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Original Article

Rural Epidemiology of Maternal Mortality in Tribal women from Bastar, Chhattisgarh , India

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ABSTRACT

Objectives: The primary objective was to study epidemiology of Maternal Mortality in tertiary care hospital in the tribal region of (Bastar), Chhattisgarh, India and their relation to age, education, occupation and socioeconomic status of the diseased mothers. Materials and Methods: This is a retrospective study. In this study cohort of 119 cases of Maternal Mortality among tribal women of Bastar region between July 2007 and August 2011 have been studied. Information on their age, education, Occupation and socioeconomic status was noted. Results: Among 119 diseased mothers 26 (21.85%) were of 25 years of age. 16 (13.45%) were of 22years, 14 (11.76%) were of 30 years, 11(9.24%) were of 20 years, 11 (9.24%) were of 35 years, 8 (6.72%) were of 19 years,7 (5.88%) were of 23 years, 6 (5.04%) were of 21 years, 4 (3.36%) were of 28 years, 4 (3.36%) were of 32 years, 3 (2.52%) were of 26 years, 3 (2.52%) were of 27 years, 18,24,29,38,40 and 42 years age group were having 1 (0.84%) each. Out of 119, only 1(0.840%) was educated up to 11class, 9 (7.563%) were educated up to 8 class, 10 (8.403%) were educated up to 5class, 11(9.243%) were educated up to 4class, 88 (73.943%) were illiterate. A majority of patients had a low education status. Out of 119, 75 (63.025%) were Laborers, 43 (36.134%) were Farmers, and 1(0.840%) was street beggar. A majority out of 119 patients, 118 (99.12%) belonged to the lower social economic status with monthly income less than Rs. 2126=00 and 1patient (0.88%) was street beggar.

1. Introduction

Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. To facilitate the identification of maternal deaths in circumstances in which cause of death attribution is inadequate, a new category has been introduced: Pregnancy-related death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death [1].

Maternal mortality remains a huge problem globally. About 99 per cent of maternal deaths occur in developing countries, with India contributing the largest number. India's Maternal Mortality Ratio (MMR) is estimated to be 254 per 100,000 live births [2]. It is estimated that two thirds of these deaths take place in the Empowered Action Group states of Assam, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttaranchal and Uttar Pradesh [2].

While this has declined from 301 per 100,000 births in 2001–2003to 254 per 100,000 births in 2004–2006, it is still a cause for concern. Every year, about 80,000 women die due to pregnancy-related complications in India [3]. According to a UNICEF study, 61 per cent of maternal deaths occur in tribal communities [3].

In tribal region of Bastar during 2008 Maternal Mortality Ratio was 269.08, in 2009 was 277.33, 2010 was 226.33 and in 2011

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M.M.R. is 239. 03 per 100000 Live births [4] . In Orissa state, Maternal Mortality Ratio (SRS 2004 - 2006) is 303 per 100000 Live births [5].

2. Materials and Methods

2.1. Demography *Bastar, Chhattisgarh*

The total geographical area of the Chhattisgarh State is 136034.28 Sq.Km. Jagdalpur (Bastar) is the largest district (17016.040 Sq.Km.) [6].

Table 1District :*Bastar*

Area	26882.1
Total Population	1302253
Male	648068
Female	654185
Population Share of States Population	6.26
GenderRatio	1009

Chhattisgarh state Biodiversity strategy, Chhattisgarh, India [6].

12.19% of the total population of Chhattisgarh belongs to the Scheduled Castes (SC) as defined in the Constitution of India in Art. 341 [6].

The castes under the scheduled tribes (ST) as defined by the Art. 342(1) comprises 32.46% (or 1/3) population of Chhattisgarh (Census of India 1991). There are 42 tribal groups which are further divided in to their sub groups / castes. Gond is the largest tribal group (55.05% of the tribal population of Chhattisgarh) in the state which is divided in to 13 sub groups / castes. Other tribal groups are Kanwar (11.84%), Halba (4.76%), Bhatra (2.52%), Urao (1.89%), Bijhwar (1.72%), Bhariya (1.58%), Sanwara (1.34%), Baiga (0.93%), Agariya (0.74%), etc5. The highest concentration of ST population is in Bastar and Dantewada in the south. Almost 98% of the ST population resides in rural areas [6].

Table 2District :*Bastar*

SCHADULED CAST	
Gender Ratio	99
Population Share	7.5%
SCHADULED TRIBE	
Gender Ratio	1009
Population Share	66.5%

Source : Primary Abstract Census of India 1991, Registrar General of India, New Delhi [2,6].

Table 3. The major tribal groups in *Bastar*

Tribe	*Occupation*
Muria	Plain cultivation, labour
Abujhmaria	hill cultivation, Basketry
Dandami Maria	Plain cultivation; labour
Maria	Plain cultivation; labour
Dorla	Plain cultivation; labour
Bhatra	Plain cultivation; labour
Dhurwa	Basketry and cultivation
Halba	Plain cultivation and labour

Chhattisgarh state Biodiversity strategy, Chhattisgarh, India [6].

Objective:

The primary objective was to study epidemiology of Maternal Mortality in tertiary care hospital in the tribal region of (Bastar), Chhattisgarh, India and their relation to age, education, Occupation and socioeconomic status of the diseased mothers.

2.1. This is a retrospective study of tribal patients treated in the Department of Obstritics & Gynecology, Government Medical Collage and the associated Maharani Hospital, Jagdalpur (Bastar), Chhattisgarh.

2.2. Study Population: The sample consisted cohort of 119 tribal patients who attended tertiary care hospital for medical care between July 2007 and August 2011. Those with a non-tribal background, attended between July 2007 and August 2011, were excluded from the study (n=12). Finally 119 (n=119) tribal patients were included in the study.

2.3. Sampling: This is a retrospective study of the patients cohort admitted in the Department of Obstritics & Gynecology, Government Medical Collage and the associated Maharani Hospital, Jagdalpur (Bastar), Chhattisgarh for treatment.

2.4. Data collection: All tribal patient admitted in indoor wards (n=119) treated by the Gynecologists, and the relevant data was collected from the Department of Obstritics & Gynecology and Medical Records Department, Government Medical Collage and the associated Maharani Hospital, Jagdalpur (Bastar), Chhattisgarh, The information of the cohort included demographics for example, Age, Sex, Educational Status, Occupational status, Socioeconomic status (SES).

2.5. Data Analysis: Demographics data of the patients, Age, Sex, Educational Status, Occupational status, socioeconomic status (SES) were represented in percentage

3.Result

Results of the present study showed several facts about Maternal Mortality in the tribal population of Bastar. The study showed that among 119 diseased mothers 26 (21.85%) were of 25 years of age, 16 (13.45%) were of 22years, 14 (11.76%) were of 30 years, 11(9.24%) were of 20 years, 11 (9.24%) were of 35 years, 8 (6.72%) were of 19 years,7 (5.88%) were of 23 years, 6 (5.04%) were of 21 years, 4 (3.36%) were of 28 years, 4 (3.36%) were of 32 years, 3 (2.52%) were of 26 years, 3 (2.52%) were of 27 years, 18,24,29,38,40 and 42 years were having 1 (0.84%) each. (Chart in page 7)

A majority of maternal mortality 93 (78.14%) was noted in age group between 19 and 35 years.

A majority of patients had a low education status. Out of 119, only 1(0.840%) was educated up to 11class, 9 (7.563%) were educated up to class, 10 (8.403%) were educated up to 5class, 11(9.243%), 88 (73.943%) were illiterate.

Among our 119 patients, largest group composed of laborers 74 (63.02%) and the second largest group farmers 43(38.05%) with 1 (0.88%) street beggar.

A majority out of 119 patients, 118 (99.12%) belonged to the lower social economic status with monthly income less than Rs. 2126=00 and 1patient (0.88%) was street beggar.

4.Discussion

A majority out of 119 patients, 118 (99.12%) belonged to the lower social economic status with monthly income less than Rs. 2126=00 and 1 patient (0.88%) Street beggar. A majority of maternal mortality 93 (78.14%) was noted in age group between 19 and 35 years.

Out of 119, 75 (63.025%) were Laborers, 43 (36.134%) were Farmers, and 1(0.840%) was street beggar. Out of 119, only 1(0.840%) was educated up to 11class, 9 (7.563%) were educated up to 8 class, 10 (8.403%) were educated up to 5class, 11(9.243%), 88 (73.943%) were illiterate. Thus majority belonged to low educational status.

The state of Chhattisgarh also has one of the highest sex or gender ratios in India, indicating better conditions for women as compared to other states in India, long distances, lack of adequate transport network, remote villages and dense forest cover have been deterrent to the Government's efforts in delivering health services to the people [6].

The chief causes of maternal mortality were found to be unhygienic and primitive practices for parturition. From the inception of pregnancy to its termination, no specific nutritious diet is consumed. The habit of taking alcohol during pregnancy has been found; continue their regular activities including hard labor during advanced pregnancy. A majority of deliveries are conducted at home attended by elderly ladies of the household, which resulted in an increased susceptibility to various infections. These are major shortcoming of low educational status, low socioeconomic status among tribal population. The above has been shared [7].Unavailability of proper medical facilities provided by government and lack of awareness about health that has increased mortality rates. Primitive tribal groups have problem at different stages of social, cultural, economic and health development [7].

Education, especially the female education, is generally considered a key factor to development. Female education is believed to have a great influence on the maternal and child health as it enhances the knowledge and skills of the mother concerning age at marriage, contraception, nutrition, prevention and treatment of diseases [8].

Low literacy rate [3.3 percent] was observed among the primitive Abhujmaria tribe of Bastar district, (RMRC. 1992). The Indian tribes have been exposed to literacy only recently (Moonis Raza, et al., 1990). Literacy among the tribal's was found to be very low i.e. 25.9percent and especially so among the tribal females (14.5 percent) (NSSO, 1991).Most of the literates among the scheduled tribes were literate only up to the primary level. Within the country, the level of literacy among the tribal's varied widely [9].

Girls in tribal societies were given in marriage generally after puberty. According to 1971 census at the national level, the age at marriage for tribal women was higher (16.39) than that of the rural women in general (15.39) [9].

The above statement supports the findings of our study that low educational status, low socioeconomic status, are the major causes of Maternal Mortality among tribal women of Bastar. High maternal mortality among mothers reflects not only inadequacy of health care services for tribal population of Bastar, but also low educational status and low socioeconomic status consequential in low standard of living, lack of awareness for availing available health care facilities, unhygienic and primitive practices for parturition resulting ultimately in increase in maternal mortality among tribal women of Bastar.

5.Conclusion

In spite of all efforts taken by the central and state Government to ameliorate educational, socioeconomic status and occupational status, maternal mortality still remains a major cause of women mortality in tribal population of Bastar (Chhattisgarh).

Prevention: Prevention is better than cure. Prevention is crucial strategy for reduction of maternal mortality in tribal women population. A integrated comprehensive strategy should be implemented to ameliorate educational status, socioeconomic status (SES) and thus improving the standard of living and ultimately improving the quality of life. In this context we must remember that western countries controlled most of the infectious diseases long before the advent of modern antibiotics, only by improving their standard of living.

Socioeconomic Status: Socioeconomic status (SES) is often measured as a combination of education, income, and occupation. It is commonly conceptualized as the social standing or class of an individual or group. Low Socioeconomic status (SES) and its

correlates, such as lower education, poverty, and poor health, ultimately affect not only our tribal society but any society as a whole.

Education: Education especially the female education is generally considered a key factor to development. Female education is believed to have a great influence on the maternal and child health as it enhances the knowledge and skills of the mother concerning age at marriage, contraception, nutrition, prevention and treatment of diseases.

The standard of living: The standard of living includes factors such as income, quality and availability of employment, class disparity, poverty rate, quality and affordability of housing, hours of work required to purchase necessities, gross domestic product, inflation rate, number of vacation days per year, affordable (or free) access to quality healthcare, quality and availability of education, life expectancy, incidence of disease, cost of goods and services, infrastructure, national economic growth, economic and political stability, political and religious freedom, environmental quality, climate and safety. The standard of living is closely related to quality of life.

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