 DOI : 10.48165/jiafm.2023.45.3.8

ORIGINAL ARTICLE

The Changing Profile of Suicidal deaths in COVID-19 Pandemic in Haryana: A Retrospective Study

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Abstract:

Life is precious in all forms and stakes rise when it concerns the most advance species on our planet i.e humans. COVID-19 pandemic has been the most challenging time for human civilization in 21st century. Billions infected, millions dying, reeling health infrastructure, economic meltdown pushed people to their wits end, traumatising them physically, crippling them economically and psychologically. Physical and economic damage may be adjudged by morbidity, mortality figures and GDP but psychological derangements are very difficult to assess as their effect can be long lasting and far reaching. An attempt was made in this study to assess this by studying the most severely affected individuals who resorted to ending their lives. A retrospective study was conducted to study & statistically compare the profile parameters of suicide deaths during the two peak of COVID-19 pandemic (2020 & 2021) and years preceding it (2017 & 2018) brought for autopsy at an apex tertiary care centre in Haryana. It was found that there was an increase in number of suicide cases per year as the pandemic progressed along with rise in ratio of male to female cases and change in distribution of cases in different age groups with preponderance of younger age groups.

Keywords: Suicide; Pandemic; Change.

Introduction:

Life is precious in all forms and stakes rise when it concerns the most advance species on our planet i.e humans. COVID-19 pandemic has been the most challenging time for human civilization in 21st century. Billions infected, millions dying, reeling health infrastructure, induced a substantial fear and concern leading to stress and anxiety which was further worsened by lockdown restrictions, financial meltdown, lack of physical contact with acquaintances and friends pushing people to their wits end, traumatising them physically, psychologically and crippling them economically. COVID-19 not only caused physical health concerns but also resulted in a number of psychological disorders.[1] First case of COVID-19 was reported in India in January 2020 and first death in March 2020.[2]

Physical and economic damaged may be adjudged by morbidity, mortality figures and GDP but psychological derangements are very difficult to assess as their effect can be long lasting and far reaching. An attempt was made in this study to assess this by studying the most severely affected individuals who resorted to ending their lives by suicide. The operational criterion for determination of suicide defines it as "A death arising from an act inflicted upon oneself with the intent to kill oneself".[3]

Although, homicide appears to be the most gruesome face of death, it is usually for a sinister purpose whereas, suicide is a purposeless loss of life due to mental inability to face situations and challenges of life. Such loss is unacceptable and preventable with timely and often low-cost interventions. Therefore, all recourses possible must be undertaken to prevent it. In order to devise these measures of prevention we need to understand the change in scenario like subjects at risk, high risk time zones.

This study was planned for studying and comparing the profile of suicidal deaths during the peak years of COVID-19 pandemic with those in preceding two years free from pandemic, so that a clear and scientific comparison can be made between the two phases.

Material and methods:

A retrospective study was planned and rolled out by authors from Department of Forensic Medicine, PGIMS, Rohtak. Post-mortem records of suicidal deaths whose postmortem was done at mortuary of PGIMS, Rohtak, over a period of four years, were thoroughly reviewed. The data was collected from post-mortem record register of mortuary for eligible cases of suicidal deaths brought to mortuary of PGIMS, Rohtak, over a period of four years. A total of 967 cases fulfilled the eligibility criteria. The data was collected for a period spreading over four years, including two peak years of COVID-19 pandemic (2020 & 2021) and two years preceding it (2017 & 2018) on a structured proforma designed to capture relevant details. Data obtained regarding various parameters like age, gender, time of year, district of origin, method of suicide was tabulated and statistically analyzed.

Inclusion criteria: All confirmed cases of suicidal deaths whose post mortem was done at mortuary of PGIMS, Rohtak during the study period.

Exclusion criteria: 1.All cases where manner of death is not

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Article History
DOR : 27.10.2022 DOA : 29.03.2023

Table 1. Shows the year wise distribution of cases in Pre-COVID and COVID phase.

	Year	Suicidal Deaths
Pre-covid Years	2017	219
	2018	214
Covid-19 Pandemic Years	2020	252
	2021	265

Table 2. Gender wise distribution of cases in Pre-COVID and COVID phase.

Gender	Pre-Covid Phase	Covid Phase	Total	Test of significance
Male	226	347	613	X^2=4.355, df=1, p= 0.0369
Female	170	167	337	
Total	436	514	950	

Table 3. Age wise distribution of cases in Pre-COVID and COVID phase.

Age Group	Pre-covid Phase	Covid Phase
0 to 10	0	0
11 to 20	73	94
21 to 30	131	132
31 to 40	94	105
41 to 50	87	97
51 to 60	37	54
61 to 70	10	28
71 to 80	1	7

Table 4. Quarter-wise distribution of cases in Pre-COVID and COVID phase.

	Pre-Covid Phase	Covid Phase	Test of significance
First Quarter (Jan-Mar)	83	97	X^2=4.328, df=1, p= 0.228
Second Quarter (Apr-Jun)	131	138	
Third Quarter (July-Sept)	114	167	
Fourth Quarter (Oct- Dc)	105	115	

Table 5. Case distribution based on method of suicide in Pre-COVID and COVID phase.

Method of suicide	Pre-covid phase	Covid phase
Poisoning	416	490
Hanging	14	21
Drowning	3	2
Firearm	0	3
Jumping in Front of Train	0	1

suicidal. 2. All cases where no definitive manner and cause of death could be established.

Data analysis: Collected data were entered in the MS Excel spreadsheet, coded appropriately and later cleaned for any possible errors. The statistical analysis was carried out using IBM SPSS Statistics for Windows, Version 22.0 (IBM Corp. Armonk, NY, USA). Chi-square test was applied to compare profile parameters of suicidal deaths in PRE-COVID years (2017 & 2018) and COVID-19 pandemic years (2020 & 2021) to evaluate whether the changes found in various parameters were statistically significant or not. All tests were performed at a 5% level of significance; thus, an association was significant if the p value was less than 0.05.

Results:

Among the total 967 cases studied 17 cases were excluded due to indeterminate or non-suicidal manner of death. Amongst the remaining 950 cases included in the study the year wise distribution of caseswas as shown in table 1. It is clear from the data that there was an increase in number of suicide cases per year as the pandemic progressed.

The study cases were predominantly males with 613 subjects

Chart 1. Shows the year wise distribution of cases in Pre-COVID and COVID phase.

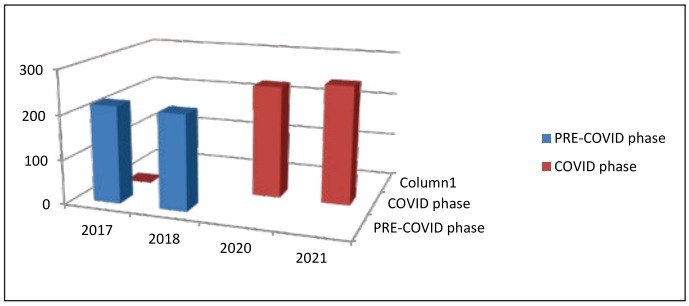


Chart 2. Gender wise distribution of cases in Pre-COVID and COVID phase.

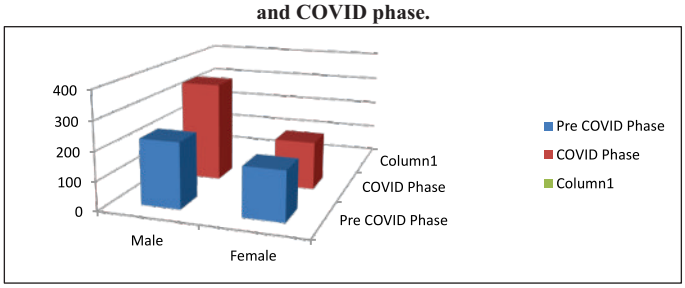


Chart 3. Age wise distribution of cases in Pre-COVID and COVID phase.

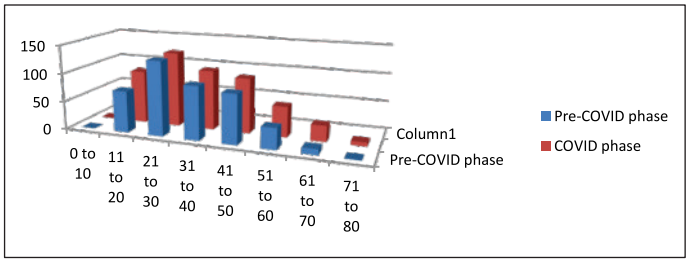


Chart 4. Quarter-wise distribution of cases in Pre-COVID and COVID phase.

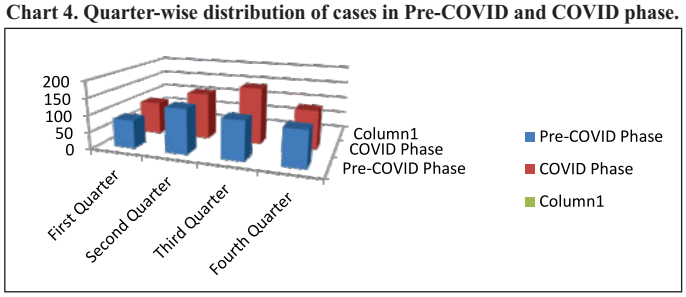
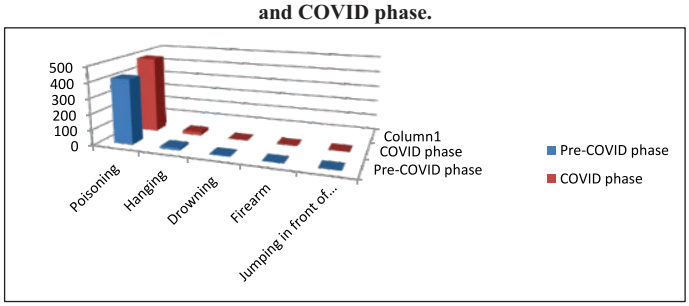


Chart 5. Case distribution based on method of suicide in Pre-COVID and COVID phase.



(64.5%) whereas females were about one-third of the total at 337 cases (35.5%). However, the ratio of male to female cases increased more during the COVID phase as compared to pre-COVID phase with number of male suicides increasing from 266

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to 347 in COVID phase. On statistical analysis this increase was found significant as shown in Table 2.

The cases belonged to all age groups ranging from second decade to eighth decade. The age wise distribution of cases was as shown in table 3. Although there was a clear predominance of younger age groups in the suicides, the age distribution remained similar with no statistically significant change in age-wise distribution of case during pre-COVID phase as compared to COVID phase.

The cases were not distributed evenly all around the year with rise in number of cases in certain quarters in COVID phase corresponding to peak of COVID-19 wave. The quarter-wise distribution of cases around the year was as shown in table 4. There was a distinct rise in suicidal deaths in the third quarter of the COVID phase (167), corresponding to the post-peak of COVID-19 wave in second quarter as compared to similar quarter in pre-COVID phase (114). On statistical analysis the difference in suicidal deaths in third quarter of COVID phase and pre-COVID phase was found to be statistically insignificant.

The various methods used for suicide also studied and number of each was as shown in table 5. The data shows that poisoning was the predominant method of suicide in Haryana both during pre-COVID and COVID phase. Suicide by firearm injury and jumping in front of train was seen only during COVID phase. Deaths due to hanging also increased during COVID phase however, the increase was not found to be statistically significant on analysis.

Discussion:

WHO had predicted the rise in the number of mental health problems due to the global pandemic and had addressed this issue through various messages and publications related to mental health awareness and prevention.[4] The study of profile of suicidal deaths can help the policy makers to identify the high risk population group and expected catastrophic time zones so as to devise strategies to save maximum number of lives with available resources.

In the present study it was found that number of cases of suicidal deaths increased during the COVID phase, similar to findings of Acharya et al.,[5] Pathirathna et al.[6] and Choudhury et al.[7] probably due to the uncertainty induced fear and concern leading to stress and anxiety especially in developing countries where health services were limited and overwhelmed by huge population load. However, in study by Pirkis et al.[8] in developed countries suicide rates either remained stable or decreased during early phase of pandemic.

The present study found males were more as compared to females, further the ratio of male to female cases increased during the COVID phase which could be attributed to stress of loss of employment and income as males are usually the sole bread-earners of family in India. Similar observations were made by Mamun et al.[9] in his study in neighbouring country.

There was a clear predominance of younger age groups in the suicides in the present study and similar findings were observed by Acharya et al.[5] and Choudhury et al.,[7] which can be attributed to the fact that younger generations are actively involved in social and economic activities and thus were worst affected.

In the present study it was observed that there was a distinct rise in suicidal deaths in the third quarter of the year in COVID phase (167), corresponding to the post-peak of COVID-19 wave in second quarter as compared to similar quarter in pre-COVID phase (114). This rise in number of cases corresponding to waves of COVID-19 peaks and economic lockdown have been documented by John et al.,[10] Shrestha et al.[11] and many others.

Conclusion:

We humans cannot control nature and its wraths like the COVID-19 pandemic however, no stone should be left unturned in saving human lives whenever possible. The health care sector needs to strengthen its suicide screening services like the community based gatekeeper training programme, for early identification of high risk cases and timely intervention for individuals with suicidal behavior. All the stakeholders, including policymakers, psychiatrists, psychologists, and other healthcare professionals should collaborate to raise awareness to screen, detect and timely intervene the needy patients. The challenge of the COVID-19 crisis can be turned into an opportunity to advance the suicide prevention strategies and save precious lives not only today but even in future.

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