

Original Article

A review of 196 suicides among medical students in India from year 2009 to 2018

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Abstract:

Background: Study of medicine has always been challenging with immense pressure and high workload. This unjust pressure can sometimes transform into psychological illness and commitment of suicide. The objective of this study was to explore patterns and possible determinants of suicide among medical students in India.

Methods: The present study is a record based retrospective study which included collection of data from news-articles published in various English, Hindi and regional dailies, news portal articles and publications in different streams of medical journals through web-based/electronic database search. More than 2000 such articles were reviewed from year 2009 to 2018 and data was extracted.

Results: Among 196 medical students, who committed suicide over last 10 years, 42% were female, 42% belonged to the age group of 20-24 years and 68.37% were MBBS students. 31.12% of the victims were in their first year of medical education. Among 61 post-graduate students, most victims were from the department of Anaesthesia (10), General Surgery and Pediatrics (7 each). In 55% of the cases, method/mode of suicide was hanging. Academic & examination pressure was the most cited reason for commitment of suicide. Incidence density of suicide among medical students was calculated to be 6.82 per lakh students per year over the period of 2009-18; while it was 9.56 per lakh students per year in the year 2018.

Conclusion: This study is first attempt to find incidence and possible reasons for suicide among medical students in India. It has comprehensively explored 196 suicides among medical students across the country over past 10 year.

Key words: Medical student, Under-graduate (UG), MBBS, Post-graduate (PG), MD/MS/Diploma, Super-specialty (SS), DM/MCH, Suicide, and Suicide rate.

INTRODUCTION:

"I am tired now. I never wanted to study MBBS, I wanted to play (cricket)", wrote a final year female student aged 22 years before committing suicide in her hostel room.¹ Another 26 years old female PG student who was depressed over her parent's reaction to her rejection of a wedding proposal wrote in her suicide note: "I am a virgin, and you should trust me". A 26 years old male PG resident of general surgery department committed suicide stating: "Compressed, Depressed, tortured, 24 hours duty, no leave, still work should be perfect? How can this happen?"² 23 year old final year MBBS student penned in her suicide note: "I enjoyed a lot in the beginning and now I am suffering. I cannot concentrate on my studies".⁴ These are the plights of some of the students who committed suicide in recent years in various medical institutions across India.

The study of medicine has always been challenging with immense pressure and high workload. Medical students frequently have more unjust pressure which can sometimes transform into psychological illness therefore, leading in to

suicidal thoughts and rarely commitment of suicide. In United States of America, a total of 52 suicides were reported by 88 medical schools during a period of 8 years (1974-1981).⁵ Later on six suicides were reported by 90 medical schools in USA in between year 2007-11.⁶ In other studies; 8 suicides were reported in a Brazilian medical school over 20 years (1965-1985), 6 suicides were reported at a medical school in Austria over a period of five year (2007-11) and 6 suicides were reported in a recent survey of the 17 Canadian medical undergraduate programs (MDUPs) over last 10 years.^{7, 8, 9} Meanwhile in India 16 suicides were reported by Pruthi S et al (2015) in a period of 4 years from 2010 to 2013 in a retrospective review of newspaper reports and internet search.¹⁰

Replying to a query regarding increasing trend and causes of suicide among medical students in India which was asked by a member of parliament Shri Kapil Moreshwar Patil (L. S. US Q. NO. 2451 For 02.01.2018), Shri Hansraj Ahir, Minister of State of Home Affairs replied: "The specific information regarding details of suicide by students of medical institutes is not maintained centrally. The information on causes of suicides by medical students is not

maintained by the National Crime Records Bureau.”¹¹ Apparently neither Medical Council of India nor any of the state government seems to have any idea regarding menace of suicide in medical college campuses throughout India. Nevertheless, accurate suicide data are always needed to find trends, establish predisposing and predictive factors, and identify targets for intervention.¹² So this study was planned with an objective to explore pattern and possible determinants of suicide among medical students in India during last 10 years by using media reports available online.

METHODS:

Study design: This was a record based retrospective type of study.

Study duration: Collection of data lasted almost over 4 months with another 2 months were spend for re-checking, validation and analysis of data.

Study setting: News-articles published in various English, Hindi and other regional news-papers, web based news portals and publications in different streams of medical journals during past 10 year from year 2009 to 2018 were searched through web-based/electronic databases using Google search engine.

Inclusion Criteria: Under-graduate MBBS students, MBBS-Interns, Post-graduate Degree (MD/MS) or Diploma students and Super-specialty DM/MCH students.

Exclusion Criteria: Other medical students like students of dental sciences, physiotherapy, nursing, pharmacy, lab-technician and other paramedical courses, AYUSH doctors, DNB students, post-PG Senior Resident, research scholar/associates, PhD students etc.

Methodology: The online data of last 10 years of suicides among medical students was collected. Almost 2000 media reports, news articles and scientific article were reviewed for collection of data.

In the initial stage of data collection phrases like: death of medicos, death of medico, death of medical student, death of medical student in India, मेडीकलकालेजकेछात्रकीमौत, junior resident death India, junior doctor death India and junior doctor suicide India were searched. Later on other terms were tried which included: medical student died in India, medico's suicide, मेडिकलछात्रकीमौत, medical student suicide and medical student death case. At least 10 pages of each of the above mentioned phrase was screened to find any suicide report. Almost 100 suicides reports were gathered by using these terms in Google search engine.

Later on a list of all medical colleges/institute was obtained from the website of medical council of India and a college and or city wise search was made using the terms medical student suicide and medical student death in combination with the name of that college and or the city. After this we were able to extract the data of another 100 suicides among medical students in India in last 10 years.

In the next stage of data collection, cross validation of each suicide was done through online extensive search. All attempts were made to re-check and cross-check the collected information from many different web sources and or portals so that the socio-demographic characteristics of the victims and circumstances of their suicide could be ascertained with enough confidence. In case of any disparity, researches relied on the reports of reliable media houses, circumstantial evidences and own experiences.

The information thus collected was transferred on the pre-designed classified tables in Microsoft excel sheet and then it was cleaned for missing values and typing errors. Suicide data which were grossly incomplete were removed from the list. In the end, a final analysis of 196 suicides among medical students was done by using Microsoft excel sheet.

RESULTS:

A total of 196 medical students reportedly committed suicides during last 10 years in India. 42.3% (83) of the victims were female and 57.7% (113) were male. Mean age of victims was 23.42 years with a range of 17 to 40 years and a standard deviation of 3.77 years. Age data of 20 victims was missing. Nearly half (82/176) of the victims were in the age group of 20-24 years while 16% (29/176) were below the age of 20 years, 28% (50/176) were in the age group of 25-29 years and 8.5% (15/176) were aged 30 years and above. Graph 1 shows that most individuals who committed suicide were aged 22 years (n=24), followed by 19 years and 25 years (19 each).

Graph 2 displays that maximum number of suicides were seen in the year 2018 (37), followed by 2017 (34) and 2016 (27). Graph 3 depicts that maximum number of suicides were occurring in the month of July and October (21 each), followed by November and February (19 each).

Table 1 shows that while 134 (68.37%) victims were under-graduate (UG) MBBS students, 61 (31.12%) were post-graduate (PG) student of MD/MS/Diploma and 1 (0.51%) were a super-specialty DM student. One third of the victims (61 of 183; missing data 13) were in their first year of UG/PG/Super-specialty education at the time of commitment of suicide. Table 2 shows that among PG students; most victims belonged to the specialty of Anaesthesia (10) followed by General Surgery, Pediatrics (7 each), Obstetrics & Gynecology (6), General Medicine (5 each), and Orthopedics (4) and Radio-diagnosis (3). Among big departments by virtue of number of PG seats, highest suicide rate per lakh medical seats per year was observed in the stream of Anaesthesia (17.00) and Pediatrics (16.95).

55.6% of suicides were committed inside a hostel room. Suicide note was reportedly found in almost one third (65/196) of the cases but warning signs before suicide were said to be present in more than half of the cases (103/196).

Table 3 shows that hanging was most preferred mode/method of suicide among medical students in India followed by poisoning and fall from building. Two third of hanging (72/108) were committed in a hostel room inside the campus.

In 72% (18/25) of the cases of suicide by fall from building, it was either a hostel building or any other building inside the medical college campus which was chosen by a victim for commitment of suicide.

Table 4 shows that 3 commonly cited reasons for a suicide among medical student as academic pressure & examination (30.56%), depression/mental illness (28.33%) and love affair (15%).

Suicide rate over last 10 years (2009-2018):

- A. Academic year wise population of MBBS students was calculated after adjustment for increase in seats over last 10 years (35,000 in year 2009 to 60,000 in year 2018), duration of every academic year (duration of MBBS second year-1½ year, rest all academic years-1 year each), academic year wise examination results and vacancy of seats over sanctioned seats during last 10 year. Approximate population was calculated to be: First year – 4.5 lakh, Second year – 6.5 lakh, Third year – 4 lakh, Final year – 4 lakh and Intern – 3.75 lakh. After adjustment for missing data academic year-wise suicide rates was calculated to be: First year – 8.89 per lakh, Second year – 3.85 per lakh, Third year – 5.25 per lakh, Final year – 10.5 per lakh and Intern – 1.6 per lakh. Overall suicide rate for MBBS students was calculated to be 5.89 per lakh students per year over last 10 years.
- B. Academic year wise population of post-graduate medical students was calculated after adjustment for increase in seats over last 10 years (15,000 in year 2009 to 30,000 in year 2018), duration of post-graduation courses (MD/MS Degree – 3 years, Diploma – 2 years), examination only after completion of full duration of PG course and vacancy/quittance of seats in various departments. Approximate population was calculated to be: First year – 2 lakh, Second year – 1.9 lakh and Third year – 1.6 lakh. After adjustment for missing data academic year-wise suicide rates was calculated to be: First year – 12.8 per lakh, Second year – 10.3 per lakh and Third year – 9.9 per lakh. Overall suicide rate for post-graduate students was calculated to be 11 per lakh students per year over last 10 years.
- C. Overall suicide rate among all students (including Under-Graduate, Post-Graduate& Super-Specialty) over the period of 2009-18 was calculated to be: 6.82 per lakh students per year.

Suicide rate in 2018:

- A. It is estimated that total number of medical students in India in the year 2018 would be around 3.87 lakhs (3 Lakh MBBS + 80,000 MD/MS/Diploma + 7000 DM/MCH students) and with a total of 37 reported suicides (25 MBBS students + 11 MD/MS/Diploma students + 1 DM student), Incidence Density of suicide among medical students in 2018 would be at least 9.56 per lakh students per year but Incidence

would be at least 39.8 per lakh admissions per year based on 37 suicides among 93,000 admissions in all colleges/institution of the country in the year 2018.

- B. Incidence Density of suicide among MBBS students in 2018 was calculated to be 8.33 per lakh students per year while it was 13.79 per lakh students per year among other medical students (i.e. post-graduate plus super-specialty students).

DISCUSSION:

It was observed that though the total medical seats in India has doubled in last 10 years^{13,14}, number of reported suicides has quadrupled in the same period (9 to 37). The reason for this can be an increase in number of suicides or increase in absolute number of medical seats or better reporting and media coverage of suicides or increased penetration of internet connectivity or a combination of all of the above and or many other factors.

Suicide rates among medical students were calculated for last 10 years (2009-18) and for past one year (2018). 2 different suicide rates were calculated in our study as not only the recent data was seemingly more reliable and complete in nature, but number of medical seats has also increased irregularly over last 10 years and so the calculation of exact number of medical students over this period was not possible. Still we estimated approximate number of medical students during all those years. Based on these calculations, medical student suicide rate of 9.56 and 6.82 per lakh per year was calculated for past 1 year and for last 10 years (2009-18) respectively. These suicide rates are somewhat comparable to suicide rate reported in United States of America (18.4 in 1974-1981, 2.3 in 2007-2011)^{5,6}, Brazil (39.6 in 1965-1985)⁷, Austria (36 in 2007-11)⁸ and Canada (8.7 in 2011-16)⁹.

According to National Crime Records Bureau (NCRB report 2015) female accounted for 38.69% of suicides in the age group of 18-30 years in India; but in our study much higher proportion of female (42.35%) were involved in commitment of suicide.¹⁵ It means that college campuses are no safer place for female medical students in India.

Suicide peaks at the age of 22 years, 19 years and 25 years correspond well with the final year of MBBS, first year of MBBS and first year of post-graduation respectively in an average medical student's life in India. Though there is no uniformity in the examination schedule across India; many suicides were taking place at the time of examinations. Maximum number of suicides in the month of July corresponds well with the time of admission in medical colleges across India, giving emphasis on the watchfulness and counseling of medical students at around the time of admission and during the time of examinations.

Among almost 500 medical colleges/institutes of India, 13 accounted for 27% of all reported suicides by medical students in last 10 years. Reason for this can be better reporting by media and or stressful environment in these medical institutes/colleges. Similarly, 35% of reported suicides were only from 10 big cities of India. This is also an

indication that suicides which are happening in remote/other part of India can be much higher in number and so actual suicide rate among medical student might be much higher than which is calculated in our study.

According to NCRB report means/mode adopted by victims to commit suicide in 2015 in India were as following: Hanging – 45.6%, Poison – 27.9%, Fire/Self Immolation – 7.2%, Drowning – 5.4%, coming under Running Vehicle/Train – 2.5%, Jumping from Building or Other Sites – 1.8%, Consuming sleeping pills – 0.5%, Self-inflicting injury – 0.4%, Fire-arm – 0.4% and others – 7.7%.¹⁵ So, suicide by fall from building was 7 times more common mode of suicide among medical students in comparison to general population and probable reasons for that can be availability of many high rise buildings and its poor maintenance like unavailability of safety grills and or security staff in these buildings. Suicide by hanging, fire-arm and knife injury was also commoner among medical students in comparison to general population. On the other hand suicide by drowning and fire/burn was less common mode of suicide among medical students. Though many medical students have committed suicide by poisoning, its prevalence was lesser than the general population. Reason for this may be the fact that very few students chose to die by oral consumption of poison which is quite a common phenomenon among general population due to rampant use of pesticide poisons especially in agriculture sector in rural India. Most of the suicidal poisoning among medical students in India was by the use of anesthetic drugs and that too by intravenous route as this is considered to be a painless mode of death and also the drugs for this purpose are usually freely available in most of the hospitals in India.

According to NCRB 'Family Problems' and 'Illness' were the major causes of suicides among general population which accounted for 27.6% and 15.8% of total suicides respectively during the year 2015¹⁶ but among medical students more than 2/3rd of all suicides were due to academic/examination pressure, mental illness/depression and love affair. Most of these conditions are often preventable and or treatable.

In the study by Pruthi S et al (2015), authors reported 16 suicides in a period of 4 years (2010 to 2013) but we were able to find 55 suicides over the same period.¹⁰ Among those 16 suicides reported by Pruthi S et al, we were not able to find sufficient data on 3 suicides and so these suicides were not included in our analysis. This gives emphasis on the point that reporting by online database search is not a satisfactory tool for such kind of studies but this was the only available option with us and actual incidences of suicides among medical student might be much higher than reported in our research work.

CONCLUSION & RECOMMENDATIONS:

This study is first attempt to explore pattern and possible determinants of suicide among medical students in India during last 10 years by using media reports which were searched online through Google search engine. Suicide rate among medical students over last 10 years and during past 1 year was also calculated for very first time in India. This calculation of suicide rate among medical students was based

on media reports and this definitely is not the best way but was only feasible approach in current circumstances.

In Indian context, this data might be collected more easily by Medical Council of India (MCI), New Delhi that maintains record of all medical admissions across India. Unlike western countries, voluntary reporting by medical colleges/institutions doesn't seem an appropriate strategy in India and instead a compulsory reporting can be used to make a national mortality statistics for medical students and this information can be used for making appropriate intervention and preventive strategies specific to them. MCI usually inspects any medical college/institute before giving permission to start a medical college/course and or before increase in its admission capacity. So, during any of such inspection, MCI can also ask for record of any natural/un-natural deaths in previous years as a proxy of student welfare activities and if unusual cluster of any such incidences are found in any of the medical college and or in any of the state, MCI can ask them to rectify or other-wise can cancel its recognition and or withdraw permission of a medical college/course including many other possible punishments. Nevertheless, accurate suicide data of medical students in India are urgently needed to find trends, establish predisposing and predictive factors, and identify targets for intervention.

LIMITATIONS:

Different terminologies used in different parts of India for a medical student was a real hurdle in collection of data. For example resident doctor, junior doctor, junior resident (JR), senior resident (SR), chief resident (CR) or house surgeon are different names for a post-graduate medical student in different parts of India. This might had led to difference in actual reporting of such cases. In fact in some media reports, student preparing for admission in a medical course and students of 10th and 12th standard with biology/science stream were also reported as a medical student.

Though efforts were made to convert relevant web pages of Indian local languages into English language by using Google translate services, it was not possible many a times and sometimes the resultant conversion was not up to the mark making it unusable for the purpose of this study. Reporting from remote towns and places where coverage of English news-paper is less was not satisfactory leading to probable under-reporting from some parts of the country (like Bilaspur, Solapur etc.).^{10, 15}

Though all attempts were made to re-check and cross-check the information gathered from a web source but it was not possible many a times. This was especially true in regard to the cause of suicide or circumstances leading to suicide where more than one type of contradictory statements were usually available made by either of victim's parents or friends or college administration or police. For example; reason for commitment of suicide was mentioned as harassment by college administration, family problem and health problem in three different news reports in a case of suicide by a third year female student from Andhra Pradesh.^{17, 18, 19} In few cases, sparkingly different statements were

observed in different media reports, like for example; age of 20 and 27 was reported by 2 different web-sources for a same victim from New Delhi.^{20,21} In a case of suicide by 26 year old PG student from Gujarat, mode of suicide was reported to be hanging and poisoning in 2 different sets of news reports from a same media house on 2 different dates.^{22,23} Different names of a victim were reported in different media report in many cases.^{24, 25, 26, 27, 28, 29, 30} In one such case; different name as well as education were reported for a medical student of Gorakhpur in different sets of news reports.^{31, 32} Different date of suicide was mentioned in different media report for a post graduate student of Punjab.^{33,34}

Even in some cases, serious contradictory reports were available online regarding homicidal or suicidal nature of circumstances which might have led to death of a medical student. In many such instances, parents claimed that his/her ward was killed but others claimed that it was a suicide.³⁵ Though we tried to be reasonable and sensible, many of such deaths were considered as suicide in our study. Like-wise among many contradictory reports for cause of suicide, we tried to choose best possible reason for any suicide. If any error has happened in any case in our study, it is purely by mistake and it should never be considered in favor or disfavor or any person and or any institution. We ask for sorry in advance from bottom of our heart for any such mistake and deeply regret for hurting sentiments of any person and or victims' families.

REFERENCES:

1. MBBS student commits suicide: Tired, wanted to be cricketer. Written by Kavita Upadhyay |Dehradun| Updated: February 27, 2018 5:48:13 am. Available at <https://indianexpress.com/article/india/uttarakhand-mbbs-student-commits-suicide-tired-wanted-to-be-cricketer-5079457/>, Accessed on September 11, 2018.
2. Medical student ends life due to depression in Hyderabad. Deccan Chronicle Jun 10, 2015. Available at <https://www.deccanchronicle.com/150610/nation-crime/article/medical-student-ends-life-due-depression-hyderabad>, Accessed on September 9, 2018
3. Resident Doctor commits suicide; Dean, HoDs booked for Abetment. Editors pick, Profession, State News by Meghna. Available at <https://medicdialogues.in/resident-doctor-commits-suicide-dean-hods-booked-for-abetment/>, Accessed on September 05, 2018.
4. Final Year MBBS Student from Sastan Commits Suicide in Mangaluru. By Violet Pereira, Mangaluru. Team Mangalorean. - December 27, 2017. Accessed from <https://www.mangalorean.com/final-year-mbbs-student-sastan-commits-suicide-mangaluru/>, Accessed on September 14, 2018.
5. Pepitone-Arreola-Rockwell F, Rockwell D, Core N. Fifty-two medical student suicides. *Am J Psychiatry*. 1981;138:198-201.
6. Cheng J, Kumar S, Nelson E, Harris T, Coverdale J. A national survey of medical student suicides. *Acad Psychiatry*. 2014;38:542-546.
7. Millan LR, Rossi E, De Marco OL. [Suicide among medical students]. *Rev Hosp Clin Fac Med São Paulo*. 1990;45:145-149.
8. Kamski L, Frank E, Wenzel V. [Suicide in medical students: Case series]. *Anesthetist*. 2012;61:984-988.
9. 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(3):178-81.
10. Pruthi S, Gupta V, Goel A. Medical students hanging by a thread. *Educ Health*. 2015;28:150-151.
11. Un-starred Question No. 2451 on Suicide by Students by Shri Kapil Moreshwar Patil (02.01.2018). Available at [164.100.47.190/loksabhaquestions/annex/13/AU2451.pdf](https://www.mca.gov.in/Uploaded/2018/02/02/16410047190/loksabhaquestions/annex/13/AU2451.pdf) Accessed on November 11, 2018.
12. Blacker CJ, Lewis CP, Swintak CC, Bostwick JM, Rackley SJ. Medical student suicide rates: A systematic review of the historical and international literature. *Acad Med* 2019;94(2):274-80.
13. Government aims to double medical seats. Press Trust of India: May 14, 2012 19:56 IST. Available at <https://www.ndtv.com/india-news/government-aims-to-double-medical-seats-482524>, Accessed on February 11, 2019.
14. Available at <https://www.mciindia.org/CMS/information-desk/college-and-course-search>, Accessed on October 14, 2018.
15. Suicides in India by National Crime Record Bureau Accessed from: ncrb.gov.in/StatPublications/ADSI/ADSI2015/chapter-2%20suicides-v1.pdf, Accessed on February 12, 2019.
16. Doctors in state strike work over colleague's suicide. Thread available at: https://www.reddit.com/r/india/comments/2ehfmy/doctors_in_state_strike_work_over_colleagues/, Accessed on February 02, 2019.
17. Andhra Pradesh News on August, 03, 2014. August 3, 2014 – Hyderabad. Accessed from <http://www.andhranews.net/State/2014/August-03-Andhra-Pradesh-2014-1156.htm>, Accessed on February 11, 2019.
18. MBBS student ends life. NELLORE, AUGUST 03, 2014 23:40 IST. Accessed from <https://www.thehindu.com/news/national/andhra-pradesh/mbbs-student-endslife/article6277496.ece>, Accessed on September 14, 2018.

19. Narayana Medical College student commits suicide. THE HANS INDIA | Aug 03, 2014, 10:58 AM IST. Accessed from <https://www.thehansindia.com/posts/index/Crime/2014-08-03/Narayana-Medical-College-student-commits-suicide/103867>, Accessed on September 04, 2018.
20. 20-yr-old medico hangs self at GTB Hospital. TNN | Oct 16, 2010, 03.07 AM IST. Accessed from <https://timesofindia.indiatimes.com/city/delhi/20-yr-old-medico-hangs-self-at-GTB-Hospital/articleshowprint/6756197.cms>, Accessed on September 17, 2018.
21. Delhi: Medical student commits suicide in hostel room. Cities | Press Trust of India | Updated: October 15, 2010 22:22 IST. Accessed from <https://www.ndtv.com/cities/delhi-medical-student-commits-suicide-in-hostel-room-436267>, Accessed on September 22, 2018.
22. 23-year-old medical student hangs self to death due to exam pressure. Sarfaraz Shaikh | TNN | Mar 24, 2018, 14:26 IST. Accessed from <https://timesofindia.indiatimes.com/city/ahmedabad/23-year-old-medical-student-hangs-self-to-death-due-to-exam-pressure/articleshow/63441780.cms>, Accessed on September 24, 2018.
23. Doctor kills herself with anesthetic. TNN | Mar 25, 2018, 04.00 AM IST. Accessed from <https://timesofindia.indiatimes.com/city/ahmedabad/doc-kills-herself-with-anaesthetic/articleshowprint/63447242.cms>, Accessed on October 11, 2018.
24. MBBS student ends life in Bangalore's MS Ramaiah hostel. WRITTEN BY Santosh Kumar RB. Updated: Mar 23, 2011, 08:58 AM IST. Accessed from <https://www.dnaindia.com/bangalore/report-mbbs-student-ends-life-in-bangalore-s-ms-ramaiah-hostel-1523127>, Accessed on October 14, 2018.
25. Upset over suspension, medical student hangs herself. Bangalore | Mid-Day.com | Updated: March 23, 2011 16:10 IST. Accessed from <https://www.ndtv.com/bangalore-news/upset-over-suspension-medical-student-hangs-herself-450847>, Accessed on September 29, 2018.
26. Medical student commits suicide in Karnataka's Bidar. By Express News Service. Published: 03rd May 2017 06:48 PM. Accessed from <http://www.newindianexpress.com/states/karnataka/2017/may/03/medical-student-commits-suicide-in-karnatakas-bidar-1600619.html>, Accessed on November 14, 2018.
27. MBBS student jumps off fourth floor, dies. The Hindu. BIDAR, MAY 04, 2017 01:17 IST. Accessed from <https://www.thehindu.com/news/national/karnataka/mbbs-student-jumps-off-fourth-floor-dies/article18380172.ece>, Accessed on October 19, 2018.
28. Kannur MBBS student ends life in Bidar. TNN | May 4, 2017, 07:42 IST. Accessed from <https://timesofindia.indiatimes.com/city/hubballi/ka-nnur-mbbs-student-ends-life-in-bidar/articleshow/58506998.cms>, Accessed on September 29, 2018.
29. Second Osmania Medical College student to end life in past year. By Express News Service. Published: 16th August 2017 08:04 AM. Accessed from <http://www.newindianexpress.com/states/telangana/2017/aug/16/second-osmania-medical-college-student-to-end-life-in-past-year-1643808.html>, Accessed on December 02, 2018.
30. MEDICO TAKES ANESTHETIC TO COMMIT SUICIDE. Deccan Chronicle · 17 Aug 2017. Accessed from <https://www.pressreader.com/india/deccan-chronicle/20170817/281517931230776>, Accessed on September 25, 2018.
31. BRD student dead in hostel, police find suicide note. By Express News Service | Lucknow | Published on December 4, 2017 1:05:33 am. Accessed from <https://indianexpress.com/article/india/gorakhpur-brd-student-dead-in-hostel-police-find-suicide-note-4966466/>, Accessed on November 18, 2018.
32. Female MBBS student dies of anaesthesia overdose at BRD Medical College, police claim suicide. Written by Srawan Shukla. Updated: Dec 2, 2017, 10:24 PM IST. Accessed from <https://www.dnaindia.com/india/report-female-mbbs-student-dies-of-anaesthesia-overdose-at-brd-medical-college-police-claim-suicide-2564332>, Accessed on November 21, 2018.
33. Ludhiana suicide: 2 DMCH doctors booked. HT Correspondent. Hindustan Times. Updated: Oct 17, 2014 11:58 IST. Accessed from <https://www.hindustantimes.com/punjab/ludhiana-suicide-2-dmch-doctors-booked/story-2OLI6DHvTCLazYXJ3ZTLPP.html>, Accessed on December 12, 2018.
34. DMCH student's suicide: Case registered finally. By Express News Service | Ludhiana | Published: October 8, 2014 12:44:06 am. Accessed from <https://indianexpress.com/article/cities/ludhiana/dmch-students-suicide-case-registered-finally/>, Accessed on September 17, 2018.
35. Parents of dead medical student refute suicide angle. Piyush Rai | TNN | Updated: Sep 11, 2017, 23:24 IST. Accessed from <https://timesofindia.indiatimes.com/city/bareilly/parents-of-dead-medical-student-refute-suicide-angle/articleshow/60468675.cms>, Accessed on December 21, 2018.

Table 1: Education and academic year-wise distribution of suicide among medical students

Education	Academic year	Number	Percentage	
Under-graduation (MBBS)	First Year	39	29.55	
	Second Year	25	18.94	
	Third Year	21	15.91	
	Fourth Year	41	31.06	
	Internship	6	4.55	
	Subtotal	132	100	68.37
	Not Known	2		
Post-graduation (MD/MS/Diploma)	First Year	21	42.00	
	Second Year	16	32.00	
	Third Year	13	26.00	
	Subtotal	50	100.00	31.12
	Not Known	11		
Super-specialty (DM/MCH)	First Year	1	100.00	
	Second Year	0	0.00	
	Third Year	0	0.00	
	Subtotal	1	100.00	0.51
Total		196	100.00	

Table 2: Specialty-wise distribution of suicide among Post Graduate (MD/MS/Diploma) medical students (n=57, missing data=4)

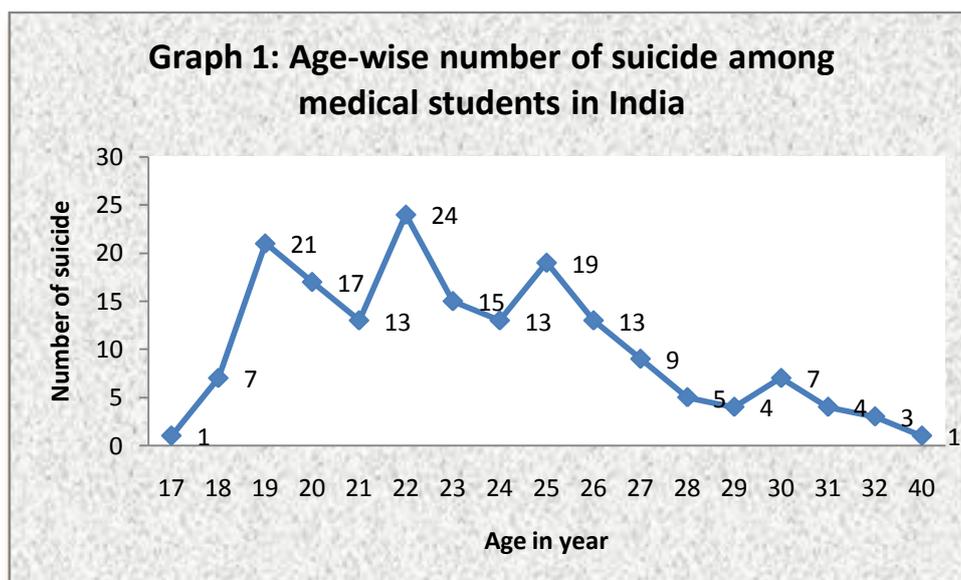
Specialty	Number of suicide (2009-18)	%	Approximate number of seats (2009-18)	Suicide rate per lakh seats per year
Anaesthesia	10	17.54	62942	17.00
Pediatrics	7	12.28	44188	16.95
General Surgery	7	12.28	63014	11.89
Obstetrics & Gynecology	6	10.53	53505	12.00
General Medicine	5	8.77	69105	7.74
Orthopedics	4	7.02	36880	11.61
Radiology	3	5.26	30702	10.46
Ophthalmology	2	3.51	30313	7.06
PSM/Community Medicine	2	3.51	21335	10.03
Skin/Dermatology	2	3.51	17358	12.33
Biochemistry	1	1.75	13659	7.83
ENT/Oto-Rhino- Laryngology	1	1.75	20268	5.28
Nuclear Medicine	1	1.75	812	131.73
Pathology	1	1.75	36825	2.91
Pharmacology	1	1.75	17976	5.95
Psychiatry	1	1.75	16061	6.66
Radiotherapy	1	1.75	6901	15.51
TB & Chest Diseases	1	1.75	12149	8.81
Transfusion Medicine	1	1.75	1625	65.87

Table 3: Method/Mode of suicide among medical students (n=192, missing data=4)

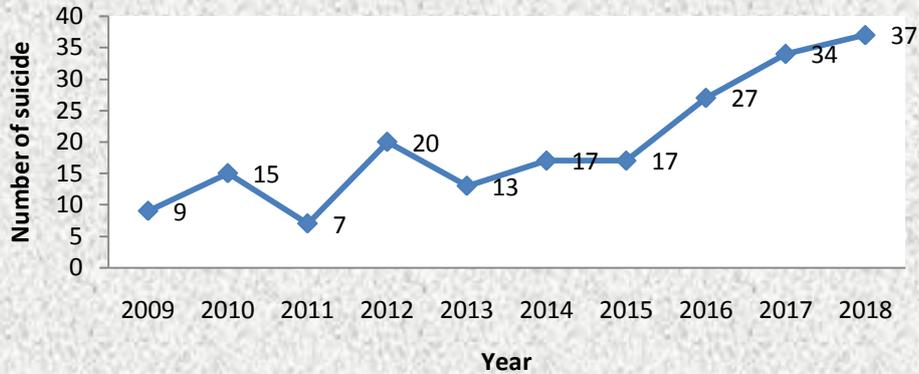
Method/Mode of suicide	Number	Percentage
Hanging	108	56.25
Poisoning	37	19.27
Fall from building	25	13.02
Train Accident	11	5.73
Drowning	4	2.08
Fire/Burn	3	1.56
Fire-arm/Gun Shot	2	1.04
Knife injury	2	1.04
Total	192	100.00

Table 4: Main reason of suicide among medical students (n=180, missing data=16)

Main Reason of Suicide	Number	Percentage
Academic Pressure and Examination Stress	55	30.56
Depression/Mental Illness	51	28.33
Love Affair	27	15.00
Work Place Harassment/Stress	12	6.67
Family Problem	8	4.44
Wrong Profession/Wrong Place	5	2.78
Marital problem/Dowry	4	2.22
Personal Problem	4	2.22
Financial Hardship	3	1.67
Other Medical problem	3	1.67
Drug Addiction/Overdose	3	1.67
Ragging	2	1.11
Cyber Bullying	1	0.56
Hypersensitive Personality	1	0.56
Disciplinary punishment	1	0.56
Total	180	100



Graph 2: Year-wise number of suicide among medical students in India



Graph 3: Month-wise number of suicide among medical students in india



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