Original Article

Suicide among Indian Medical Students and Professionals: A 3-year Exploratory Study Using Online Google Database (2020–2022)

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Abstract

Background and Aims: Medical students and professionals are particularly susceptible to psychological distress due to various factors especially after COVID 19 pandemic. However, there is currently no robust reporting system for suicides among medical professionals in India. We aimed to explore the characteristics of suicide deaths among medical students and professionals in India over three years (2020–2022). **Materials and Methods:** We conducted a two-level retrospective analysis of online news report on suicide deaths among medical students and professionals from January 2020 to December 2022. **Results:** A total of 118 fatal suicides among MBBS students, postgraduates and working medical professionals were reported. More than 50 percent of the reported suicides were before the age of 30 years. The most common method used was hanging (49%) and the presence of mental illness (12%) was the commonest predictor of suicide among medical students and professionals. **Conclusion:** There is pressing need for a national suicide reporting system for medical students and professionals to formulate a stringent policy on suicide prevention for medical community.

Keywords: COVID-19, doctors, India, medical students, suicide

Introduction

Suicide is a global mental health concern, accounting for more than 700,000 deaths each year. According to the World Health Organization (WHO), every 40 s, an individual loses their life to suicide. Suicide is the fourth-leading cause of death among the 15–29 years age group globally.[1] The annual mortality due to suicide exceeds the combined deaths due to natural disasters, violence, war, and conflict.[2] Over 70% of suicides occur in low- and middle-income countries. The rise in the magnitude of the suicide rate has shifted from the Western world to Asia in recent years. The suicide mortality rate in India is 12.7 per 100,000 population, significantly higher than the global average of 10.6 and the highest in South-East Asian countries.[3,4] According to the National Crime Records Bureau, a total of 1,64,033 suicides were reported in India in 2021, with a significant increase during the years 2020 and 2021. A high proportion, approximately 8% were students who had died by suicide.[4] However, there has been no national representation for students in different streams. This is particularly challenging when it comes to understanding the gravity of the situation in the medical profession, as India has approximately 1 million doctors, the largest globally.

Medical professionals are subjected to more psychological distress owing to various stressors unique to their field. The existing literature indicates a greater risk of suicide among medical students and professionals than the general population.[5,6] The estimated risk of suicide, including medical students, among doctors, is 2.5 times higher than the general population.[7] A systematic meta-analysis estimated an 11.1% pooled prevalence of suicidal ideation among medical students.[8] Two separate meta-analyses found a pooled

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prevalence of 12-month and lifetime suicidal attempts among medical students at around 1.64% and 3.2%, respectively.[9,10] The situation is worrisome in the Indian context, as evidenced by various studies. The articles focusing on Indian medical students report that 2.9%–5.4% have attempted suicide during their lifetime, indicating an elevated prevalence of suicide attempts in India as compared to other nations.[11] Chahal *et al*. reported that nearly 230 medical students died due to suicide in India during the last decade.[12]

Several issues have been highlighted as important factors leading to suicide in medical professionals. "Burnout" has emerged as a significant predictor of suicidal ideations in this population.[13] Burnout scores have been positively correlated with depression in a study involving a cohort of preclinical and clinical students.[14] Other issues that increase the risk of suicide among doctors include disturbed work–life balance, academic stress, litigations, substance use, and poor coping skills.[15] Furthermore, access to lethal means and the knowledge to effectively use them is one of the most significant reasons for the increased risk of suicide among medical practitioners.[16] Another pertinent issue concerning the mental health of medical practitioners is their reluctance to seek help for various reasons, including perceived stigma, fear of confidentiality, anticipation of negative career implications, and concerns regarding medical registration and licensure.[17] In addition to these factors, dysfunctional beliefs such as viewing depression as a sign of weakness and negative self-image in the public eye act as major barriers to help-seeking and recovery.[18,19]

The COVID-19 pandemic has brought this pressing issue to the forefront, with its physical and psychological consequences affecting people from all walks of life. Historically, suicide rates have always increased postpandemic.[20] Numerous studies worldwide suggest a rise in suicides after the COVID-19 pandemic in the general population.[21,22] However, we could find only one study investigating suicides specifically among health-care professionals during the first wave of the COVID-19 pandemic. The study was conducted using media reports and showed that 26 health-care professionals died by suicide worldwide, with the majority of deaths in India ($n = 8$), followed by the United States ($n = 6$).[23] Despite the existing evidence of this concerning situation, there is still a lack of data regarding "completed suicides" among the medical fraternity. There is a dearth of research on suicide among Indian doctors owing to limited available resources to collect information and a lack of adequate reporting of cases. While some countries have annual assessments and reports from medical practitioners on various issues, including mental health, and provide confidential mental health services,[7] such efforts are minimal in India, where suicide and mental health remain taboo subjects. Suicide among health-care workers is a serious issue, and more research is needed to understand the gravity of the situation, especially during the peak years of the COVID-19 pandemic, which has taken a significant toll on the mental health of medical professionals.[24] Therefore, the present study is an attempt to explore the suicide-related characteristics among medical students and professionals in India using reports available on the Google database. We aim to shed light on this grave situation of suicides among medical practitioners in developing nations, as having a healthy, functional workforce of medical students and working professionals is one of the most important pillars of any country's health system.

Materials and Methods

The national representation of suicide-related deaths in India is limited due to passive surveillance and the broad categorization of professions.[25] The National Crime Records Bureau does not separately depict the suicide data for the "medical profession." Therefore, we conducted the present study by utilizing the press media reports on suicides within the medical fraternity, available on the Google search engine. This particular data extraction method has been employed in various studies and is supported by an evidence base as a "literature search" method for studying the common characteristics related to suicide.[12,21]

We conducted a retrospective analysis of news reports on suicide deaths among medical students and professionals from January 2020 to December 2022. The analysis included online news reports of "completed suicide" cases involving undergraduate and postgraduate medical students, as well as working medical professionals, published in both Hindi and English languages. All the students and working professionals included in the analysis are from India and primarily pursued their education in Indian medical colleges. The students from allied subjects such as nursing, physiotherapy, dental sciences, and nonallopathic doctors were excluded. Furthermore, we considered only post-2019 news reports given the significant impact of the COVID-19 pandemic on health-care professionals during this period.

The data were sourced from secondary sources, and as there were no human participants involved, formal ethical clearance was not required. However, confidentiality regarding details of the deceased has been rigorously maintained.

Search strategy

Initially, two investigators (GC and K) independently conducted online searches on news portals using keywords such as "doctor suicide," "physician suicide," "medico suicide," "healthcare suicide," "hospital suicide," "healthcare professional suicide," "COVID-19 pandemic," "COVID-19 suicide," "suicide among medical professionals," and "suicide MBBS students." They specified the time frames both year wise and month wise.

To cross-verify and ensure no data was missed; a second-level search was done on Google. This search strategy involved creating a state-wise list of all the medical colleges, both government and private, offering undergraduate, postgraduate, and diploma courses. This list was sourced from the National Medical Commission (NMC) website[26]

and included a total of 719 colleges across India. Colleges in the states of Nagaland and Imphal, as well as the union territories of Lakshadweep and Daman and Diu, where no medical colleges currently operate, were excluded from the search. These 719 colleges were then divided between the two investigators. Investigator GC searched 361 colleges online using keywords that included the "name of the college," "state," and "suicide" in combination. Similarly, Investigator K searched the remaining 358 colleges using the same keywords in a similar manner. All the news links were saved and further screened by author JY to eliminate any duplication. The reports that did not meet the aforementioned criteria were excluded from the analysis.

Data stratification and statistical analysis

Information from each press report was stratified for several parameters including year-wise distribution, sociodemographic variables such as age and gender, geographical variables encompassing zonal and state-wise distribution, postgraduation specialty, suicide-related variables like method, and the alleged reason for suicide. The data collected were coded and entered into a Microsoft Excel worksheet. Descriptive statistics, including frequency, percentage, and mean and standard deviation, were calculated for each domain.

Results

A total of 118 completed suicides were reported among MBBS students ($n = 60$), postgraduate medical students ($n = 30$), and working medical professionals ($n = 28$) from January 2020 to December 2022 [Table 1]. There has been a steep rise in the number of suicides from 2020 ($n = 21$) to 2022 ($n = 68$), as depicted in Figure 1.

Sociodemographic characteristics of the study sample

The mean age of medical students and professionals with completed suicide attempts was 27 ± 9 years. The number of deceased males was nearly double the number of deceased females (1.9:1). More than 50% of the reported suicides occurred before the age of 30 years [Table 2]. Overall, the southern zone of India was most affected ($n = 32$), while the Northeast had the least number of suicides among medical students and professionals ($n = 3$) [Table 3]. Figure 2 illustrates the state-wise distribution of suicide deaths.

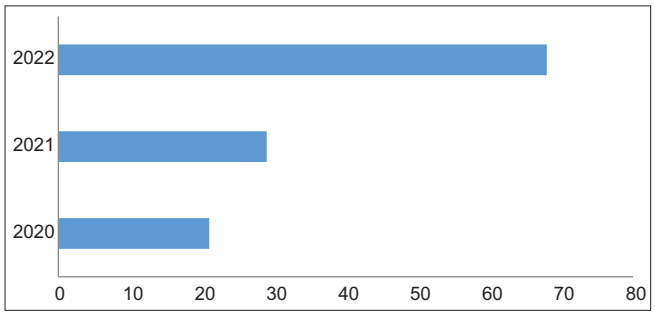

Figure 1: Year-wise trends for suicide among medical students and professionals

The five worst-affected states with the highest number of suicides were Uttar Pradesh, Gujarat, Rajasthan, Karnataka, and Delhi.

Distribution by postgraduation specialty

A total of 30 postgraduate students committed suicide from January 2020 to December 2022. The medical specialties with the highest number of suicides were general surgery (13.33%), general medicine (13.33%), and pediatrics (10%) [Table 4].

Suicide-related characteristics

The most common method used for suicide was hanging (49%), followed by jumping from height (19%), and intravenous agent misuse (7%). Other, less common but more violent means were gunshots and self-immolation [Figure 3]. While no particular

Table 1: Distribution of suicide deaths among MBBS, postgraduate medical students, and working professionals in India (January 2020–December 2022)

Year	MBBS	PG medical students	Working medical professionals
2020	8	6	7
2021	17	6	6
2022	35	18	15
Total	60	30	28

PG: Postgraduate

Table 2: Sociodemographic characteristics of suicide deaths among medical students and professionals (January 2020–December 2022)

Characteristics	MBBS students	PG medical students	Working medical professionals	Total
Sex, *n* (%)				
Male	41 (68.33)	18 (60)	17 (60.71)	76
Female	18 (30)	11 (36.67)	11 (39.29)	40
Not specified	1 (1.67)	1 (1.67)	0	2
Age categories				
<20	4	1	0	5
20–25	41	3	0	44
25–30	3	19	6	28
30–35	1	4	6	11
>35	0	1	13	14
Not specified	11	2	3	16

PG: Postgraduate

Table 3: Zonal distribution of suicides among medical students and working professionals

Zone	*n* (%)
Northern	27 (22.9)
Central	28 (23.7)
Eastern	9 (7.6)
Northeastern	3 (2.5)
Western	19 (16.1)
Southern	32 (27.1)

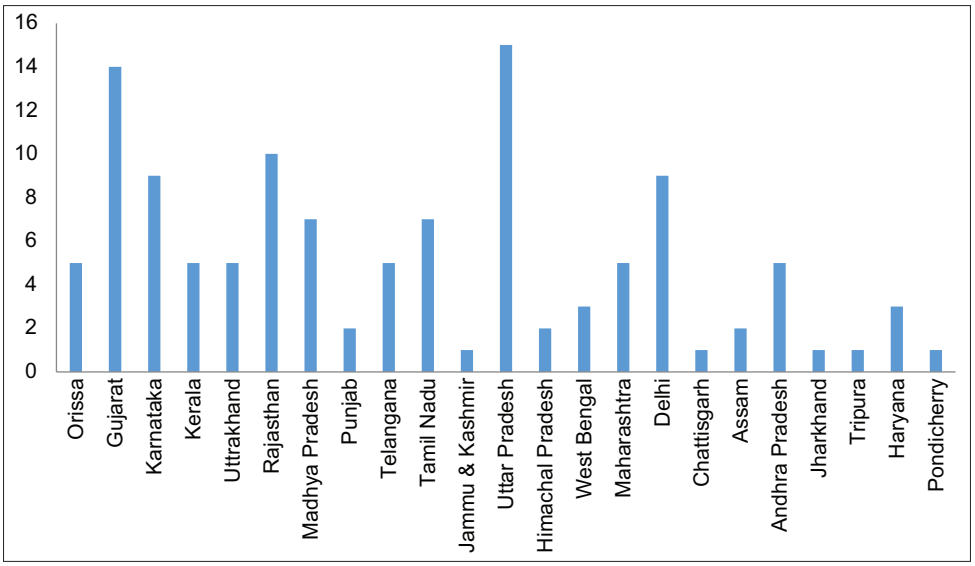

Figure 2: State-wise distribution of suicide among medical students and professionals

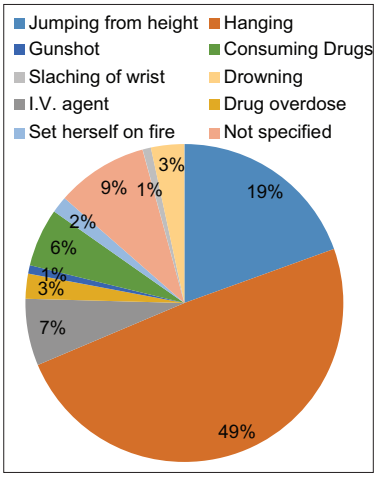

Figure 3: Means of suicide among medical students and professionals

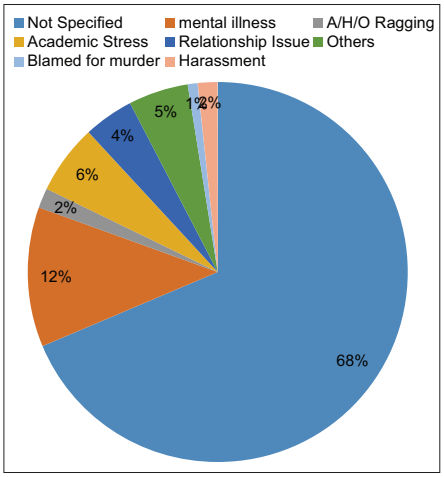

Figure 4: Reason for suicide among MBBS students and professionals

reason was specified for most cases, the presence of mental illness (12%) was one of the most common predictors of suicide among medical students and professionals, followed by academic stress (6%) [Figure 4].

Discussion

Suicide among medical students and professionals is a largely overlooked issue in national suicide statistics. A decade-long study reported a total of 358 suicide deaths among medical students, residents, and physicians from 2010 to 2019 in India.[12] The number clearly surpasses the figures of other nations. For comparison, only six suicide deaths were reported over a 10-year period from 2006 to 2016 among Canadian medical students.[27] Another study by Kishor *et al.* focused on suicide among Indian doctors from March 2016 to March 2019, reporting 30 suicide deaths.[7] Our study indicates an alarming fourfold increase in suicides over the last 3 years [Figure 1]. These findings are consistent with data obtained from recent right to information response, according to which 64 MBBS and 55 postgraduate medicos died by suicide in the last 5 years. In addition, during the same period, 1166 students dropped out of medical colleges.[28] This troubling situation has prompted the NMC, the regulatory body for Indian doctors, to address the unacknowledged issue of major public health significance. In late 2022, it directed all medical colleges to submit data on suicide and dropouts among undergraduate and postgraduate students over the past 5 years. Furthermore, the regulatory body has taken cognizance of the working hours and initiated measures such as weekly offs for medical students.[29]

Our study results also highlight a concerning trend, with male medicos committing almost twice as many suicides as their female counterparts [Table 2]. This aligns with national data, which shows that completed suicides are more common among males than females.[4] Menon *et al.* also highlighted higher risk-taking scores among males in Indian medical colleges.[30] It is more pertinent to note that our study reveals the age group with the maximum suicide deaths is 20–25 years among

Table 4: Specialty-wise distribution of suicide among postgraduate medical students

Specialty	PG medical students	
	n=30, *n* (%)	Male:female
Surgery	4 (13.33)	1:1
Medicine	4 (13.33)	4:0
Pediatrics	3 (10)	2:1
Neurology	2 (6.67)	2:0
Anesthesia	2 (6.67)	0:2
OBG	2 (6.67)	0:2
Orthopedics	2 (6.67)	2:0
Ophthalmology	1 (3.33)	1:0
Psychiatry	1 (3.33)	1:0
Radiology	1 (3.33)	1:0
Pulmonology	1 (3.33)	0:1
Physiology	1 (3.33)	0:1
Others	6 (20)	3:2

PG: Postgraduate, OBG: Obstetrics and gynecology

undergraduates and 25–30 years among postgraduates [Table 2]. The beginning of the journey of under graduation as well as postgraduation is a transition into a different environment in medical college The individuals are exposed to various stressors such as distance from family members, extensive medical curriculum, rigorous clinical rotations, long working hours, and new peer relationships which can push already vulnerable individuals to brink of self-harm.[31] In addition, the early 20s are known for the onset of various mental health disorders, coinciding with the start of medical school. Our study also highlights mental health disorders are the most common reason for completed suicides [Figure 4]. The medical specialties with highly demanding working hours such as general surgery, internal medicine, and pediatrics are most commonly affected by suicide-related deaths [Table 3]. However, this contrasts with previous study findings that suggested anesthesiologists were at higher risk among all the medical specialties.[7,12,32] Ragging, despite being banned by authorities in nearly all Indian colleges, emerged as an important cause of suicide among medical students. Academic failures and relationship issues also dominate as causes of suicide among medical students in our content analysis.

Consistent with the previous study findings, hanging was the most common method of suicide among medical students and professionals [Figure 3]. This underscores the importance of identifying early warning signs, such as planning, expressing an intent to die, social isolation, and past failed attempts, as hanging is typically not an impulsive means of suicide. The use of intravenous substances and consumption of other poisonous substances are alarming trends among medicos [Figure 3]. It is noteworthy that the use of intravenous substances is no longer limited to postgraduate residents or, specifically to anesthesiologists, as indicated in previous studies.[12,33] Our study reveals that completed suicide attempts were more common in government institutes, with the state of Uttar Pradesh reporting the highest number of suicide-related deaths [Figure 2]. The state of Uttar Pradesh has maximum medical colleges, comparable only to the southern state of Karnataka in terms of numbers. The larger representation of medical students from Uttar Pradesh may have contributed to a high number of suicide reports. The results could also partly be attributed to the inclusion of Hindi-language news reports in our study, which could have led to the underreporting of data from other parts of the country. Nevertheless, the southern zone was the most affected overall, in concordance with the suicide trends in the general population of India, as per NCRB data.[4]

The problem statement clearly emphasizes the urgent need for a suicide prevention framework tailored to the medical fraternity. Health-care professionals play a pivotal role as "key gatekeepers" in suicide prevention strategies worldwide.[34] However, we often overlook the mental health of our own medical community, leading to low help-seeking behavior among medical students and professionals despite being in the hospital daily. The low rate of students seeking psychiatric treatment despite screening positive for depression is well reported.[35] Moreover, telehealth services tailored for medical professionals in India are essential and currently lacking. The Ministry of Social Justice has established the KIRAN helpline (1800-599-0019)[36] as a 24/7 national resource. This initiative is a positive step, and there is a growing need for similar services to support the mental health of medical students and professionals in India. There is a compelling need to introduce practical aspects of psychiatry and mental health issues early in the academic curriculum, with a specific focus on shaping medical students' attitudes toward these topics. Such an initiative would be instrumental in raising awareness about mental health, reducing stigma, and promoting help-seeking behavior. Interactive learning techniques, including art and role-play, can be particularly effective in educating about complex topics like suicidal behaviors. Moreover, organizing sessions and workshops on effective stress and time management during residency can empower doctors to take care of their mental health and strike a better work-life balance. In addition to these measures, increasing access to mental health counselors, implementing faculty advisor/mentor programs, and educating faculty members about medical student distress, can provide a valuable aid for fostering the overall well-being of medical students.[37] Finally, a sensitive portrayal of suicide in media could be an important suicide prevention strategy. The Press Council of India adopted guidelines on reporting suicides in 2019, based on the WHO guidelines.[38] The guidelines on media reporting of suicide are likely to have a greater impact if they are embedded in a broader national strategy to prevent suicides.

Limitations

The findings of our study must be interpreted in light of several limitations. First, we only considered news reports available online in English and Hindi language for the study. These selection criteria could have resulted in underreporting and exclusion of data from regions of the country where English or Hindi is not the primary language of communication, or from newspapers with no online publications. In addition, many news reports of suicide attempts with uncertain outcomes were

excluded from the study due to a lack of updated information. Second, we did not consider the total number of suicides among Indian students or the general population during the study period. Consequently, we cannot ascertain the actual suicide rates of medical students and professionals among total suicides using the present data. It is also important to note that not every suicide may have been reported, and the possibility of errors in a few variables cannot be denied. However, the authors have made their best efforts to address these limitations by verifying news reports from multiple news sources and excluding any dubious reports.

Despite these limitations, the study also possesses several strengths. An extensive search strategy was employed by the authors at two levels to prevent the omission of data. The number of suicide deaths among medical students and professionals was found to be 50 after the first level of search. This number more than doubled to the current total of 118 after a rigorous second level of data search by the authors. Furthermore, there is a dearth of studies reporting suicides among medical students and professionals during the COVID-19 pandemic. Therefore, the results can provide valuable insights and knowledge regarding medical student suicides in India in this period. Such information can draw attention to this often-overlooked issue and promote the development of suicide prevention protocols, especially for the medical community, in the future.

Conclusion

Medical students are more prone to developing various psychological issues and need proactive support and preventive strategies to thrive in the medical field. Challenges remain in terms of early identification of those in need of help and providing accessible interventions. Our study results are an initial step in characterizing suicide among medical students and professionals in India. Further prospective research is necessary to document future suicide cases and explore identifiable risk factors in this population. We hope that this work further stimulates the development and implementation of preventive programs for medical students. Mandatory reporting of suicides among medical students, residents, and working professionals is essential to generate authentic data. A national policy on suicide prevention is also imperative to uphold India's commitment to health, particularly mental health.

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Conflicts of interest

There are no conflicts of interest.

References

1. World Health Organisation. Suicide Prevention. Available from: https://www.who.int/health-topics/suicide. [Last accessed on 2024 Feb 02].
2. World Health Organization. Disease Burden and Mortality Estimates. Available from: https://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html#.XMHAUySKxRI.mendeley. [Last accessed on 2024 Feb 10].
3. Rappai R, Cherian AV, Lukose A, Vijayakumar L. Suicide research in India: An overview of four decades. Asian J Psychiatr 2020;53:102191.
4. Ministry of Health and Family Welfare, Government of India. Accidental Deaths and Suicides in India 2020. National Crime Records Bureau. Available from: https://ncrb.gov.in/en/accidental-deaths-suicides-in-india. [Last accessed on 2024 Feb 10].
5. Duarte D, El Hagrassy MM, Couto TC, Gurgel W, Fregni F, Correa H. Male and female physician suicidality: A systematic review and meta-analysis. JAMA Psychiatry 2020;77:587-97.
6. Schernhammer ES, Colditz GA. Suicide rates among physicians: A quantitative and gender assessment (meta-analysis). Am J Psychiatry 2004;161:2295-302.
7. Kishor M, Chandran S, Vinay HR, Ram D. Suicide among Indian doctors. Indian J Psychiatry 2021;63:279-84.
8. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, *et al.* Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: A systematic review and meta-analysis. JAMA 2016;316:2214-36.
9. Mortier P, Cuijpers P, Kiekens G, Auerbach RP, Demyttenaere K, Green JG, *et al.* The prevalence of suicidal thoughts and behaviours among college students: A meta-analysis. Psychol Med 2018;48:554-65.
10. Tsegay L, Abraha M, Ayano G. The global prevalence of suicidal attempt among medical students: A systematic review and meta-analysis. Psychiatr Q 2020;91:1089-101.
11. Nesan GS, Kundapur R, Maiya GR. A study on suicide ideation among medical students in Mangalore. Indian J Public Health Res Dev 2020;11:328-33.
12. Chahal S, Nadda A, Govil N, Gupta N, Nadda D, Goel K, *et al.* Suicide deaths among medical students, residents and physicians in India spanning a decade (2010-2019): An exploratory study using on line news portals and Google database. Int J Soc Psychiatry 2022;68:718-28.
13. Dyrbye LN, Thomas MR, Massie FS, Power DV, Eacker A, Harper W, *et al.* Burnout and suicidal ideation among U.S. medical students. Ann Intern Med 2008;149:334-41.
14. Fitzpatrick O, Biesma R, Conroy RM, McGarvey A. Prevalence and relationship between burnout and depression in our future doctors: A cross-sectional study in a cohort of preclinical and clinical medical students in Ireland. BMJ Open 2019;9:e023297.
15. Supe A, Burdick WP. Challenges and issues in medical education in India. Acad Med 2006;81:1076-80.
16. Hawton K, Clements A, Simkin S, Malmberg A. Doctors who kill themselves: A study of the methods used for suicide. QJM 2000;93:351-7.
17. Dyrbye LN, West CP, Sinsky CA, Goeders LE, Satele DV, Shanafelt TD. Medical licensure questions and physician reluctance to seek care for mental health conditions. Mayo Clin Proc 2017;92:1486-93.
18. Henderson M, Brooks SK, Del Busso L, Chalder T, Harvey SB, Hotopf M, *et al.* Shame! Self-stigmatisation as an obstacle to sick doctors returning to work: A qualitative study. BMJ Open 2012;2:e001776.
19. Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. JAMA 2010;304:1181-90.
20. Leaune E, Samuel M, Oh H, Poulet E, Brunelin J. Suicidal behaviors and ideation during emerging viral disease outbreaks before the COVID-19 pandemic: A systematic rapid review. Prev Med 2020;141:106264.
21. Bhuiyan AK, Sakib N, Pakpour AH, Griffiths MD, Mamun MA. COVID-19-related suicides in Bangladesh due to lockdown and economic factors: Case study evidence from media reports. Int J Ment Health Addict 2021;19:2110-5.
22. Dsouza DD, Quadros S, Hyderabadwala ZJ, Mamun MA. Aggregated COVID-19 suicide incidences in India: Fear of COVID-19 infection is the prominent causative factor. Psychiatry Res 2020;290:113145.
23. Jahan I, Ullah I, Griffiths MD, Mamun MA. COVID-19 suicide and its causative factors among the healthcare professionals: Case study evidence from press reports. Perspect Psychiatr Care 2021;57:1707-11.
24. Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. JAMA 2020;323:2133-4.
25. Behere PB, Sathyanarayana Rao TS, Mulmule AN. Decriminalization

of attempted suicide law: Journey of fifteen decades. Indian J Psychiatry 2015;57:122-4.
26. National Medical Commission of India. List of College Teaching. Available from: https://www.nmc.org.in/information-desk/for-students-to-study-in-india/list-of-college-teaching-mbbs/. [Last accessed on 2024 Feb 04].
27. Zivanovic R, McMillan J, Lovato C, Roston C. Death by suicide among Canadian medical students: A national survey-based study. Can J Psychiatry 2018;63:178-81.
28. Pratibhan A. 119 Medical Students Died by Suicide in Last 5 Years, Over 1,000 Dropped Out: RTI Reply. News by Career360; 2023. Available from: https://www.news.careers360.com/119-medical-students-died-suicide-last-5-years-1000-dropped-out-mbbs-pg-nmc-ugc-colleges-ragging-rti-reply. [Last accessed on 2024 Feb 13].
29. Perappadan BS. NMC Seeks Details of Suicide, Drop-Outs Among Medical Students. The Hindu; 2022. Available from: https://www.thehindu.com/news/national/nmc-seeks-details-of-suicide-drop-outs-among-medical-students/article65966853.ece. [Last accessed on 2024 Feb 13].
30. Menon P, Chaudhury S, Saldanha D, Sahu S, Singh V, Pathak V. Stress levels and its association with self-harm and risk-taking behavior in medical undergraduates. Ind Psychiatry J 2018;27:41-6.
31. Watson C, Ventriglio A, Bhugra D. A narrative review of suicide and suicidal behavior in medical students. Indian J Psychiatry 2020;62:250-6.
32. Dutheil F, Aubert C, Pereira B, Dambrun M, Moustafa F, Mermillod M, *et al.* Suicide among physicians and health-care workers: A systematic review and meta-analysis. PLoS One 2019;14:e0226361.
33. Hikiji W, Fukunaga T. Suicide of physicians in the special wards of Tokyo Metropolitan area. J Forensic Leg Med 2014;22:37-40.
34. Luoma JB, Martin CE, Pearson JL. Contact with mental health and primary care providers before suicide: A review of the evidence. Am J Psychiatry 2002;159:909-16.
35. Puthran R, Zhang MW, Tam WW, Ho RC. Prevalence of depression amongst medical students: A meta-analysis. Med Educ 2016;50:456-68.
36. Ransing R, Kar SK, Menon V. National helpline for mental health during COVID-19 pandemic in India: New opportunity and challenges ahead. Asian J Psychiatr 2020;54:102447.
37. Wasson LT, Cusmano A, Meli L, Louh I, Falzon L, Hampsey M, *et al.* Association between learning environment interventions and medical student well-being: A systematic review. JAMA 2016;316:2237-52.
38. Vijayakumar L. Media matters in suicide – Indian guidelines on suicide reporting. Indian J Psychiatry 2019;61:549-51.