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Suicides in India

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ABSTRACT

Introduction: Suicide is a mortality contributor to a major extent among young and economically productive populations. Current study aims to analyze the trend, causes, and modalities of suicides in India over the last decade.

Methods: Retrospective observational study based on analysis of secondary data compiled from the National Crime Records Bureau, which is a national database maintained by the Ministry of Home Affairs, Government of India.

Results: The study included data related to suicides in India from 2012-2021. An increase in the number of suicides was noted from 135445 in 2012 to 164033 in 2021. The most common approach to committing suicide was found to be hanging over the years, increasing from 37% in 2012 to 57.05% in 2021. Persons resorting to poisoning, self-immolation, drowning, and coming under running vehicles have decreased from 2012-2021. The majority of suicide victims contributed to 65.31% and 72.53% of suicides in 2012and 2021, respectively. The highest percentage of suicide victims over the years was found to be the age group of 18-30 years (34%) which is closely followed by the 30-45 years age group. Family problems have been the most common cause of suicide from 2012 (25.6%) to 2021 (33.2%), with a very slight decrease from 20.8% in 2012 to 18.6% in 2021.

Conclusion: The burden of suicide has not shown any decline in last decade. There is a need for multisectoral intervention to reduce the burden of suicides, involving all the stakeholders, including government, family, community, educational institutions, and health care providers.

Keywords: Suicide, Suicide Rate, Public Health, National Crime Records Bureau (NCRB), Secondary Data.

INTRODUCTION

Among young individuals, suicide has become a crucial health issue causing significant mortality. Globally, suicide owing to death is estimated to be more than 7,00,000 every year, and it has risen by 6.7% (0.4% to 15.6%) between 1990 and 2016.[1] The World Health Organization (WHO) has also prioritized mental health in the Sustainable Development goals under WHO Special Initiative for Mental Health (2019–2023); Universal Health Coverage for Mental Health.[2] Suicide rates increased in India too in 2020, with male preponderance possibly due to the economic consequences of the pandemic pressurizing the breadwinners.[3] Low and middle-income countries are the victims of suicide, contributing to 77% of suicides globally in 2019.[4]

The suicidal death counts are higher than the deaths due to breast cancer, malaria, Human Immunodeficiency Virus /Acquired Immuno Deficiency Syndrome

(HIV/AIDS), war, or homicide.[5] India used to be ranked lower than some Western European and other nations in earlier studies. Over the past ten years, credible community surveys have reported that the highest suicide rates are also found in India.[6] More than 100,000 people commit suicide annually in India. 1,64,033 suicides were reported in total in India in 2021, a rise of 7.2% from the previous year.[7] The bulk of suicides among the states in 2021 were reported in Maharashtra (22,207), accompanied by Tamil Nadu (18925), Madhya Pradesh (14965), West Bengal (3500), and Karnataka (13056).[8] The methods used to commit suicide in 2021 ranged from simple and effective methods like hanging (57%), poisoning (25.1%), drowning (5.1%), and jumping (1.1%), etc. to more painful methods, including self-inflicted injuries, touching an electric wire, fire or self-immolation, coming under running vehicles or trains, etc.[8] The most lethal suicide method was firearms covering 75% of suicidal deaths, whereas cutting the wrist was found to be the least lethal suicidal method, with less than 5% of suicidal deaths.[5] The age between 15 and 29 years was found to have most adult suicide fatalities. For a 15-year-old in India, the cumulative chance of passing away by suicide before turning 80 years is roughly 13%.[6]

The suicide death rate (SDR) has been higher among women.9,10 Female suicide rates also peak earlier than male suicide rates.[6] In the nation, there were 45,026 female suicides in 2021. Housewives had the largest number of female suicides, followed by students and daily wage workers. Impotency/infertility and "marriage-related issues" (more particularly, "dowry-related issues") had higher proportions of female victims. In 2021, out of 1,18,979 male suicides, the majority of suicides were committed by daily wage earners, followed by self-employed persons and unemployed persons. Children under the age of 18 committed suicide for the most part because of illness, which includes mental illness, chronic illness such as Acquired Immunodeficiency Syndrome/Sexually Transmitted Diseases, cancer, paralysis, etc.[11] Other causes were poverty, debt, unemployment, exam failure, and career issues. Even with a higher prevalence of suicide in India, the Mental Healthcare Act decriminalized suicide only in 2017. India launched its National Suicide Prevention Strategy (NSPS) in 2022, the first national policy catering to reducing suicide mortality by 10% by 2030.[12] Multiple initiatives have been introduced – KIRAN helpline, community programs, Suicide Prevention India Foundation, Suicide Prevention and Implementation Research Initiative (SPIRIT), etc. However, their implementation remains a challenge, as well as their benefits for reaching the most vulnerable section of society, are questionable. A study in Australia estimated the economic cost of suicide and non-fatal suicide behavior, and it was found to be $6.73 billion.[13]

They suggested that workplace suicide prevention intervention is a positive economic investment, and for every dollar invested, the benefits would be in excess of $1.50.[14] Thus, investing in mental health services would pay huge dividends in improving the economy by increasing productivity and workability.[2] Apart from economic cost, suicide and attempt to suicide leads to loss of disability-adjusted life years. In New Zealand, approximately 19218 life years were lost due to suicide in the year 2002. Similarly, in 2022, 'suicide and self-inflicted injuries' was the second leading cause of death in Australia, with an estimated 159,200 total years of life lost.[15] Similar estimates have not been calculated in India, further emphasizing the meager relevance attributed to mental health and suicide in our society. Considering the economic burden and the years of life lost due to suicide, the studies related to suicide in India are very limited. Although several mental health-related strategies are being introduced, the impact of their implementation remains unknown. It is

essential to develop as well as implement context-specific suicide prevention plans for various regions of India by first understanding who commits suicide, why they do it, and how they do it.[10] Additional attention should be given to high-risk behaviors and the vulnerable sections of society. Coordinated and multi-sector (primary, secondary, and tertiary preventative interventions are the only ways to identify and tackle the risk factors of suicide, for which further studies related to suicides in India become essential.

MATERIALS & METHODS

Study Design: A retrospective observational study based on analysis of secondary data

Source of Data: The data was compiled from the National Crime Records Bureau (NCRB)[8], which is a national database maintained by the Ministry of Home Affairs, Government of India.

Methodology of Data Collection:

We have taken the secondary data from NCRB, which has collected data from states/UTs Police and compiled and presented it in the form of a report. The authenticity of the information cannot be put on NCRB as the data is being provided by states/UTs. The State Crime Records Bureaux (SCRBx) collects data for NCRB's report from the District Crime Records Bureaux (DCRBx). They also separately collect data from mega-cities with 10 lacks or more population as per the latest census. For the purpose of this study, we have compiled data from the past 10 years of Accidental and Suicidal Deaths in India document from the year 2012 to 2021. The information on deaths due to accidents and suicides is collected in the current study. There are two broad groups of deaths due to accidents. They include deaths due to causes attributable to nature and accidental deaths due to causes not attributable to nature.

STATISTICAL ANALYSIS

Data were analyzed by descriptive analysis and represented in Mean and Standard deviation (SD) for numeric variables, frequency, and proportion of categorical variables. The data was also presented using trend diagrams.

RESULT

Our study included data related to suicides in India from 2012 to 2021. The year-wise distribution of the number and rate of suicides is shown in Table 1. In our study, an increase in the number of suicides was noted from 135445 in 2012 to 164033 in 2021. Only a marginal increase was noted in the rate of suicides over these years, from 11.2 per Lakh in 2012 to 12 per Lakh in 2021 (Table 1).

Table 1: Distribution of the Number of Suicides, Growth of Population, and Rate of Suicides During

Year	Total Number of Suicides	Mid-Year Projected Population (in Lakh+)	Rate of Suicides (Total Number of Suicides/ Mid-Year Projected Population) (in lakh)
2012	135445	12133.7	11.2
2013	134799	12287.9	11
2014	131666	12440.4	10.6
2015	133623	12591.1	10.6
2016	131008	12739.9	10.3
2017	129887	13091.6	9.9
2018	134516	13233.8	10.2
2019	139123	13376.1	10.4
2020	153052	13533.9	11.3
2021	164033	13671.8	12

Rate of Suicides = Incidence of suicides per one lakh (1 00,000) of the population

The most common approach to committing suicide was found to be hanging over the years, increasing from 37% in 2012 to 57.05% in 2021. (Figure 1). People resorting to poisoning, self-immolation, drowning, and coming under running vehicles have decreased from 2012 to 2021. Jumping, consuming sleeping pills, touching

electric wire, self-inflicting injury, and firearms are the less common means adopted throughout the years. The majority of suicide victims have been found to be males from 2012 (65.31%) to 2021 (72.53%) (Figure 2). The age group of 18-30 years has constantly accounted for the highest percentage of suicide victims over the years at approximately 34%, which is closely followed by the 30-45 years age group (Figure 3).

Figure 1: Percentage of Means/Mode Adopted by Victims to CommitSuicide for the year 2012 to 2021

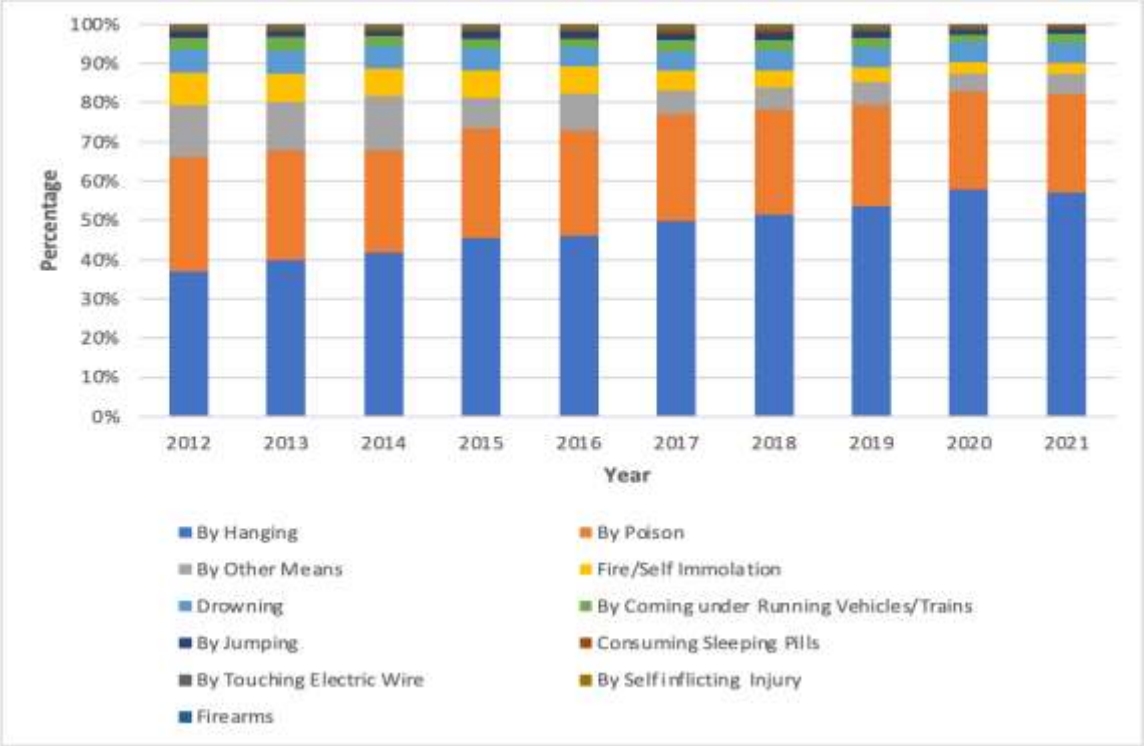


Figure 2: Stacked bar chart of the gender of suicides cases from year 2012 to 2021

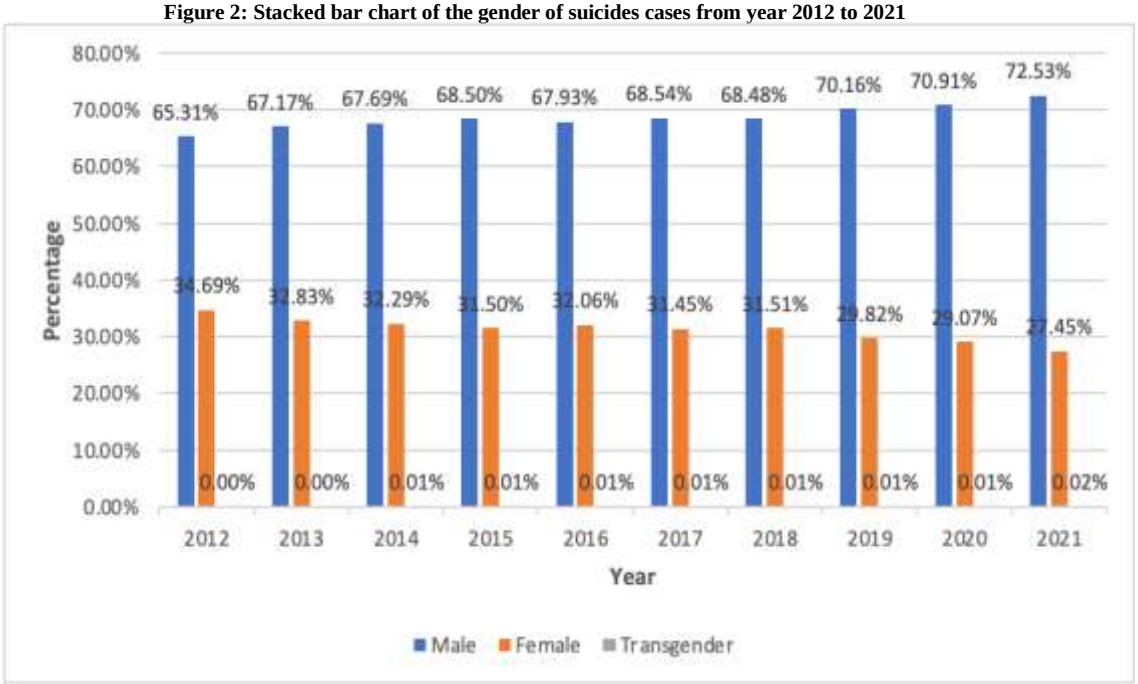
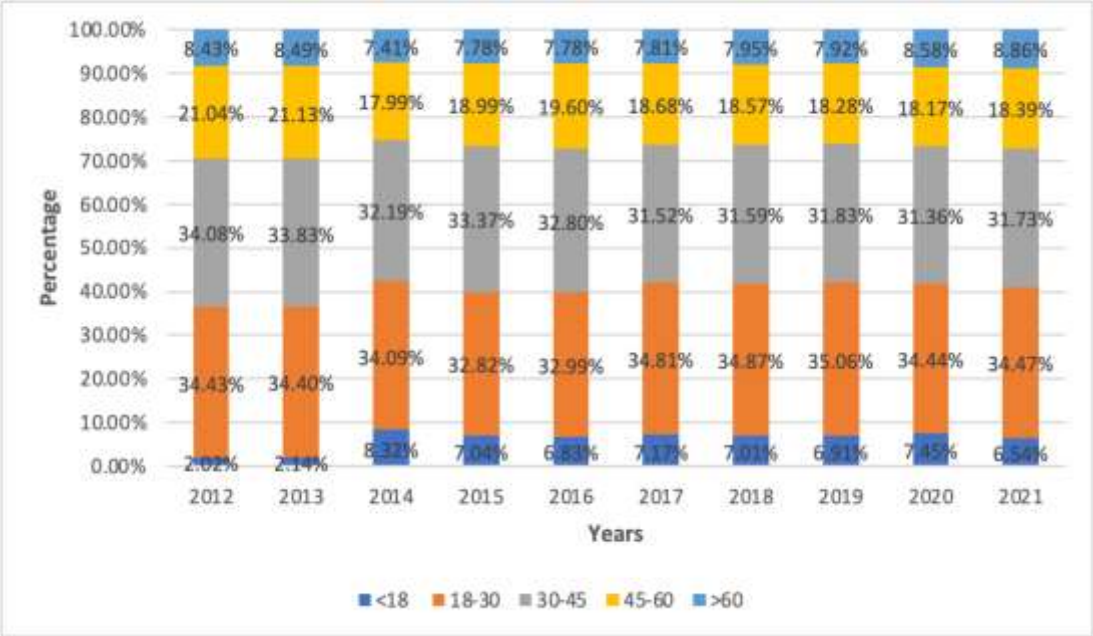


Figure 3: Stacked bar chart of suicide victims by age group for the year 2012 to 2021



The lowest percentage of suicides has been reported among those aged under 18 years. However, their proportion has gradually increased from 2.02% in 2012 to 6.54% in 2021. There has been a gradual decrease in suicides in the 45-60 years age group.

Family problems have been the most common cause of suicide from 2012 (25.6%) to 2021 (33.2%) in India (Table 2). Illness has been shown to be the next common cause of suicide after family problems in India, with a very slight decrease from 20.8% in 2012 to 18.6% in 2021. Minor causes in 2012 which have shown a steady increase over the years include drug abuse/alcoholic addiction (6.40%), love affairs (4.60%), bankruptcy (3.90%), and marriage-related issues (4.8%). Poverty constitutes a decreasing portion of the causes over these years, from 1.9% in 2012 to 1.1% in 2021. The more recent causes include failure in examination, unemployment, professional problem, property dispute, death of a dear person, illicit relations, fall in social reputation, and infertility at approximately 1% each.

Table 2: Distribution of Causes of Suicides for Years 2012 to 2021

Causes of Suicides	Year									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Family Problems	25.60%	24%	21.70%	27.60%	29.20%	30.10%	30.40%	32.40%	33.60%	33.20%
Other Causes	26.50%	29%	33.20%	26.20%	16.60%	23.50%	12.70%	11.10%	9.80%	9.20%
Causes Not Known	15.10%	15.60%	12.40%	12.10%	11.50%	0%	11%	10.30%	10.40%	9.70%
Illness	20.80%	19.60%	18%	15.80%	17.10%	18.50%	17.70%	17.10%	18%	18.60%
Drug Abuse/Alcoholic Addiction	3.30%	3.40%	2.80%	2.70%	4%	5.20%	5.53%	5.60%	6%	6.40%
Love Affairs	3.20%	3.30%	3.20%	3.30%	3.50%	3.90%	4%	4.50%	4.40%	4.60%
Bankruptcy or Indebtedness	2%	2%	1.80%	3.30%	2.80%	4.00%	3.70%	4.20%	3.40%	3.90%
Poverty	1.90%	1.40%	0%	0%	0.90%	0.90%	0.90%	0.80%	1.20%	1.10%
Marriage Related Issues	1.60%	1.70%	5.10%	4.80%	5.30%	5.50%	6.20%	5.50%	5%	4.80%
Failure in Examination	0%	0%	1.80%	2%	1.80%	2%	2%	2.00%	1.40%	1%
Unemployment	0%	0%	0%	2%	1.80%	1.90%	2%	2.00%	2.30%	2.20%
Professional/Career Problem	0%	0%	0%	0%	1.40%	1.40%	1.30%	1.20%	1.20%	1.60%
Property Dispute	0%	0%	0%	0%	2%	1%	0.90%	1.10%	0.90%	1.10%
Death of Dear Person	0%	0%	0%	0%	0.90%	0.80%	0.80%	0.90%	0.90%	1.20%
Suspected/Illicit Relation	0%	0%	0%	0%	0.60%	0.60%	0.50%	0.50%	0.50%	0.40%
Fall in Social Reputation	0%	0%	0%	0%	0.60%	0.50%	0.40%	0.40%	0.40%	0.50%
Impotency/ Infertility	0%	0%	0%	0%	0%	0.30%	0.20%	0.30%	0.20%	0.20%

DISCUSSION

In India, there has been a gradual increase in the number of suicides every year, from 135445 in 2012 to 164033 in 2021. However, the suicide rate from 2012 to 2021 is fairly close with very little difference. Twelve suicides per 1 lakh population were reported in India in 2021 alone. An estimated 20% of suicides worldwide are thought to be caused by self-poisoning with pesticides.[2] However, in our study, hanging has remained the most common mode adopted to commit suicide over the years, followed by poisoning. During the use of firearms, certain medications are one of the prevalent suicide techniques used across the world. The proportion of victims adopting hanging demonstrated a stark increase from 37% in 2012 to 57.05% in 2021. Correspondingly, there has been a decrease in other modes of suicide, such as poisoning, self-immolation, drowning, and coming under running vehicles. Jumping, consuming sleeping pills, touching the electric wire, self-inflicting injury, and firearms continue to constitute very fewer percentages over the years. The majority of suicide victims have been identified to be males from 2012 to 2021, with a gradual increase from 65.31% in 2012 to 72.53% in 2021.

Correspondingly, the proportion of female victims has decreased over these years. A similar trend is seen globally where men commit suicide which is more than twice as high as compared to women. The highest percentage of suicide victims over the years was found to be the age group of 18-30 years (34%) which is closely followed by the 30-45 years age group. A similar trend was also reflected globally.[16] Lowest percentage of suicides have been reported among those aged under 18. However, the proportion of these teenagers has gradually increased from 2.02% in 2012 to 6.54% in 2021. The shocking economic and epidemiological effects of teenage have been studied and attempted to be quantified with the greatest human development indices. Each year, about 7,000 young lives are lost to suicide, costing more than $5.53 billion and resulting in a loss of 406,730 years of life.[17] In a country like India, loss of productive population can cause similar economic and epidemiological effects.

Studies suggest that with more help and understanding, suicide rates could be lowered. To attain this, suicide must be acknowledged as a public health issue, and people must be given awareness that it can be stopped and its prevalence decreased.

This needs an early intervention, one implemented by WHO, Including suicide prevention strategies in different categories.[18] These strategies include Universal prevention strategies (Universal), which are intended to reach the entire population in an effort to improve health and reduce the risk of suicide through increased access to assistance, the strengthening of protective mechanisms like social support, and environmental changes. Other Strategies for selective prevention focus on vulnerable populations within a population based on traits including age, sex, employment position, or family history. Specific susceptible populations are also focused such as those exhibiting early suicide warning signs or those who have already attempted suicide.

There is evidence that a number of tactics can successfully stop suicide in the general population. Numerous of these, such as education and psychosocial initiatives, limiting access to lethal weapons, and the pharmacological and psychological management of depression, also need to be taken into account for kids and teenagers. It is necessary to advise the implementation of psychosocial suicide prevention interventions, particularly school-based awareness and skill-training programs, which could address both suicidality and underlying psychopathological and interpersonal issues (such as depression, substance abuse, family conflicts, and peer victimization).[19] Although it may be difficult, preventing suicide in children and adolescents must be a top concern. Additionally, numerous juvenile suicide

prevention programs have shown an improvement in mental health and suicide knowledge, social integration, and attitudes toward getting help, which may reduce the risk of suicide.

The Ministry of Social Justice & Empowerment of India introduced the KIRAN 24/7 mental health helpline in September 2020 to assist those in need of mental health care as the suicide rate is also high among the population with mental illness. The Department of Empowerment of Persons with Disabilities (DEPwD) created the helpline with the intention of offering psychological support. Other community initiatives include the Suicide Prevention and Implementation Research Initiative (SPIRIT) of the Centre for Mental Health Law and Policy (CMHLP), which seeks to implement scientifically supported suicide prevention treatments in rural India. Since the method of pesticide use for suicide is high in India, especially in rural agricultural areas like Tamil Nadu, etc. centralized pesticide-storage facilities were established in some areas of Tamil Nadu, which caused decreased suicide rates among pesticide consumers when compared to other areas of Tamil Nadu without this facility.[20] The Mariwala Health Initiative has announced the formation of a National Alliance to unite experts from many fields, such as policy and research, in order to advance the cause of suicide prevention. They prioritize people's life experiences and support community-based approaches.[21] Also, gatekeeping training is being provided in India, in which combined effort of the Suicide Prevention India Foundation (SPIF) and the QPR institute aims to provide the general public with a fundamental understanding of the warning signs of suicide and first aid expertise so they can recognize and assist someone going through a suicide crisis.[22] The impact of suicides can be tackled only with a multi-sectoral approach for resource allocation, capacity building, and national programs for promoting the availability and utility of mental health resources even at the grass-root level. It involves partnerships between government, non-governmental organizations, policymakers, citizens, and researchers to address suicide prevention policies and improve the quality of research being produced. The evidence regarding multi-sectoral interventions has come from high-income countries like Australia, the United States, and Canada, which could be customized to developing and under-developed nations, too.[23]

CONCLUSION

Although there are plenty of initiatives by the Government of India to prevent suicide rates, proper counseling, or educational programs which play a vital role in reducing suicides, children must be educated about the importance of life since the rate of suicide is significant among children. All the suicide preventive measures must be taught to the general population because they are usually the victims of suicides. There should be a multi-department approach to take any further measures. A large community-based studies must be encouraged to identify any reasons and/or insecurities pushing a person into the suicidal thought, and all the preventive measures must be identified.

Declaration by Authors

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