

## A Study of Reproductive and Child Health among the Dhur Gond Tribal Community of Mahasamund District, Chhattisgarh, India

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**ABSTRACT** Present cross-sectional study was conducted to understand the pregnancy related women reproductive health, infant and child mortality and also to assess the nutritional status of mother and under five children among Dhur Gond tribal community of Mahasamund district of Chhattisgarh, India. 174 ever married women and 68 under five children were selected for the present study. Pre-structured schedule was used to collect socio-economic, demographic, reproductive health including ante-natal care, delivery practices etc. Weight of under five children and height and weight of mother were measured by standard techniques. Weight for age was calculated for assessing child nutritional status using NCHS standard, body mass index (BMI) was used to assess for mother nutritional status. Results revealed that high percentages of mother had not taken ante-natal checkup (51.72%), tetanus injection (41.38%) and iron and folic acid tablets (56.32%) during pregnancies. 94.83 percent deliveries performed at home and 57.47 percent birth were done mainly by untrained *dai* (traditional birth attendant's). Infant and child mortality rate was 5.92 and 4.28 per 100 live births respectively. 47.12 percent of mothers were undernourished (BMI <18.5 kg/m<sup>2</sup>) and all the children were suffered from malnutrition. Grades II and III malnutrition were higher among girls compared to boys. Poor health status during child bearing period, low ante-natal care, high deliveries at home along with high prevalence of undernutrition of underfive children and mothers. These are mainly due to low socio-economic condition, high illiteracy, lack of awareness among Dhur Gond tribal community.

### INTRODUCTION

The major aim of reproductive and child health (RCH) programme is to improve the survival status of mothers as well as children of a community or nation (Jain and Visaria 1998). Because women are a particularly vulnerable segment of a society and suffer from social, economic and nutritional deprivation to a far greater extent than men (Amin 1995). In general, when the care of a child's mother suffers, the childcare suffers as well (UNICEF 1996; Engle et al. 1999). Specifically, women's quality of life with her children as well as family and community

is largely influenced by pregnancy related health and nutritional problem of the women (WHO 1997). About 200 million women become pregnant each year in the developing countries and suffer from nutritional deficiencies (WHO 1997). Similarly, more than half of the malnourished children in the developing world are found in South Asia, and 26 million babies are born with low birth weight because their mothers are either ill or malnourished (UNICEF 1993, 1996). There is evidence to show poor maternal health status exemplified by low BMI is associated with poor lactation performances and poor growth in infants (Kusin et al. 1992). An important element in reducing health risk from mother and children is to increase the proportion of babies delivered in proper health facilities, which will reduce the risk of infections of mother and newborn child (Mitra et al. 1997). Because one third of the total disease burden that woman face is linked to pregnancy, childbirth, abortion and reproductive tract infection (World Bank 1993). Therefore, maternal and child health services play a vital role in achieving improved reproductive outcomes in various societies, particularly in rural settings (Bhatia and Cleland 1995). But the availability of maternal and child health (MCH) services is low

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throughout the world (Hollan 1989; Bhandari et al. 1989; Paul 1991). As a result, the insufficient use of health care services, especially prenatal care and place of delivery influences the high rate of infant and child mortality (Gaminiratne 1991; Fiorste 1994). A study in Bangladesh reveals that high infant and child mortality is influenced by limited use of health care services by mothers (Kabir and Amin 1993). Mason (1984 1996) and Chatterjee (1991) pointed out that women's education is associated with the later age at marriage, contraceptive use, and lower fertility. Bourne and Walker (1991) confirmed that mother's education in India has greater effect on the survival of her daughters than sons. Elo (1992) suggested that there is positive effect of maternal schooling on the use of pre-natal care and delivery assistance. Education enhances women's knowledge of modern health care facilities, improves her ability to communicate with modern health-care providers and by increasing the value she places on good health, results in heightened demand for modern health-care services (Caldwell 1979; Schultz 1984; Caldwell and Caldwell 1988; Barrera 1990).

In India, reproductive child health programme was launched in 1997 to improve the ante-natal care, institutional deliveries or deliveries with trained health worker and also post-natal mother as well as child health care services (NIHFW 1999-2000) and later on the National Population Policy (2000) has set a goal to safe motherhood and empowering women for improving health and nutrition. Special provisions have been made for the most vulnerable groups population like scheduled caste, tribe, adolescent and urban slum. National Family Health Survey (NFHS) also focussed these segments and specifically on scheduled tribal population (NFHS-II 1998-99), who are the most "disadvantaged group" so called and suffer by poor reproductive and child health status specifically in Central India (Dey 2003; Ram et al. 2003). Thus, it needs time to time community based survey to understand the present situation and change in reproductive and child health condition of a particular community because tribal communities have their own socio-economic and cultural domains (Rath 2004). There are few works on different aspect of reproductive and child health among specific tribal communities in India and showing poor reproductive and child health status (Basu and Kshatriya 1997; Narahari and Rani 2002; Reddy et al. 2001; Pandey et al. 2001) but there is no study on

reproductive and child health status of Dhur Gond tribal community, who are one of the important tribal communities in Central India. Therefore, the objective of the present study is to understand the pregnancy related women reproductive health along with infant and child mortality and also to assess the nutritional status of mother and under five children among Dhur Gond tribal community of Mahasamund district of Chhattisgarh, India.

## MATERIALS AND METHODS

### The Sample

The sample for the present cross-sectional study was collected from two villages (Bhadraasi and Basuladabri) of Bagbahara block of Mahasamund district of Chhattisgarh State, India. A sample of 174 married Dhur Gond tribal women along with 68 children (32 boys and 36 girls, aged less than 5 years) were selected for the present study.

### Demographic and Reproductive Health Data

The information on infant and child mortality, age at first marriage, menarche and menopause, pre-natal care and delivery practice of last child birth, family planning practice was collected by using pre-tested and pre-structured schedules.

### Anthropometric Measurements

The anthropometric measurements of height and weight of women and weight of Dhur Gond boys and girls were taken as per the IBP recommendation (Weiner and Lourie 1981) The same investigator (RC) collected all the measurements to avoid the inter-observer error, and for maintaining uniformity and accuracy in techniques. Anthropometer rod was used to measure height of the women. The reading was taken to the nearest 0.1 cm. Portable weighing machine was used to measure weight of the children and women wearing minimum clothing and it was recorded to the nearest 0.5 kg.

### Age Estimation

The age of the children were ascertained from the *Anganbadi* register. Ages of most of the children and mother were calculated and cross-

checked with reference to the events such as some important festivals, storm, flood etc. The aged members of the households and villages, along with the ward member and the clan chief also confirmed the age of the children. The age of the child was recorded in complete years. For analysis of the data the age grouping was done according to the age at the last birth day. All the children who had completed 3 years but less than 4 years were group as 3 years and likewise age group was calculated.

### Analysis

Mean, standard deviation and percentage of demographic and reproductive data were calculated. Infant mortality rate (IMR) and child mortality rate (CMR) were calculated per 100 live births. The nutritional anthropometric indices of children were calculated using reference median as recommended by NCHS (Frisancho 1990) and classified according to Jelliffe classification of weight for age (Jelliffe 1966) and mother nutritional was assessed through body mass index and classifying according to thinness of mother (WHO 1995).

## RESULTS AND DISCUSSION

It is observed from the Table 1 that the mean reproductive span of studied Dhur Gond women is nearly 34 years, which is started from menarche (mean age at menarche 13.84 years) and ended at menopause (mean age at menopause 48.15 years). The Saharia tribal mothers of Madhya Pradesh has found to be slightly lower mean age at menarche (13.5 years) and also mean age at menopause (44.6 years) compared to present women (Biswas and Kapoor 2004). Age at menarche of studied women is higher when compared to Gond (12.8 years), Kamar (13.5 years), Hill Korwa (13.7 years) and lower than Munda (14.7 years) and Abujmaria (15.0 years) tribal women in Central India (cited in Biswas and Kapoor 2004). Whereas mean menarcheal age of Oraons tribe of Assam is 13.26 years (Gogoi and

**Table 1: Age at menarche, first marriage and menopause**

Variables	Mean ( $\pm$ SD)
Age at menarche (years)	13.84 (1.23)
Age at first marriage (years)	16.31 (2.28)
Age at menopause (years)	48.15 (2.48)

Sengupta 2003). Tyagi et al. (1983) reported that mean menarcheal age among Oraon (12.80 years) and Munda (12.76 years) girls of Ranchi, which are also lower than present women. The mean age at menarche (14.41 years) among Kharia tribal girls of Orissa are higher than present women (Basu and Kshatriya 1997). Whatever the variation exist between them, it may be attributed to several socioeconomic and cultural factors (Sanchez-Andres 1997; Ersoy et al. 2005). It is found to be observed that reproductive span is higher among Dhur Gond women compared to Kamar and Hill Korwa tribe of Madhya Pradesh (Cited Biswas and Kapoor 2004). The mean age at first marriage is 16.31 years, which is slightly higher than women of Chhattisgarh (15.4 years) and Madhya Pradesh (14.9 years) states (NFHS-II 2000).

Table 2 represents the pre-natal care of women during last pregnancy. 51.72 percent of women had not received any ante-natal check up during their last pregnancy. Even those are taken ante-natal check up, within which only 4.02 percent of women are completed total ante-natal check up. In Chhattisgarh, mothers of 42 percent of children did not receive any ante-natal check during their last child (NFHS-II 2000). In second stage of ante-natal check up, 41.38 percent of women did not take tetanus toxoid (TT) injection. Whereas 42 percent of Chhattisgarh and 46 percent of Madhya Pradesh women did not receive any TT injection during their last pregnancy, which is slightly higher compared to present women. While 67 percent of Kharia tribal women of Orissa were found to be immunized with TT injection, therefore they are much better immunized during last pregnancy than Dhur Gond women (Basu and Kshatriya 1997). On the other hand, 56.32 percent of women did not take iron and folic acid tables

**Table 2: Prenatal care of women during last pregnancy**

Variables	N= 174	%
<i>Antenatal Check-up</i>		
None	90	51.72
At least 2 times	50	28.74
At least 3 or more	27	15.52
Total	7	4.02
<i>Tetanus Toxoid Injection During Pregnancy</i>		
None	72	41.38
At least 1	11	6.32
At least 2	91	52.30
<i>Iron and Folic Acid Tablets During Pregnancy</i>		
None	98	56.32
Taken less than 100	64	36.78
Taken 100	12	6.90

and only 6.90 percent of women consumed 100 tablets during their last pregnancy. Whereas 45 percent of Chhattisgarh and 53 percent of Madhya Pradesh women did not take iron and folic acid supplementation during their last pregnancy (NFHS-II 2000). A survey on the schedule tribe women of Tamil-Nadu also revealed that education has direct effect on the utilization of ante-natal care services (Nanda and Niranjana 1999). Therefore, poor antenatal care may be attributed to women's knowledge of modern health care facilities (Caldwell 1979), effectiveness of health care services (Gaminiratne 1991; Forste 1994) or specifically mother's level of education (Elo 1992).

From Table 3, it has been observed that 94.83 percent of Dhur Gond women had home delivery during their last child compared to only 5.17 percent in hospital delivery. Whereas 57.47 percent of childbirth is conducted by untrained *dai* (traditional birth attendant's) compared to 12.07 percent by doctor and 29.89 percent of trained *dai* (traditional birth attendant's) respectively. Basu and Kshatriya (1997) also reported that 94 percent of Kharia tribal women of Orissa conducted deliveries at home. In rural area of India more than 80 percent of the deliveries occur at home, assisted by traditional birth attendant's (*Dai*) and household members. In case of rural deliveries, the unhygienic condition with no ante-natal care often leads to infection in

**Table 3: Delivery practices among women**

Variables	N= 174	%
<i>Place of Delivery</i>		
Home	165	94.83
Hospital	9	5.17
<i>Service Provider</i>		
Untrained <i>dai</i>	100	57.47
Nurse	1	0.57
Doctor	21	12.07
Trained <i>dai</i>	52	29.89

**Table 4: Number of surviving and dead children of married women and age at death of children**

Variables	Women age (years)							Total
	<20	20-24	25-29	30-34	35-39	40-44	45-49	
No. of women	4	17	33	28	24	10	58	174
Live births	4	29	83	104	102	52	234	608
Surviving	4	24	69	90	88	45	190	510
<i>No. of Children, Dead, by Age at Death</i>								
<1 years	0	1	6	4	7	4	14	36
1-5 years	0	2	3	3	4	3	11	26
<i>Mortality</i>								
Infant mortality rate	0	3.44	7.22	3.85	6.86	7.69	5.98	5.92
Child mortality rate	0	6.89	3.61	2.88	3.92	5.77	4.70	4.28

mothers and newborn (World Bank 1996; Bharati et al. 1998).

Table 4 shows surviving and dead children along with infant and child mortality rate in different age groups of women. Infant mortality rate (5.92 per 100 live births) of Dhur Gond tribe is lower than India IMR (8.8 per 100 live births) and also IMR of Madhya Pradesh (NFHS, 2000). Whereas Kharia tribe has very high rate of IMR (10.2 per 100 live birth) than present tribal group. Baigas tribal community of Central India also showed high IMR (13.4 per 100 live births) than present community (Verma 2002). While Khasi (4.2 per 100 live births), Garo (5.2 per 100 live births) and Mizo (2.3 per 100 live births) tribal communities of north-east India are more or less same IMR as we found in our present study (Adak 2001). In case of child mortality rate (4.28 per 100 live births) of present tribe is higher compared to CMR of India (3.6 per 100 live births) but lower than Madhya Pradesh (5.1 per 100 live births) (NFHS-II 2000).

Table 5 shows the modern family planning practices among Dhur Gond married women. It is

**Table 5: Family planning practices**

Variables	N=174	%
<i>Family Planning Used</i>		
Ever used	108	62.06
Never used	66	37.94
<i>Types of Method (n=108)</i>		
Condom	7	6.48
Pills	3	2.78
Women sterilization	79	73.15
Men sterilization	19	17.59

**Table 6: Nutritional status of mother**

BMI ( $\text{kg}/\text{m}^2$ ) gradation	N=174	%
<16.00	23	13.22
16.00-16.99	22	12.64
17.00-18.49	37	21.26
>18.50	92	52.88

**Table 7: Distribution of child nutritional status (Weight for age)**

Grade	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Normal	0	0.00	0	0.00	0	0.00
Grade I	16	50.00	11	30.50	27	39.70
Grade II	12	37.50	20	55.60	32	47.10
Grade III	4	12.50	5	13.90	9	13.20
Total	32	100.00	36	100.00	68	100.00

found that 62.06 percent of women used performed modern family planning methods and 37.94 percent did not. Those, who have practiced family planning, within which 73.15 percent of women used sterilization and only 2.78 percent used pills and 6.48 percent of women used condom by their husband. Whereas comparatively lower percentages of Chhattisgarh (45%) and Madhya Pradesh (44.0%) women used modern family planning methods (NFHS 2000). The percentage (16.0%) is very low among Kharia tribal couples of Orissa (Basu and Kshatriya 1997).

The distribution of BMI (kg/m<sup>2</sup>) among Dhur Gond women (Table 6) shows 47.12 percent of women are undernourished (BMI < 18.50 kg/m<sup>2</sup>) as compared to 52.88 percent who are normal (≥ 18.50 kg/m<sup>2</sup>). Within undernourished women 13.22 percent are suffered by severe undernourishment (BMI < 16.00 kg/m<sup>2</sup>). It is evident that women with better nutritional status (BMI > 18.50 kg/m<sup>2</sup>) have history of better infant health status (NNMB 1994; 1996). This nutritional deprivation not only affects the health of the mother, but also the health of the foetus and child (Winikoff 1990).

All the children studied suffered by different grades of malnutrition on the basis of weight for age index (Table 7). The girl child show higher prevalence of grade II (55.60%) and grade III (13.90%) malnutrition compared to 37.5 percent and 12.5 percent of boys, respectively. Similarly, high prevalence of undernutrition was also reported in Maria Gond (Rao and Rao 1994) and Gond (Rao et al. 2005) tribal preschool children of Madhya Pradesh. High prevalence of chronic and acute undernutrition was also observed in other tribal and caste preschool children in India (NNMB, 2000; Mahapatra et al. 2000; Mitra et al. 2004; Rao et al. 2006).

### CONCLUSION

Poor health status during child-bearing period, low ante-natal care, high deliveries at home along

with high prevalence of undernutrition of under five children and mothers, these are mainly due to low socio-economic condition, high illiteracy and lack of awareness among Dhur Gond tribal community. Further indepth study is necessary to understand the underlying causes.

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