incidence of suicide among medical students at the Medical University of Innsbruck was also examined. In publications from German-speaking

countries on medical student suicides are mentioned but current statistics were not available. The Tyrolean State Police in Austria registered 14 suicides by students belonging to various disciplines between 2006 and 2011. A research in Innsbruck Medical University (approximately 2,800 medical students) indicated that 6 medical students committed suicide between June 2007 and June 2012 (Kamisnki, 2012).

A Systematic Review was conducted to check the prevalence of death by suicide among medical students and residents. The authors' scant PubMed, Scopus, Google Scholar, and ScienceDirect databases using the search terms patient suicide, trainee, medical student, and resident. They conducted a separate search to identify relevant curriculum using the same terms in combination with coping, teaching, programs, and education. Eight studies met inclusion criteria, which consisted of psychiatry residents alone. They found no studies that determined the prevalence of a patient suicide among medical students or residents in specialties other than psychiatry. The prevalence rates were 31, 33, 43, 47, 54, 61, 68, and 69 %. All studies were cross-sectional, and none collected data prospectively. There were certain limitations of the data which include single-site studies, lack of clarity of the specific question asked, low response rates, and uncertain reporting periods. The authors found two curricula with outcome data that assisted medical trainees in managing the psychologically distressing consequences of the death of a patient (Puttagunta, 2014).

Suicide literacy, suicide stigma, and help-seeking intentions in Australian medical students were studied in a cross-sectional survey design. The survey was administered to 165 currently-enrolled Australian National University (ANU) postgraduate medical students and 54 final-year undergraduate medical students at the University of Adelaide. These samples were compared to another sample of 676 general members of the ANU, undertaken six months earlier. Final year postgraduate and undergraduate students had significantly higher levels of mental health literacy (measured using the Literacy of Suicide Scale) than other medical students or general university staff and students. Suicide stigma (measured using the Stigma of Suicide Scale) was comparable across the samples. Greater stigma was associated with less exposure to suicide and increased help-seeking intention. Students who had a perspective of normalization of suicide had significantly lower help-seeking intentions for thoughts of suicide (Chan, 2014)

Suicidal ideation was also studied among medical students of Pakistan. Forty-six (13.9%) of 331 students had made some plan in their lifetime to commit suicide while 16 (4.8%) tried to commit suicide at some point of time. More number of females than males contemplated suicide. Most of the first-year medical students experienced suicidal ideation. The greatest risk factor influencing suicidal ideation was substance abuse (Osama, 2014).

A meta-analytic study on the prevalence of Suicide Attempts among College Students was conducted in China. The aim of the study was to estimate the pooled prevalence of suicide attempts among college students in China. Relevant researches up to August 2014 were systematically searched via electronic databases and the researchers only selected articles that either reported the prevalence of suicide attempts or had enough data for calculating the prevalence. Finally, 29 eligible studies, with 88,225 college students, were included. The maximum and minimum reported prevalence of suicide attempts among college students in China were found to be 0.4% and 10.5%, respectively (Yang et al., 2015).

A meta-analytic study was done on medical students using systematic online databases and searched for cross-sectional studies examining the prevalence of depression. A total of

62,728 medical students and 1845 non-medical students were pooled across 77 studies and examined. Analyses indicates a global prevalence of depression amongst medical students. Female, Year 1, postgraduate, and Middle Eastern medical students were more likely to be depressed, but the differences were not statistically significant. When understanding by the year of study, Year 1 students had the highest rates of depression. Rates of depression then gradually decreased to reach Year 5. This trend signifies a steady drop in the overall mean frequency of suicide ideation (Puthran, 2016).

Another cross-sectional study of 456 native Portuguese medical students from their 4th and 5th years at the University of Lisbon was conducted and suggested that depression among medical students was 6.1% and suicidal behavior was 3.9%. Higher depression scores were noted in students who were females, living alone, experiencing poor physical health, from poor economic status, had a psychiatric diagnosis, with family history of psychiatric disorders, and high levels of anxiety. Depression scores were also higher in students with suicidal ideation, suicidal plan, and suicidal attempt. Suicidal behavior was higher in medical students who were living alone, had poor physical health, were from poor economic status, were receiving psychopharmacology treatment, had high alcohol use, severe depression, and high anxiety levels. There were no differences between students in the 4th and 5th years of medical school regarding the rate of depression and suicidal behavior (Coentre, Faravelli & Figueira, 2016).

A National Survey-Based Study was done on Death by Suicide among Canadian Medical Students. It was conducted in 17 Canadian medical undergraduate programs (MDUPs) about the last 10 years. Basic demographic data was collected for reported suicide. Six suicides (50% female) were reported over the ten years from 2006 to 2016. The estimated cause-specific mortality rate was 5.9-8.7/100,000 medical students/year. There were seven (44%) MDUPs that kept statistics on student deaths including suicides and 10 (63%) reported having rules or regulations about what to do in case of a suicide (Zivanovic, 2017).

A Web-based survey was sent out to a sample of medical students to understand who attempts suicide. A multi-predictor Poisson regression was performed to identify factors associated with a history of suicide attempts. In addition, an elastic net regularization was used to build a risk calculator to identify students at risk for attempted suicide. The final study consisted of 4,840 participants. The prevalence of suicide attempts in the sample was 8.94%. Risk factors associated were found to be: female gender (P < 0.001); homosexuality; low income; bullying by university peers; childhood (P = 0.001) or adult trauma; family history of suicide; suicidal ideation within the last month; daily tobacco use; and having severe risk for alcohol abuse (Marcon, 2019).

The prevalence of depression and associated risk factors among medical students were studied in Vietnam. A cross-sectional study was conducted on medical students with clinical experience at HMU from November 2015 to January 2016. Self-reported depression had significant associations with the perceived financial burden, physical inactivity, being a senior student, perceived negative influence of night shifts, and non-self-determined motivation profile. Suicidal ideation was significantly associated with perceived financial burden and a non-self-determined motivation profile. Multivariable regression models indicated significant risk factors for self-reported depression as non-self-determined motivation, perceived financial burden, and vigorous level of physical activity. Non-self-determined motivation and perceived financial burden were significant risk factors for suicidal ideation, (Pham, 2019)

A study cross-sectional of 4,882 participants in 2020 detected the risk of suicide attempts among Chinese medical college students used a machine learning algorithm. Self-report data on socio-demographic and clinical characteristics were gathered online through the website or the social media app, WeChat. The random forest model achieved good performance in predicting suicide attempts. 37 suicide attempt predictors were noted with establishment of a 5-fold cross validation built random forest model. This model has achieved a good performance in predicting suicide attempts with 90.1% accuracy, 73.51% sensitivity and 91.68% specificity. Suicidal ideation, suicide plan, anxiety, depression and relationship with the participant's father were the most important predictors, followed by further important predictors of drinking, physical disorder history, family income, family type and relationship with mother. Intriguingly, anxiety had a higher weight than depression and having an unhealthy relationship with one's father was also one of the top five suicide predictors (Shen, 2020).

A study on Suicide of Bangladeshi medical students assessed risk factor trends based on press reports and investigated 22 months suicide reports from January 1, 2018, to November 30, 2019. All newspaper reports concerning individual cases of medical student suicide were reviewed. 13 reported suicides remained after removing non-medical student suicide reports (N=45). Based on these, most of the medical students were from public medical colleges (n=9) and four were from a private medical college, medical technology institute, medical institute, or paramedical institute. Among the 13 students, eight were female, seven of the ten that reported years of study were in the final stages (i.e., fourth or fifth) year of the medical curriculum, and most of them (10 of the 13 suicides) were reported in the first half of the academic year. All but one of these were by hanging (n=12) and the most common cause for suicide was academic issues (Mamun, 2020).

A Study on Suicide Ideation among Medical Students was also performed in Mangalore in which a cross-sectional (health survey) study was done. Among 415 students, 179 were males and 236 were females. 3.6% and 8.9% had a high and moderate risk of committing suicide respectively. 3.3% felt to attempt suicide at least once in the last 12months and 27.9% engaged in smoking, alcohol or other addictions (Nesan, 2020).

A meta-analysis done in 2021 on risk factors for suicidal ideation (SI) and suicide attempt (SA) among medical students reported original quantitative or epidemiological data on risk factors associated with SI and SA among undergraduate medical students were included. Twenty-two studies reported outcomes on SI risk factors only, and three studies reported on both SI and SA risk factors. Meta-analysis was performed on these risk factors. Poor mental health outcomes including depression, burnout, comorbid mental illness, and stress were presented as the strongest risk for SI and SA. Conversely, smoking cigarettes, family history of mental illness, alcohol use and suicidal behavior were not significant risk factors (Seo, 2021).

A study was done on suicide among Indian doctors. All available Indian newspapers in English on the online platform were scrutinized on doctors' suicide reports from the year 2016 March to 2019 March. Thirty suicides were reported between 2016 March and 2019 March, out of which 18 were female and 12 males. More than 80% were younger than 40 years. Twenty-two were from medical education institutions. Seventeen were from south India and 13 from North India. Eight were MBBS students and ten were postgraduate students. Among subspecialties, six doctors were from Anesthesia. Seventeen used hanging

as a method of suicide, eight used medications, and five jumped from building to end life. Nineteen suicide reports about doctors mentioned that they were depressed (Kishor, 2021). Mental health problems were the next most common reason among medical students and physicians whereas harassment was among residents. An exploratory study was performed on Suicide deaths among medical students, residents, and physicians in India spanning a decade (2010-2019). Content analysis of all suicide death reports among medical students, residents, and physicians available from online news portals and other publicly available sites was done. The search was done retrospectively using relevant search words individually or in combination with language restricted to Hindi and English for the given period. Reports on completed suicide by allopathic medical students, residents, and physicians from India were included. A total of 358 suicide deaths were noted among medical students (125), between 2010 and 2019. Around 7 out of 10 suicides happened before the age of 30 and the mean age was 29.9 years. It was found that female residents and physicians were younger than their male counterparts at the time of suicide. Overall maximum suicide deaths were concentrated in South India except in Kerala. 26% had exhibited suicide warning signs and only 13% had ever sought psychiatric help before ending their lives (Chahal, 2021).

RESULT OF THE STUDY

About 50 abstracts of articles related to suicide in medical students were read. In which 23 relevant researches were scanned in detail and full articles were accessed. Most studies were found to be cross-sectional in design. This makes the participants report past experiences. This might be a limitation in the way previous studies have approached the topic. It has factors like confabulation which comes in to picture since the data relies on the recall of the participants.

Majority of the studies have primarily focused on gathering the data related to prevalence and risk factors. A cross sectional study was conducted on Suicide ideation among medical students from South India found that alcohol consumption, smokers, and tried/done substance abuse. More than half were dissatisfied with academic performance, 34 students had broken up with their close friends, and 20 felt neglected by their parents/family. One-fifth of respondents had reported suicide ideation, 24 have given serious thought to committing suicide, and 28 students consider their life as a burden. (Jain et al., 2012) Suicide intervention programs and depression counselling should target older students and students of lower socioeconomic status (PC Fan, 2012). In the 9 longitudinal studies that assessed depressive symptoms before and during medical school (n = 2432), the median absolute increase in symptoms was 13.5%. Suicidal ideation prevalence data were extracted from 24 cross-sectional studies (n = 21 002) from 15 countries. The overall pooled crude prevalence of suicidal ideation was 11.1% (Rotenstein, 2016).

An analytical cross-sectional observational study was conducted to determine the lifetime prevalence of suicidal ideation and suicide attempts in medical students of Bucaramanga. Having had at least one episode of serious suicidal ideation in their lifetime was reported by 15.7% of the students, with 5% of the students reported having made at least one suicide attempt (Pinzon Amado, 2013). A study exploring conducted a separate search to identify relevant curricula using the same terms in combination the prevalence of experience of death of a patient by suicide among medical students and residents with coping, teaching, programs, and education, all of which concerned psychiatry residents alone. They found no studies that determined the prevalence of the experience of the death of a patient by suicide among medical students or residents in specialties other than

psychiatry. The prevalence rates were 31, 33, 43, 47, 54, 61, 68, and 69 %. The authors found two curricula with outcome data that assisted medical trainees in managing the psychologically distressing consequences of the death of a patient (Puttagunta, 2014).

In Pakistan; Forty-six (13.9%) of all the students had made a plan in their lifetime to commit suicide while 16 (4.8%) of the 331 students tried to commit suicide at some point of time in their life. More females than males pondered suicide while first-year medical students formed the majority of those with suicidal ideation. The single greatest risk factor predisposing to suicidal ideation was substance abuse (Osama, 2014) In China, the maximum and minimum reported prevalence of suicide attempts among college students in China were 0.4% and 10.5%, respectively (Yang et al., 2015). A global prevalence of depression amongst medical students was noted. By the year of study, Year 1 students had the highest rates of depression, rates of depression then gradually decreased to reach Year 5 (Puthran, 2016). In Portugese medical students' suicidal behavior was higher in medical students who lived alone, who had poor physical health, poor economic status, who was in psychopharmacology treatment, and who had high alcohol use, severe depression, and high anxiety levels (Coentre, Faravelli & Figueira, 2016). In Canada, six suicides (50% female) were reported over the ten years from 2006 to 2016. The estimated cause-specific mortality rate was 5.9-8.7/100,000 medical students/year (Zivanovic, 2017).

In Brazil, female gender (P < 0.001); homosexuality; low income; bullying by university peers; childhood (P = 0.001) or adult trauma; family history of suicide; suicidal ideation within the last month; daily tobacco use; and being at severe risk for alcohol abuse (Marcon, 2019). A study in Vietnam found that for suicidal ideation, non-self-determined motivation and perceived financial burden were significant risk factors (Pham, 2019). A study done among Chinese medical college students found that Suicidal ideation, suicide plan, anxiety, depression and relationship with the participant's father were the most important predictors, followed by additional important predictors, such as drinking, physical disorder history, family income, family type and the participant's relationship with mother. Interestingly, it is worth noting that anxiety has a higher weight than depression. And that having an unhealthy relationship with one's father was also ranked as the top five suicide predictors (Shen, 2020). Among the 13 students, eight were female, seven of the ten that reported years of study were in the final stages (i.e., fourth or fifth) year of the medical curriculum, and most of them (10 of the 13 suicides) were reported in the first half of the academic year. Most provided reason for suicide was academic distress (Mamun, 2020). A study done in Mangalore, India found that among 415 students, 179 were males and 236 were females. 3.6% and 8.9% had a high and moderate risk of committing suicide respectively. 3.3% felt to attempt suicide at least once in the last 12months and 27.9% did smoking and alcohol and other addictions (Nesan, 2020).

A recent study found that mental health outcomes including depression, burnout, comorbid mental illness, and stress were presented as the strongest risk for suicidal ideation and suicidal attempt among medical students. Conversely, smoking cigarettes, family history of mental illness, and suicidal behavior were not significant risk factors Stand alcohol use was not a significant risk factor for SA among medical students (Seo, 2021). Thirty suicides with more females than males, more than 80% were younger than 40 years. Twenty-two were from medical education institutions. Seventeen were from south India and 13 from North India. Nineteen suicide reports about doctors mentioned that they were depressed (Kishor, 2021). A retrospective content analysis based study on medical professionals in India found that a total of 358 suicide deaths were noted highest among medical students (125) as

compared to residents and physicians, between 2010 and 2019. Mean age was 29.9 years. On studying the deaths, it was found that female residents and physicians were younger than their male counterparts at the time of suicide. Overall maximum suicide deaths were concentrated in South India except in the state of Kerala. Twenty-six percent had exhibited suicide warning signs and only 13% had ever sought psychiatric help before ending their lives (Chahal, 2021).

DISCUSSION AND FUTURE DIRECTIONS

Although known problems of suicide and suicidal attempts results are well documented in scientific literature in various geographical locations, studies have majorly focused in a single area. The current review compiles together all the scientific data across these geographical locations and reviews it to understand if there are any major discrepancies found between the trends in the data. The prevalence rates showed similar trends across geographical locations; rates for suicidal ideation were higher as compared to the attempt. Prevalence for suicidal ideation ranged from 8.9% to 15.7% and suicidal attempt ranged from 0.4-10.5% across studies. Females were found to be more at risk as compared to males across the scanned literature. In more recent studies it was found that female residents and physicians were younger than their male counterparts at the time of suicide. Suicide was found more in professionals who are less than 40 years old in multiple researches. It was also found that initial medical year students were at a higher risk as compared to the final year medical students.

Certain initial studies found that substance/alcohol abuse have been single greatest risk factors. These studies did not control other risk factors hence; error variance could have skewed the results. Depression was a comorbid illness found in most of the reported suicide studies. Hence, suicide in medical students is precipitated by mood symptoms rather than personality traits like impulsivity. This could be further explored to clarify the reason from which the suicide is stemming among medical students. There have been limited colleges offering curricula that assisted medical trainees in managing the psychologically distressing consequences of the death of a patient and mostly in psychiatry students. A comparison in India shows that more deaths were found in South India as compared to South India. Another study corroborates the conclusion. Overall maximum suicide deaths were concentrated in South India except in the state of Kerala. It was also found that 26% had exhibited suicide warning signs and only 13% had ever sought psychiatric help before ending their lives. Hence majority of the population in medical students who are at risk remains latent.

Medical colleges and universities should inculcate a student online portal for the students to seek help in emotional turmoil as a primary prevention strategy. Such portals should imbibe ethical considerations like confidentiality stringently to be much more approachable. Curriculum modification is required to provide courses that equip the students with dealing with multiple stressors that comes along with the extensive medical academia and the emotional baggage that comes with treating morbid patients. Activity clubs (music, dance, painting, cooking, gymkhana, and other sport activities) should be included on campus to buffer against stressful course of the medical academia. Workshops should be conducted for handling social isolation, time management, stress management, dealing with the aftermath of morbid patients. Student wellness centre with a committee to moderate caregiver burden and other stressors that might contribute to suicidal behaviour in medical students.

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Acknowledgement

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author declared no conflict of interest.

How to cite this article: Gupta, A., Parab, A. & Ghodke, J. (2022). Understanding Suicide in Medical Students: A Narrative Review. *International Journal of Indian Psychology*, 10(4), 1992-2002. DIP:18.01.191.20221004, DOI:10.25215/1004.191