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Research Article

MATERNAL DEATH COMMUNITY REVIEW OF CASES IN SELECTED DISTRICTS OF ODISHA, INDIA

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ABSTRACT

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Keywords:

Maternal Death, Maternal Death Review, poor referral, Odisha Every Maternal death is preventable. More so, India was a part of the International community that agreed upon the Millennium Development Goals 15 years ago, whose one of the aims was to bring down the MMR to 109 for 1lakh live births by 2015. Initiatives in this direction have resulted in a decline in MMR from 277 to 230 (AHS-2102-13) in the state of Odisha, one of the states with highest death rates. The study was a part of systematic attempt to re-examine our causal framework and putting some missing pieces so as to achieve the targeted goal. 20 maternal deaths reported in the year 2013, from the poor performing districts of Khandamal, Koraput, Kalahandi and Sundergarh were assessed using the Community Based Maternal Death Review Tool (CBMDR). These data brought out the facts that poor risk perception resulting in the delays in health care delivery were the cause of maternal deaths in all the cases. It brings out strongly that timely referral services and improved delivery points at the remote areas can address the persisting problem of high maternal deaths in state of Odisha.

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INTRODUCTION

Improving maternal health, which is also the Millennium Development Goal 5, is one of the biggest challenges for the country. One woman dies every nine minute in India from any cause related to pregnancy. Each year in India, roughly 28 million women experience pregnancy and 26 million have a live birth. 15% of all pregnancies are likely to develop complications. Of these, an estimated 55,000 maternal deaths and one million new born 1 deaths occur each year.¹ About two-thirds of maternal deaths occur in EAG (Empowered Action Group) states - Bihar and Jharkhand, Orissa, Madhya Pradesh and Chattisgarh, Rajasthan, Uttar Pradesh and Uttarakhand and in Assam, all these states being among the 18 high focus states under 3 NRHM² Maternal Death Review(MDR) is conducted with a goal to reduce maternal mortality and morbidity. The objectives of MDR are to understand the determinants of maternal death and to provide stimulus for action at all levels. MDR leads to identifying gaps and the reasons for maternal deaths, for taking corrective actions to fill such gaps and improve service delivery. The governmental programs run by state have attempted in the state and succeeded in bringing down maternal mortality

considerably. However the achievement is not uniform across the state. The state of Odisha is divided into 30 administrative units and Annual Health Surveys report the performance of the districts as per selected parameters like Maternal Mortality Ratio, Infant Mortality Rate, Crude Birth Rate and Crude Death Rate. On the basis of these surveys 4 worst performing districts were selected as the universe of this study cohort ieKhandhamal, Kalahandi, Koraput,Sundergarh. In all the first three districts MMR was 297 per one lakh live birth and for Sundergarh it was 212. The study was done among the families of the reported maternal death in the year March 2012-2013, in these districts to elaborately comprehend the social and circumstantial evidence that led to the deaths.

METHODOLOGY

The study was undertaken by a developmental agency partner OXFAM in due consultation with the state health Directorate, with the objective to take a closer view into the reasons of persisting maternal deaths in some of the administrative districts of the state of Odisha. This was happening in spite of improved statistics in other parts of the state, since the implementation of the ambitious umbrella programme National Rural Health Mission, which had offered several initiatives like capacity building of facilities for deliveries, cash on institutionalized delivery and strengthening of quality of antenatal and postpartum care. Given below in Fig 1 is the map of Odisha and the 4 districts indicated where the study was undertaken.



The health indicators of the selected districts are given below in Table 1

Table 2 District wise distribution of the maternal deaths

Parameters(N=20)	Kalahandi	Koraput	Khandhamal	Sundergarh	Total
Caste SC	3	1	1	1	6
ST	2	2	1	2	7(37%)
OBC	1	0	2	2	5
others	0	1	0	0	2
Type of family					
Joint	3	0	2	2	8
Nuclear	3	4	2	3	12(63%)
Education(Women)					
illiterate	5	1	1	1	8 (41%)
Primary/sec	1	2	3	1	7
above class 8	0	1	0	3	5

The table 2 is suggestive of the socioeconomic conditions in which the women lived. Public Distribution System(PDS), Supplementary Nutrition Programme(SNP) and Below Poverty Line (BPL) are the three schemes run all over the country to provide subsidized ration, fortified food for the pregnant

Table 1 District profile from Annual Health Survey Data of 2 years (AHS 2010-11, AHS 2011-12)³

	MMR		Crude Birth Rate		Crude Death Rate		IMR	
	2011-12	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12	2010-11
Sundargarh	212	253	17.90	18.20	7.2	7.2	49	55
Khandhamal	297	311	21.20	21.40	9	8.9	86	88
Kalahandi	297	311	20.20	20.10	6.7	6.7	56	59
Koraput	297	311	25.10	25.80	7.9	8	53	56

Qualitative methods were used for the review. The investigators collected the information through the verbal autopsy for twenty deaths that occurred during the review period and were analysed to understand thecircumstances and issues related to maternal death. Verbal Autopsy is a technique whereby family members, relatives, neighbours or other informants and care providers are interviewed and asked for a narrative to elicitinformation on the events leading to the death of the mother, during pregnancy/ abortion/ delivery/ within 42days after delivery, in their own words in order to identify the medical and non-medical (includingsocioeconomic) factors for the cause of death of the mother.

Two teams of investigators were formed and trained to do verbal autopsy. The formats developed under NRHM (National Rural Health for Community Based Maternal Death Review⁴ was used for the investigation. Immediately after the training, two teams of investigators undertook maternal death review between September 2012 and August2013.The data was collated and analysed using SPSS version 16 and the results and report discussed with the state stakeholders.

RESULTS

20 maternal deaths reported from the selected 4 districts in 2012-13 were followed up as per the research tool and tabulated.

The districts selected for the review had a predominant tribal &marginalized population and as seen in the table 37% of the women were from scheduled tribes, 63% were living in nuclear families and 41% had no formal education and even the rest were educated maximally till class 8.

 Table 2 Benefits from other social programmes running in state

5000	•	
Indicators	Freq	%
PDS card Yes	14	70
Received SNP Yes	18	90
Type of house semipucca	8`	40
Katcha	12	60
Safe Drinking water Yes	16	80
Land ownership Yes	15	75
BPL Card Yes	11	55

mothers and even otherwise entitlement for several other economic facilities like subsidized health facilities, drug reimbursements etc. As indicated in the table SNP was received by 90% of the women, 55% were BPL card holders and 70% were enrolled for PDS services. Only 80% had access to safe drinking water and 60% lived in mud or katcha houses. This brings out strongly that the mothers who died belonged to a low socioeconomic background.

Women were in the age group 17-25 years, best respondents were husbands in 14 (73.7%), followed by the in laws as in 7(37%) of the deaths. 36.8% of the women were married at age less that 18 years. 9 deaths Ie 45% each were both at home and in hospital. As indicated in Fig 2 maximum deaths ie 47.4% were within 42 hours of delivery and Post Partum Haemorrhage was the cause.

The study brought out the fact that the benifits of antenatal checkups were undone by the lack of birth preparedness as nearly 60% of the women had received atleast 3 antenatal checkups as reported by the families. Village health nutrition

days (VHND) with 42.1% headed the site for antenatal checkups followed by facility based check ups at Primary and Community Health centers.



Fig 2 Details of the maternal deaths

 Table 3 District wise discrepancy in health information by

 Village health workers

Health Workers	Kalahandi	Koraput	Phulbani	Sundergarh	total
informed about	3	3	1	0	7
danger signs-yes					
(n=7)					
	42.9%	42.9%	14.3%	0%	100.0%
Detected	2	4	1	0	7
Signals in good					
time (n=7)					
	28.6%	57.1%	14.3%	0%	100.0%

Table 3 brings out one of the biggest drawbacks in the Indian health care delivery system wherein only 7 out of the 20 deaths were informed of danger signs and given emergency care in due course. The district Sundergarh fares worst with no such reporting from this district and all other districts were less than 50%. Our rural population is heavily dependent on the advice and guidance of these village health workers, who for whatever reasons have been failing to support the health system. This problem could hold the key to revamp the primary health services in the country and an urgent package needs to be worked out to train, motivate and ensure the optimum utilization of this cadre in health care delivery.

8 (40%)women died due to lack of prompt decision to seek facility based care, 3(15%) died due to lack of transport to

reach timely the facility and 9 (45%) died due to lack of referral services.

DISCUSSION AND RECOMMENDATIONS

The study though small, brings out the persisting problem of the lack of preparedness of our rural health care delivery system in India to handle pregnancy and birth. The situation is compounded by local customs and practices like early marriages, less spacing between births and a resistance to the facility based service like continuing with the practice of home based deliveries. Motivation and training of the health workers including doctors is affected because of the political apathy towards ensuring better working conditions in the rural areas. Every maternal death is either forgotten quietly or mushroomed into a blame game between the system and family conditions. This probably is the reason why the maternal death audits now relied on interviews with all key witnesses to the woman's pregnancy and emergency using an indepth interview guide as done in this study.⁵

There are several challenges in rolling out such a study like ethical issues, an investigative look into the existing infrastructure and manpower, mobilizing communities and creating awareness in communities besides others. ^{6,7} In a similar study done by ICMR in selected districts of Uttar Pradesh, the most populous state of India in 2003, majority of maternal deaths occurred to women who were relatively young and case of first delivery. More than three fourth of the maternal death occurred to the mothers below the age 30 years. More than 40% the deaths were at parity, one & two which may be due to early marriage age. The main cause of death was observed to be PPH (17%), post partum septicemia (13%) and anaemia (13%). About 24% of the deaths were observed to be during antenatal period, about 70% deaths in postnatal period and 7% were found to be during delivery.45% of the deliveries were conducted by untrained dais. More than 60 percent of the maternal deaths occurred SC, ST and OBC households.8 These results are similar to those reported in our study suggesting that twenty years hence there has been no significant change in remote districts. UNICEF supported the introduction of Maternal and Perinatal Death Inquiry and Response (MAPEDIR) in 2011 in 16 districts in six Indian states (West Bengal, Rajasthan, Jharkhand, Bihar, Orissa, and Madhya Pradesh) with high maternal mortality.^{9, 10} A total of 1,120 maternal deaths were followed to understand the causes. Overall, half of the maternal deaths had occurred at home (56.6 %), one third (30.9 %) in health facility, and 9 % died while being taken to health facility. This was for the first time the Government woke up to the reasons as to why women died even in health facility and on the way to health facility.

The report of the study has been shared with the state government of Odisha and strong policy decisions have been initiated like arrange for subsidized transport in the form of Ambulance 108 services in outreach areas, standardized and fully operational blood banks especially for these districts and finally a massive campaign to initiate awareness among families that a facility based preparedness for birth could avert several maternal deaths. Institutional up gradation for referral is in the pipeline and is being consciously looked into by the government too.

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