

Suicide research in India: An overview of four decades

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ABSTRACT

Background: Suicide is a global phenomenon and a major public health concern and 'it is possibly preventable if it is well understood'.

Aim: The article is an attempt to understand 'suicide in India' with the existing literature and the lacuna for the four decades.

Methods: The information is collected from 270 articles on suicide research in India, published in various electronic data bases and different official sites as surprisingly the nation is with highest suicide mortality rate among all regional countries.

Results: The review shows an increase in the number of articles on suicide in India over the period of time. Though the suicide mortality rate in India is significantly high, the number of intervention studies remains very minimal. India's understanding about 'the concept' remains questionable as the data from different sources for the same time period shows a huge disparity. Sex, age, socio-economic status, substance abuse, mental illness, medical illness, psychological and environmental stressors etc make individuals vulnerable to end their lives.

Conclusion: Appropriate official documentation and more qualitative studies would help in understanding the phenomena better. Intervention studies and policy level changes are the need of the hour to save the nation from the dangerous 'iceberg of suicide'.

1. Introduction

Suicide is a global phenomenon and the problem of high suicide rate has been shifted from Western Europe to Asia in recent years (Ali Mohammad Mokhtari, 2019), nowadays it is a major public health concern in Asian countries (Rajiv Tandon, 2018). Among all South East Asia regional countries, India has the highest suicide mortality rate and it is 16.3 per 1, 00,000 population, with regional average of 13.2 (Fig. 1) and global average of 10.6. The net cost of suicide is 149,313.9 trillion (Sarma, 2018). As per National Mental Health Survey- 2016, treatment gap for suicidal risk behaviour is > 80 % in India (NMHS, 2016).

To fill the treatment gap for suicide existing in the country, there is a need to understand phenomena better and take further steps based on available knowledge in terms of future research, interventions and policy level changes. Considering the same, the article is an attempt to bring 'suicide research in India' for four decades on a single platform.

2. Methodology

The article is based on existing literature in the field of 'suicide in India', for the duration of last four decades, from 1979 to 2019. A total of 270 articles collected from electronic data base such as PubMed, EBSCO, Ovid and ProQuest using appropriate search terms, included combination of following key words; suicide, suicidal ideas, suicidal thoughts, death wishes, suicidal intent, suicide attempt, suicide survivors, deliberate self-harm etc. Articles those were already found out from PubMed (advanced search) were excluded in ProQuest, Ovid and EBSCO search. All studies in the spectrum of 'suicide' with full text, abstracts are included in the study. Articles contains various dimensions as follows: age, sex, adolescents, young adults, elderly, farmer, religion, geographical area, immigrants, cultural and dynamic approach, suicide rate, risk factors, pattern of suicide, suicide notes, medical illness, pregnancy period, mental illness, forensic, hospital-based studies, prevention, intervention, mental health services, cost etc. Information is collected from other reliable sources such as WHO, NCRB, NMHS, NIMH as well (Fig. 2).

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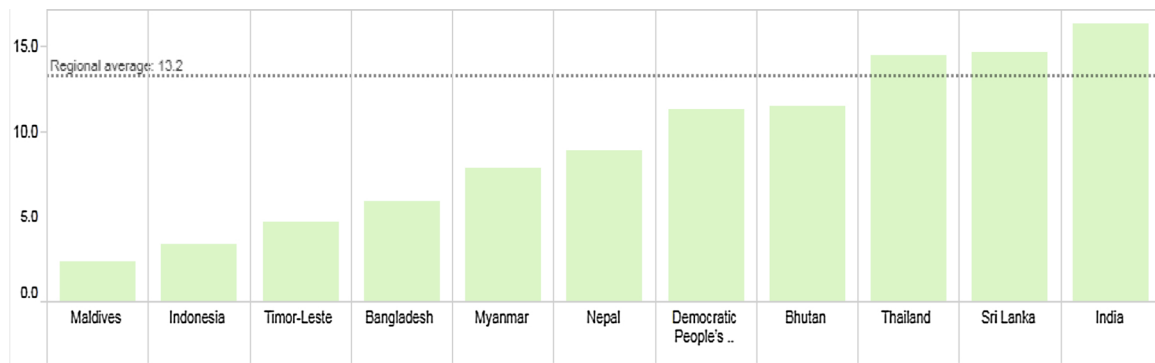


Fig. 1. Regional Suicide Rate (Distribution by country in selected WHO regions - adapted WHO, 2018).

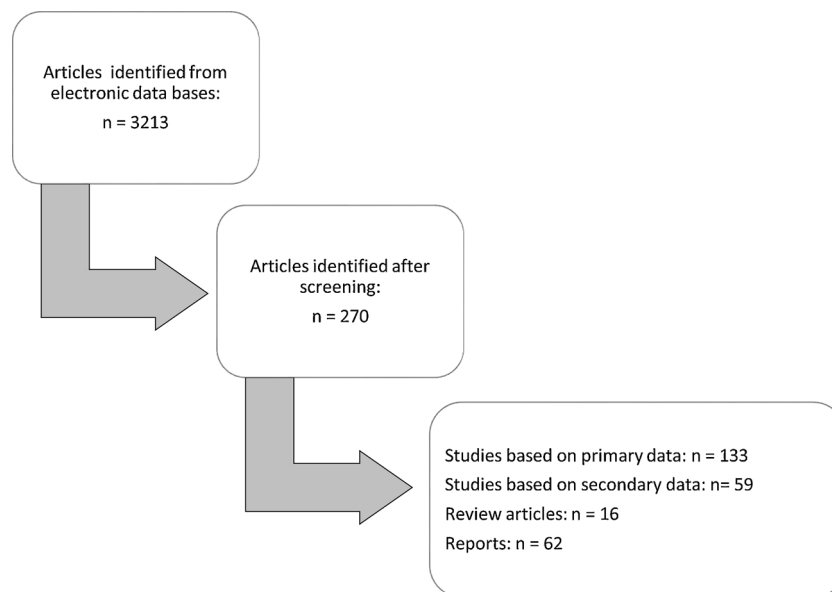


Fig. 2. Data selection process.

Data cross-checked multiple times to reduce the process bias. Articles were collected, sorted out and analysed by first and second authors, and cross checked by other authors who are experts in the field to reduce the researcher bias. Author followed 'narrative review', where the data can be organised in chronological order, with summary of research or presented in 'conceptual frame work' (Bart and Green, 2006; Ferrari, 2015).

3. Results

3.1. Epidemiological Factors

An individual's high and moderate risk of suicide is 0.9 % and 0.7 % respectively and suicide risk is more in the age group of 40–49 (NMHS, 2016). Deliberate Self Harm (DSH) may or may not lead to suicide but the children with DSH are more vulnerable. A study in 2016, revealed school going children of 8.73 (male) and 8.83 (female) years old had DSH (Tomar, 2016), which indicates boys develop the vulnerability early. Suicide rate among adolescents is high and the help seeking behaviour of adolescence has also been shown to be inadequate (C.T. Sudir Kumar, 2000).

According to WHO data, age standardized suicide rate in India is 16.4/100,000 for women and 25.8 for men (WHO, 2012). The suicide death rate in women is > 2 times higher in India than the global average (Dandona, 2018), shows the magnitude of the issue. Female suicide rate is high in Kerala, Chhattisgarh and Gujarat (NMHS, 2016).

A study on Indian suicide and marriage stated that males commit suicide regardless of their marriage (Peter Mayer, 2002). And Gender-based victimization is a major risk factor for the suicidal behaviour among transgender persons (Virupaksha and D. M., 2016).

As per National Mental Health Survey, seven states reported suicide rates higher than the national average as follows: Assam (11.1), Madhya Pradesh (11.9), West Bengal (15.5), Chhattisgarh, Gujarat and Kerala (22.4) and Tamil Nadu (23.4) (NMHS, 2016).

In 2010 Lancet article reported 187,000 suicides in India and the data of Government of India reported 134,600 suicides for the same year (Patel et al., 2012; Government of India, 2012), this discrepancy in data clearly shows the magnitude of the issue is not well studied and there is a long way to go to understand the phenomena.

3.2. Risk Factors

The risk factors of suicide are following as per the studies conducted for the last four decades: self-harm (Kiran Jakhara, 2017), personality traits of aggression and impulsivity (Piyoosh Kumar Singh, 2018) especially borderline, antisocial or narcissistic personality, substance abuse (Reddy, 2010), mental illness (L.Vijayakumar, 1999; Kar, 2010), anxiety (Ghosh, 2015), reaction to stress (Halder and A. M., 2016), depression in primary relatives (Shivani Pasia, 2015), gender differences and association to sex, violence (Lasrado, 2018), marital problems, financial difficulties, perceived humiliations (Sahoo and H. B., 2016), family disputes (Sandeep Grover, 2015), parental death by

suicide (O Gureje1, 2011), housing insecurity, being married (Kermode, 2014), chronic pain, living alone, break in a steady relationship (Manoranjitham and A. P., 2010), absenteeism in school or college, premarital sex, physical and sexual abuse, independent decision making (Aravind Pillai, 2009), etc.

Farmer suicide covers a large portion of Indian literature on suicide with review articles, case control, verbal autopsy etc and consider following as the risk factors associated with farmer suicide in India : slow output growth, deficient demand, and high unemployment (Das, 2017), noninstitutional credit sources (Merriott, 2016), addiction, apathy from the end of government, poor irrigation, increased cost of cultivation, and use of chemical fertilizers (Behere and M. C., 2009), financial constraints, crop failure, mental and physical illness, stress, interpersonal issues and marriage of female members in the family (Bhise and B. P., 2016). The study conducted by Manik Changoji Bhise and colleagues gives an insight in to the life of survivors: female survivors, spouse and parents of suicide victims have a high risk of distress, generally expressed by depressive and somatic symptoms (Manik Changoji Bhise, 2016).

3.3. Protective Factors

Recent studies mentioned positive life events, good education and social support (suresh and Kumar, 2013), motherhood - having a child < 2-year-old (Vijayakumar, 2015), spirituality in phenomenological terms (Larissa Portnoff, 2017), and the ability to regulate

telephone service (Priyavadan Chandrakant Shastri, 2010) are other possibilities.

In the prevention and management of suicide, the account of suicide attempt survivors (individuals who attempted suicide) matters a lot. In a study conducted in south India, 80 % of suicide attempters felt that their suicide attempt could have been prevented. 64 % and 16 % of them perceived that family and society could have helped them respectively (Dushad Ram, 2012). Farmers of Vidarbha region in Maharashtra reported self-reliance and capacity building, support system, counselling services, village level transparent system for relief packages could be the possible solutions to prevent farmer suicide (Amol and Dongre, 2012).

3.6. Existing literature and the LACUNA

Our data constitutes 270 articles on suicide for four decades (1979–2019), with the number of articles varies from 0 to 38 in each year. Though there is inconsistency in the number articles per year, over all there is a gradual increase in suicide related studies over the period of time (see Fig. 3). Most of the studies are from South India especially from Karnataka (N = 43), located mainly in Bangalore (N = 14) and Mysore (N = 10). Tamil Nadu and Maharashtra positioned second and third respectively in the number of studies on suicide with Chennai in Tamil Nadu and Mumbai in Maharashtra in lead. The states and union territories with research on suicide conducted India for the last four decades are given in Fig. 4.

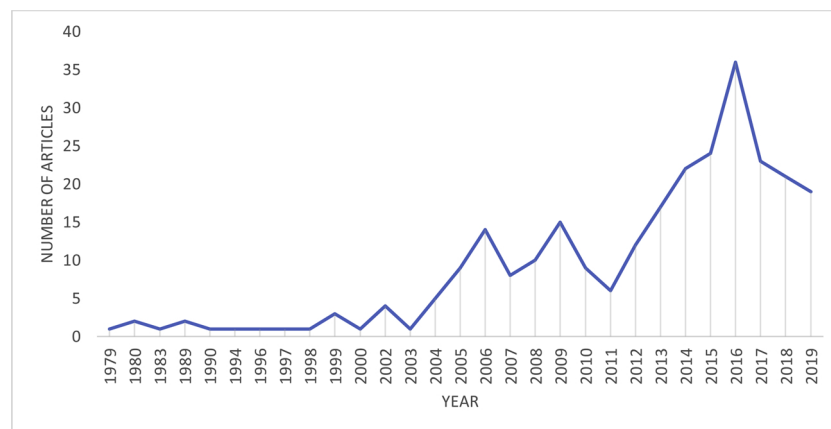


Fig. 3. Number of studies on suicide in India per year (1979–2019) (Years without studies are excluded).

emotions can serve as protective factors against suicide (Singh, 2018a).

3.4. Dynamics identified from suicide notes

Apology/ shame/ guilt, instruction on practical concerns, problems in love affair and financial constraints were the major content of suicide notes (Namratha and M. K., 2015; Manjeet and Bhatia, 2006). Manjet S Bhatia noted in a study that a last wish had been mentioned in some of the suicide notes (Manjeet and Bhatia, 2006).

3.5. Prevention and Management

Over the period of time different authors have mentioned different strategies to prevent and manage the crisis. Establishment of 'Crisis Centre' or 'suicide prevention centre' in the major cities of India is one among them (Priyavadan Chandrakant Shastri, 2010). Population based approaches that focus on improving public health (K.S.Jacob, 2008), a suicide prevention programme with multidimensional approach and different professionals such as general practitioners, paediatricians, school teachers and school counsellors (Jena and T. S., 2004) and 24 h

Million death study (MDS)* covered the entire Nation and NMHS** covered the following 12 states: Assam, Manipur Punjab, Uttar Pradesh, Jharkhand, West Bengal, Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Tamil Nadu and Kerala.

* MDS - one of the largest studies on premature mortality across the globe.

** NMHS – National Mental Health Survey 2015 – 2016

Most of the studies are cross sectional and there are review articles focusing different areas of suicide such as: climate change and agricultural suicides (Kamal Kumar Muraria, 2018), psychological review of suicide stories of celebrities (Nandini and n. c., 2018), law, medicine and hijra suicides (Rao, 2017), epidemiological patterns and implications (Starlin Vijay Mythri, 2016), public health and interventions (Jacob, 2016), factors associated with the farmer suicide (Dominic Merriott, 2017), diabetes mellitus and suicide (Siddharth Sarkar, 2014), suicide in India in general (Anil Rane, 2014), suicide and pregnancy (Daniela and Fuhr, 2014), child and adolescent psychiatry and suicide (Priyavadan Chandrakant Shastri, 2010), non-fatal suicidal behaviours in adolescents (Jena and T. S., 2004) etc.

Nandi and colleagues conducted first intervention study in 1979, in

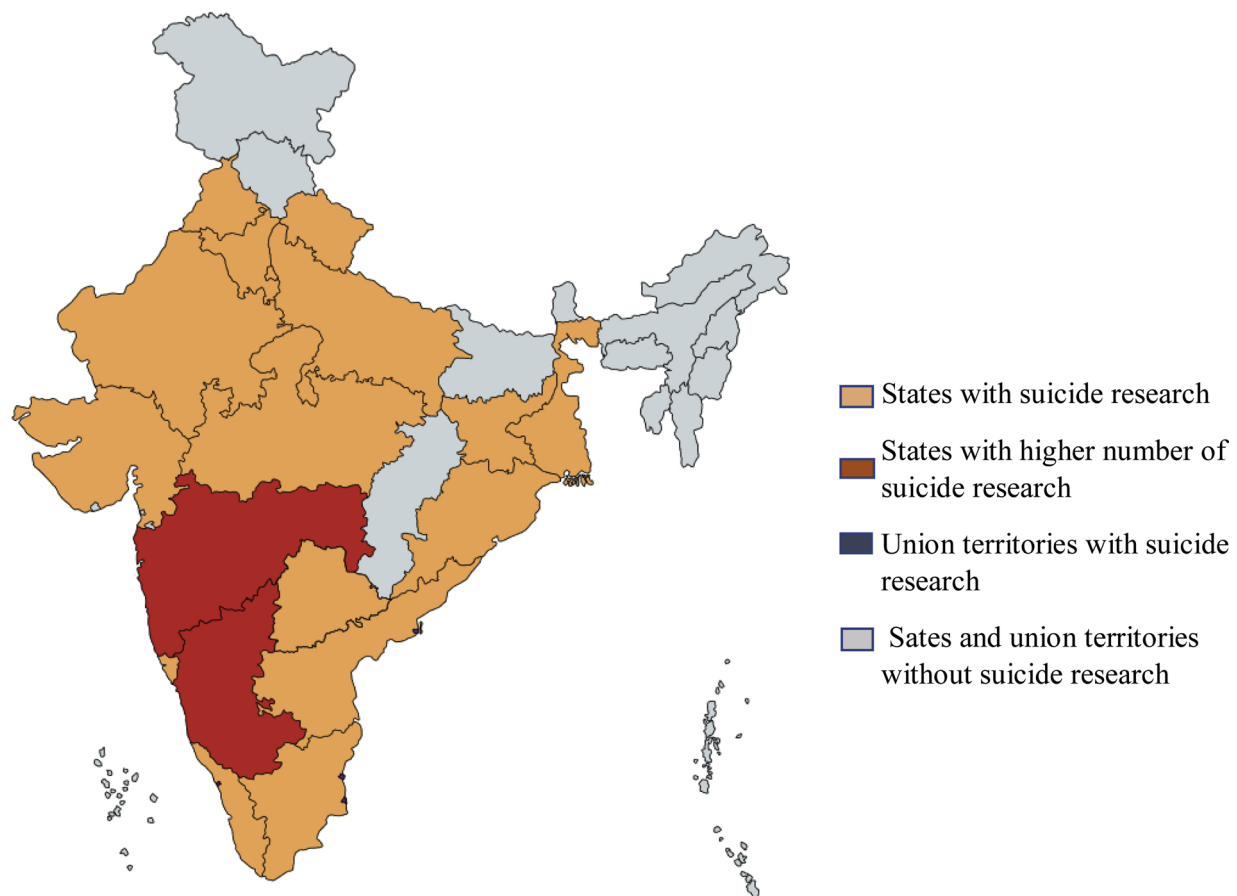


Fig. 4. Suicide research in Indian states and union territories (1979–2019).

which the availability of ‘Endrine’ was restricted in Daspur and Chandrakona in West Bengal as it was the method adopted by individuals to kill themselves during those periods and there was no positive result associated, individuals adopted other method to end their lives (e.g. hanging) (Nandi and S. P., 1979).

The second intervention study was after 29 years, in 2008, WHO multisite intervention study (SUPRE – MISS) on suicidal behaviours, resulted in the reduction of number of suicides in selected areas with brief intervention and contact for suicide attempters (Vijayakumar et al., 2011; Alexandra Fleischmann, 2008). Rest of the studies are as follows: i) a community feasibility study involving a household survey and surveillance ii) DBT for senior secondary school students iii) household survey and FGDs with significant reduction in suicide rate as the result of intervention (Lakshmi Vijayakumar, 2013; Taruna, 2014; Vijayakumar, 2017).

A phased intervention among drug users (IDUs) in Delhi couldn’t come up with any positive findings (Enisha Sarin, 2013) though it was a great attempt of intervening with high risk group.

It took 29 years to come with a second intervention study and the number of intervention studies are 7, i.e. 2.74 % of total data, which is thought provoking, it leaves a questions in researchers’ ‘why do India lack intervention studies and evidence based models?’, filling this gap can be a future direction.

Though there are several studies on risk factors, India significantly lacks studies on protective factors, which can potentially contribute to prevention and management of suicide. There are very few studies on survivors (the person who attempted suicide or the family members or other close ones of the individual who committed suicide), survivors experience significant distress secondary to the incident and may end up in depression (Manik Changoji Bhise, 2016) and this area needs an urgent attention.

There are very few qualitative studies happened in these forty years. The possibility to go into the deeper feelings associated to suicide, the lived experience, the subjective feeling of the respondent etc makes the qualitative element the need of the hour to understand the phenomena better to have a holistic approach in the prevention and management of suicide.

4. Implication and recommendation

Considering the gap in existing mental health services ‘Mental Health Action Plan 2013–2020’ emphasizes effective leadership and governance, comprehensive, integrated mental health and social care services in community, implementation strategies for promotion and prevention, strengthened information systems and evidence-based search (WHO, 2018). The article attempted to throw light into gap in the existing literature to achieve the above-mentioned goals in the area suicide research in future.

It’s time to bring an official body under ministry of health or separate for suicide prevention, management and recording. Suicide is no more a crime or punishable offence as per MHCA, 2017 and as it clearly says “Notwithstanding anything contained in section 309 of the Indian Penal Code any person who attempts to commit suicide shall be presumed, unless proved otherwise, to have severe stress and shall not be tried and punished under the said Code and without prejudice to the generality of the provisions contained in sub-section (1), the appropriate Government shall, in particular, plan, design and implement public health programmes to reduce suicides and attempted suicides in the country” in the chapter 16 and 6 respectively. Section 115 of MHCA clearly states “suicide attempters are presumed to have severe stress, not to be punished and the government should have duty to provide care, treatment, and rehabilitation to reduce the risk of recurrence”

(MHCA, 2017). The need to form national centre for suicide prevention with nodal units and sub units in each state with a holistic approach is emphasized in previous studies (Aggarwal, 2015; Chavan and S. T., 2015; Priyavadan Chandrakant Shastri, 2010) as well. The holistic approach can be incorporated into general health care practice as the 'suicide' and the spectrum of suicide is not an isolated phenomenon.

As the role media is significant in imparting knowledge and behaviour to individuals (Singh, 2018a, 2018b), regulating media (Reddy and M. S., 2016) is the one possible step towards suicide rate reduction as it clearly found out in previous studies (Armstrong and V. L., 2018) that the suicide reports in the media are against World Health Organization guidelines.

Knowledge and skill are the two pillars which can bring the change. There is a training gap across health care professions in terms of suicide prevention (Rahel Eynan, 2015), standardized set of trainings is crucial in filling the gap.

5. Strengths and limitations

Though the article is the first article from the country which gives an overview of suicide research in India for forty years and included all the possible information according to authors' knowledge, it must have missed certain data. And however, the recommendations are well thought, based on the available literature and the practical experience of authors, it lacks a detailed description in the present article.

6. Conclusion and Future Direction

Making use of the available literature and filling the gap would be the right step towards addressing the crisis. More qualitative and intervention studies are the need of the hour. A multidimensional holistic model, which can be incorporated to the education and general health care system can act as strong step towards the goal. As policies are the basic pillars of change in any country, it's time to look 'suicide' as a 'silent epidemic' and develop national policies which can potentially prevent and manage the same.

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Nil.

Declaration of Competing Interest

Nil.

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