

Original Research Article

Farmers' suicide and mental disorders perspectives in research approaches-comparison between- India and Australia

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ABSTRACT

Background: Almost 90% of persons who commit or attempt suicide has a diagnosable mental disorder. Farmers are an occupational category with high suicide risk and their risk is more than that of the non-farming population. But there is no conclusive evidence as to whether farmers have more psychiatric morbidity than the general population. Are other causes also attributable to the increased suicide risk of farmers? Since research data about this is inconclusive, we decided to compare the research approaches and findings on farmers' suicide conducted by mental health professionals with that of other professionals.

Methods: A systematic search of published literature on farmers' suicide for a period of 10 years from 2002 to 2012 was conducted using the electronic databases, PubMed and Google Scholar, using the keywords "farmers' suicide".

Results: 49 articles were retrieved through PubMed search and 24,800 articles through Google scholar search. PubMed retrieved and Google Scholar retrieved articles were then compared keeping Australia and India as reference points.

Conclusions: Comprehensive studies on farmers' suicide, analyzing the diverse perspectives and causes, objectively and concurrently were lacking, especially from India. The Australian studies had attempted to include multifaceted perspectives on research about farmers' suicide. There were no studies from India about interventions or their impact on farmers' suicide. A segmented approach into farmers' suicide research has its limitations. Novel methodologies incorporating diverse perspectives is needed from India for better understanding of the enigma of farmers' suicide, so that steps can be taken to address such a public health and social issue.

Keywords: Australia, Farmer, India, Suicide

INTRODUCTION

Worldwide, suicide is among the three leading causes of death among those aged 15-44 years and the second leading cause in the 10-24 years age group.¹ Every year about one million people die from suicide; giving a "global" mortality rate of 16 per 100,000.² Mental illness is a well-researched risk factor for suicide.³

Farmers are an occupational category with high suicide risk. Though farming is considered as a peaceful and healthy way of life, agriculture has the highest rates of mortality in any industry.⁴ In some farming communities, suicide rates are reportedly higher than the general population. Nevertheless, data from the extant literature is inconclusive as to whether mental health problems are over represented in these communities.⁵

In a study of suicides among farmers in Kerala, multifactorial causation was the finding. There were more mental disorders in farmers but only common mental disorders, in a backdrop of family history of alcoholism, alcohol use and psychosocial issues like marital, family problems and economic hardships. Depression and alcohol dependence syndrome (ADS) was significantly more in victims than in controls.⁶

Are the increased rates of farmers' suicide due to an increased prevalence of mental disorders in them or are there other causes attributable? Since there is no conclusive evidence about this, we decided to compare the research approaches and findings on farmers' suicide conducted by mental health professionals with that of other professionals.

METHODS

A systematic search of published literature on farmers' suicide for a period of 10 years from the year 2002 to 2012 was conducted. Two electronic data bases, PubMed covering articles from medical field and Google Scholar covering articles from all fields (medical and non-medical) were searched from January 1, 2002 to January 31, 2012 with the keywords "farmers' suicide".

The PubMed search picked up 49 articles. The abstracts and full text articles from PubMed were studied. Of the 49 articles retrieved, 13 were specifically about suicides of farmers. Seven studies were from Australia, four were from India and one each was from Korea and Scotland. Studies from India and Australia were selected and studied. Australia and India were chosen based on the availability of large PubMed data on farmers' suicide from these two countries. Besides, both these countries are traditionally agriculture oriented and the suicide rates of farmers in both these countries are high.^{7,8}

Google Scholar picked up 24,800 articles about farmers' suicides from across the world. We narrowed down the search using the keywords "farmers' suicide AND Australia" and "farmers' suicide and India". There were 15,000 hits from Australia and 16,400 hits from India. Out of these, we selected the first hundred articles each, from Australia and India, as sorted "by relevance". Google Scholar sorts articles based on 'relevance' (i.e. the most frequently cited articles) or by 'date' and we decided to sort articles "by relevance". From the articles thus selected, we excluded those articles already obtained from PubMed search. These 'Google scholar only' articles were then compared with the PubMed retrieved articles, keeping Australia and India as reference points. We adopted this approach in order to compare the research on farmers' suicide between that of the medical and non-medical personnel.

RESULTS

Of the PubMed retrieved seven Australian studies, two were community studies, one was a review, one was a case study and three were review of records (Table 1). The studies were conducted by professionals from mental health and public health. The studies from Australia explored the role of climatic factors in the causation of farmers' suicide. The climatic factors especially drought as a precipitating factor and their implications were studied. One of these articles explored the role of protective support systems and one study emphasized the inequitable gender relations contributing to suicide.

Two of the Pubmed retrieved Indian studies were from Vidarbha district of Maharashtra state and one was from Sunderban region (Table 2). There was also one narrative review. There were no intervention studies. One of the qualitative studies from India on farmers' perceived reasons for suicide, cited multifactorial reasons involving economic, environmental, social and political.⁹ Another study was done by psychological autopsy method, which pointed to financial indebtedness and other economic issues as the important triggers to suicide.¹⁰

Of the 17 google scholar retrieved Indian articles, majority were by economists and sociologists (Table 3). Their emphasis was purely on financial indebtedness, fall in economic position, globalization, debt trap and pressure from local money lenders, impact of green revolution, crop failure and faulty government policies including ex gratia payment and the faulty way of spending by the farmers. The studies from India found economic crises and government policies as detrimental. Modern farming methods involving excessive use of chemicals caused environmental degradation and low fertility of the soil. The use of genetically modifiable (GM) seeds which require use of chemical fertilizers had compounded to the problem. Genetically modified seeds caused repeated crop failure due to loss of land biodiversity. The ensuing high cost of cultivation ultimately led to debt trap and suicide. Government policies related to market prices, debt trap by private money lenders were also significant issues. The government's failure to implement policies for the welfare of the poor small farmers was also significant. Providing relief to families of deceased farmers had led to paradoxical effect. Farmers committed suicide to enable financial assistance to the families.^{11,12}

Google scholar literature review from Australia yielded only one monograph. The common articles which were also there in PubMed were excluded. The study was conducted by public health and labor studies personnel (Table 4). While firearm use was the most common method of suicide in Australia, pesticide use was the common method in India pointing to a link between accessibility and suicide attempt.

Table 1: Articles on farmers' suicide, Australia -PubMed retrieved.

No.	Study	Discipline	Objective	Conclusion
1	Berry HL et al ¹⁵	Community Medicine and Public Health	How climate change and related factors affect farmers' mental health in Australia.	There is a need for a systematic epidemiology of the mental health of farmers facing weather related adversity
2	Guiney R ¹⁶	Department of Planning and Community Development	Data from Coroner's record. Whether farming suicides increased in Victoria during the prolonged drought in South Eastern Australia.	Suicide risk increased during period of drought
3	Suzanne McLaren & Chantal Challis ¹⁷	School of Behavioural & social sciences and humanities	A study on 99 Australian men farmers, to investigate the applicability of 3 models of resiliency for the prediction of suicidal ideation from depression (the risk factor) and social support and sense of belonging (the protective factors).	Explores the roles of social support & sense of belongingness as resilience factors for protection from suicide
4	Sartore GM et al ¹⁸	Centre for Rural and Remote Mental Health	The case study was about how drought affects a typical extended family.	This article explored how general practitioners can identify and respond to the drought related mental health needs of farming residents.
5	Judd F et al ¹⁹	Centre for rural mental Health	To investigate the rate of mental health problems amongst farmers compared with non-farmer rural residents and to investigate additional factors which might lead to increased risk of suicide amongst farmers.	Increased risk of suicide amongst farmers was not merely due to elevated rate of mental health problems. Individual personality, gender and community attitudes that colour a person's ability to express mental health problems and seek help may be additional risk factors.
6	Andrew N. Page & Lyn J. Fragar ²⁰	Public Health & Community Medicine	To identify and describe suicide data for different classes of agriculturists in Australia for the period 1988 to 1997.	Male farm manager and agricultural labourer suicide rates were higher than male national rates and rates in the wider rural population. Descriptive and linear regression analysis of aggregated mortality data.
7.	Keith Miller & Catherine Burns ²¹	Social work	Retrospective audit review of the files of suicide victims in the South Australian Coroner's Office.	Suicide rates of farmers in South Australia in 2001, was significantly higher than the overall rate of suicide in South Australia in 2001

Table 2: Articles on farmers' suicide, India -PubMed retrieved.

No.	Author	Discipline	Objectives	Conclusions
1.	Anindya Das ²²	Centre for Social Medicine and Community Health	Evaluating farmers' suicide from broad, multifactorial concept of health.	To consider doctrines of methodological holism where one studies macro-determinants which shape microcosm
2	Arabinda N. Chowdhury et al ²³	Psychiatry, Public health & Epidemiology	Role of pesticide poisoning in suicide and attempted suicide; awareness of risks, safe practices of use and associated self-injury in farmer households. Retrospective record review of adult cases of deliberate self-poisoning.	Pesticide poisoning - the most common method of DSH. Unsafe pesticide storage and inadequate knowledge about adverse effects.
3	PB Behere, AP Behere ¹⁰	Psychiatry	Psychological autopsy for reasons of farmers' suicide between January 2005 to March 2006 in Wardha district	The factors which played a role were: (1) chronic indebtedness and inability to pay accumulated interest, (2) economic decline leads to family disputes, depression, alcoholism, etc., (3) compensation following suicide helps to repay debt, (4) grain drain, and (5) rising costs of agricultural inputs and falling prices of produce
4	Amol R. Dongre & Pradeep R. Deshmukh ⁹	Community Medicine	To explore perceived reasons & common factors for farmers' suicides in the Vidarbha region of Maharashtra,	Farmers perceived debt, addiction, environmental problems, poor prices for farm produce, stress and family responsibilities, government apathy, poor irrigation, increased cost of cultivation, private money lenders, use of chemical fertilizers and crop failure as the reasons.

Table 3: Articles on farmers' suicide, India –Google scholar retrieved.

No.	Study	Discipline	Conclusion
1	BB Mohanty ²⁴	Sociology	Suicides among farmers in Maharashtra were caused by failures in business, trade and politics. Suicides evaluated in relation to Durkheimian theory
2	Assadi, Muzaffar ²⁵	Social & Political Sciences	Suicide seen in the context of capitalist development, which initially created euphoria but later led to massive agrarian crisis
3	Srijit Mishra ²⁶	Development studies, Economics	Economic and weather uncertainties led to farmers' suicides. The solution is to merge public policy initiatives with civil society engagement.
4	Srijit Mishra ²⁷	Development studies, Economics	Reflection of the larger socioeconomic malaise & yield, price, input
5	Muzaffar Assadi ²⁸	Political Science	Analyses how the capitalist path of development through globalisation causes the sharpening agrarian crisis in India; the condition of Indian farmers in a liberal world of economic development. Gender, age and caste factors also considered

6	V. Sridhar ²⁹	Economics	The policies due to economic liberalisation have imposed a stress on the farmers leading to suicides
7	Daniel Münster ³⁰	Department of Social Anthropology	Contexting the study of farmers' suicides in ethnographies of agrarian practice and the local developmental state.
8	A Malone ³¹	Journalist	The 'GM (genetically modified) Genocide' argues against poverty, alcoholism, drought and 'agrarian distress cause farmers' suicide
9	P. D. Jeromi ³²	Assistant Advisor, Reserve Bank of India	Economic liberalization without safety nets along with droughts caused economic indebtedness which caused suicide
10	Cormac Sheridan ³³	Microbiologist & Journalist	Criticism about the association of farmer suicide & GM cotton
11	Mae-Wan Ho ³⁴	Geneticist-Scientist	Economic liberalization, debt, GM cotton
12	Madare SN ³⁵	Political Science	Economic reforms-agrarian crisis-suicide
13	S. Mohanakumar & R. K. Sharma ³⁶	Economics	The agrarian crisis and farmers' distress in Kerala are closely linked to the neoliberal policy regime
14	Neil Aggarwal ³⁷	Psychiatry	<ul style="list-style-type: none"> ● Farmers in India experience different stresses as farmers elsewhere, due to illiteracy, the bonded labor system, large families, government corruption and debts from local moneylenders. ● A responsible farmer's suicide methodology must include the biological & broader social, cultural, political and economic contexts. ● The onus should be shifted from the farmer to the circumstances
15	Siddhartha Mitra & Sangeeta Shroff ³⁸	Economics	The loss in competitiveness of the Indian cotton farmer after the opening up of India's agricultural economy in the mid-1990s was a major reason for the increase in farmers' suicides
16	Chindarkar N ³⁹	Social Sciences	Farmers' suicides were a result of disruption of livelihoods security of the small and marginal farmers, which comprises of economic, social, psychological as well as emotional security,
17	Iyer AA ⁴⁰	Philosophy	Phenomenon of farmer suicides in central India starkly exposes "some of the fundamental limitations of the contractarian formulations of corporate social responsibility"

Table 4: Articles on farmers' suicide, Australia –Google scholar retrieved.

No.	Study	Discipline	Content
1	King D et al ⁴¹	Public Health & National Institute of labour studies, Australia	No significant differences between farmers and non-farmers in psychiatric morbidity. Accumulated stress resulting from a combination of factors contribute to farmer suicide

DISCUSSION

When research on farmers' suicide of both countries were compared, certain interesting findings emerged. In India there was a schism in research approach. PubMed articles were by professionals from mental and public health. Humanities' stream had abundant literature focusing on

the economic and political factors paving the way for farmers' suicides. The mental health aspects were not taken into consideration. The qualitative and verbal psychological autopsy studies from India also reported economic factors and crop failure as causes. There were no methodologically robust studies from India. We did not come across personnel from medical and non-medical

streams conjointly involving in research regarding farmers' suicide in India. Suicide should not be reduced to a mental health issue solely.

A comprehensive approach to suicide would also reduce stigma, which is one of the factors which prevent people from disclosing and seeking help.¹³ On the other hand farmer's suicide should not be seen as a mere socioeconomic and political issue. There were no intervention studies from India.

The Australian literature regarding farmers' suicide was mainly conducted by professionals from mental and public health with inputs from humanities stream. The suicide rates were found to be higher in farmers. There is some evidence on the low rate of psychiatric morbidity in farmers as compared to the general population.¹⁴ Therefore do farmers have a low threshold of vulnerability to suicide?

The complex intertwining of the biological and the psychosocial issues have to be explored together to generate novel hypothesis which could provide effective solutions. Innovative methodologies in research, incorporating heterogeneous aspects should be evolved to address the problem of farmers' suicide which would generate effective solutions.

Limitations

We had selected the literature only of the time period of 10 years from 2002 to 2012. Only a selective study of the literature of that period was done.

CONCLUSION

In the literature search, there were no comprehensive studies on farmers' suicide, analyzing the diverse perspectives and causes, objectively under a single umbrella from India. There were no studies about interventions or their impact on farmers' suicide. The Australian literature had attempted to incorporate medical and non-medical aspects leading to farmers' suicide

It was concluded that a multipronged research approach encompassing that of professionals from mental health, economics, sociology, agriculture and political science in a collaborative manner will provide better understanding and effective solutions for farmers' suicide in India.

Recommendations

More systematic and methodologically robust, comprehensive studies would give more insights about farmers' suicide in India. Investigating the pathways to farmers' suicide would also provide useful information regarding their causes and prevention

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