

Suicide of Bangladeshi medical students: Risk factor trends based on Bangladeshi press reports

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Introduction

Student suicides are thought to be mediated by a wide range of factors including excessive academic stress, relationship problems, family problems, hopelessness, financial stress, feelings of social isolation, work problems, exposure to trauma, alcohol and drug use, and other mental health problems (Arafat & Mamun, 2019). Furthermore, medical student suicide rates are reportedly higher than those of the general population (Blacker, Lewis, Swintak, Bostwick, & Rackley, 2019; Schernhammer, 2005), and in some cases it rises up to 3-5 times higher than that of the general public (Kamski, Frank, & Wenzel, 2012).

Based on a recent systematic review comprising 13,244 medical students from 13 different countries, the prevalence of suicidal ideation ranged from 1.8%-53.6% (Coentre & Góis, 2018). Based on these findings, the suicidal behaviors of medical students are of concern compared to other cohorts. However, there is a shortage of studies based on actual medical student suicides (as opposed to suicidal behaviors more generally) and the reports in the international literature globally are few (Blacker et al., 2019). The situation is similar in Bangladesh (where there are no specific reports or datasets on attitudes and risk factors of medical student suicide victims), although there are a few anecdotal studies (e.g., Arafat, 2016, 2018; Arafat & Hossain, 2018; Arafat, Mali, & Akter, 2018; Arafat & Mamun, 2019; Mamun & Griffiths, 2019; Shah et al., 2017).

Based on the preceding overview, accurate data on medical student suicide rates, identified risk factors, and the efficacy of intervention strategies are needed to implement effective programs for students and to assess whether such interventions will prevent future physician suicides (Blacker et al., 2019; WHO, 2018). Given this knowledge gap, the present study investigated risk factors (i.e., gender, study year, place, month in which the suicide occurred, and specific suicide reasons) of medical students' suicide and their suicide attitudes using press reports in the Bangladeshi online print media.

Methods

The present retrospective study investigated 22 months' Bangladeshi medical student suicide reports from January 1, 2018 to November 30, 2019. The content of all suicide news from Bangla and English medium were searched, collected and analyzed retrospectively via a *Google* search. All newspaper reports concerning individual cases of medical student suicide were reviewed. After removal of non-medical student suicide reports (N=45), a total of 13 reported suicides remained. Post-2018 reports were chosen to reduce the selection bias. This was based on the research team's perception that the reporting of student suicides had increased dramatically since the beginning of 2019 compared to those recalled in 2018. The data were from secondary sources so no formal ethical clearance was required.

Results

The 13 cases of Bangladeshi medical student suicide between January 2018 and November 2019 had not been reported previously in the Bangladeshi media. Based on the news reports, most of the medical students were from public medical colleges (n=9) and four were from either a private medical college, medical technology institute, medical institute, and paramedical institute. Among the 13 students, eight were female, seven of the 10 that reported year of study were in the final stages (i.e., fourth or fifth) year of 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 the suicides were by hanging (n=12) and the most provided reason for suicide was academic distress (n=4; in two cases the reason was not reported) (see Table 1).

Discussion

The present study investigated risk factors of Bangladeshi medical students' suicide (i.e., gender, study year, place, onset time and specific suicide reasons) because they are among the most prone to suicide compared to other students worldwide (Arafat & Mamun, 2019). In a previous study, a total of 358 suicide cases were found January 2009-April 2018 among the Bangladeshi general population, where students (n=135) comprised 37.7% of cases (Arafat et al., 2018). Another study reported a total 271 suicide reports (November 2016-April 2017) where student suicides (n=64) comprised 23.6% of all cases (Shah et al., 2017)). However, neither study reported the number of medical students separately.

The number of suicides among medical students has been little studied globally, therefore few comparisons can be made relating to international figures. In the USA, 31 suicides (of 163 medical student deaths) were reported from 1947-1967 (Simon, 1968), 26 suicides (of 55 medical student deaths) were reported from 1967-1971 (Everson & Fraumeni Jr, 1975), 52 suicides (of 88 medical student deaths) were reported from 1974-1981 (Pepitone-Arreola-Rockwell, Rockwell, & Core, 1981), 15 medical student suicides were reported from 1989-1994 (Hays, Cheever, & Patel, 1996), and six medical student suicides from 2006-2011 (Cheng, Kumar, Nelson, Harris, & Coverdale, 2014). In Canada, one study reported six suicides among medical students over a ten-year period from 2006-2016 (Zivanovic, McMillan, Lovato, & Roston, 2018). In Thailand, five suicides and one suicide attempt among medical students were reported 2007-2017 (Siriphonphaibool & Charoensin, 2018). In India, 16 suicides were reported among medical students between 2010-2014 (Pruthi, Gupta, & Goel, 2015). In a study of three countries (Germany, Austria and Switzerland) six medical students committed suicide 2007-2012 (Kamski et al., 2012). Based on these figures, it appears that there is a greater incidence of medical student suicides in Bangladesh compared to suicide incidence rates reported elsewhere (see Blacker et al. [2019] for a review).

The present study also found that the female suicide rate (n=8) was slightly higher than that of males (n=5), although this was based on a very small non-representative sample. Previous research has tended to find that more females commit suicide globally as well as in Bangladesh (Arafat, 2019b; Badiye, Kapoor, & Ahmed, 2014; Dias et al., 2014; WHO, 2016). The present study also found that four out of eleven reasons cited for the suicide were due to academic distress (two cases did not report the reason). However, to the best of the present authors' knowledge, reasons for suicide among medical students in previous studies was primarily due to study related actual or perceived stress along with poor academic performance (Kirsling & Kochar, 1989). For instance, all six cases in a Thai study (Siriphonphaibool & Charoensin, 2018), and eight (of 16) cases in an Indian study (Pruthi et al., 2015) were noted as having committed suicide due to academic distress. In Bangladesh, contemporary curricula are still very traditional and academic standards are very rigorous meaning that students have to study around the clock which can cause intensive stress.

Most of the cases in the present study (7 out of 10 where the year of study was reported) committed suicide towards the end of their academic study period. Very few previous studies have examined the academic year in which medical student suicides took place. In a Canadian study, five of six medical student suicides occurred during their senior years (Zivanovic et al., 2018). However, in a US study, early academic years (first, second, and third year) is typically viewed to be a vulnerable period for medical suicide (Cheng et al., 2014). The same study also reported a higher suicide tendency in the first months of the year. In the present study, 10 of the 13 suicides were reported in the first half of the academic year. This may be because medical professional exams in Bangladesh tend to be in the first half of the year and the pressure of exams can cause academic stress.

Another notable finding was the method of suicide. The vast majority of the suicides in the present study were due to hanging (12 of 13) with the remaining case committing suicide by poisoning. Previous

retrospective studies also suggest that these two methods are widely used in suicides in Bangladesh (Arafat et al., 2018; Arafat & Mamun, 2019; Chowdhury et al., 2017; Shah et al., 2017) and other countries (e.g., India, Portugal; Badiye et al., 2014; Dias et al., 2014). Among medical students, two of six suicides in a US study were due to hanging (Cheng et al., 2014), and one of six cases in a Thai study were due to hanging. Based on the findings here, it would appear that suicidal hanging is much higher than elsewhere. Alternatively, it might be that media reporting of suicides by hanging suggests ways in which ‘copycat’ suicides can be carried out (Neiderkrotenthaler et al., 2009).

The present study has an number of limitations. It did not consider the total number of suicides among Bangladeshi students or the general population during the study period. Also, not every suicide will have been reported. Consequently, the actual suicide rates of medical students (or university students more generally) among total suicides cannot be ascertained using the present data. Despite these limitations, the study provides novel information and knowledge regarding medical student suicide victims (i.e., incidence rate, potential risk factors, and methods used to commit suicide). Such information may be useful in developing of bespoke awareness-raising and suicide prevention protocols.

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Table 1: Distribution of Bangladeshi medical students' suicide cases

Date of suicide	Gender of suicide victim	City where suicide occurred	Age at which suicide occurred	Year of study	Method of suicide	Reason for suicide
5 February, 2018 ¹	Female	Kushtia	NR	NR	Hanging	Specific reason was not reported but possible parental divorce may have been a factor
9 February, 2018	Female	Rajshahi	20	3 rd	Hanging	Family pressure due to bad performance in examination
25 February, 2018	Male	Chittagong	NR	Intern	Hanging	Depression
10 March, 2018 ²	Female	Dhaka	22	4 th	Hanging	NR
11 May, 2018	Female	Mymensingh	NR	5 th	Hanging	NR
19 June, 2018	Female	Mymensingh	NR	5 th	Hanging	Mental disturbance
15 July, 2018 ³	Female	Dhaka	NR	NR	Hanging	Blackmail
2 August, 2018	Female	Rajshahi	25	5 th	Hanging	Extra-marital issue
17 January, 2019 ⁴	Male	Dhaka	NR	2 nd	Hanging	Quarreling with mother, and parental divorce
4 April, 2019	Male	Comilla	NR	NR	Hanging	Failing the final professional medicine exam 11 times
4 May, 2019	Male	Bogra	24	5 th	Poisoning	Failing 'gynecology and obstetrics' in the final professional examination
12 May, 2019	Female	Sylhet	21	2 nd	Hanging	Excessive academic pressure
16 November, 2019	Male	Chittagong	24	5 th	Hanging	Medical problem with a finger on his right hand that would prevent him from becoming a surgeon

¹ Medical technology student

² Private medical student

³ Medical institute student

⁴ Paramedical student

NR = Not reported