

## Elderly Suicidal Deaths - An Observational Study

Sandwip Talukdar<sup>\*1</sup>, Zeenat Jahan<sup>2</sup>, Preyanka Chowdhury<sup>3</sup>, Krishna Das<sup>4</sup>, Shishir Kumar Talukder<sup>5</sup>, Mostafizur Rahman<sup>6</sup>

<sup>1</sup> Assistant Professor, Department of Forensic Medicine & Toxicology, North Bengal Medical College, Sirajganj, Bangladesh. <sup>2</sup> Associate Professor, Department of Forensic Medicine & Toxicology, Barind Medical College, Rajshahi, Bangladesh. <sup>3</sup> Medical Officer (Resident), National Institute of Ophthalmology, Dhaka, Bangladesh. <sup>4</sup> Lecturer, Department of Forensic Medicine & Toxicology, North Bengal Medical College, Sirajganj, Bangladesh. <sup>5</sup> Shishir Kumar Talukder, B. Sc. (Hon's) in Microbiology. 3rd year (resident), IIAST Affiliated, RU, Rangpur, Bangladesh. <sup>6</sup> Lecturer, Department of Biochemistry, North Bengal Medical College, Sirajganj, Bangladesh.

**ABSTRACT:** The suicide was 3rd leading cause of unnatural death among elderly age group. The suicide death of an older subject is less impactful on the people than the loss of someone younger, particularly of adolescents and of young adults. For these reasons, suicide in the elderly population is a phenomenon that is often ignored or neglected, drawing less attention than suicide in younger population. An Observational study of suicides among elderly age group  $\geq 60$  years was conducted in the Department of Forensic Medicine and Toxicology North Bengal Medical College, Sirajganj. The data was taken from 250 bedded Sirajganj general hospital from Police inquests, hospital records, toxicological reports and suicide letters were collected by police and studied. The total elderly suicidal deaths during the period of 3 years were 112, more common among 60-64 years aged people. Educated, middle class, joint family and different categories of professional background with physical ailments were common factors in the study. The methods used for suicide ranged from poisoning, hanging, and burns to fall from height. The results were analysed and compared with previous research studies, and this study matched the results of several other studies. This is possibly due to beginning of dependency and stressful life following their retirements. Suicide is the 3<sup>rd</sup> leading unnatural cause of death among elderly which is not an impulsive act. Intervention in the aged suicide will be a complex task and should involve changes at different levels of the current aged care system.

**Keywords:** Suicide, Elderly Deaths, Cause of Death, Socio-Economic Status, Physical Illness, Mental Illness.



**\*Correspondence:**  
Dr. Sandwip Talukdar

**How to cite this article:**  
Talukdar S, Jahan Z, Chowdhury P, Das K, Talukder SK, Rahman M; Forensic Botany: Elderly Suicidal Deaths - An Observational Study. *Int. J. Forensic Expert Alliance*. 2024; 1 (1): 40-45

**Article history:**  
Received: February 28, 2024  
Received: March 26, 2024  
Accepted: May 12, 2024  
Published: June 27, 2024

**Peer Review Process:**  
The Journal abides by a double-blind peer review process such that the journal does not disclose the identity of the reviewer(s) to the author(s) and does not disclose the identity of the author(s) to the reviewer(s).



Copyright: © 2024 by the author(s). This is an open-access article distributed under the terms of the **Creative Commons Attribution 4.0 International License (CC BY-NC 4.0)** which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## INTRODUCTION

The suicide was 3rd leading cause of unnatural death among elderly age group. The suicide death of an older subject is less impactful on the people than the loss of someone younger, particularly of adolescents and of young adults. For this reason, suicide in the elderly population is a phenomenon that is often ignored or neglected, drawing less attention than suicide in younger population. This may be due to its lower economic impact on society, since most older suicide victims are not in the workforce, and the fact that fewer years of life are lost.<sup>1</sup> The World Health Organization had defined suicide as an act deliberately initiated and performed by a person in the full knowledge or

expectation of its fatal outcome.<sup>2</sup> Much discussion took place with regard to definitions, with the ongoing evolution of terms in this field and the use of different terms for very good reasons elsewhere in this sector. Currently, suicide is the act of deliberately killing oneself.<sup>2</sup> Every 40 seconds a person dies by suicide somewhere in the world. The number of suicides in certain countries may be under-reported because of the stigma associated with the act (for religious, cultural or other reasons). Comparability of suicide data between countries is affected by a number of reporting criteria, including how a person's intention of killing themselves is ascertained, who is responsible for completing the death certificate, whether a forensic investigation is carried

out, and the provisions for confidentiality of the cause of death.<sup>4, 5</sup> The details of circumstances leading to suicidal death were collected from the Police inquest reports, hospital records and post-mortem examination reports. People acquire a sense of self in an interpersonal context. Unfortunately, it is this same social milieu in which this delicate sense of self is fractured. Painful experiences suffered in the developmental years lead to varying degrees of depersonalization and alienation. In the course of defending themselves from onslaught of negative stimuli, elder people establish a fundamental ambivalence toward themselves that eventuates in an essential split in the psyche.<sup>6</sup> Both sides of this diversion of mind- the self and the anti-self are the dynamic systems that have their own integrity and boundaries. In this context, feelings of worthlessness, emptiness, lack of prospects or resources arise, and the elderly are not always to counter them with new objectives and interests. Rapid cultural changes, constant research and scientific success have made it possible to achieve results that a century ago were considered unreachable, with the increase in life expectancy because of better health care. Nevertheless, the extra years of life achieved do not necessarily provide a better quality of life; the increase in chronic diseases and the loss of physical strength often lead to feeling of worthlessness, anxiety for the future, lack of prospects or resources, until depression.

## MATERIALS AND METHODS

An Observational study of suicides among elderly age group  $\geq 60$  years was conducted in the Department of Forensic Medicine and Toxicology, north bengal medical college sirajganj. The data was taken from 250 bedded sirajganj general hospital from Police inquests, hospital records, toxicological reports and suicide letters were collected by police and studied.

## RESULTS

The total suicidal deaths of elderly age group people during the period of 3 years (2020-2022) were 112 i.e. 10.21% of total suicidal postmortem examinations performed at the hospital. Out of these, 31 were in first year (2020), 40 were in second year (2021), and 41 were in third year (2022). Elderly suicides were more common among 60-64 years aged people, i.e. 38.4%, followed by 65-69 years aged i.e. 24.1%, 70-79 years aged i.e. 20.5%, 80- 89 years aged i.e. 15.2% and the least was noted in 90+ year-aged people i.e. 1.7%. Among these, 71 were males and 41 were female. It is found that more than half of the deceased i.e. 50.8% were from rural areas and 49.2% were from urban areas. Among the study population, 56.2% were uneducated and 43.8% educated. It was observed that 5 people (4.4%) belonged to the upper class, 68 people (60.7%) belonged to the middle class and 39 people (34.9%) belonged to the lower-class groups. Different categories of people were involved in agriculture related works were 39, housewives were 69, labourers were 28, from retired govt. employees were 16, private employees were 5 businesspeople were 15, lawyer was 1 and others were 4. It is observed that more were from joint families i.e. 58% than nuclear families i.e. 41% and least among alone people i.e. 1%. Health conditions of the deceased were studied and grouped into mental illness and physical illness, 32 were (28.5%) had history of mental illness, 80 (71.4%) were had no history of mental illness. While considering other health conditions like Diabetes, Hypertension and its Related Disorders were 10 (11.1 %), GIT Illness were 31 (34.4 %), heart disease were 3(3.3 %), Chronic Lung Disease were 4 (74.4 %), Covid-19.

**Table1: Distribution of Study Population According to Age**

Age range	Number	Percentage
60-64 years	43	38.4%
65-69 Years	27	24.1%
70-79 Years	23	20.5%
80-89 Years	17	15.2%
90+ Years	2	1.7%
Total	112	100%

**Table 2: Distribution of Study Population According to Occupation**

Occupation	Number	Percentage
------------	--------	------------

Advocate	1	0.8%
Agriculture & related works	39	34.8%
Business	5	4.4%
Housewife	28	25.0%
Labourers	16	14.3%
Driver	3	2.6%
Private employee	5	4.4%
Watchmen	3	2.6%
Retired employee from Govt.	8	7.1%
Others	4	3.6%
Total	112	100%

**Table 3: Distribution of Study Population According to Type of Physical Illness**

Physical Illness	Number of cases	Percentage
Diabetes, Hypertension and its related disorders	10	11.1%
GIT Illness	31	34.4%
COVID-19 and its related diseases	3	3.3%
Chronic Lung Disease	7	7.7%
Cancer	3	3.3%
Joint and Spine disease	4	4.4%
Kidney disease	10	11.1%
Paralysis	7	7.7%
Unidentified physical illness	6	6.6%
Thyroid disorders	2	2.2%
Others	4	4.4%
Heart disease	3	3.3%
Total	90	100%

**Table 4: Distribution of Study Population According to Method of Suicide**

Suicide method	Number	Percentage
Poisoning	53	47.3%
Drowning	3	2.6%
Fall from height	5	4.4%
Hanging	31	27.6%
Railway Deaths	3	2.7%
Burns	13	11.6%
Total	112	100%

And Its Related were 3 (2.6%), Cancer were 3 (2.6%), Paralysis were 6 (5.35%), physical illness were 90 (80.3%) and without any physical illness were 58 (51.7%). Suicidal methods were used by our study population were, poisoning 53 (47.3%), burns - 13 (11.6%), drowning - 3 (2.6 %), drug overdose - 4 (3.5%), hanging - 31 (27.6%), OP poisoning - 85 (33.07 %), Paraquat poisoning - 1 (0.38 %), Suicidal fall from height - 5 (4.4 %), Suicide on railway track - 3 (2.7 %).

## DISCUSSION

In spite of mixed trends, suicide remains a significant public health problem worldwide. Potential explanations for cross-national variations in trends over time in elderly suicide rates include cross-national differences in trends over time in the prevalence of mental illness in the elderly, socioeconomic factors, cultural factors, the availability of appropriate healthcare services, and public health initiatives to improve the detection and treatment of mental illness, mental health and suicide prevention.<sup>6</sup>

Fundamentally, suicide rates in most industrialised nations increase with age, the highest rates of all occurring in elderly men. Risk factors for elderly suicide are older age, male gender, living alone, bereavement (especially in men), psychiatric illness (depression, alcohol misuse, previous suicide attempt, vulnerable personality traits), physical illness (pain).<sup>7</sup> The total suicidal deaths of elderly age group people during the period of 3 years (2020-2022) were 112 i.e. 10.21% of total suicidal postmortem examinations performed at the hospital. Out of these, 31 were in first year (2020), 40 were in second year (2021), 41 were in third year (2022). Elderly suicides were more common among 60-64 years aged people i.e. 38.4%, followed by 65-69 years aged i.e. 24.1%, 70-79 years aged i.e. 20.5%, 80- 89 years aged i.e. 15.2% and the least was noted in 90+ years aged people i.e. 1.7%.

Similar findings were observed by Vikram Palimar, who found suicide among aged 61-65 years, was 38.4%. This is possibly due to beginning of dependency and stressful life following their retirements.<sup>8</sup> In contrast to this in collaborative study by SAMHSA, CDC, NIH, and HRSA, HIS, suicide rate increased with increasing age.<sup>9</sup> It was observed in the present study that the elderly males (63.3%) were more prone for suicide than their counterparts (36.6%) with a male female ration 1.24:1. Different categories of people were involved in agriculture related works were 39, house wives were 69, labourers were 28, from retired govt. employees were 16, private employees were 5 business people were 15, lawyer was 1 and others were 4. The similarly high rates of suicide among males were reported by Ronald W Maris, Abraham VJ, Bennett, collaborative study and very high rate was reported by Vikram Palimar.<sup>8, 10-12</sup> This high rate among males may be due to declining health, depleting wealth and depending tendency on alcohol and drugs. It has been observed that more than half of the deceased (50.8%) were from rural areas, similar to the study by Hude Quan who reported highest rate of suicide in rural population (46.7%).<sup>13</sup> Many of the rural patients reach the urban for area for better treatment and that is the main reason for observing more rural deaths than urban. It shows that 57% of the individuals were not educated in the present study and the similar findings of high level of low educational status (75%) among elderly suicide reported by Rubernowitz.<sup>14</sup>

It was observed that 5 people (4.4%) belonged to the upper class, 68 people (60.7%) belonged to the middle class and 39 people (34.9%) belonged to the lower-class groups. It is observed that more than quarter (28%) of our study population belonging to agriculture and agriculture related jobs, while another quarter (26%) did household work and were dependent, labourers constitute about (16%), about 10% were retired from government services and staying at home and remaining were business and other works (5%). It has been observed that 59% of the individual were from joint families, 40% were from nuclear families and fraction was staying alone. In their study Ronald W Maris, Quan, Cattell HR, Kaplan and Sodocks also found the similar observations of suicide among living alone.<sup>10, 13, 15, 16</sup> The reason for high rate of suicide in joint family in this study could be due to social and cultural differences in this part of world, where majority of families are joint families, in contrast to living alone and nuclear families which are common in western countries. It has been observed in the present study that the elderly suicide has got multifactorial causation. Among them chronic illness (47%), psychiatric disorders (27%), financial problems (30%), family conflicts (26%), addiction to substance abuse (9%) were the common factors. These findings are in contrast with Howard Cattell, Bennett, Hude Quan, in which psychiatric illness and mental illness were common.<sup>12, 13, 17</sup> Family conflicts were the commonest factor as 59.53% of the individuals in the present study were from joint family. Chronic illness and physical pain were common due to aging and low socioeconomic status, because of these factors major portions of the elderly had depressive psychiatric disorders secondary to their illness. About 9% of study population was alcohol (Toddy in rural areas) dependent / addicts. In this study one committed suicide because of not getting toddy during lockdown period.

Similar findings were observed by Howard C and O Connell C *et al.*<sup>17, 18</sup> Gastrointestinal problems including chronic pain abdomen (34.4%) were most common chronic illness faced by study population. Others include diabetes mellitus (11.1%), respiratory problems (7.7%), osteoarthritis and spine disorders (4.4%), cancers (3.3%), kidney and urinary problems (11.1%) and liver problems (0.8%). These findings were contrary to findings observed by Howard Cattell.<sup>17</sup> But high rate of cancer incidence among



elderly people who committed suicide was found by Haakon H Eilersten.<sup>19</sup> This indicates gastrointestinal problems were neglected by the people than cardiovascular and diabetes. In addition, they are contributing to increase in suicide rates among elderly. The present study shows that OP poisoning was the commonest method of suicide, followed by hanging and the burns was third most common method. In many studies like Howard C, Bennett & Collins, and De Martino RE *et al.* gunshot injuries were common, but in present study not a single case of firearm injuries was reported.<sup>12, 17, 20</sup> Fall from height was the most predominant in the study by Robert C Abrams, but in present study shows that only 5.66% of individuals committed suicide by fall from height.<sup>21</sup> Suicide by overdose of drugs was common in study by Rubenowitz, but in present study it is only 1.55% only.<sup>14</sup> Poisoning as common suicidal method used by victims in this study could be due to lack of rules and regulations regarding use of pesticides and easy accessibility. Elderly people reporting suicidal feelings presented markedly higher levels of physical and psychological distress, such as depression, anxiety, and hostility. Results implicitly confirm that depressive symptomatology is not adequately treated. Greater attention is warranted in psychological evaluation of the elderly to take into account those risk factors that, if properly identified and managed, could reduce the frequency of suicidal thoughts and, probably, associated actions.<sup>22</sup>

## CONCLUSION

Suicide is the third leading unnatural cause of death among elderly. Suicide rate among elderly males predominated over their counterparts with male: female ratio of 1.24:1. More than half of the victims were rural dwellers. About 57% of the study groups were uneducated. 52% of the individuals belonged to non-working/households. Bulk of them belonged to middle and upper lower class. More than 52% of study populations were dependent. About 59% of the elderly suicide victims hailed from joint families and another 25% were having loneliness/isolated history. In addition, they are contributing to increase in suicide rates among elderly. Family and financial problems (19.4%) and addicted to alcohol and financial problems (8.94%), others are miscellaneous. Suicide among older people rarely is an impulsive act. Intervention in the aged suicide will be a complex task and should involve changes at different levels of the current aged care system.

**Source of funding:** Self-funded.

**Conflict of interest:** The authors declare that there is no conflict of interest.

## REFERENCES

1. Dombrovski AY, Szanto K, Reynolds CF. Epidemiology and risk factors for suicide in the elderly: 10-year update. *Aging Health*. 2005;1(1):135–45.
2. World Health Organization. Geneva; 1998. Primary prevention of mental neurological and psychosocial disorders. Chapter 4: Suicide; pp. 75–90.
3. World Health Organization. Geneva; 2014. Preventing suicide: a global imperative.
4. OECD. Paris: OECD Publishing; 2012. Suicide, in Health at a Glance: Europe 2012. <http://dx.doi.org/10.1787/9789264183896-10-en>.
5. OECD. Paris: OECD Indicators, OECD Publishing; 2015. Health at a Glance 2015. [http://dx.doi.org/10.1787/health\\_glance-2015-en](http://dx.doi.org/10.1787/health_glance-2015-en).
6. Shah AK, Bhat R, MacKenzie S, Koen C. Elderly suicide rates: cross-national comparisons of trends over a 10-year period. *Int Psychogeriatr*. 2008;20(4):673–86.
7. Coda S. Invecchiamento e longevità: perdite e risorse a confronto. [Ageing and longevity: a comparison between losses and resources] *Journal of Psychopathology (Italian)* 2000;6(2).
8. Palimar V, Arun M, Bhagavanth P, Babu YR, Mohanty MK. Fatal deliberate self harm in geriatrics. *JIAFM* Oct-Dec. 2006 Oct; 28(4):177-9.
9. Department of Health and Human Services (CDC), Suicide: Factsheet available at <http://www.cdc.gov/ncipc/factsheets/suifacts.htm>.
10. Ronald W Maris, Allan L Berman and Mortan M Silverman. "Elderly Suicides", New Age international publishers, 2006 comprehensive textbook of suicidology: 142- 148.
11. Abraham VJ, Abraham S, Jacob KS. Suicide in the elderly in Kaniyambadi block, Tamil Nadu, south India. *International Journal of Geriatric Psychiatry*: A journal of the psychiatry of late life and allied sciences. 2005 Oct; 20(10):953-5.
12. Bennett AT, Collins KA. Elderly suicide: a 10-year retrospective study. *The American Journal of Forensic Medicine and Pathology*. 2001 Jun 1; 22(2):169-72.

13. Quan H, Arboleda-Florez J. Elderly suicide in Alberta: difference by gender. *The Canadian Journal of Psychiatry*. 1999 Oct; 44(8):762-8.
14. Rubenowitz E, Waern M, Wilhelmson K, Allbeck P. Life events and psychosocial factors in elderly suicides—a case-control study. *Psychological medicine*. 2001 Oct; 31(7):1193-202.
15. Cattell HR. Elderly suicide in London: An analysis of coroners' inquests. *International Journal of Geriatric Psychiatry*. 1988 Oct; 3(4):251-61.
16. Kaplan and Soderstrom; *Suicide*, International Student Edition. Synopsis of psychiatry, 8th edition: 64, 864 and 865.
17. Howard C. Suicide in the elderly. *Adv Psychiatry Treat*. 2000; 6(2):102-8.
18. O'Connell H, Chin AV, Cunningham C, Lawlor BA. Recent developments: suicide in older people. *Bmj*. 2004 Oct 14; 329(7471):895-9.
19. Eilertsen HH, Lilleng PK, Mæhle BO, Morild I. Unnatural death in the elderly. *Forensic science, medicine, and pathology*. 2007 Mar; 3(1):23-31.
20. DeMartino RE, Crosby AE, EchoHawk M, Litts DA, Pearson J, Reed GA, West M. A call to collaboration: The federal commitment to suicide prevention. *Suicide and Life-Threatening Behavior*. 2003 Jun 1; 33(2):101-10.
21. Robert C. Abrams, Elderly suicide victims more likely to have fallen to their deaths, published: Thursday, 26-may 2005 <http://www.newsmedical.net>.
22. Scocco P, Meneghel G, Caon F, Dello Buono M, De Leo D. Death ideation and its correlates: survey of an over-65-year-old population. *J Nerv Ment Dis*. 2001;189(4):210–8.