Factors influencing suicidal attempt among the agrarian community of central Maharashtra

Kshirod Kumar Mishra, Joge Vivek Prabhakar
Department of Psychiatry, MGIMS, Wardha, Maharashtra, India

Address for correspondence:
Dr. Kshirod Kumar Mishra,
Department of Psychiatry,
MGIMS, Sevagram, Wardha,
Maharashtra, India.
E-mail: kmishra@mgims.ac.in

Received: 06 May 2020
Revised: 22 June 2020
Accepted: 30 August 2020
Published: 07 November 2020

ABSTRACT

Introduction: Attempted suicides occur 8–20 times more frequently than completed suicides. Attempted suicides are just the tip of the iceberg of the completed suicides, now a universal phenomenon. Several factors such as financial constraints, altercation among family members, and easy availability of pesticides have been attributed as the common factors for attempted suicide among the rural population. Materials and Methods: On this background, we evaluated all the cases of attempted suicide admitted to our rural medical college during a period of 1 year. Details of sociodemographic profile, mode of attempt, and reason for the attempt were evaluated. All the cases were administered Beck’s Depression Inventory. Factors influencing suicidal attempts among farmers and nonfarmers were analyzed using suitable statistical methods. Results: Out of a total of 117 cases of attempted suicide, only 21% of the cases were farmers. Majority of them were males and were married. The main mode of attempt was poisoning. The common psychiatric diagnosis was adjustment disorder followed by depressive disorder. Conclusion: Although the study was conducted in a rural setup from an agrarian background, the majority of the cases were of nonfarmer. The most common mode of suicidal attempt among farmers as well as nonfarmers was pesticide ingestion owing to its easy availability among the agrarian population. Although the most common reason for attempt among the nonfarmer population was interpersonal problems, indebtedness still remains the most common reason for farmers. Attention of policymakers is drawn toward two important aspects: policy on the sale of usual pesticides and policy for the farmers to overcome loss in farming.

Keywords: Agrarian population, attempted suicide, rural India

Studies across the globe had documented that agriculture is one of the most dangerous industries and the agrarian population are subjected to several physical, biological, and chemical hazards. Those factors are further compounded by volatile market condition, limited availability of off-farm employment, growing cost of machinery, and loss in the farming due to change in the weather condition, leading to untimely crop failure.

A study carried out by Mishra and Behere and Rathod in central Maharashtra revealed that associated indebtedness deteriorating economic status, family-related stress, and

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Mishra KK, Prabhakar JV. Factors influencing suicidal attempt among the agrarian community of central Maharashtra. Ind Psychiatry J 2020;29:93-6.
crop failure were the major risk factors among the agrarian population in this region.¹⁰,¹¹

**MATERIALS AND METHODS**

We evaluated all the cases of attempted suicide admitted to our rural medical college of Wardha district of Maharashtra. During the period of 1 year (April 2018–March 2019), all the cases of attempted suicide admitted from Wardha and adjacent districts, namely, Yavatmal, Amravati, Nagpur rural, and Paratwada of central Maharashtra, were studied. After the initial recovery from the attempt, all those cases were referred for psychiatric evaluation from the medical/surgical intensive care unit and wards. After obtaining institutional ethical committee approval, all the cases were evaluated on a semi-structured pro forma after obtaining the written consent of the patient or the caregiver, when required. Details of sociodemographic profile, mode of attempt, and reasons for the attempt were evaluated. All the cases were diagnosed clinically as per the International Classification of Diseases-10 diagnostic criteria by the treating psychiatrist. They were administered Beck’s Depression Inventory (BDI). Appropriate treatment was given depending on the clinical diagnosis of the case. Factors associated with suicidal attempts among the farmer and nonfarmer group were analyzed using suitable statistical methods.

**RESULTS**

During the study period, a total of 117 cases of attempted suicide (n = 117) were referred for the psychiatric evaluation and management. Among them, only 21% of the cases were involved in farming [Graphs 1 and 2]. The mean age in the case of farmers was 42 years, whereas in nonfarmers, it was 34 years. A male preponderance was observed in the study sample (87% of farmers and 55% of nonfarmers) [Table 1]. Most of the cases in both the groups were married (62.5% of farmers and 56% of nonfarmers). Majority of the cases were living in a nuclear family setup (82.05%) [Table 1]. Consumption of pesticide and herbicide was the most common mode of attempt among farmers as well as nonfarmers (100% and 85%, respectively) [Table 2]. Interpersonal conflict among the family members was the most common reason for attempt among the nonfarmers (64%), whereas among the farmers, the most common reason was indebtedness (38%) [Table 3]. In 30% of cases, there was associated alcohol abuse. Clinical diagnosis of the cases and BDI score showed that at least one-third of the cases had depressive episodes of varied severity [Table 4].

### Table 1: Sociodemographic profile of farmers and nonfarmers

| Variables               | Farmer, n (%) | Nonfarmer, n (%) | P    |
|-------------------------|---------------|------------------|------|
| Attempters              | 24 (20.51)    | 93 (79.48)       | 0.45 (NS) |
| Mean age                | 42.37         | 34.05            |      |
| Sex                     |               |                  |      |
| Male                    | 21 (87.5)     | 52 (55.91)       | 25.40, P=0.0001 (S) |
| Female                  | 3 (12.5)      | 41 (44.08)       |      |
| Marital status          |               |                  |      |
| Married                 | 15 (62.5)     | 52 (55.91)       | 6.42, P=0.09 (NS) |
| Unmarried               | 9 (37.5)      | 35 (37.83)       |      |
| Widow                   | 1 (4.16)      | 1 (4.07)         |      |
| Divorced                | 5 (20.8)      | 5 (5.37)         |      |
| Occupation              |               |                  |      |
| Farmer                  | 24 (100)      |                  | 134.10, P=0.0001 (S) |
| Student                 | 7 (28)        |                  |      |
| Homemaker               | 18 (72)       |                  |      |
| Daily laborer           | 21 (80.7)     |                  |      |
| Others                  | 19 (76)       |                  |      |
| Never employed          | 1 (4.16)      |                  |      |
| Business                | 4 (3.3)       |                  |      |
| Family type             |               |                  |      |
| Nuclear                 | 20 (83.3)     |                  | 0.03, P=0.5 (NS) |
| Joint                   | 4 (15.6)      |                  |      |
| Religion                |               |                  |      |
| Hinduism                | 23 (95.8)     |                  | 6.82, P=0.03 (NS) |
| Islam                   | 0             |                  |      |
| Buddhism                | 1 (4.16)      |                  |      |
| Residence               |               |                  |      |
| Rural                   | 24 (100)      |                  | 31.21, P=0.0001 (S) |
| Urban                   | 0             |                  |      |
| Semi-urban              | 0             |                  |      |

NS - Nonsignificant; S - Significant

### Table 2: Mode of attempt

| Mode of attempt | Farmer, n (%) | Nonfarmer, n (%) | P    |
|-----------------|---------------|------------------|------|
| Poisoning       | 24 (100)      | 79 (84.9)        | 16.22, P=0.0001 (S) |
| Drug overdose   | 0             | 5 (5.37)         |      |
| Hanging         | 0             | 4 (4.30)         |      |
| Burning         | 0             | 5 (5.37)         |      |
| Cutting         | 0             | 2 (2.15)         |      |
| Drowning        | 0             |                  |      |

S - Significant

### Table 3: Reason for attempt

| Reason for attempt | Farmer, n (%) | Nonfarmer, n (%) | P    |
|--------------------|---------------|------------------|------|
| Loan               | 9 (37.5)      | 11 (11.82)       | 18.03, P=0.0001 (S) |
| Altercation with family | 8 (33.33) | 59 (63.44)       |      |
| Physical illness   | 3 (12.5)      | 9 (9.6)          | 0.20, P=0.65 (NS) |
| Social issues      | 4 (16.66)     | 14 (15.05)       | 0.14, P=0.69 (NS) |

NS - Nonsignificant; S - Significant
DISCUSSION

Our study was aimed at comparing the difference in sociodemographic factors, mode of attempt, reasons for attempt, and psychiatric diagnosis among the cases of attempted suicide between farmers and nonfarmers from a rural background admitted to a rural medical college of central Maharashtra following suicidal attempt.

Majority of the cases among farmers and nonfarmers were in the age range of 35–45 years (37.6%). Earlier studies have shown that attempted suicide is common among women than men.\[1\] In our study, a male preponderance was observed (88% of farmers and 56% of nonfarmers). These findings corroborate with an earlier study by Mishra et al. from the same region, where the male and female ratio was 1.4:1.\[2\] The similar sex ratio was also seen in the study done in Sikkim by Pradhan and Dhakal.\[3\] Difference in sex came out to be a significant factor in attempted suicide case by farmers and nonfarmers. This ratio is much higher than the ratio for suicides in the general population in India. One of the reasons may be that farming lands in India are mainly on the name of males, and females though involved in farming are not considered farmers as they do not have farmlands on their name.\[4\]

In Indian studies, a considerable number of attempters in our study had life events related to relationships and marriage. Similar results are shared by the multinational study by Fleischmann et al., in which majority of the participants from Indian centers were married than being single.\[5\] Low level of education as a risk factor for attempted suicide was projected in a study done by Srivastava et al.\[6\] This finding can be corroborated with the finding of our study where majority of the attempters were educated up to 10th standard.

The most common mode of attempt in our study was consumption of pesticides. It can be attributed to easy availability of the pesticide among the agrarian community of rural India. This finding corroborates with the previous studies done in rural India.\[2,3,6,7\]

A common reason for attempt among farmers was indebtedness (38%), followed by interpersonal problems within family members (33%). The primary cause of attempt among farmers includes financial constraints, whereas among the nonfarmers, indebtedness as a cause was only seen in 12% of the cases. Earlier studies done in this region of the country had shown that farmers had lower annual income due to crop failure, forcing them to sale their livestock to repay the loan amount and toward their day-to-day living.\[5\]

A variation in the frequency of the psychiatric disorders is seen among the suicide attempters in Indian studies; diagnosis of depression remained the most common one.\[6-13\] In our study, 33% of the nonfarmers and 25% of farmers had depression of different severity level on clinical evaluation. In the present study, only two-third of the cases in the nonfarmer group had a psychiatric diagnosis, whereas the majority of the farmers had a clinically diagnosable psychiatric condition. This can be due to the fact that farmers in general have more psychological morbidity than that of the general population as they face the compounding effects of physical stressors, environmental changes, economic challenges, and lack of differentiation between personal and professional life with no customary age of retirement culminating in psychological distress.\[14\]
CONCLUSION

This is one of the premium studies carried out in a rural setup among the agrarian population to find out the factorial difference among farmers and nonfarmers in cases of attempted suicide. The most common mode of suicidal attempt among the agrarian population still remains pesticide consumption due to its easy availability, though the common reason for attempt among the nonfarming group was interpersonal problems; among the farmers, it was indebtedness. Suicide and attempted suicides depend on multiple factors, namely, premorbid personality of the individual, coping skill, social support system, and stressful life events. Attention of policymakers is drawn into those modifiable factors to mitigate the number of suicides among the rural agrarian population and more specifically among the farmers.

Limitations

This study is a hospital-based study. It may not provide a true picture of the community.

Acknowledgment

We are thankful to all participants and their caregivers for giving their consent for the study.

Financial support and sponsorship
Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Isaac M. Social psychiatry in India; more relevant today than never before? Indian J Soc Psychiatry 2012;28:10-4.
2. Chowdhury AN, Banerjee S, Brahma A, Biswas MK. Pesticide poisoning in nonfatal deliberate self-harm: A public health issue: Study from Sundarban delta, India. Indian J Psychiatry 2007;49:262-6.
3. Behere PB, Rathod M. Report on Farmers’ Suicide in Vidarbha, Wardha: Report Submitted to Collectorate; 2006.
4. Fraser CE, Smith KB, Judd F, Humphreys JS, Fragar LJ. A farming and mental health problems and mental illness. Int J Soc Psychiatry 2005;51:340-9.
5. Mishra S. Suicide of farmers in Maharashtra State: Report submitted to Government of Maharashtra State. Mumbai: Indira Gandhi Institute for Development Research; 2006.
6. Mishra KK, Gupta N, Bhabulkar S. Sociodemographic profile of suicide attempts among the rural agrarian community of central India. Ind Psychiatry J 2015;24:185-8.
7. Pradhan CL, Dhakal MM. Profile of risk factors related to attempted suicide in Sikkim, India. Ind Priv Psychiatry J 2015;34:41.
8. Fleischmann A, Bertolote JM, De Leo D, Botega N, Phillips M, Sisask M, et al. Characteristics of attempted suicides seen in emergency-care settings of general hospitals in eight low-and middle-income countries. Psychol Med 2005;35:1467-74.
9. Srivastava MK, Sahoo RN, Ghotekar LH, Dutta S, Danabalan M, Dutta TK, et al. Risk factors associated with attempted suicide: A case control study. Indian J Psychiatry 2004;46:33-8.
10. Bhatia MS, Aggarwal NK, Aggarwal BB. Psychosocial profile of suicide ideators, attempters and completers in India. Int J Soc Psychiatry 2000;46:155-63.
11. Siwach SB, Gupta A. The profile of acute poisonings in Harayana-Rohtak Study. J Assoc Physicians India 1995;43:756-9.
12. Kar N, Khatavkar P. Risk factors associated with suicidal behaviour in depressed patients. Orissa J Psychiatry 2005;14:38-4.
13. Narang RL, Mishra BP, Mohan N. Attempted suicides in Ludhiana. Indian J Psychiatry 2002;41:82-7.
14. Behere PB, Bhise MC. Farmers’ suicide: Across culture. Indian J Psychiatry 2009;51:242-3.