



# Suicide in India

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## Abstract

**Sources of data:** The current report reviews the data from the series Accidental Death and Suicide in India published by India's National Crime Records Bureau (NCRB) reporting official suicide rates based on police reports over the period of 10 years from 2004 to 2013. A reference to wider literature is made to present a comprehensive picture.

**Areas of agreement:** Suicide in India is more prevalent in young, is likely to involve hanging and ingestion of pesticides and is related to social and economic causes. Reducing alcohol consumption, unemployment, poverty, social inequities, domestic violence and improving social justice are essential to reduce suicide in India.

**Areas of controversy:** NCRB data might underreport suicide. Discrepancy in farmers' suicide rate between reports suggests that this might be overrepresented in NCRB data.

**Growing points:** An integrated suicide prevention programme with a multi-dimensional approach is needed. Mental health care bill and the recent launch of first national mental health policy are welcome measures. Decriminalization of suicide is likely to positively influence mental health practice and policy in India.

**Area timely for developing research:** Nationally representative studies investigating fatal and non-fatal suicidal behaviours, evaluation of models of service delivery for the vulnerable population, investigating suicide following different treatment services and effects of decriminalization of suicide on suicide rates should be the focus of future research.

**Key words:** suicide, India, young

## Introduction

The current article critically reviews the data from the series Accidental Death and Suicide in India published by India's National Crime Records Bureau (NCRB) reporting official suicide rates based on police reports over the period of 10 years from 2004 to 2013.<sup>1</sup> The use of official statistics was made in this review because it is nationally representative and the only systematic source of data on suicides in India. It should be noted that a number of authors believe this data must be viewed with circumspection.<sup>2,3</sup> The comparison with the other reports suggests that NCRB data could be underreporting suicide possibly due to suicide being a crime in India till recently.<sup>4</sup> Thus, a reference to the wider literature in the form of available reviews (systematic and scoping) and published report on the nationally representative mortality survey (NRMS) conducted by the Registrar General of India between 2001 and 2003 (million death study), with an application of age-specific and sex-specific proportion of suicide deaths in this survey to the 2010 UN estimates of absolute numbers of deaths in India to estimate the number of suicide deaths in 2010,<sup>4</sup> is made where appropriate. While comprehensive, this review is not intended to be exhaustive.

## Prevalence

The NCRB report suggests that more than one hundred thousand people (1 34 799) in the country lost their lives by committing suicide during the year 2013 making the suicide rate (number of suicides per hundred thousand population) 11%.<sup>1</sup> This makes for an increase in suicide rate of 5.7% over the period of 2004–13 for a simultaneous increase of 15% in the population during the same period. The rates of suicide in this decade have shown a mixed trend. It dropped from 2002 to 2003 and then increased from 2005 to 2010 with a subsequent drop again in 2011 and remained static in 2012.

These numbers could be an underestimation of at least 25% in men and 36% in women as suggested by NRMS.<sup>4</sup> Their estimate of the number of suicides in individuals aged 15 years or older for the year

2010 of 1 87 000 is significantly higher than 1 31 469 recorded by NCRB for the same age group in the same year. According to a recent scoping review of suicide in South Asian Countries,<sup>5</sup> the non-pooled mean rate of suicide in India is 28.8 (standard deviation = 32.17). There could be a range of religious, legal and cultural factors affecting the willingness to report a death as a suicide and contributing to the underreporting and misclassification of suicides by NCRB.<sup>6</sup> However, the consistent findings from these reports and reviews are the high suicide rates in India and higher age-standardized mortality rates in both women and men aged 15 years or older when compared with high-income countries.<sup>7</sup> It was more than double when compared against the rates from high-income countries in women over 15 years according to NCRB report in 2010<sup>1</sup> and was almost two and a half times during the same year, according to NRMS.<sup>4</sup>

## Age and gender effect

The time trends using NCRB data over the period of 10 years from 2004 to 2013 show that the maximum suicide deaths have consistently occurred in 15–29 years age group for women and 30–44 years age group for men (Fig. 1). Even though the median age of suicide for men has remained higher when compared with women over the 10-year period [women 25 years, interquartile range (IQR) 20–36; men 34 years, IQR 20–36],<sup>4</sup> the difference in the suicide rates between the 15–29 and 30–44 years age range in men has been marginal, making the overall (both genders together) total rates of suicide highest in 15–29 years old. A lower median age of suicide in women shows higher prevalence of suicide in younger females. The overall male:female (M:F) ratio of suicide victims over the 10-year period has shown an increase from 1.8 to 2.<sup>1</sup> This is different from European countries and the United States where the male suicides far outnumber female suicides (M:F = 3:1–4:1).<sup>8</sup> However, the gender ratio in India is similar to other Asian countries where it is much lower, e.g. in China, the ratio falls below 1:1.<sup>9</sup> The higher rates of female suicide in Asian countries may be linked to the position of women in the traditionally patriarchal

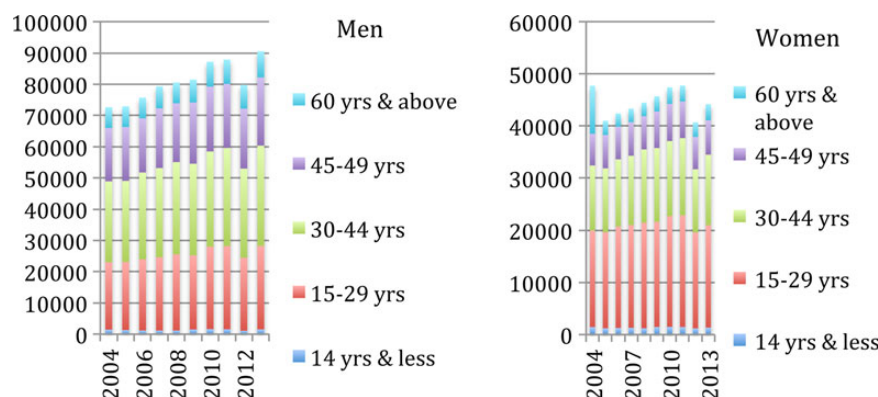


Fig. 1 Suicide in men and women between 2004 and 2013.

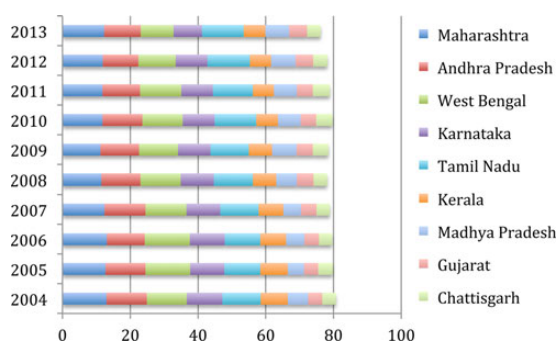


Fig. 2 Percentage share of suicide between states from 2004 to 2013, NCRB.

societies of Asia as noted in Strategies to Prevent Suicide (STOPS) project in Asia of Suicide Prevention International (SPI).<sup>6</sup> The self-esteem, self-image and the worth and identity of women are dependent upon the male members in many of these patriarchal societies. Additionally, the family, social and work pressures result in a significant impact on women's mental health.<sup>10</sup>

## Geographical variation

On analysis of the data from NCRB, it is evident that around 80% of suicides occur in 9 states out of 29 states in India, and this figure has remained almost static over the period of 2004–13 (Fig. 2). There are some differences in state-wide distribution assessment of suicides between NCRB and NRMS.<sup>1,4</sup> However, the findings of states recording the highest rates of suicide are consistent. As seen in the time

trends established from the annual reports published by NCRB between 2004 and 2013 (Fig. 2), cumulative rates in Tamil Nadu, West Bengal, Andhra Pradesh, Maharashtra and Karnataka make for over 50% of suicides (from 58.5% in 2004 to 55% in 2013) consistently over the 10-year period. In NRMS, around 40% of suicidal deaths in the country (42% of suicide deaths in men and 40% of suicide deaths in women) occurred in the four states Tamil Nadu, Andhra Pradesh, Karnataka and Kerala with additional 15% in West Bengal and Maharashtra, in 2010.<sup>4</sup> This is a slightly conservative estimate when compared with NCRB report of 63.6% suicides occurring in the aforementioned six states in the year 2010. One of the key findings of NRMS was the association of residency in Southern states with higher risk of suicide.<sup>4</sup>

The studies from Southern states confirm this geographical variation.<sup>11</sup> These studies show that the most common contributors to suicide in Southern states are a combination of social problems, such as interpersonal and family problems, financial difficulties and pre-existing mental illness.<sup>12–14</sup> The prevalent suicidal thinking or planning, social acceptance of suicide as a method to deal with difficulties and ready access to highly lethal pesticides could partly explain high rates of suicide in these states.<sup>15</sup>

## Causes of suicide

According to the NCRB report of the 2004–13 period (Fig. 3), it is observed that social and economic causes

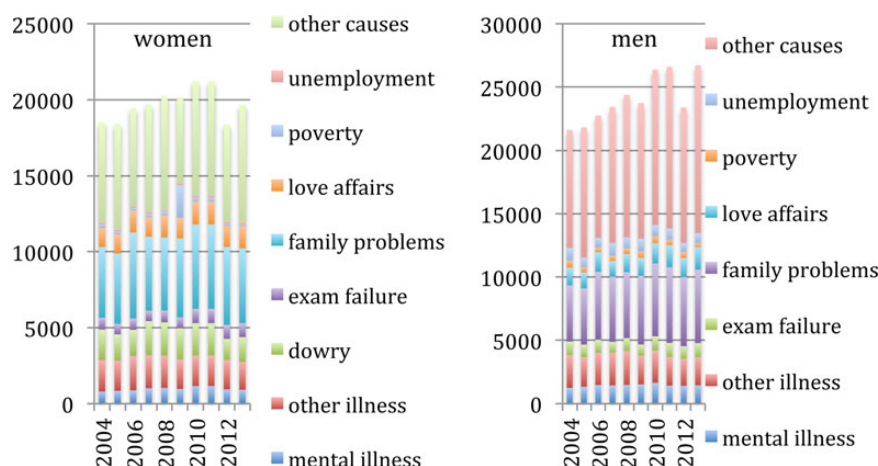


Fig. 3 Causes of suicide in 15–29 years old men and women between 2004 and 2013.

have led most of the males to commit suicide, whereas emotional and personal causes have mainly driven females to end their lives.<sup>1</sup> This is consistent with a recent systematic review of suicide studies in India showing that depression plays a less dominant role in suicide in India.<sup>16</sup> Even though alcohol use and alcohol dependence was found to be one of the risk factors in this review, the strength of this association was far less than reported between mental illness and suicide in developed countries.<sup>17,18</sup> The reports from psychological autopsy studies conducted in developed countries suggest that psychiatric disorders are present in about 90% of people who die by suicide and that these conditions contribute to 47–74% of the population attributable to the risk of suicide.<sup>17,18</sup> More than half of those who commit suicide in developed countries meet diagnostic criteria for an affective disorder at the time of committing the act.<sup>16,18,19</sup>

The findings of NCRB report is similar to the findings from STOPS project of social factors being more salient as risk and protective factors for suicide in India than they are in Europe or the USA.<sup>6</sup> Another matched case-control study from rural South India found psychosocial stress and social isolation to be the major causes of suicide.<sup>12</sup> In this study, psychiatric morbidity was present in 37% of completed suicide, and alcohol dependence (16%) and adjustment disorders (15%) were the most prevalent psychiatric diagnosis.<sup>12</sup> Social drinking is not a way of life in India,

and alcoholism (including alcohol dependence and abuse) has consistently been established as one of the risk factors for suicide in India.<sup>13,20</sup> The other risk factors as identified by other studies include interpersonal and marital conflicts,<sup>20,21</sup> financial problems,<sup>20</sup> poverty,<sup>22</sup> lack of social justice,<sup>22</sup> social inequities,<sup>22</sup> domestic violence<sup>20</sup> and unemployment.<sup>20</sup> These findings have several healthcare- and policy-related implications. They highlight the need for any effective suicide prevention programme to be multidimensional and address the economic, social, cultural and interpersonal factors contributing to the picture.

## Method of suicide

The time trends according to NCRB reports over the 10-year period from 2004 to 2013 show that poisoning as a method of suicide in males and females of 15–29 years has gone down with hanging becoming the preferred method (Figs. 4 and 5). This finding is similar to the finding of a recent systematic review of suicide in India of 36 studies that found hanging as the most frequently reported method of suicide (10–72% of all suicides) followed by self-poisoning (16–49%), drowning (3–39%) and burning or self-immolation (6–57%).<sup>21</sup> In NRMS, poisoning mostly from pesticides used in agriculture was found to be the leading cause of death followed by hanging in both 15 years and older men and women.<sup>4</sup> According to this

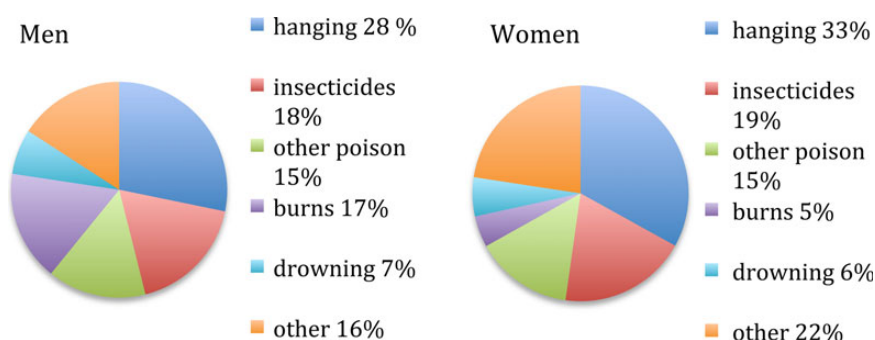


Fig. 4 Methods of suicide in men and women aged 15 years and older (2010), NCRB.

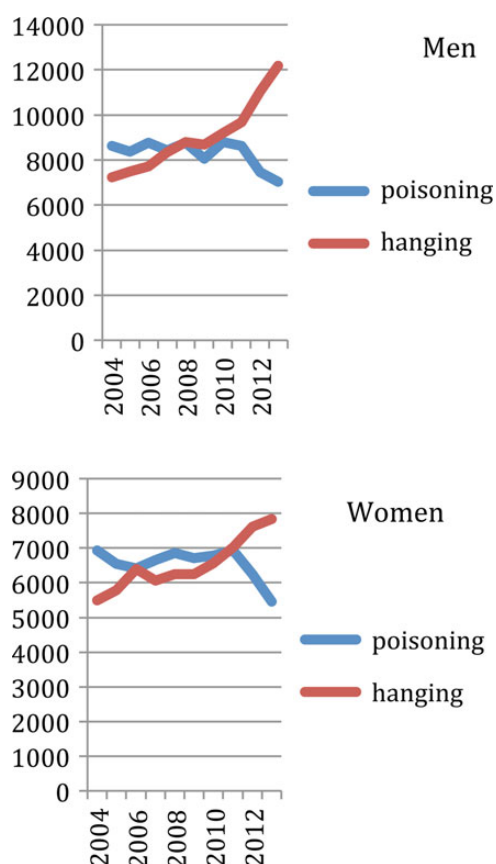


Fig. 5 Time trends in poisoning and hanging in 15–29 years old men and women.

study, self-immolation resulted in almost one-sixth of all female suicides.<sup>4</sup> The high rates of suicide by self-immolation in India could be due to the ease of this method as well as also reflect the cultural connotation of fire as it plays an important part in Hindu rituals

and may symbolize a protest against injustices in life.<sup>23</sup> These findings are important for devising any suicide prevention programme. In addition to restricting access to means, that is one of the effective suicide prevention strategies,<sup>24</sup> sociocultural interventions that empower women are crucial for the success of any such programmes.

One of the ways in which restricting access can reduce the number of deaths caused by suicide is by decreasing self-harming behaviour particularly among those who engage in impulsive, low-intent acts.<sup>24</sup> In an innovative effort to examine the reduction in rates of suicide by reducing the means of suicide (reduced access to pesticides in this case), Vijayakumar *et al.* succeeded in testing the feasibility of a centralized pesticide storage facility as well as its usefulness in reducing pesticide suicides in a southern state in India.<sup>25</sup> However, long-term monitoring systems to test the effectiveness of such measures, evaluation of degree of substitution of restricted methods by other methods of suicide and evaluation of the feasibility and acceptance of the restriction steps are required before such measures can be implemented at national level.

## Suicide and occupation

The NCRB data shows that housewives consistently form the largest group of suicide victims (around 18%) of total persons committing suicides and for over 50% of the total female victims.<sup>1</sup> There are no data available from NCRB to make comparisons between the rates of suicide amongst housewives and

employed women. The statistics from 2011 census shows that females make for 48.27% of total population of India,<sup>26</sup> and the workforce participation rate for females at the national level is 25.51%.<sup>26</sup> Therefore, the higher total number of suicides in housewives does not imply that being a housewife is a risk factor for suicide, as a vast majority of women in India are not employed. However, employment can offer various benefits like bringing interest and fulfilment, structure and sense of control as well as income, social status and social contacts,<sup>10</sup> that could improve mental health and psychological well-being in women in Indian sociocultural context.<sup>10</sup>

Those involved in farming and agriculture form the next largest group, comprising around 11% of the total victims followed by those working in the public and private sectors, and unemployed. Farmers' suicide in India has been a sensitive issue for the policy makers and public health researchers alike. There have been a significant number of media and government reports, ethnographies and case studies suggesting that the liberalization of the Indian economy in the early 1990s resulted in an 'agrarian crisis' and an increase in farmers' suicides. However, NMRS providing the first accurate estimates of deaths from suicide in India from 1.1 million households,<sup>4</sup> found no significant difference between suicides in agricultural workers, non-workers and others (salaried, professional and other jobs) (30, 33 and 38%, respectively). Kennedy and Kind critiqued these findings and suggested that it might not be a true representation of farmer's suicide as it overlooks the qualitative evidence.<sup>27</sup> Interestingly, this report concluded that the differences in the structure of agricultural production could explain interstate variation in suicide rates in India with a policy implication of reduction in suicide rates, if the proportion of marginal farmers, cash crops or indebted farmers is reduced.

## Suicide and law

Till recently, suicide was a criminal offence in India. Recent overturning of Section 309 by the Indian Government, and thus decriminalization of suicide, is a welcome step in the direction of a pragmatic

and compassionate approach to suicide. The stated reason for criminalization of this behaviour was the belief that law can act as a deterrent against other such attempts in the society.<sup>28</sup> The evidence is mixed in this context. A comparison of suicide rates in Canada in the 10-year period before and after decriminalization of suicide found no increase in the rate of suicide following decriminalization, while the suicide rates in seven countries (Canada, England and Wales, Finland, Hong Kong, Ireland, New Zealand and Sweden) 5 years prior and 5 years following decriminalization noted an increase in the suicide rates after decriminalization of suicide.<sup>29,30</sup> This increase in suicide rates can possibly be explained due to better reporting of such attempts as earlier they could have been reported as accidents to prevent legal hassles.

The change in policy in India followed a recommendation from the Indian Law Commission in 2008. This report mandated that people attempting suicide would be presumed to be suffering from mental illness and thus not liable for punishment. However, according to WHO data only about 60% of people who die by suicide in India suffer from a mental illness, when compared with up to 90% of those in high-income countries.<sup>31</sup> Thus, beyond improvement of mental health services, other factors contributing to suicide—the widespread availability of lethal organophosphates and consumption of alcohol, and social determinants such as unemployment, poverty, domestic violence, social inequities and lack of mental health awareness—must be addressed. The decriminalization of suicide is likely to positively influence mental health practice in India. The anticipated changes include accurate reporting and recording of suicide as a cause of death, reduction in stigma associated with suicidal behaviour and use of these figures to inform suicide prevention strategies.

The first National Mental Health Policy was recently launched in India. The policy assesses the existing mental health care and lays down guidelines for future mental health care in India. One of the recommendations of the policy was decriminalizing suicide, and it has been achieved. Another step in the direction of better mental health care in India is the Mental Health Care Bill. The parliamentary standing



committee in India has already cleared the Mental Health Care Bill 2013. However, the psychiatry fraternity in the country has voiced multiple concerns about the utility of this bill, its feasibility in Indian setting, its implications and the counter-productive provisions it contains.<sup>32</sup>

## Prevention programmes

The current high rates of suicide in India highlight an urgent need for a coordinated national suicide prevention plan that will raise awareness and help make suicide prevention a national priority. A comprehensive approach across country at community, regional and national levels including all the stakeholders such as departments of health and education, social welfare, police and the judiciary is required. A recent review of studies reporting suicide intervention programmes in Asia presents a dismal picture of intervention programmes in India.<sup>33</sup> One of the observations of this review was a high demand for prevention efforts, but lack of resources and scarcity of available programmes in populous countries like India.<sup>33</sup> The only study from India included in this review was SUicide-PREvention Multisite Intervention Study on Suicidal behaviours (SUPRE-MISS), launched by WHO in 2000. This study was aimed at increasing the knowledge about suicidal behaviours and the effectiveness of brief interventions for suicide attempters in culturally diverse places around the world.<sup>34</sup> The effectiveness of brief intervention and contact (BIC) in reducing the rates of subsequent repetition of suicide attempts in low- and middle-income countries (up to 18 months after discharge from the emergency setting) could not be conclusively demonstrated by this study.<sup>34</sup>

India is also a participant in STOPS project that attempts to understand the relationship of a range of socioeconomic, cultural and religious factors with patterns of and responses to suicide in the Asian countries.<sup>6</sup> These factors play a more salient role as risk and protective factors for suicide than they do in Europe or the USA.<sup>6</sup> The findings of this project will be used to develop and undertake high-priority projects that are likely to make a difference in participating nations.

## Conclusion

Suicide is an important public health problem in India. Compared with the pattern of suicide in high-income countries, suicide in India is more prevalent in women (particularly young women), is much more likely to involve hanging and ingestion of poison and is more closely associated with social causes and less closely associated with mental illness. Its prevention needs a multidimensional approach with a careful assessment and addressing of social factors contributing to the problem. Reducing alcohol consumption, unemployment, poverty, domestic violence, improving social justice and reducing social inequities are essential to reduce the suicide rates in India. Recent decriminalization of suicide is a step forward and is likely to positively influence mental health practice and policy in India. The anticipated changes as a result of this policy shift include: accurate reporting and recording of suicide as a cause of death, reduction in stigma associated with suicidal behaviour and use of these figures to inform suicide prevention strategies. The future research should focus on nationally representative studies investigating fatal and non-fatal suicidal behaviours, models of service delivery for the vulnerable population and investigating suicide following different treatment services. Additionally, effects of policy changes such as the recent decriminalization of the suicide should be studied over a period of time.

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