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Impact of COVID-19 pandemic related lockdown on Suicide: Analysis of newspaper reports during pre-lockdown and lockdown period in Bangladesh and India

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ABSTRACT

The economic and social devastation wrought by the COVID-19 crisiscoupled with the unavailability of traditional coping resources is a "perfect storm" for suicide. Evidence suggests that its impact may be disproportionately high in low-and-middle-income countries. The study aimed to assess and compare nature and correlates of suicidesfrom news reportsduring the immediate pre-lockdown and lockdown phase of COVID-19 in Bangladesh and India. We performed analysis of suicide reports from purposively selected online vernacular and English newspapers of Bangladesh and two states/union territory in India, between January to June 2020. We divided the time period of observation into two phases: pre-lockdown and lockdown phase. Country wise findings between the two phases were compared in terms of demographic and characteristics of the reported suicide.

A total of 769 news reports wereanalysed; 141 from Bangladesh and 628 from India. When compared to the pre-lockdown period, the odds of suicide by hanging was significantly higher during lockdownin India (adjusted Odds Ratios [aOR] = 3.8, p = 0.018) and Bangladesh (aOR = 3.1, p = 0.048). Suicide demographics in India were different from Bangladesh during lockdown; more males died by suicide in India (aOR = 2.7, p = 0.023) and more people died by hanging (aOR = 2.6, p = 0.029). The pandemic restrictions impacted suicide demographics in the studied regions of India and Bangladesh. Further research using population-based time-series data are warranted to investigate the issue.

1. Introduction

Vulnerability to suicidal behaviour in the wake of the COVID-19 crisis has been shown to vary across nations and settings. A study on Google search trends datain the early part of the COVID-19 pandemic noted an increase in several suicide risk factors that could potentially exacerbate long term suicide risk (Halford et al., 2020). Some of the population level risk factors identified for suicideduring thepandemic include female gender, COVID-19 positive status, hailing from a low socio-economic status, unemployment, disability, history of medical or psychiatric morbidity, and racial and ethnic factors (Iob et al., 2020). Further, changes like social isolation, lockdown resulting in scarcity of resources, stigma, discrimination, and stress related to COVID-19 have also been implicated (Thakur and Jain, 2020). Suicide rates are known to increase during pandemics which are periods of social and economic crisis (Cheung et al., 2008; Wasserman, 1992). Additionally, there is mass unemployment, exhaustion of resources, financial crisis, healthcare challenges, academic loss, and so on; all of which may negatively impact population mental health.

Experts have opined that the impact may be worse in low resource

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settings where the social and economic challenges owing to the pandemic are compounded by the lack of social safety and welfare nets (Gunnell et al., 2020). The impact is also worse in certain population sub-groups such as those with mental illnesses; such individuals are unable to access treatment adequately (Muruganandam et al., 2020; Sher, 2020) and this may worsen suicide risk. This effect may also be pronounced in low- and middle-income countries like India and Bangladesh, two densely populated nations with inadequate, inequitable health care systems and a high treatment gap for mental health disorders (Gautham et al., 2020; Hossain et al., 2014; Momotaz et al., 2019; Murthy, 2017). Further, these countries are located in South-East Asia, a suicide dense region that contributes to nearly 40 % of global suicides (Vijayakumar, 2017).

These considerations add context to the present study whereinour primary objective was to systematically compare patterns and trends in suicidal behavior between pre-COVID lockdown and lockdown periodin India and Bangladesh separately, by performing a content analysis of online published news reports of suicide.Additionally, we also aimed to perform a cross-country comparison of nature and correlates suicide in the pre-lockdown and lockdown periods. No such research has been carried out in these nations so far to the best of our knowledge; nevertheless, it has the potential to inform suicide prevention programs in these countries and may also have relevance for similarly resource constrained settings.

2. Material & methods

2.1. Study setting & data collection

Relevant suicide reports were collected from online news portals of English and vernacular newspapers by a team of bilingual investigators from India and Bangladesh. In India, data were collected from two specified geographical regions: Uttar Pradesh and Puducherry, both of which have certain unique characteristics. Uttar Pradesh is the most populous state in India with a relatively low suicide rate whereas Puducherry is a small union territory of India with the dubious distinction of the country's one of the high suicide rate (National Crime Records Bureau, 2020) and an annual suicide rate of nearly three times the national average in 2018 (National Crime Records Bureau, 2020). The newspapers of Bangladesh cover the whole country. There are lots of socio-cultural similarities between Bangladesh and India. Similarly, there are no major differences in terms of economics between the two countries. Both countries are placed under lower-middle income countries group in World bank report (World Bank, 2020).

Because national lockdown was implemented in both Bangladesh and India on the same time (25th March 2020 for India and 26th March 2020 for Bangladesh), we divided the time period of news publication into two phases: pre-lockdown period from January 1st, 2020 to March 24th, 2020 and lockdown phase from March 25th, 2020 to June 30th 2020, for both Bangladesh and India. In both countries, the enforcement of lockdown was not uniform; there were variations from rural to urban areas, between states, as well as small to large cities. Despite these variations, the impact of lockdown was significant on general population, in both the countries.

Only online versions of newspapers were scrutinized. Newspapers of four different languages (Hindi, Tamil, Bangla, English) were purposively selected; all of them were among the most widely read newspapers in the respective countries and languages (Indian Readership Survey, 2019). We included all news articles that reported a suicide event (both suicide attempts and suicide) within the jurisdiction of each country during the relevant time periods. Reports about suicide by bombing and physician-assisted suicide were not found in the search and were intended to be excluded.

2.2. Data extraction

Following reviewing the content of the included news reports, data were extracted in a structured format under the following headings: country, region, date of publication of news report, name of the newspaper, the language of the news report, particulars of the deceased (age, gender, marital status, education, occupation), risk factors, life events, mode of suicide, suicide note, presence of mental illness/substance use, type of suicide (complete, incomplete, extended), suicide-pact, and homicidal act associated with suicide. Quality checking of data was done by two investigators (first and second author) and duplicate entries were removed.During data cleaning, duplicate suicide reports were removed by matching date & place of suicide, names (if available), age and gender. A total of 137 duplicate reports were removed. All the investigators (medical graduates, post-graduate trainees in psychiatry) involved in data collection underwent an initial online training session explaining the questionnaire responses and data coding. This session was led by a psychiatrist (first author) with prior experience in conducting similar studies (Menon et al., 2020). Data collection was done using google forms. To check the understanding of the investigators, they were allowed to cross-check certain random entries of other investigators. Final cleaning of the data was done by the first author.

2.3. Statistical analysis

Data were analysed using Stata version 14.0 (Statacorp., Texas, United States). Categorical variables were summarized as frequency and percentages. Patterns of suicide as reported by media during the pre-lockdown and during lockdown were compared between countries as well as for each country separately. The association of various independent variables with patterns of suicide was assessed using Chi-square test and unadjusted odds ratios with 95 % CI were calculated. Multivariable logistic regression analysis was performed by including the variables that had a p-value of less than 0.2 in unadjusted analysis and adjusted odds ratios(aOR) with 95 % CI were calculated. For risk factors, however, ORs were not calculated as one report could contribute several reasons for observed suicide. A p-value of less than 0.05 was considered statistically significant.

2.4. Ethical approval

As we have only used information available in the public domain, no formal ethical approval was sought.

3. Results

3.1. Sample description

A total of 769 news reports were analysed from Bangladesh and India, of which 141 were from Bangladesh and 628 were from India (Fig. 1). From Bangladesh, only two news reports were in English and rest were in vernacular language (i.e. Bangla); hence, we excluded these two news reports from analysis, making the final sample of 139.The distribution ofvernacular Bangladeshi news reports were as follows: Bdnews24 (n = 13), Ittefaq (n = 13), Jagonews (n = 52), Jugantor (n = 10), KalerKantho (n = 26), Prothom Alo (n = 24) and RisingBD (n = 1). Thus, a total of 7 vernacular newspapers were analysed from Bangladesh

Among news reports from India, 171 were in English and the remaining (n = 457) were in vernacular languages (Hindi - 303; Tamil - 154). The distribution of suicide related news reports from the sampled vernacular newspapers in India were as follows: Dainik-Jagaran (Hindi, n = 247), Amar-Ujala (Hindi, n = 56), Daily-Thanthi (Tamil, n = 140), and Dinakaran (Tamil, n = 14). English news reports were extracted from the HindustanTimes (n = 95) andthe Times-of-India (n = 76).Thus, a total of 2 English and 4 vernacular newspapers were sampled from India.

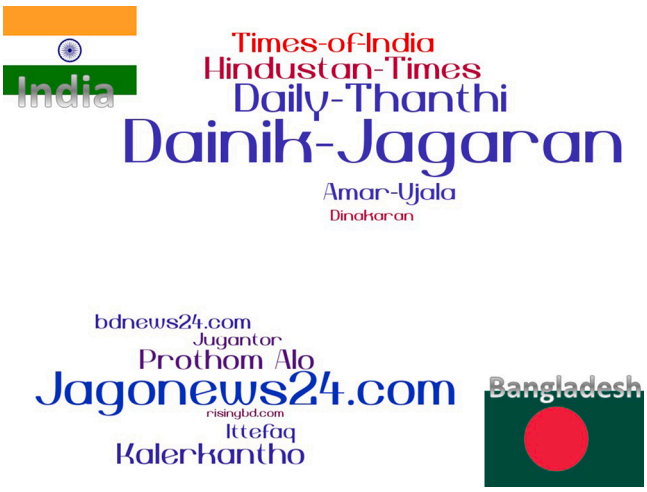

Fig. 1. Word cloud analysis of frequencies of news items from sampled newspapers of each country.

3.2. Comparison between suicide patterns in India during pre-lockdown and lockdown period

Compared to pre-lockdown period, the odds of suicide by hanging were significantly higher during the lockdown period in India (adjusted OR 3.8, p = 0.018) (Table 1). However, the odds of recovery of suicide note during lockdown period was lesser when compared to pre-lockdown(adjusted OR 0.34, p = 0.009).No significant differences were noted in demographic or newspaper reported risk factors for suicide between the two time periods.

3.3. Comparison between suicide patterns in Bangladesh during pre-lockdown and lockdown period

The odds of suicide by hanging were significantly higher(adjusted OR – 3.1, p = 0.048) while suicide by poisoning was non-significant (adjusted OR – 3.3, p = 0.081) during lockdown period as compared to pre-lockdown period.No significant differences were noted either in demographics or other newspaper reported risk factors for suicide in Bangladesh during the two time periods of observation (Table 2).

3.4. Comparison of pre-lockdown suicide patterns in Bangladesh and India

The odds of suicide among those employed in India was 13.5 times that in Bangladesh (p = 0.002). The odds of completed suicide in India was 18.4 times that in Bangladesh (p = 0.027) (Table 3). Other parameters assessed did not distinguish the two countries.

3.5. Comparison of suicide patterns during lockdown in Bangladesh and India

During lockdown, the odds of suicide among Indian males was 2.7 times that among Bangladeshi males; this finding was statistically significant (p = 0.023) (Table 4). Likewise, the odds of suicide by hanging in India was 2.6 times that in Bangladesh (p = 0.029).

Significant differences were found in newspaper reported risk factors for suicide in the lockdown period between the countries. It was observed that relational issues were the most common reasons for suicide in both the countries while health issues were more commonly reported as a reason for suicide in India. The two groups did not differ on the other parameters assessed.

Table 1
Comparison between suicide patterns in India during pre-lockdown and lockdown period.

Parameters of assessment†	Pre-lockdown n (%)	Lockdown n (%)	OR (95 % CI)	p-value
Gender	**n = 223**	**n = 395**		
Male	148 (66.4)	257 (65.1)	1	–
Female	75 (33.6)	138 (34.9)	1.05 (0.74–1.49)	0.290
Marital status	**n = 168**	**n = 298**		
Married	108 (64.2)	167 (56.0)	1	–
Unmarried	58 (34.5)	119 (39.9)	1.33 (0.89–1.97)	0.162
Widow/Widower / Divorced / Separated	2 (1.3)	12 (4.1)	3.88 (0.85–17.68)	0.080
Employment status	**n = 164**	**n = 252**		
Student	39 (23.8)	54 (21.4)	1.07 (0.66–1.74)	0.767
Employed	108 (65.9)	139 (55.2)	1	
Housewife*	9 (5.5)	32 (12.7)	2.76 (1.26–6.03)	0.011
Unemployed*	8 (4.8)	27 (10.7)	2.62 (1.15–6.00)	0.022
Risk factors	**n = 194**	**n = 373**		
Financial stress	31 (17.4)	39 (10.5)	–	
Health issues	32 (18.0)	75 (20.1)	–	0.055
Relational issue	87 (48.9)	196 (52.5)	–	
Other issues	44 (24.7)	63 (16.9)	–	
Life event	**n = 205**	**n = 359**		
Present	135 (65.9)	259 (72.1)	1.31 (0.91–1.90)	0.148
Absent	69 (34.1)	100 (27.9)	1	–
Mode of suicide	**n = 216**	**n = 391**		
Hanging***	135 (62.5)	278 (71.1)	3.43 (1.75–6.72)	<0.001
Poisoning	36 (16.6)	45 (11.5)	2.08 (0.96–4.53)	0.064
Fire arm	25 (11.7)	15 (3.8)	1	–
Others***	20 (9.2)	53 (13.6)	4.42 (1.94–10.04)	<0.001
Suicide note	**n = 196**	**n = 324**		–
Recovered*	29 (14.8)	29 (9.0)	1.77 (1.02–3.06)	0.042
Not recovered	167 (85.2)	295 (91.0)	1	–
Substance use	**n = 178**	**n = 283**		
Present	22 (12.4)	33 (11.7)	1.07 (0.60–1.90)	0.822
Not present	156 (87.6)	250 (88.3)	1	–
Mental illness	**n = 184**	**n = 289**		
Present	15 (9.2)	64 (22.1)	1	–
Not present***	169 (91.8)	225 (77.9)	3.20 (1.76–5.82)	<0.001
Type of suicide	**n = 220**	**n = 398**		
Complete	204 (92.7)	339 (85.2)	1	–
Extended*	10 (4.5)	37 (9.3)	2.23 (1.08–4.57)	0.029
Incomplete	6 (2.7)	22 (5.5)	2.21 (0.88–5.53)	0.092
Suicide – Pact	**n = 205**	**n = 337**		
Present	17 (9.3)	38 (11.3)	1.41 (0.77–2.56)	0.266
Absent	188 (91.7)	299 (88.7)	1	–
Homicide	**n = 206**	**n = 331**		
Present	21 (10.2)	27 (9.2)	1	–
Absent	185 (89.8)	304 (91.8)	1.28 (0.70–2.33)	0.422

* $p < 0.05$.
*** $p < 0.00$.
† Numbers may vary for different parameters because all reports did not provide information for all parameters.

Table 2
Comparison between suicide pattern in Bangladesh during pre-lockdown and lockdown period.

Parameters of assessment[†]	Pre-lockdown n (%)	Lockdown n (%)	OR (95 % CI)	p-value
Gender	**n = 44**	**n = 95**		
Male	16 (36.4)	42 (44.2)	1.39 (0.66–2.89)	0.384
Female	28 (63.6)	53 (55.8)	1	–
Marital status	**n = 39**	**n = 81**		
Married	20 (51.3)	46 (48.4)	1.18 (0.55–2.56)	0.671
Unmarried	18 (46.2)	35 (51.6)	1	–
Widow/Widower/ Divorced/ Separated	1 (2.5)	0 (0.0)	–	–
Employment status	**n = 36**	**n = 74**		
Student	17 (47.2)	28 (37.8)	1.10 (0.17–7.25)	0.923
Employed	7 (19.4)	19 (25.7)	1.81 (0.25–13.21)	0.559
Housewife	10 (27.8)	24 (32.4)	1.60 (0.23–11.08)	0.634
Unemployed	2 (5.6)	3 (4.1)	1	
Risk factors	**n = 35**	**n = 75**		
Financial stress	2 (5.7)	9 (12.0)	–	
Health issues	3 (8.6)	9 (12.0)	–	0.489
Relational issue	21 (60.0)	34 (45.3)	–	
Other issues	9 (25.7)	23 (30.7)	–	
Life event	**n = 36**	**n = 76**		
Present	25 (69.4)	57 (75.0)	1.32 (0.55–3.18)	0.536
Absent	11 (30.6)	19 (25.0)	1	–
Mode of suicide	**n = 42**	**n = 90**		
Hanging	25 (59.5)	63 (70.0)	2.88 (0.94–8.78)	0.063
Poisoning	7 (16.7)	20 (22.2)	3.27 (0.86–12.35)	0.081
Fire arm	2 (4.8)	0 (0.0)	–	–
Others	8 (19.0)	7 (7.8)	1	
Suicide note	**n = 35**	**n = 65**		
Recovered	4 (11.4)	8 (12.3)	1.09 (0.30–3.90)	0.897
Not recovered	31 (88.6)	57 (87.7)	1	–
Substance use	**n = 34**	**n = 59**		
Present	3 (9.8)	1 (1.7)	5.61 (0.56–56.25)	0.142
Not present	31 (91.2)	58 (98.3)	1	–
Mental illness	**n = 34**	**n = 93**		
Present	5 (14.7)	14 (15.1)	1.53 (0.50–4.68)	0.454
Not present	29 (85.3)	79 (84.9)	1	–
Type of suicide	**n = 44**	**n = 88**		
Complete	38 (86.4)	88 (100.0)	–	–
Incomplete	6 (13.6)	0 (0.0)	–	–
Suicide – Pact	**n = 31**	**n = 72**		
Present	2 (6.5)	6 (9.3)	1.32 (0.25–6.92)	0.744
Absent	29 (93.5)	66 (91.7)	1	–
Homicide	**n = 35**	**n = 71**		
Present	4 (11.4)	5 (7.0)	1.70 (0.43–6.79)	0.45
Absent	31 (88.6)	66 (93.0)	1	–

[†] Numbers may vary for different parameters because all reports did not provide information for all parameters.

4. Discussion

The findings of the study need to be evaluated keeping the following facts in mind.

- The quality of reporting varies across the newspapers.
- Multiple factors influence the quality of news reports.

Table 3
Comparison of pre-lockdown suicide pattern of Bangladesh and India.

Parameters of assessment[†]	India n (%)	Bangladesh n (%)	OR (95 % CI)	p-value
Gender	**n = 223**	**n = 44**		
Male***	148 (66.4)	16 (36.4)	3.43 (1.74–6.73)	<0.001
Female	75 (33.6)	28 (63.6)	1	
Marital status	**n = 168**	**n = 39**		–
Married	108 (64.3)	20 (51.3)	2.70 (0.23–31.20)	0.426
Unmarried	58 (34.5)	18 (46.1)	1.61 (0.14–18.82)	0.704
Widow/Widower / Divorced / Separated	2 (1.2)	1 (2.6)	1	–
Employment status	**n = 164**	**n = 36**		
Student	39 (23.8)	17 (47.2)	2.55 (0.88–7.40)	0.085
Employed***	108 (65.9)	7 (19.4)	17.14 (5.26–55.86)	<0.001
Housewife	9 (5.5)	10 (27.8)	1	–
Unemployed	08 (5.0)	2 (5.6)	4.44 (0.74–26.68)	0.103
Risk factors	**n = 174**	**n = 35**		
Financial stress	31 (17.8)	2 (5.7)	–	
Health issues	32 (18.4)	3 (8.6)	–	0.056
Relational issue	87 (50.0)	21 (60.0)	–	
Others	24 (13.8)	9 (25.7)	–	
Life event	**n = 205**	**n = 36**		
Present	136 (66.3)	25 (69.4)	1.15 (0.54–2.48)	0.716
Absent	69 (33.7)	11 (30.6)	1	–
Mode of suicide	**n = 216**	**n = 42**		
Hanging	135 (62.5)	25 (59.5)	2.16 (0.86–5.44)	0.102
Poisoning	36 (16.7)	7 (16.7)	2.06 (0.65–6.51)	0.220
Fire arm	25 (11.6)	2 (4.7)	5.00 (0.95–26.23)	0.057
Others	20 (9.3)	8 (19.1)	1	–
Suicide note	**n = 196**	**n = 35**		
Recovered	29 (14.8)	4 (11.4)	1.34 (0.44–4.09)	0.601
Not recovered	167 (85.2)	31 (88.6)	1	–
Substance use	**n = 178**	**n = 34**		
Present	22 (8.8)	3 (12.4)	1.46 (0.41–5.17)	0.560
Not present	156 (91.2)	31 (87.6)	1	–
Mental illness	**n = 184**	**n = 34**		
Present	15 (8.1)	5 (14.7)	1.19 (0.66–5.76)	–
Not present	169 (91.9)	29 (85.3)	1	–
Type of suicide	**n = 220**	**n = 44**		
Complete**	204 (92.7)	38 (86.4)	5.37 (1.64–17.53)	0.005
Extended	10 (4.6)	0 (0.0)	–	–
Incomplete	6 (2.7)	6 (13.6)	1	–
Suicide – Pact		**n = 31**		

(*continued on next page*)

Table 3 (*continued*)

Parameters of assessment†	India n (%)	Bangladesh n (%)	OR (95 % CI)	p-value
	n = 205			
Present	17 (8.3)	2 (6.5)	1.31 (0.28–5.97)	0.726
Absent	188 (91.7)	29 (93.5)	1	–
Homicide	**n = 206**	**n = 35**		
Present	21 (10.2)	4 (11.4)	1.14 (0.37–3.54)	0.825
Absent	185 (89.8)	31 (88.6)	1	–

** $p < 0.01$.
*** $p < 0.001$.
† Numbers may vary for different parameters because all reports did not provide information for all parameters.

- The degree of adherence to media reporting guidelines also varies among newspapers.

However, in our recent studies on media reports, we found that most of the newspapers have poor adherence to media reporting guidelines (Arafat et al., 2020a). This phenomenon has been widely in various newspapers of South-East Asia with little variations (Arafat et al., 2020a; Menon et al., 2020).

The main findings of the study were that several significant changes in suicide demographics and clinical characteristics were observed in India following the imposition of national lockdown; however, no such changes were noted in Bangladesh. This included more suicides among the housewives and unemployed; a greater proportion of suicides by hanging and extended suicides; higher proportion leaving a suicide note and, notably, decreased odds of suicide associated with mental illness during the lockdown, when compared to pre-lockdown period. Further, compared to Bangladesh, a significantly greater proportion of males and those employed committed suicide in India during both time periods; in contrast, suicides among the unemployed were greater in India only during the lockdown period. Interestingly, reasons for suicide also differed between countries during lockdown; health issues were more commonly incriminated in India compared to Bangladesh.

There is a dearth of systematic research on suicides during the COVID-19 pandemic, particularly in low- andmiddle-income countries like Bangladesh and India. Prior case reports of COVID-19 associated suicide in Bangladesh and India have noted possible reasons for suicide such as fear of having COVID-19, financial strife, unemployment, academic loss and psychological distress (like guilt, shame, frustration, fear) are available (Bhuiyan et al., 2020; Dsouza et al., 2020; Lathabhavan and Griffiths, 2020; Mamun and Griffiths, 2020; Monjur, 2020; Menon et al., 2021). Our findings agree with these reports and suggest that relationship issues, health concerns and financial issues are the most common reasons for suicide, though health concerns were more commonly reported from India.

Previous print media based studies from Bangladesh reveal a similar demographic and clinical risk factor profile for suicide aligned with our findings in the pre-lockdown period (Arafat et al., 2020b, 2018; Arafat, 2019). No nationwide media reporting study is available from India, possibly owing to the size and diversity of the country. Few available studies from individual Indian states using the psychological or verbal autopsy method have noted a greater proportion of suicide deaths among males (Prasad et al., 2006; Soman et al., 2009) and hanging and insecticide poisoning being the favoured methods of suicide (Prasad et al., 2006). A nationally representative Indian survey using verbal autopsy method found a lower male to female ratio and greater proportion of suicide among the young (Patel et al., 2012). Similar findings have been noted in studies using information available from national

Table 4
Comparison of suicide pattern during lockdown period in Bangladesh and India.

Parameters of assessment†	India n (%)	Bangladesh n (%)	OR (95 % CI)	p-value
Gender	**n = 395**	**n = 95**		
Male***	257 (63.6)	42 (44.2)	2.35 (1.49–3.70)	<0.001
Female	138 (36.4)	53 (55.8)	1	–
Marital status	**n = 298**	**n = 81**		
Married	167 (56.0)	46 (48.4)	1.07 (0.65–1.76)	0.797
Unmarried	119 (39.9)	35 (51.6)	1	–
Widow/Widower / Divorced / Separated	12 (4.1)	0 (0.0)	–	–
Employment status	**n = 252**	**n = 54**		
Student	54 (21.4)	8 (14.8)	1.45 (0.72–2.90)	0.301
Employed***	139 (55.2)	19 (35.2)	4.67 (2.69–11.21)	<0.001
Housewife	32 (12.7)	24 (44.4)	1	
Unemployed**	27 (10.7)	3 (5.6)	6.75 (1.83–24.89)	0.004
Risk factors	**n = 373**	**n = 75**		
Financial stress	39 (10.5)	9 (12.0)	–	
Health issues	75 (20.1)	9 (12.0)	–	
Relational issue	196 (52.5)	34 (45.3)	–	
Other issues	63 (16.9)	23 (30.7)	–	0.028
Life event**	**n = 359**	**n = 76**		
Present	259 (66.2)	57 (75.0)	1	
Absent	100 (33.8)	19 (25.0)	1.16 (0.66–2.04)	0.612
Mode of suicide	**n = 391**	**n = 90**		
Hanging	278 (71.1)	63 (70.0)	1.96 (1.08–3.55)	–
Poisoning	45 (11.5)	20 (22.2)	1	–
Fire arm	15 (3.8)	0 (0.0)	–	–
Others*	53 (13.6)	7 (7.8)	3.37 (1.30–8.68)	0.012
Suicide note	**n = 324**	**n = 65**		
Recovered	29 (9.0)	8 (12.3)	0.70 (0.30–1.61)	0.402
Not recovered	295 (91.0)	57 (87.7)	1	
Substance use***	**n = 283**	**n = 59**		
Present	33 (11.7)	1 (1.7)	7.66 (1.03–57.13)	0.047
Not present	250 (88.3)	58 (98.3)	1	–
Mental illness***	**n = 289**	**n = 93**		
Present	64 (22.1)	14 (15.1)	1.08 (0.56–2.07)	0.824
Not present	225 (77.9)	79 (84.9)	1	–
Type of suicide	**n = 398**	**n = 95**		
Complete	339 (85.2)	88 (92.6)	1.23 (0.51–2.96)	0.651
Extended	37 (9.3)	0 (0.0)	–	–
Incomplete	22 (5.5)	7 (7.4)	1	–

(*continued on next page*)

Table 4 (*continued*)

Parameters of assessment[†]	India n (%)	Bangladesh n (%)	OR (95 % CI)	p-value
Suicide – Pact	**n = 337**	**n = 72**		
Present	38 (11.3)	6 (9.3)	1.39 (0.57−3.44)	0.466
Absent	299 (88.7)	66 (91.7)	1	–
Homicide	**n = 331**	**n = 71**		
Present	27 (8.2)	5 (7.0)	1.17 (0.44−3.16)	0.753
Absent	304 (91.8)	66 (93.0)	1	–

[*] $p < 0.05$.
[**] $p < 0.01$.
[***] $p < 0.001$.
[†] Numbers may vary for different parameters because all reports did not provide information for all parameters.

suicide databases in India (Arya et al., 2019, 2018). An Indian study, evaluated the published suicide reports from google database during 12th March 2020 to 11th April 2020 as a pilot study and described various psycho-social attributes of suicide during COVID-19 pandemic (Rajkumar, 2020). This study included a total of 49 media reports and evaluated the reports in the context of stress-diathesis model (Rajkumar, 2020). However, to the best of our knowledge, none of the study evaluated the change of trend of suicide from pre-lockdown to lockdown phase, globally.

Our study, though different from the above studiesin terms of the methodology employed, also attempted to evaluate changes in suicide trendsdue to the imposition of national lockdown; an infection containment strategy. Hence, our time period of observation was shorter. Some of our major findings can be explained due to the physical effects of the lockdown; as an example, the relatively greater proportion of suicides due to hanging in India and Bangladesh during lockdown may be due to difficulty in procuring poisonous compounds or firearms owing to the restrictions imposed.

Notably, a greater proportion of suicides during lockdown in India was not associated with mental illness. This points to a greater role for socio-cultural factors such as economic adversity, social disruptions, interpersonal issues and stressful life events in triggering suicides in the Indian setting; the effects of which may be more pronounced in individuals harbouring maladaptive personality traits such as impulsivity (Kattimani et al., 2015). No such findings were noted, however, in Bangladesh.

Overall, significant changes were noted in demographics of suicidal behavior between pre-lockdown and lockdown phases in India; but not Bangladesh. Several factors may account for these variations. First, the intensity and implementation of lockdown rules and containment strategies may vary between countries; these would directly impact livelihood and job opportunities. Second, the number of media reports from Bangladesh were comparatively fewer lending decreased statistical power to detect differences, if any. Third, religion may exert a protective effect on suicides, particularly during times of distress. Bangladesh is a Muslim majority nation and suicide is strictly prohibited among Muslims. Nevertheless, prior studies from Bangladesh (Arafat, 2019), have shown that suicide remains a major public health issue. In light of these findings, further studies are warranted to explain the observed lack of impact of COVID-19 lockdown on suicidality in Bangladesh.

The study findings must be interpreted in light of itslimitations. First, we have covered only online newspapers due to resource constraints and other forms of mass media such as radio were not analysed. Next, we have purposively selected the dailies to be included and therefore, the results may not extend to other forms of print media, such as tabloids or evening dailies, which also enjoy a considerable readership. Further, data from mass media reports may not be accurately representative of the suicidal events in the community (Armstrong et al., 2019). Also, there may be reporting bias about mental illness, substance use, risk factors, and life events, etc. in the newspapers. Seasonal variations, socio-economic and political factors may too, influence the variation of suicide from pre- to post-lockdown period. Finally, single investigators were involved in the granular analysis and coding of data for every newspaper report and thus some observer bias is inevitable. We tried to minimize this bias in three ways;by conducting an initial online orientation session as mentioned before; designing the individual questions in such a way that all items were either coded as present/absent or under simple and clear headings (such asemployed/housewife/student/unemployed), thus minimizing the need for complex coding; and finally, creating an online group where investigators were encouraged to share their queries that arose during the data collection process – because all the authors were part of the group, it not only helped to clarify queries but also assisted investigators to learn from each other's queries. The newspaper reporting standards advocate that confidentiality should not be violated but many newspapers do not comply (Arafat et al., 2020a; Menon et al., 2020; Menon et al., 2021). So effective reporting does not report on risk factors, most of which are confidential in nature (other than sociodemographic factors and recent stresses). Newspapers again do not publish credible evidence of the deceased's mental illness. Good forms of reporting value the deceased's privacy. Newspaper accounts are often not accurate with respect to investigating the existence of mental illness in the deceased. There could be fresh onset mental illness during the lockdown era that could have been undiagnosed or untreated. Hence, these should be interpreted cautiously. Newspapers should not, for these reasons, be considered a highly credible source of risk factors.

Our findings provide preliminary evidence that may have implications for suicide prevention efforts in the region.Considering the findings of this study, future research may attempt to explore the attributes of suicide during large calamities by obtaining information from more reliable sources covering a larger population.In resource constrained settings, the role of technological approaches, such as artificial intelligence, may help in surmounting barriers to care and assist in taking care delivery to the doorstep of those who need it the most (Ćosić et al., 2020). Also, there is need of collaboration between the press and media houses with the mental health professionals for increasing awareness among the journalists about sensible reporting of suicide. The Press Council of India (PCI) may conduct sensitizing workshops for reporters by involving mental health professionals and even patients with mental illnesses and their caregivers. Such collaboration is expected to improve the quality of media reporting, generate better data for research as well as information dissemination about suicide.

5. Conclusion

The study reveals thatthe COVID-19 crisis and subsequent lockdown has impacted the demographics of suicide (as reported in the news reports) among the regions studied in India. At the same time, no significant effects were noted in Bangladesh. These findings point to the need for furtherstudies on the impact of lockdown and containment strategies employed by nations on suicidal behaviour using more robust techniques such as population-based time-series data to investigate the issue more accurately. It needs to be noted that the news reports of suicide are not the true reflection of suicide in the community. The study findings give a preliminary overview of the suicide during and before lockdown. Moreover, they also highlight theneed for designing suicide prevention activities that take into account the unique interplay of socio-religious and economic factors that may vary between countries and regions; this will increase the impact and minimize damage as nations recover from the devastating impact of COVID-19.

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