



Factors Influencing the Perinatal Mortality among the Hill Korwas: A Particular Vulnerable Tribal Group of Chhattisgarh, India

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Abstract

Objective: The prime objective of this study is to know the biocultural determinants of perinatal mortality among a particular vulnerable tribal group. WHO defined perinatal mortality as the "Late fetal and early neonatal deaths weighing over 1000 gm. at birth expressed as a ratio per 1000 live births."

Methodology: In order to know the factors influencing the perinatal mortality among the Hill Korwas of Chhattisgarh the details of 202 of total births were recorded during one year period (2006 – 2007). Prestructured, pretested interview schedules were used for data collection. Standard techniques were used to take the maternal anthropometry, blood samples and birth weight.

Result: Perinatal mortality was higher in Hill Korwas mothers who did not have any antenatal checkups (138.55/1000 birth). PNMR was higher in case of gestational age less than nine months, (192/1000 births). There was a Typical fall in the PNMR in para 2, mothers as against primis, after which the PNMR increased with each successive pregnancy. Out of 202 total births 25 perinatal deaths were recorded which estimated the perinatal mortality rate to be 123.76.

Introduction

Perinatal mortality serves as a sensitive index of maternal and neonatal care for an area and also reflects the general health of the population. It is an indicator of the extent of pregnancy wastage as well as the quality and quantity of health care available to the mother and the newborn. The problems affecting the health of mother and child are multifactorial. MCH problems cover a broad spectrum. At one extreme, the most advanced countries are concerned with problems such as certain behavioral problems [1,2,3,7]. At the other extreme, in developing countries, the primary concern is reducing of maternal

and child mortality and morbidity, spacing of pregnancies, prevention of communicable diseases and promoting acceptance of health services.

WHO (1970) defined perinatal mortality as the late fetal and neonatal deaths weighing over 1000 gm. At birth expressed as a ratio per 1000 live births. Perinatal mortality has assumed a greater significance as a yardstick of obstetric and pediatric care before and around the time of birth [10]. Various factors are known to be associated with perinatal mortality including socio-economic status, parity of the mother, quantity and quality of prenatal, intranatal and neonatal care [3]. In order to bring



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down the perinatal mortality provision of special care to mother at risk is essential. To affect a reduction in these deaths as assessment of the factors which determine the risk is essential [10].

The process through which the different bio-social variables influence the perinatal mortality can be understood by undertaking micro-level studies with epidemiological and anthropological approaches. The present investigation was undertaken with a view to understand the factors responsible for the high perinatal mortality rate among the Hill Korwas tribe of the newly formed Chhattisgarh state. The Hill Korwas represent one of the weakest sections of particular vulnerable tribal group. Their economic condition is precarious and they are unable to make their both ends meet.

Several studies have been conducted in different regions of the country on Perinatal child survival and associated bio-cultural factors. Data reveals that PNMR was high in remote, rural and Tribal areas of the Country [1,2,5,6,7,8,9,12,9,12,15].

Hill Korwa a sub group of Korwas tribe was identified as Particular Vulnerable Tribal Group (PVTG) during the fifthfive-year plan. The history of this tribe reveals that they moved westward into the old Khudia Jamindari (present Sanna and Bagicha revenue circles) of Jashpur district from Chhotanagpur region. They are distributed in Sarguja, Jashpur and Korba districts and their total population is 27107 (2001 Census). They are concentrated in 72 villages of Bagicha blocks and 12 villages of Manora block of Jashpur district. Their population in the two blocks are 8972 and 441 respectively [11].

Russell and Hiralal (1916) stated that the Korwa are a Kolarian tribe of the Chhotanagpur Plateau. They have two territorial groups. The inhabitants of the hilly areas are called Paharia Korwas and those of the plains Dihariya Korwa. Dalton believed that the korwa dialect is closely related to Asuri and resembles to Mundari and Santhali. [16]

Materials and methods

For the present investigation a community-based study on factors influencing the perinatal mortality among the Hill Korwas of Jashpur (Chhattishgarh) was carried out in 202 pregnancies and outcome of Jashpur during the period of one year i.e. from 20th June 2006 to 19th June 2007. The data has been collected by using a pretested interview schedule, participant observation and group discussion. Assistance have been taken for data collection from Axillary Nurse Midwives and Anganwadi Workers.

For this study attempt has been made to cover all births during the period of investigation. Four densely populated villages have been selected as the Centre of clusters. Information pertaining to perinatal care, care at birth, postnatal care, maternal factors, household and community level factors was obtained for every birth. Live births were followed up for one month. Assistance have been taken for data collection and follow up from ANM and Anganwadi workers.

The primary data processed to find out the different mortality rates and proportions as well as relationship between various factors. The variable considered under socio demographic characteristic were literacy, socio-economic status, age of mother, family customs, environmental sanitation and the distance of the nearest medical facility. Variables considered under obstetric characteristics were quality and quantity of ANC, Previous

obstetric history, parity, place and type of delivery, birth attendant and multiple pregnancies, the components of antenatal services checkups in each trimester, recording of weight, urine and blood pressure iron and folic acid tablets supplementation etc.

Results and discussion

In order to know the factors influencing the perinatal mortality among the Hill Korwas the details of 202 of total births (live births and still births) were recorded. The field work was carried out from 20th June 2006 to 19th June 2007. The results were analyzed which revealed the following facts. Out of 202 total births 25 perinatal deaths were recorded which records the perinatal mortality rate to be 123.76. **Table 1** presents key indicators maternal and child health investigated during the study.

Perinatal mortality was higher in Korwas mothers who did not have any antenatal checkups. With regards to quality of ANC the perinatal deaths were higher in those who had a poor quality of ANC. PNMR was also observed to be higher in case of those who did not have a single antenatal checkup as compared to those who had at least 1-3 checkups during the entire pregnancy period. Table-2 reveals maternal and obstetric factors associated with PNMR.

PNMR was higher in case of gestational age less than 9 months. PNMR was 127.76 with antenatal health problems. PNMR was higher in those who delivered in sitting position (137/1000). PNMR was recorded to be higher in breech delivery (200) as compared to those whose presentation was vertex. PNMR was also recorded to be higher in multiple births.

Table 1: Facts with relation to PNMR.

Total births	202
Live births	192
Still birth	10
Early neonatal deaths	15
Perinatal mortality rate	123.76
Still birth rate	49.50
Early neonatal mortality rate	74.25
Premature birth rate	84.15
Low birth weight rate	440.59
Maternal mortality rate	14.85

Two doses of Tetanus Toxoid (TT) injections, Supplementation of Iron Folic Acid (IFA) tablets, and blood pressure checkups are important components of Antenatal Care (ANC) [4].

Among mothers who received ANC 17.82% had two doses of TT injection, 10.80% were given IFA tablets, 22.28% had their blood pressure checked. In India 43% of deliveries were assisted by a health professional whereas only 2.00% of deliveries were assisted by trained personnel among Hill Korwas.

PNMR was highest in case of mothers whose height was < 143 cm. with regards to weight it was observed that PNMR increase as the weight increased. It was also higher in case of mothers whose weight was less than < 40 kg. Most of the Hill Korwas women had normal blood pressure. PNMR did not show any definite trend regarding level of Hb. The average height and weight of the Korwa women were observed to be less than National Nutrition Monitoring Bureau. The resultant height and

weight of Korwa women might be responsible for low birth weight babies in turn might be affecting the high PNMR in the present population.

Marriage is near universal and occurred early in India. Although the legal age at marriage is 18 year for girls, the mean age at marriage in India is 16.8 years. Early marriage leads to early child bearing which is seriously health hazard for Korwas women. With regard to age of mother it was observed that PNMR was highest in case of mothers who were less than 19 years and it was also observed to be high when mother were more than 30 years. First born children to Hill Korwas mothers under age 20 experienced much higher perinatal mortality than did the first born children born to older mother.

Utilization of both antenatal care and delivery services were low in the present population. The perinatal mortality was

quite high in case of deliveries attended by untrained personnel. Most of the Hill Korwas use indigenous instruments to cut the umbilical cord. None of them used sterilized instruments in order to cut the umbilical cord. Majority of the Hill Korwas women breast fed their child within the first day while few of them started it 2-4 dates after the birth of the child. Most of the Korwas women either squeezed the colostrum or discarded with thinking that it was harmful and it is not digestible.

The immunization statuses of pregnant women as well as the children were very low in the present population. Most of them showed a lack of interest, negligence and reluctance. Few mothers reported non availability of medical personnel and infrastructure.

Table 2, presents the maternal and obstetric characteristics determining perinatal mortality among the Hill Korwas of Jashpur.

Table 2: Maternal and obstetric characteristics determining PNMR.

S.N	Factors	Level	No. of Mother	PNMR
1.	Antenatal Checkups	Yes	36	55.55
		No	166	138.55
2.	Quality of ANC	Good	23	43.47
		Average	13	76.92
		Poor	166	138.55
3.	No. of Checkups	1-3	36	55.55
		Nil	166	138.55
4.	Gestation	<9 month	26	192
		9 months complete	135	103
		≥ 10 months	41	97.56
5.	Complication/ Health Problem During Pregnancy	Yes	196	127
		No	06	-1.00
6.	Amenorrhea	Normal	141	134.75
		Abnormal	61	98.36
7.	Type of Delivery	Vertex	12	119.79
		Breech	10	200
		Other	-	-
8.	Birth attendant	Trained	04	-
		Untrained	198	126
9.	Multiple pregnancy	Singleton	199	120.66
		Twin	3	333
10.	Height of Mother (cm)	UP to 143	53	132.07
		144-150	150	93.33
		Above	37	81.08
11.	Weight of Mother	≥ 40 Kg	96	114.5
		41-50 Kg	100	110
		>50 Kg	06	500
12.	Blood pressure	Low	89	112.35
		Normal	85	141
		High	28	107
13.	Hemoglobin	≤ 7	13	-
		8-11	176	119
		7-11	13	307
14.	Position of Mother During Delivery	Sitting	175	137
		Squatting	27	37.03
		Other	-	-
15.	Sex of Child	Male	109	119
		Female	93	93

S.N	Factors	Level	No. of Mother	PNMR
16.	Parity	1 st	34	147
		2-3	76	105
		4-6	75	120
		6+	17	176
17.	Bad Obstetric History	No	78	51
		Yes	124	169
18.	Birth Weight	<2.5 kg.	89	247.19
		>2.5	95	31.57

Table 3: Social demographic and environmental factors determining, PNMR.

S.N	Factors	Level	No. of Mother	PNMR
1.	Literacy of Mother	Literate	10	300
		Illiterate	192	114.58
2.	SES	Good	05	-
		Average	98	122.44
		Poor	99	141
3.	Age of Mother	≤ 19	45	155.55
		20-29	100	70
		≥ 30	57	140
4.	Type of Family	Joint /3		
		gene nuclear	60 142	150 112.67
5.	Family size	≤ 3	27	185
		≥ 4	175	114
6.	Avoiding certain food during pregnancy	No.	125	128
		Yes	77	116.88
7.	Heavy work till last trimester of pregnancy	Yes	190	126
		No	12	83
8.	Accident during pregnancy	Yes	17	23.5
		No	185	113.5
9.	Ethno medicine used	Yes	25	1230
		No	177	124
10.	Nutrition from AWC	Yes	43	116
		No	159	125.78
11.	Instruments used for cutting umbilical cord	Bamboo		
		Strip	101	138
		Blade	77	103
		Other	24	125
12.	Usage of colostrums	Used	17	294
		Not used	185	108
13.	Special diet During Pregnancy	Yes	10	-
		No	192	130
14.	Family History Maternal Paternal	Normal	103	97
		Comp.	99	151
		Normal	103	97
		Comp.	99	151
15.	Distance of Medical facilities (KW)	≤ 5	11	90
		≥ 5	192	125
16.	Environmental Sanitation	Good	21	142
		Average	80	87
		Poor	101	148.5

The quality of ANC showed a very strong association between poor quality ANC and high PNMR. Association was observed between number of antenatal checkups and PNMR. Direct relationships between poor maternal obstetric histories and PNMR have been observed in the present study.

There was typical fall in the PNMR in para 2 mothers as against primis, after which the PNMR increased with each successive pregnancy. Among the various factors influencing prenatal mortality are gestation < 9 months, breech deliveries, births attended by untrained dais, babies of multiple pregnancies, height of mother < 143 and weight of newborn < 2.5 kg.

Table 3 is with regard to social, demographic and environmental factors determining the PNMR among the Hill Korwas of Jashpur there is a strong association between PNMR and poor socio-economic status, age of mother, heavy work till the terminal stage of pregnancy, instrument used for cutting the umbilical cord, maternal complications, distance of medical facility and poor environmental sanitations.

Conclusion

The health delivery system needs to be restructured to make it more responsive health in particular. The health delivery system must be made area specific as in the diverse socio-economic cultural and demographic set up like ours, one single model cannot be effectively implemented in the entire country. The continuing high PNMR among the Hill Korwas need to be reduced within the existing frame work through strengthening of the primary health care elements likely to be acceptable to be introduced. These include good quality antenatal care, adoption of the risk approach, promotion of self care, presence of a trained birth attended etc. For the success of these programmes, it is necessary that community should be mobilized and motivated to come forward to avail the existing MCH services.

The ICDS scheme infrastructure should be strengthened especially in Bagicha and Manora blocks of Jashpur district where the communication facilities are poor for the holistic development of mother and child which is one of the eight essential objectives of primary health care. It was observed that the community was not very keen or interested to avail of the services. Most of the deliveries among the Hill Korwas took place in the home under the assistance of persons who have not had any opportunity to know the essential of aseptic precautions, through the use of media etc. Every women of this community should be made aware that pregnancy is not an always physiological and should be persuaded to seek health care by 12 week. They must also be made aware that immunization services of all pregnant women and children are needed to avoid neonatal tetanus and other infections.

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