

ORIGINAL RESEARCH

A comparative Study on Sociodemographic and clinical factors in Patients of severe depression with and without Suicide

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ABSTRACT

Background and Aim: Suicide is one of the most severe outcomes of depression, with around 700,000 people dying due to suicide every year. In India, the suicide rate is increasing by 6.2% in 2021 compared to 2020. Suicide attempts range from 10 to 40 times more frequent than completed suicide. This further leads to suicide hence suicide attempts will be a major public and mental health concern in India. Sociodemographic and clinical factors play significant roles in a suicide attempt so our aim is to identify high risk factor in patient of suicide, which help in early detection and prevention of suicide attempt and lower the suicide rate. **Methods and material:** The study design was a cross-section observational study that recruited patients from the Department of Psychiatry over one year, from June 2021 to May 2022. After Institutional Ethics Committee clearance, patients were included in the study sample as per the institutional prevalence of depression. A purposive sampling technique was utilized and all those patients who fulfilled the inclusion criteria had suicide attempts included as Group A, while those diagnosed with severe depression without any suicidal attempt were recruited into Group B. For documenting the patient's sociodemographic and clinical information a semi-structured proforma was made. After formal assessment, both groups were quantified using the Hamilton Depression Rating Scale (HAM-D), the Beck Scale for Suicidal Ideation (BSSI), and the Suicide Behavior Questionnaire-Revised (SBQ-R). Later interpreted using Open-source software. Statistical analysis was done on categorical and continuous variables using the student t-test and Pearson correlation. **Result:** Mean age of patients with depression with suicide attempts was 28.2 years with the highest suicide rate among the 18-29 years age group, male, married, Hindu, belonging to the urban area, with the total duration of illness lower in patients of depression with suicide attempt than non-suicidal depression which is significant. **Conclusion:** This study identifies high-risk sociodemographic factors by which we can identify depressive patients at risk of suicide. Also highlights the importance of considering the number of suicide attempts, SBQ score and BSSI score as predictors of suicidality. However, more research is needed to fully understand the relationship between socio-demographic factors, another clinical parameter of depressive patients and suicidal behavior.

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INTRODUCTION

Depression is a prevalent mental illness that affects people of all ages, genders, and socioeconomic backgrounds. It is characterized by persistent feelings of sadness, irritability, or emptiness, along with a loss of interest in previously enjoyable activities and decreased energy, which can result in easy fatigue. Other symptoms may include inappropriate guilt, difficulty concentrating, decreased self-esteem, disturbed sleep, decreased appetite, a bleak or pessimistic view of the future, and thoughts of self-harm or suicide [1]. According to the WHO's 2020 survey, around 280 million people globally have depression [2]. *Suicide* is defined as a self-inflicted

death with evidence, whether explicit or implicit, of intention to die. A *suicidal attempt* is a self-injurious behaviour with nonfatal outcomes accompanied by evidence of intention to die. O'Carroll *et al.* [3]

Suicide is one of the most severe outcomes of depression, with around 700,000 people dying due to suicide every year, of which 77% are from low to middle-income countries, as per WHO [4]. In India, the suicide rate is reported to be approximately 12.0 per 100,000 population [5], with the rate increasing by 6.2% in 2021 compared to 2020, as per the National Crime Research Bureau (NCRB) [5]. Suicide attempts range from 10 to 40 times more frequent than completed suicide. [6] It is estimated that there will be

at least 5 million suicide attempts each year and in developing countries like India many people due to lack of knowledge and fear of the legality of suicide, report it as an accident, unable the mental health care professional to investigate underlying cause, in many cases which further lead to suicide hence suicide attempts will be a major public and mental health concern in India.

sociodemographic and clinic factor play significant role in suicide attempt so our aim is to identify high risk factor in patient of suicide. which help in early detection and prevention of suicide attempt and lower the suicide rate.

METHODOLOGY AND MATERIAL

The study design was a cross-section observational study that recruited patients from the Department of Psychiatry over one year, from June 2021 to May 2022 at MGM Medical College, Indore, Madhya Pradesh, India. Institutional Ethics Committee clearance was obtained before initiating this study . Both outpatients and inpatients were included in the study sample. The estimation of the study sample was performed using institutional prevalence of depression thus 60 patients of depression with suicide attempt(s) and 60 patients of depression without suicide attempt were enrolled in the study design.[7] A purposive sampling technique was utilized and all those patients who fulfilled the inclusion criteria of depression with suicide attempt(s) as per DSM-V of age between 18 to 45 years of either sex and who were drug naïve/drug-free for 3 months were recruited in the study after

obtaining written informed consent. Patients diagnosed with severe depression along with a suicidal attempt were included as Group A, while those diagnosed with severe depression without any suicidal attempt were recruited into Group B. Exclusion of the participants was done in case of patients aged less than 18 years and more than 45 years, current use of medications like antidepressants, mood stabilizers, anti-psychotics, hormone therapy, interferon, NSAID (non-steroidal anti-inflammatory drug), statin, antibiotics, steroids, psychoactive substance except tobacco, any comorbid illness, patient who refuse to give written and informed consent, pregnancy, lactation, and any medical and psychiatric comorbidity. The patient was assessed by the respective consultant in charge on the day of assessment and diagnosis was made as per the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V), and after formal assessment, both groups were quantified using the Hamilton Depression Rating Scale (HAM-D), the Beck Scale for Suicidal Ideation (BSSI), and the Suicide Behavior Questionnaire-Revised (SBQ-R). For documenting the patient's sociodemographic and clinical information a semi-structured proforma was made. The obtained data was stored and later interpreted using Open-source software (JASPO.16.4, jasp team, Amsterdam, The Netherlands. Statistical analysis was done on categorical and continuous variables using, the student t-test and Pearson correlation.

RESULTS

Table1: Description of socio-demographic parameters of study participants Group A and Group B

Socio-demographic parameters		Depression with suicide attempt (N=60)	Depression without suicide attempt(N=60)
Age(Years) mean±SD		28.2±7.69	30.4±6.89
Age group in (years)			
18-23		15(25%)	8(13.3%)
24-29		17(28.3%)	19(31.6%)
30-35		14(23.3%)	17(28.3%)
36-41		6(10%)	12(20%)
42-45		8(13.3%)	4(6.6%)
Gender			35(58.3%)
Male		34(56.6%)	
	Female	26(44.3)	25(41.6%)
Marital status			
Married		32(53.3)	32(53.3)
Unmarried		16(26.6)	12(20)
Separated		4(6.6)	6(10)
Divorced		5(8.3)	6(10)
Widowed		3(5)	4(6.6)
Education	Illiterate	5(8.3%)	7(11.7%)
	Primary	20(33.3)	18(30%)
	High school	29(48.3%)	18(30%)
	Graduate	6(10%)	17(28.3%)
Religion			

Hindu		49(81.6%)	43(71.6)
Others		11(18.3%)	17(28.3)
Employment	Unemployed	18(30%)	15(25%)
	Employed	42(70%)	45(75%)
Locality	Rural	17(24%)	24(40%)
	Urban	43(76%)	36(60%)

Group A shows mean age of 28.2 years with a standard deviation of 7.69 and Group B shows mean age of 30.4 years with a standard deviation of 6.89. Study had a male preponderance with 34(56.6%) in group A and 35(58.3%) in group B. Most patients with depression with suicide attempts belonged to the urban area, Hindu religion and were unmarried.

Table 2: Comparison between clinical parameters of depression with suicidal attempt and depression without suicidal attempt group

Clinical variable	Depression with suicidal attempt Mean \pm SD (N=60)	Depression without suicidal attempt Mean \pm SD (N=60)	T value	p value
Age of onset	26.46 \pm 6.48	29.42 \pm 5.24	-1.83	0.072
Total duration of illness (months)	5.2 \pm 2.73	6.60 \pm 2.43	-5.03	<0.001
HAM-D	33.31 \pm 5.89	30.66 \pm 5.87	2.76	0.08
SBQ	10.05 \pm 2.90	-		
Beck suicidal inventory	22.58 \pm 3.12	-		

The above table shows a comparison of continuous clinical variables between patients with depression with suicide attempts and depression without suicide attempts. There is a significant difference between the two groups in terms of the total duration of illness with p-values less than 0.001.

DISCUSSION

Mean age of patients with depression with suicide attempts is 28.2. Depression has the highest suicide rate among the 18-29 years age group, male, married, Hindu, belonging to the urban area, with total duration of illness lower in patients with depression with suicide attempt than non-suicidal depressed which is significant.

Depression is one of the most prevalent mental disorders. Suicide is one of the most dreaded outcomes of depression. It is estimated that suicide attempts are 10-20 times more frequent than completed suicides. Both suicide attempts and deaths by suicide result in a great psychological and economic burden for individuals, families and countries.[8] The World Health Organization has declared suicide a major public health problem worldwide.[9] There is a critical need to improve suicide risk detection by means of identifying high-risk sociodemographic and clinical factors for the prevention of suicide. The current study aimed to study sociodemographic and clinical profiles of patients with depression with and without suicide attempts.

Various sociodemographic parameters of study participants are depicted in Table 1. The mean age of patients with severe depression with suicide attempts was 28.2 \pm 7.69 years while those with depression without suicide attempts was 30.4 \pm 6.89 years. The

finding is in concordance with a study by Latha KS et al [10] who reported the mean age of depression to be 29.5 years.

There was a major proportion of depression with suicide attempts in the age group 24-29 years (28.3%) and 18-23 years (25%). The incidence of suicide was highest in the 18-29 years age group with 53.3% of participants belonging to the aforementioned age group. The results are in agreement with the data by the NCRB report [5], which reported age group 15-29 years have highest suicide rates in India, and WHO report [4] which also stated the age group to be having highest suicide rates.

The gender-wise distribution revealed a male preponderance in both depression with suicidal attempt[s] and depression without suicidal attempt[s] group.[11] Preponderance of male in study explain by Psychological, vocational, and societal factors may all help to explain this conclusion. The majority of women are now gainfully working across all social groups in India, especially those from middle-class households, although the country still has a male-dominated culture. The societal role of women as "homemakers" has not been much impacted by their education or financial freedom. In all aspects of life, men still have a disproportionate amount of power, particularly in the house, where they are seen as the main providers, handle the finances, and make the important choices. Because he must live up to the

expectations that come with his culturally prescribed role, the guy is more susceptible to stress.

The present study observed a higher percentage of married individuals in controls as compared depression with suicidal attempt(s) which indicate being married not a protective factor rather quality of the marital relationship, warmth and intimacy shared between the couple, ability to bear stress and responsibilities of married life are more important factors that determine protection against suicide in a married individual. Marriage is generally considered to be a protective factor for suicide but it has also been noted that this does not stand true for developing countries. [12]

In the religion-wise distribution of study participants, it was observed that individuals belonging to the Hindu religion made up 81.6% of the entire sample in the case group and 71.6% of the sample in the control group. The finding is in corroboration by multiple studies by Chandni et al, [13]. The finding can be explained by the fact that Hinduism is followed by the majority of the population in India. [14] Our study observed 8.3% of the study participants had received no formal education while 33.3% had received education upto the primary level, and 48% up to the high school level. About 10 % had received education upto college level Latha et al [7]. In comparison with controls, cases have lower education. The findings could be reflective of the educational status of the population in general rather than reflecting the educational status of the suicide attempters. Any inference to be drawn from this result would require a more robust understanding of the educational status of the Indian general population. In many Western literature, payment was associated with the risk of suicide. [15] but in our study majority of patients were employed in both groups which represents the employment status of the population rather than the risk of suicide. [7] Our study reported a slightly higher incidence of suicide among individuals residing in urban areas compared to rural areas. The findings in our study are in concordance with other studies in India such as Farooq et al [16], and Latha et al [7]. Even in the control group patients with depression without any suicidal attempt had a higher representation of the urban population. Our finding is in concordance with Mathias et al who reported similar results. [17] Mental illnesses being a stigma and more so among rural communities could be one factor that could influence our findings. It would be a difficult task to ascertain real-world data with so much of existing stigma in our society.

In our study, we found the mean duration of illness in depression with suicidal attempt patients was 5.2 ± 2.73 months which was significantly lower than the mean of depression without suicide attempt with p -value $< .001$ (Table 2). This finding is consistent with the average length of a depressed episode reported in the literature. Other than suicidal ideations, patients with severe depression also have psychomotor

retardation, which makes the consultation-seeking pattern difficult. The shorter duration of illness in patients with suicide attempt[s] group suggests that these patients presented to the healthcare settings earlier than depression without suicidal attempt patients. The mean age of onset of illness is lower in Group A than in Group B. Suicidal patients had higher HAM-D compared to the patients without suicide attempts which implies a correlation between suicidality and the severity of depression. The mean BECK'S SSI Score in depression with suicidal attempt patients was 22.58 ± 3.12 while the SBQ-R score was 10.05 ± 2.90 .

The limitations of our study include that it was a single-center study with a cross-sectional study design. Both groups (group A and group B) were patients with depression so our study lacked healthy controls. Also, there is a lack of assessment of the serum picolinic acid levels in context to different aspects of depression like melancholy, somatic symptoms, insomnia etc. Picolinic acid could be confounded by other inflammatory conditions despite having strict inclusion criteria.

CONCLUSION

This study identifies high-risk sociodemographic factors by which we can identify depressive patients at risk of suicide. Patients between 18 to 29 years of age group, male gender, married, and urban background are at high risk of suicide. We also found that patients with depression with suicide attempts present to the hospital earlier than depression without suicide attempts. That could be useful for clinicians in assessing the risk of suicide in patients with depression. The study also highlights the importance of considering the number of suicide socio-dem of suicidality. However, more research is needed to fully understand the relationship between socio-demographic factors, other clinical parameters of depressive patients and suicidal behavior. Overall, this study suggests that sociodemographic and clinical factors are promising avenues for further research and could potentially contribute to the development of new strategies for suicide prevention in patients with depression.

REFERENCES

1. Diagnostic and statistical manual of mental disorders. Arlington, VA: American Psychiatric Association; 2017.
2. GBD Results Tool | GHDx. (2021). Retrieved 9 November 2021, from <http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/d780dffbe8a381b25e1416884959e88b>
3. O'Carroll PW, Berman AL, Maris RW, Moscicki EK, Tanney BL, Silverman MM. Beyond the tower of Babel: A nomenclature for suicidology. *Suicide Life-Threat Behav.* 1996;26:237–52. [PubMed] [Google Scholar]
4. Suicide. (2021). Retrieved 9 November 2021, from <https://www.who.int/news-room/factsheets/detail/suicide>

5. National Crime Records Bureau. (2021). Accidental Deaths & Suicides in India Ministry of Home Affairs, Government of India National Highway-8, Mahipalpur, New Delhi 2021 (pp. 196-208).
6. Schmidtke A, Bille-Brahe U, DeLeo D, Kerkhof A, Bjerke T, Crepet P, et al. Attempted suicide in Europe: Rates, trends and sociodemographic characteristics of suicide attempters during the period 1989-1992. Results of the WHO/EURO Multicentre Study on Parasuicide. *Acta Psychiatr Scand.* 1996;93:327-38. [PubMed] [Google Scholar]
7. Mudgal, V., Pal, V., Rastogi, P., & Lohokare, R. (2020). A comparative study of inflammatory marker highly sensitive C- Reactive Protein in depression patients exhibiting suicidal behaviour and depression patients without suicidal behavior. *International Journal of Research in Medical Sciences*, 8(3), 1086-1093.
8. Grant RS, Coggan SE, Smythe GA. The physiological action of picolinic acid in the human brain. *International journal of tryptophan research.* 2009 Jan;2:IJTR-S2469.
9. World Health Organization. Preventing suicide: A global imperative. Geneva, Switzerland World Health Organization; 2014.
10. Latha KS, Bhat SM, D'Souza P. Suicide attempters in a general hospital unit in India: their socio-demographic and clinical profile--emphasis on cross-cultural aspects. *Acta Psychiatr Scand.* 1996 Jul;94(1):26-30. doi: 10.1111/j.1600-0447.1996.tb09820.x. PMID: 8841673.
11. Mishra K, Gupta N, Bhabulkar S. Sociodemographic profile of suicide attempters among the rural agrarian community of central India. *Industrial Psychiatry Journal.* 2015;24(2):185.
12. Radhakrishnan R, Andrade C. Suicide: An Indian perspective. *Indian Journal of Psychiatry.* 2012;54(4):304.
13. Arora M, Gupta C, Gupta R, Akhtar N, Langer B, Kumari R et al. Prevalence and correlates of depression in a rural adult population in Northwest India. *Journal of Family Medicine and Primary Care.* 2020;9(1):151.
14. Census of India: Religion [Internet]. Censusindia.gov.in. 2021 [cited 1 December 2021]. Available from: https://censusindia.gov.in/census_and_you/religion.aspx
15. Øien-Ødegaard, C., Hauge, L.J., Stene-Larsen, K. *et al.* Widening the knowledge of non-employment as a risk factor for suicide: a Norwegian register-based population study. *BMC Public Health* **23**, 1181 (2023). <https://doi.org/10.1186/s12889-023-16084-x>
16. Khan F, Anand B, Devi M, Murthy K. Psychological autopsy of suicide-a cross-sectional study. *Indian Journal of Psychiatry.* 2005;47(2):73.
17. Mathias K, Goicolea I, Kermodé M, Singh L, Shidhaye R, Sebastian M. Cross-sectional study of depression and help-seeking in Uttarakhand, North India. *BMJ Open.* 2015;5(11):e008992.