

High frequency of suicide among socio-
economically disadvantaged cultivators,
Coochbehar, West Bengal, India,
1996-2005

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Background

Global burden

- WHO estimated 815 000 people died from suicide in the world, 2000
- Every 40 seconds a person commits suicide somewhere in the world
- Suicide remains among the top three causes of death among young people.
- Each suicide has a serious impact on at least six other people

South East Asia Region

- In 1998, incidence rate of suicide was 37 in Sri Lanka, 12 in Bangladesh, 11 in India and 9 per 100,000 in Thailand.

In the Mathabhanga* sub-division of the Coochbehar, the number of suicide reported annually ranged between 233-257 for an annual rate of 31 per 100,000.

* Population of Mathabhanga- 5,67,851

Study Objectives:

- Describe suicide mortality documented in the last 10 years (1996 – 2005) in terms of time, place, person and the methods used to commit suicide.
- Measure the agreement between police records and close relative of deceased with respect to identification of the reasons for suicidal death
- Generate hypothesis about factors that may be associated with suicide.

Methods

- Study design
 - Retrospective, descriptive study, including analysis of secondary data of 1996-2005 and retrospective case study of 2005 suicide deaths
- Study population
 - Population (n= 5,67,851) of Mathabhanga sub-division of Coochbehar district, West Bengal, India.
- Case definition
 - An intentional self-inflicted unnatural death of Mathabhanga subdivision documented as suicide in the police investigation report between January 1996 and December 2005.

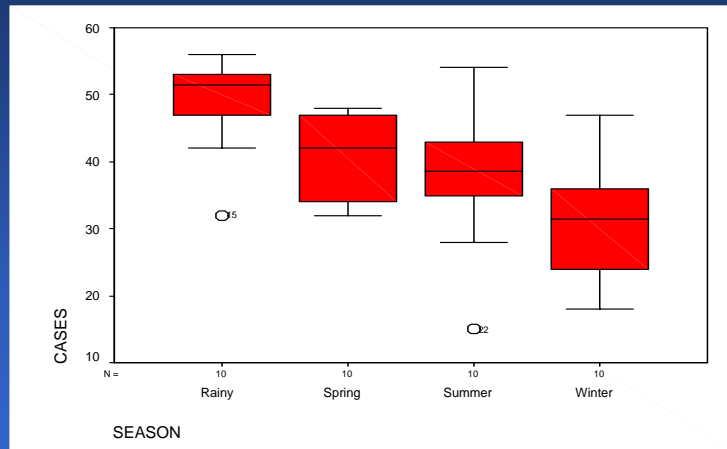
Human subject protection

- Human subject protection for deceased person
 - Data collection instruments only contained coded identifiers generated for the purpose of the study and different from the one used by the police
 - All information collected from the police was not communicated to the family respondents and vice versa
- Human subject protection for the family respondents
 - Obtained informed consent from all the participants
- The study received permission from state health administration, civil administration, police authority and the institutional ethical committee.

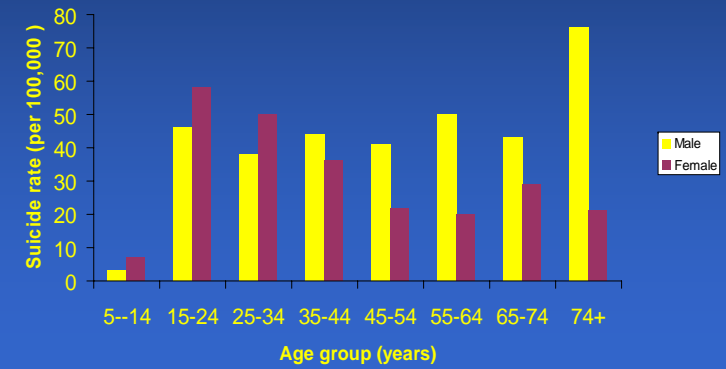
Suicide rate per 100,000 population per year, Mathabhanga, Coochbehar, West Bengal, India, 1996-2005



Seasonal distribution of suicide cases, Mathabhanga, Coochbehar, West Bengal, India, 1996-2005



Suicide rates by sex and age, Mathabhanga, Coochbehar, West Bengal, India, 1996-2005



Socio demographic specific suicide rate in Mathabhanga, Coochbehar, West Bengal, India, 1996-2005

Socio demographic characteristics		1996-2005	
		Number of cases	Suicide rate per 100,000
Religions	Hindus	1393	32
	Christians	1	25
	Muslims	190	14
Community	Scheduled caste	1089	38
	Scheduled tribe	12	21
	Other caste	483	17
Household monthly income	Below poverty line	636	29
Literacy	Illiterate	547	28
Occupation	Agriculture	1003	37
	Housewife	246	31
	Student	177	29
	Unemployed	68	20
Marital Status	Married	1197	51
	Widow, Divorcee	80	24
	Unmarried	307	10

Methods used to commit suicide, Mathabhanga, Coochbehar, West Bengal, India, 1996-2005.

Methods	1996-2005		
	Number of cases	%	
Hanging	Jute material	752	88
	Cloth material	75	9
	Others	28	3
	Total	855	54
Poisoning		581	37
Burning		65	4
Drowning		42	3
Others		41	2

**Determinants of suicide in general population and cultivators,
Mathabhanga, Coochbehar, West Bengal, India, 1996-2005**

Determinants of suicide	1996-2005	
	General population [n=1584] (%)	Cultivators [n=1003] (%)
Financial crisis	34	48
Marital disharmony	15	16
Chronic physical illness	11	12
Mental illness	11	8
Love affairs	9	5
Others	20	11

**Determinants of suicide, Mathabhanga, Coochbehar,
West Bengal, India, 2005.**

Determinants of suicide	Household data (2005)	
	General population (%)	Cultivators (%)
Financial crisis	52	79
Marital disharmony	15	9
Chronic physical illness	6	5
Mental illness	11	5
Love affairs	3	0
Others	13	2

Kappa test indicates that the measure of agreement for suicides due to financial crisis between police inquest report and household survey was 99% and statistically significant ($P < 0.05$).

Limitations

- The rates were crude and those were not standardized.
- Attributed the suicides to selected circumstances reported by the police or by the family respondents on the basis of an algorithm and not on the basis of an epidemiological measure of impact (e.g., attributable fraction).

Conclusion

- The suicide mortality was most strongly seen in the rainy season.
- Suicide mortality was more common among younger females and elder adult males.
- Rates were higher among economically productive age group.
- Socio-economically backward groups had high suicide rates
- Financial crisis was major contributing determinant and it was more common in social and financially deprived cultivators.

Recommendation

- Suggest further study to estimate the strength of association between occupations, especially agricultural, socially backward classes and the financial impacts due to adverse weather conditions on the suicidal deaths.
- To set-up multi-sectoral committee comprising of experts from the fields of agriculture, social welfare, finance, police and judicial to periodically review suicides and take remedial action.

Thank you