

Reproductive Health of Saur Tribal Women: Reality and Projection

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ABSTRACT Health is one of the assets of life, which all human beings aspire to achieve. The main objective of this study is to find out the reproductive health care with special reference to conception, prenatal and intervention variable among the Saur of Madhya Pradesh. The random household sampling procedure has been employed for the selection of the respondents and for collection of the data. There is lack of systematic and comprehensive research studies, which provide information regarding the health status of the tribal community. Research studies conducted on tribals for the health need assessment, which give an insight for strategic planning for tribal health development are hardly available. The proposed study will emphasize on the generation of critical information required for effective planning and for formulation of health strategies among the Saur. It is expected that proposed investigation will find out those socio-demographic factors as well as several other factors, which can lead to solve the problem of poor health and uplift the standard of life. The present study deals with reproductive health of Saur tribal women.

INTRODUCTION

India is home to almost more than half of the world's tribal population. Approximately more than 533 tribes were spread throughout different parts of India (Swain 2003). These tribes constitute around 8 percent of the total population whereas the largest concentrations of tribals (15.4 million) are found in Madhya Pradesh (Chopra and Makol 2004). The poor health condition of the Indian tribals is reflected in the status of their reproductive health correlated with individual and household social and economic conditions (Middleberg 2003). Reproductive health also represents the overall health condition of a population. The reproductive role of women all through the process of gestation, birth, breastfeeding, and child-rearing places her at the focal point of a population's reproductive health (Shankar and Thamilarasam 2003). It is well documented that, very few empirical studies have attempted to explain tribal reproductive health systematically with appropriate use of theoretical perspectives (Mohindra and Labonte 2010; Maharatna 2005). This limitation has been noted by scholars for last several decades. In such context, studies on reproductive health of a marginalized community requires an alternative view to incorporate the ecological approach to sustainability which views the environment as "a dynamic outcome

resulting from interaction among all elements that population the environment" (Pillai and Gupta 2011).

Reproductive health has received serious attention from public health field, even though lack of theoretical foundation to explain this comprehensive issue is noticeable. Studies from public health generally aim to identify the factors which may influence the reproductive health indicators of a particular community (Mishra et al. 2009; Rich-Edwards 2002). Studies conducted from this point of view consider the factors which influence women's reproductive health throughout the life typically from menarche to menopause (Blell et al. 2008; Mishra et al. 2009). Predictors of physical and mental health scores were illness, domestic violence, employment, social and cognitive coping and few attempts have been made to investigate the perceptions of Indian women living in mine communities about their well-being linked to reproductive health (D'Souza et al. 2013).

Objectives

The objective of this study is to find out the socio-demographic, environmental and other correlates for promotion of health care among the Saur in general and to examine reproductive health of women among the Saur tribals of Madhya Pradesh in particular.

METHODOLOGY

Materials

The study area of the proposed investigation comprises total geographic area of Chhatarpur district of Madhya Pradesh. The Saur are one of the schedule tribes of Bundelkhand region. The village with considerable concentration of Saur population has been selected within the systematic criteria through random sampling. The random household sampling procedure has been employed for the selection of the respondent and for collection of the data. In all, about 350 tribal households have been investigated within a particular time frame.

Tool Used

The present investigation has been conducted through interview schedule, group discussion and informal interview. The investigation has been done through information keeping in view the following aspects:

A door-to-door survey of randomly selected households has been undertaken among the Saur tribe of Madhya Pradesh using structured schedule.

The study is based on differential in health care with special reference to social, demographic and environmental variable among the Saur tribe of Madhya Pradesh.

The exploratory study to find out the causes of death, disease, illness data and the records will be collected by case study, case history methods and through public health centre information.

The main thrust of the present study will be on understanding the characteristics of those households which experience ill health, particularly having bearing on the reproductive health determinants.

Demographic Formula Used

Population information is best communicated in terms of number and rates. Such information is more meaningful when it provides an indication of the magnitude and distribution of the phenomenon, as well as the trend. To be useful, data must be expressed clearly as well as accurately. There are some formula devised to shape these data into manageable forms such as simple counts, rates and ratios.

Statistical Consideration

The statistics itself is a vast field and here the selection of these methods is on the basis of nature of study, nature of variable as well as the objective of study.

RESULTS AND DISCUSSION

Reality of Reproductive Health Status among Saur

From the analytical point of view, it is noteworthy that only a limited number of empirical studies have attempted to explain tribal reproductive health systematically with appropriate use of theoretical perspectives (Mohindra and Labonte 2010; Maharatna 2005). Only a small proportion anthropological and public health studies have focused on tribal reproductive health from a holistic approach.

Sex Composition (Sex Ratio)

Sex is an easily identifiable characteristic because of its dichotomous nature. The sex composition of a population plays a vital role in the population analysis, since its effects the incidence of births, deaths and marriage. In the

Table 1: Distribution by age, sex and sex ratio in pre-reproductive, reproductive and post reproductive age groups

S. No.	Age group (in year)	Male		Female		Total		Sex ratio
		No.	Percent	No.	Percent	No.	Percent	
1	Pre-reproductive (0-14 years)	565	51.36	510	52.63	1075	51.95	902
2	Reproductive (15-49 years)	489	44.45	399	41.17	888	42.91	815
3	Post reproductive (50 years above)	46	4.18	60	6.19	106	5.12	1304
Total		1100	100.00	969	100.00	2069	100.00	880

present study sex ratio is defined as the number of female per thousand males. Table 1 shows the sex ratio values in pre-reproductive (0-14 years), reproductive (15-49 years) and post-reproductive (50 years and above) age groups. It is interesting to note that in pre-reproductive and reproductive category male are found to be excess over females while in post-reproduction category the females are found to be in excess over males. The overall sex ratio is found to be 880 among the study population, which shows the preponderance of males over females.

Population Characteristics

Table 2 shows some population characteristic of the Saur population. It reveals a moderate index of aging (9.86). This is might due to the low rate of mortality among the aged persons. The young dependency ratio among them is 51.9, while old dependency ratio is 2.51 (however, such a low ratio can also be due to the small sample size) and total dependency ratio is 54.4 among the Saur population. Child dependency ratio is 22.4 this indicates a high frequency of young individual in the study population. The child-woman ratio is 114.5 among the same population.

Table 2: Population characteristics

S. No.	Population characteristics	Ratio
1	Index of aging	9.86
2	Young dependency ratio	51.9
3	Old dependency ratio	2.51
4	Total dependency ratio	54.4
5	Child-woman ratio	114.5

Population Distribution According to Marital Status

Marital status has demographic, social, religious and legal significance. Therefore, the marital status composition is yet another essential part of the study of population health dynamics. The distribution of Saur population in relation to age, sex and marital status is shown in Table 3. The unmarried male above 24 years of age as well as no unmarried female above 24 years of age is reported. However, all the individuals below 15 years of age are unmarried. This is true in both the sexes. There are 1.63 percent male found in divorced, widow or separated category.

Age at Marriage

The age at marriage of woman is an important determinant of population health dynamics and growth especially where fertility control practices is not widespread, because the institution of marriage represents the socially sanctioned initiation of cohabitation and child bearing/rearing. Any shift in the marriage age can pre-pone or postpone the beginning of the reproductive span in societies. It is widely known that age at marriage varies across and within countries/regions. It is higher in the develop countries than in the developing ones (Fernando 1982). The distribution of Saur women according to their age at marriage is shown in Table 4. The range of the age at marriage varies between 12 to 20 years. In the present study the most of the Saur girl marry at 15 years age (21.18 per cent), while marriage at

Table 3: Total population by age, sex and marital status

Age group	Unmarried						Married					
	Male		Female		Total		Male		Female		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
0-4	244	22.18	221	22.80	465	22.47						
5-9	181	16.45	168	17.33	349	16.86						
10-14	140	12.72	121	12.48	261	12.61						
15-19	98	8.90	45	4.64	143	6.91	17	1.54	49	5.05	66	3.18
20-24	19	1.72	8	0.82	27	1.30	83	7.54	68	7.01	151	7.29
25-29	9	0.81			9	0.43	80	7.27	61	6.29	141	6.81
30-34							61	5.54	56	5.77	117	5.65
35-39	2	0.18			2	0.09	57	5.18	49	5.05	106	5.12
40-44							41	3.72	43	4.43	84	4.05
45-49	1	0.09			1	0.04	15	1.36	17	1.75	32	1.54
50-54							12	1.09	13	1.34	25	1.20
55-59							10	0.90	11	1.13	21	1.01
60-64							7	0.63	9	0.92	16	0.77
65+							5	0.45	7	0.72	12	0.57

Table 4: The distribution of women according to age at marriage

S. No.	Age at marriage	Number of women	Percentage
1	< 12 years of age	4	0.98
2	13	31	7.63
3	14	38	9.35
4	15	86	21.18
5	16	84	20.68
6	17	78	19.21
7	18	48	11.82
8	19	24	5.91
9	20 and above	13	3.20
10	Total	406	100

the age of 16 (20.68 percent) as well as at the age of 17 (19.2 percent). The mean age at marriage is observed 16.06 years.

Projections of Reproductive Health Status among Saur

A brief account of reproductive health variables factors relating to infant and child mortality has been studied among the Saur women. The delivery care together with the follow-up measures adopted soon after delivery is important and visible determinant of infant and child mortality. A number of major variables that relate to this stage of human development can be broadly grouped into delivery care, post delivery care and demographic characteristics. The absence of sterilized knife and medicines they are bound to use a kitchen knife or sickle and any powder that is available for cutting and dressing the umbilical cord during home delivery in rural areas results produces tetanus which claims the lives of many infants. The place of birth influ-

ences the personnel and materials used for facilitating or damaging childbirth. Post delivery care and care during delivery are interrelated factors which involves several demographic factors birth order, sib-ship size, birth interval etc. that exist at the time of delivery have a very great influence on mortality.

Delivery Care

Table 5 shows the delivery care attendant with corresponding infant and child mortality. The result shows that maximum number of mother delivery care conducted by traditional *dais* (84.24 per cent). The highest number of infant mortality occurs among mother whose delivery care conducted by traditional *dais* (89.07 per cent) while lowest in nurse as delivery care attendant (1.62 per cent). In case of child mortality similar trend is noticed. It may be concluded that infant and child mortality is higher among mothers whom delivery care conducted by traditional *dai* as compared to lower among auxiliary nurse midwives and nurse as a delivery care attendant.

When chi square test is performed it is found that there is significant difference between delivery care and infant mortality as well as delivery care and child mortality. Simultaneously correlation test shows non-significant value between delivery care and infant mortality as well as significant value occurs between delivery care and child mortality.

Material Used for Cutting Umbilical Cord

Table 6 shows the material used for cutting umbilical chord with corresponding level of in-

Table 5: Frequency of infant and child mortality with corresponding delivery care attendant

S. No.	Response	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	Traditional <i>dai</i>	342 (84.24)	1503 (87.13)	220 (89.07)	133 (86.93)
2	A.N.M.	55 (13.55)	191 (11.07)	23 (9.31)	16 (10.46)
3	Nurses	9 (2.22)	31 (1.80)	4 (1.62)	4 (2.61)
4	Total	406	1725	247	(100)

Chi-square (χ^2) value:

Delivery care versus Infant mortality (χ^2) = 13.668 df = 4, $P \leq 0.01$ Significant

Delivery care versus child mortality (χ^2) = 14.097 df = 4, $P \leq 0.01$ Significant

Correlation (r) values:

Delivery care versus Infant mortality (r) = -0.128 Non-significant

Delivery care versus Child mortality (r) = -0.040 Significant

Table 6: Frequency of infant and child mortality with respect to material used for cutting umbilical chord

S. No.	Response	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	New blade	292 (71.92)	1035 (60.00)	144 (58.30)	89 (58.17)
2	Knife/Scissors	67 (16.50)	396 (22.96)	59 (23.89)	33 (21.57)
3	Other	47 (11.58)	294 (17.04)	44 (17.81)	31 (20.26)
4	Total	406 (100)	1725 (100)	247 (100)	153 (100)

Chi-square (χ^2) value:

Material used for cutting umbilical chord versus Infant mortality (χ^2) = 12.841, df = 4, $P \leq 0.02$ Significant.

Material used for cutting umbilical chord versus child mortality (χ^2) = 13.699, df = 4, $P \leq 0.01$ Significant.

Correlation (r) values:

Material used for cutting umbilical chord versus Infant mortality (r) = 0.299 Non-significant.

Material used for cutting umbilical chord versus child mortality (r) = 0.249 Non-significant

fant and child mortality. It shows from the table that maximum number of mothers umbilical cord cut by new blade (71.92 per cent) while other material for cutting umbilical cord is lowest (11.58 per cent). The other materials are bamboo shaft, sickle etc. The proportion of infant mortality is higher among knife, scissors and other material used for cutting umbilical chord. In case of child mortality similar trend is noticed. It may be concluded that infant mortality is proportionately lower where new blade is used for cutting umbilical cord as compared to knife, scissors or other material.

When chi square test was performed it was found that there was significant difference between material used for cutting umbilical cord and infant mortality as well as material used for cutting umbilical cord and child mortality. Simul-

taneously correlation test shows non-significant value between material used for cutting umbilical cord and infant mortality as well as material used for cutting umbilical chord and child mortality.

Place of Delivery

Table 7 shows the place of delivery with corresponding infant and child mortality. The table reveals that maximum number of delivery is placed in home (87.68 per cent). The highest number of infant mortality occurs in home deliveries (92.31 per cent) while lower in primary health centre deliveries (3.24 per cent). In case of child mortality similar trend is noticed. It may be concluded that infant mortality is higher in home deliveries as compared to lower in case of primary health centre and other delivery care places.

Table 7: Frequency of infant and child mortality with respect to place of delivery

S. No.	Place of delivery	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	Home	356 (87.68)	1548 (89.74)	228 (92.31)	137 (89.54)
2	P.H.C.	23 (5.67)	82 (4.75)	8 (3.24)	8 (5.23)
3	Other	27 (6.65)	95 (5.51)	11 (4.45)	8 (5.23)
4	Total	406 (100)	1725 (100)	247 (100)	153 (100)

Chi-square (χ^2) value:

Place of delivery versus Infant mortality (χ^2) = 13.882 df = 4, $P \leq 0.01$ Significant

Place of delivery versus child mortality (χ^2) = 14.236 df = 4, $P \leq 0.01$ Significant

Correlation (r) values:

Place of delivery versus Infant mortality (r) = -0.132 Non-significant

Place of delivery versus Child mortality (r) = -0.047 Non-significant

When chi square test is performed it is found that there is significant difference between place of delivery and infant mortality as well as place of delivery and child mortality. Simultaneously correlation test shows non-significant value between place of delivery and infant mortality as well as place of delivery and child mortality.

Post Delivery Care

Table 8 shows the value of infant and child mortality in relation to post- delivery care. It is seen from the table that number of mother is maximum in medical post- delivery care (83.00 per cent). The proportion of infant mortality is higher among non-medical post delivery care as compared to medical post -delivery care. In case of child mortality similar trend is noticed. It may be concluded from the table that medical post- delivery care can reduced the incidence of infant and child mortality.

When chi square test is performed it is found that there is significant difference between post-delivery care and infant mortality as well as post-delivery care and child mortality. Simultaneously correlation test shows non-significant value between post delivery care and infant mortality as well as post delivery care and child mortality.

Live Birth Interval

Table 9 shows the value of infant and child mortality with respect to live birth interval among Saur mothers. This table shows that number of mothers is highest in live birth interval category 1 to 1.5 years (37.19 per cent), while lowest in case of more than two years live birth interval category (15.02 per cent). The highest number of infant mortality occurs in 1 to 1.5 years live birth interval category (38.46 per cent), while lowest in case of more than two years live birth interval

Table 8: Frequency of infant and child mortality with corresponding post delivery care

S. No.	Post delivery care	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	Medical	337 (83.00)	1366 (79.19)	180 (72.87)	123 (80.39)
2	Non medical	69 (17.00)	359 (20.81)	67 (27.13)	30 (19.61)
3	Total	406 (100)	1725 (100)	247 (100)	153 (100)

Chi-square (χ^2) value:

Post Delivery Care versus Infant mortality (χ^2) = 12.50 df = 2, P $\leq$ 0.001 Significant

Post Delivery Care versus Child mortality (χ^2) = 13.76 df = 2, P $\leq$ 0.001 Significant

Correlation (r) values:

Post Delivery Care versus Infant mortality (r) = 0.279 Non-significant

Post Delivery Care versus Child mortality (r) = 0.053 Non-significant

Table 9: Frequency of infant and child mortality with respect to live birth interval

S. No.	Live birth interval	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	1 Year	64 (15.76)	150 (8.70)	34 (13.77)	13 (8.50)
2	1 to 1.5 Year	151 (37.19)	631 (36.58)	95 (38.46)	63 (41.18)
3	1.5 to 2 Year	130 (32.02)	654 (37.91)	90 (36.44)	54) (35.29)
4	2.1 Year +	61 (15.02)	290 (16.81)	28 (11.34)	23 (15.03)
5	Total	406 (100)	1725 (100)	247 (100)	153 (100)

Chi-square (χ^2) value:

Live Birth Interval versus Infant mortality (χ^2) = 14.754 df = 6, P $\leq$ 0.02 Significant

Live Birth Interval versus child mortality (χ^2) = 15.010 df = 6, P $\leq$ 0.02 Non-significant

Correlation (r) values:

Live Birth Interval versus Infant mortality (r) = -0.011 Non-significant

Live Birth Interval versus Child mortality (r) = 0.087 Non-significant

category (11.34 per cent). In case of child mortality the highest number occurs in 1 to 1.5 years live birth interval category (41.18 per cent), while lowest in case of below one year live birth interval category (8.50 per cent). It may be concluded from the table that increase the birth spacing reduces the infant and child mortality.

When chi square test is performed it is found that there is significant difference between live birth interval and infant mortality as well as non-significant value occurs between live birth interval and child mortality. Simultaneously correlation test shows non-significant value between live birth interval and infant mortality as well as live birth interval and child mortality.

Duration of Breast Feeding

Table 10 shows the weaning time with respect to infant and child mortality. It is seen from the table that number of mother is highest among 2 to 2.5 years breast-feeding duration (43.10 per cent), while lowest in more than three years breast-feeding duration (4.19 per cent). The highest number of infant mortality occurs in 2 to 2.5 years breast-feeding duration (41.30 per cent), while lowest in more than three years breast-feeding duration (4.45 per cent). In case of child mortality similar trend is noticed. It may be concluded from the table that early age weaning practices may be associated with infant and child mortality.

When chi square test is performed it is found that there is significant difference between duration of breast-feeding and infant mortality as well as duration of breast-feeding and child mortality. Simultaneously correlation test shows non-significant value between duration of breast-feeding and infant mortality as well as non-significant value occurs between duration of breast-feeding and child mortality.

CONCLUSION

When we analyse the reproductive health related variable in relation to infant mortality it has been observed that material used for cutting the umbilical chord as well as post delivery care shows significant effect on infant mortality determinacy while mother delivery care and duration of breast-feeding have least effect on infant mortality. The multi-collinearity is observed within mother delivery care and place of delivery variable. When predictor peri-natal variables are constant and all other variable are excluded then this model predicts 14.3 per cent influence in infant mortality. The reproductive health related variable in relation to child mortality shows that material used for cutting umbilical cord has significant effect while live birth interval and post delivery care shows non-significant results. If the entire pre-natal variables are constant and all other variable are excluded then this model predicts 8.3 percent of child mortality.

Table 10: Frequency of infant and child mortality with respect to duration of breast feeding

S. No.	Duration of breast feeding	Number of mothers	Number of live birth	Infant mortality	Child mortality
1	2 Years	165 (40.64)	542 (31.42)	93 (37.65)	46 (30.07)
2	2 to 2.5 Years	175 (43.10)	818 (47.42)	102 (41.30)	72 (47.06)
3	2.5 to 3 Years	49 (12.07)	267 (15.48)	41 (16.60)	24 (15.69)
4	3 Years +	17 (4.19)	98 (5.68)	11 (4.45)	11 (7.19)
5	Total	406 (100)	1725 (100)	247 (100)	153 (100)

Chi-square (χ^2) value:

Duration of breast feeding versus Infant mortality (χ^2) = 14.091 df=6, $P \leq 0.02$ Significant

Duration of breast feeding versus Child Mortality (χ^2) = 14.307 df=6, $P \leq 0.02$ Significant

Correlation (r) values:

Duration of breast-feeding versus Infant mortality (r) = 0.103 Non-significant

Duration of breast-feeding versus child mortality (r) = 0.190 Significant

RECOMMENDATIONS

The delivery care should be done by trained birth attendant. The material used for cutting umbilical cord should be sterile blade. The place of delivery should be in the health centre. The post delivery care should be done by medically trained person. The life birth interval should be minimum two to three years as well as maximum to two children norms. The weaning practices should be done as suggested by the doctor. In addition to this, hundred percent immunizations for pregnant mothers and children below five years must be targeted among the Saur population. The early age of marriage should be prohibited among the Saur. Efforts should be made towards developing proper sanitation and personal hygiene as well as the provision of safe drinking water. Awareness about Sexually Transmitted Diseases [STD] and Acquired Immuno-deficiency Syndrome [AIDS] must be further enhanced.

REFERENCES

- Blell M, Pollard TM, Pearce MS 2008. Predictors of age at menarche in the Newcastle thousand families study. *Journal of Biosocial Science*, 40(4): 563-575.
- Chopra K, Makol N 2004. Common health problems encountered by the tribal community in Bastar District. *Health and Population: Perspective and Issues*, 27(1): 40-48.
- D'Souza MS, Nairy KS, Somayaji G 2013. Factors associated with health-related quality of life among Indian women in mining and agriculture. *Health Qual Life Outcome*, 11(9).
- Fernando DFS 1982. Social demographic determinants of fertility in Sri Lanka. *Journal of Biosocial Science*, 14-59.
- Maharatna A 2005. *Demographic Perspective on India's Tribes*. New Delhi: Oxford University Press.
- Middleberg MI 2003. *Promoting Reproductive Security in Developing Countries*. New York: Kluwer Academic / Plenum Publishers.
- Mishra GD, Tom SE, Cooper R, Kuh D 2009. Early life circumstances and their impact on subsequent reproductive health: A review. *Women's Health*, 5(2): 175-190.
- Mohindra, KS, Labonte R 2010. A systematic review of population health interventions and scheduled tribes in India. *BMC Public Health*, 10: 438-447.
- Pillai VK, Gupta R 2011. *Sustainability and Social Work*. Unpublished Manuscript.
- Rich-Edwards J 2002. A life course approach to women's reproductive health. In: D Kuh, R Hardy (Eds.): *A Life Course Approach to Women's Health*. Oxford: Oxford University Press, pp. 23-43.
- Shankar R, Thamilarasam M 2003. Tribal women and reproductive health. In: RN Pati (Ed.): *Socio-cultural Dimensions of Reproductive Child Health*. New Delhi: A.P.H. Publishing Corporation, pp. 33-50.
- Swain S 2003. Health Status of Tribal People. *Concept Paper Presented in the National Seminar on Health for all in New Millennium*, 24-26 February, NIHFW, New Delhi.