

UTILIZATION OF POST NATAL CARE IN TRIBAL AREA OF MADHYA PRADESH: A COMMUNITY BASED CROSS SECTIONAL STUDY

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ABSTRACT

Background: Postnatal period is a vulnerable time, because most maternal and new born deaths occur during this period, especially immediately after childbirth. Postnatal care in the first hours and days after childbirth could prevent the great majority of these deaths.

Aims & Objectives: Present study was conducted with the objective to assess the utilization of post natal care and associated factors in tribal area of Madhya Pradesh.

Materials and Methods: A community based cross-sectional study carried in tribal area of Madhya Pradesh. A total of 210 mothers who delivered in last one year were selected for study by "30 cluster sampling method" in Nainpur block of Mandla district.

Results: Among 210 mothers, 82.4% were 15-24 years of age and 71.9% of mother received post natal check-up within 10 days of delivery. Regarding number of post-natal check-up, 36.6% of mothers received one postnatal check-up, 18.5% two, 14.7% three and only 1.9% received four post natal check-up. The education/occupation of mothers, cast, education of husband, place of delivery, person conducting delivery and level of knowledge of mother about need of postnatal check-up were significantly associated ($P < 0.001$) with utilization of post natal check-up.

Conclusion: The present study revealed that role of education, especially of female education in tribal area, is important contributing factor associated with utilization of postnatal care. Female education is related with enhancing the economic status of mothers, female empowerment, awareness of mother, and independent decisions making capacity in them.

Key Words: Post Natal Care; Tribal; Utilization; Post-Natal Check-Up

Introduction

Globally, over 500,000 women die around child birth every year, with over 90% of the deaths occurring in the developing countries^[1], most of the deaths occur during or immediately after childbirth^[2]. Postnatal period is a six-week interval between birth of a new born and the return of the reproductive organs to their normal non-pregnant state.^[3] The timing of postnatal care is also crucial to the well-being of the mother and baby. The studies have shown that some 50% of maternal deaths and 40% of neonatal deaths occur within 24 hours after birth, also known as the 'immediate postnatal period'.^[1,4] World Health Organisation (WHO) recommends that mothers receive postnatal care within the first 24 hours, followed by postnatal check on the second or third day, and then on the seventh day after delivery.^[1] The Millennium Development Goals-5 (MDG5, WHO), focuses to improve maternal health, with targets to reduce maternal mortality by three quarters between 1990 and 2015, and to achieve universal access to reproductive health by 2015.^[5,6] Postnatal care utilization has been limited in south Asia, particularly in India.^[7-10] According to 2005-06 National Family Health Survey (NFHS-3), only 42% of women were reported receiving postnatal

check-up after their recent birth.^[11] Of these, only about a third received check-up within the first two days after birth. Utilization of postnatal care can be affected by large number of factors including socio-demographic factors, economic factors, accessibility and availability of maternal and child health services etc. Therefore, present study was conducted with the objective to assess the utilization of post-natal care and associated factors in tribal area of Madhya Pradesh.

Materials and Methods

Study Area

The study has been carried out in the Nainpur block, Mandla district, Madhya Pradesh. Mandla is a tribal dominated district, located in the hilly and forest areas of east-central part of Madhya Pradesh. The population of district is 10, 53,522 and there are 9 blocks, 6 tehsils and 1221 habitable villages in the district.

Study Design and Participation

It was a community based cross-sectional study, carried out from 1st December, 2012 to 20th February, 2013. The study population comprised mothers who delivered in

last one year, and residing in Nainpur block of Mandla district. Multi-Indicator Cluster Survey (MICS) was done by "30 clusters sampling method", proposed by the WHO, which is a standard method for rapid assessment of coverage evaluation.^[12]

Sample Size

The sample size was calculated by using the formula $n = Z^2pq/d^2$ (where $Z=1.96$ at 95% confidence; p = post natal check-up (PNC) utilization; $q=1-p$; d = absolute allowable error. For this study, we presumed maximum variability that is PNC utilization were 50%, therefore $p=0.5$; $q=0.5$; $d=20\%$ of p . Taking design effect of two, the required sample size was 192.16.^[13] For a 30 cluster technique, number of subjects to be selected per cluster $192/30=6.4$ (rounded up to 7). That means we had to select 30 clusters, each with 7 mothers making a total sample size of $30 \times 7 = 210$.

Selection of Study Clusters

The list of villages in the Community Development Block with their population was obtained from the tehsil office of Nainpur Block. The 30 clusters were selected on the basis of systematic random sampling from the probability of the cluster selection based on the population size of the cluster. In each cluster, first house was selected by tip of pen method. Then data collection was done on house to house basis, till the desired sample size was achieved. House to house data collection was continued till 7 mothers who delivered in last one year were recognised. If all 7 mothers who delivered within last one year were not found in that cluster/village, the remaining mothers were to be covered from next cluster/village.

Data were collected by interview, using pretested structured questionnaire, after obtaining informed consent from mother. The questionnaire consisted of two parts. First part recorded the socio-demographic information including age of mother; education of mother, occupation of mother, type of family, family size, cast, family income, education of husband, and occupation of husband. Second part of questionnaire was covering utilization of postnatal care services, reasons of non-utilization of services, maternal and new-born component of post natal care etc., and also asked about number of live birth, place of delivery, person conducting delivery. The mother, who answered in the negative for utilization of post natal services, was asked about their view on non-utilization.

Data analyzed using Statistical Package for Social Sciences (SPSS, version 20). Percentage, means, standard deviation (SD), and odds ratio (OR) were calculated, applying logistic regression model. The criterion for statistical significance was set at the value of $P < 0.05$.

Results

A total of 210 postnatal mothers were interviewed, by "30 clusters sampling method". Of the 210 mother, 82.4% belonged to 15-24 years of age, and 17.6% to 25-34 year, with mean age 23.2 ± 3.79 years.

Table-1: Socio demographic characteristics of postnatal mothers (n=210)

Characteristics	N	%	
Age(in years)	15-24	173	82.4
	25-34	37	17.6
Education of mother	Illiterate	90	42.9
	Up to primary level	73	34.8
	Up to middle level	32	15.2
	High school and above	15	7.1
Occupation of mother	House wife	122	58.1
	Agriculture/ Labour	71	33.8
	Service	13	6.2
Type of family	Business	4	1.9
	Nuclear	96	45.7
	Joint	114	54.3
Family size	3	19	9
	4-6	99	47.1
	7-10	71	33.8
Cast	>10	21	10
	General/Other	77	36.7
	SC	13	6.2
Income (₹)	ST	120	57.1
	>10,000	48	22.9
	10,000-5000	110	52.4
	5000-2250	34	16.2
Education of husband	<2250	18	8.6
	Illiterate	42	20
	Up to primary level	58	27.6
	Up to middle level	60	28.6
Occupation of husband	High school and above	50	23.8
	Agriculture /Labour	193	91.9
	Service	11	5.2
	Business	6	2.9

Table-2: Details of utilization of postnatal services

Utilization of postnatal services	N	%	
Post natal check-up within 10 days of delivery (n=210)	151	71.9	
Reason of not receiving PNC (n=59)	Nobody visit	22	37.2
	Not aware	3	5
	Not aware and nobody visit	34	57.6
Timing of first PNC (n=210)	None	59	28.1
	Within 24 hours	142	67.6
	Between 2-3 days	6	2.9
	Between 4-7 days	3	1.4
Number of Post natal check-up (n=210)	Never	59	28.1
	One post natal check-up	77	36.6
	Two post natal check-up	39	18.5
	Three post natal check-up	31	14.7
Mother know about the need of Post natal check-up (n=210)	Four post natal check-up	4	1.9
	Yes	48	22.8
	No	162	77.2

Table-3: Factors affecting postnatal care (PNC) services utilization

Variables	Postnatal care		Chi-square (χ^2)	OR	95% CI	P-value	
	Yes (n=151)	No (n=59)					
Age (years)	15-24	129(74.6)	44(25.4)	3.443	1.999	0.954-4.190	0.064
	25-34	22(59.5)	15(40.5)				
Education of mother	Some schooling	96(80.0)	24(20.0)	9.083	2.545	1.375-4.714	0.003
	No schooling	55(61.1)	35(38.9)				
Occupation of mother	House wife	99(81.1)	23(18.9)	12.312	2.98	1.600-5.548	0
	Agriculture/Labour/ Service/business	52(59.1)	36(40.9)				
Types of family	Joint	83(72.8)	31(27.2)	0.1	1.102	0.603-2.015	0.751
	Nuclear	68(70.8)	28(29.2)				
Family size	Large	139(72.8)	52(27.2)	0.791	1.559	0.582-4.176	0.374
	Small	12(63.2)	7(36.8)				
Cast	General/SC/Other	72(80.0)	18(20.0)	5.109	2.076	1.095-3.935	0.024
	ST	79(65.8)	41(34.2)				
Income	<2250	16(88.9)	2(11.1)	2.811	3.378	0.752-15.172	0.094
	>2250	136(70.3)	57(29.7)				
Education of husband	Some schooling	130(77.4)	38(22.6)	12.469	3.421	1.691-6.921	0
	No schooling	21(50.0)	21(50.0)				
Occupation of husband	Service/Business	15(88.2)	2(11.8)	2.442	3.143	0.696-14.193	0.118
	Agriculture/Labour	136(70.5)	57(29.5)				
Live birth	Two or more	100(74.1)	35(25.9)	0.881	1.345	0.724-2.498	0.348
	One	51(68.0)	24(32.0)				
Place of delivery	Hospital	148(77.9)	42(22.1)	35.433	19.968	5.584-71.411	0
	Home	3(15.0)	17(85.0)				
Person conduct delivery	Trained person	145(78.4)	40(21.6)	32.237	11.479	4.298-30.657	0
	Untrained person	6(24.0)	19(76.0)				
Mother know the need of PNC	Yes	42(87.5)	6(12.5)	7.491	3.404	1.362-8.508	0.006
	No	109(67.3)	53(32.7)				

Table-4 :Components of postnatal check-up within 7 days after delivery (n=151)

	Components	N	%
Maternal care	Post-partum haemorrhage ^a	118	78.1
	Perineal tears ^b	113	74.8
	Breast feeding ^c	121	80.1
	Asked for fever	133	88
	Checked foul smelling lochia	81	53.6
New-born care	Breast feeding ^d	116	76.8
	Checked chord condition	110	72.8
	General well-being ^e	101	66.8
	Weight measure	136	90
	Keep baby worm ^f	89	58.9

^a Checked and respond if the pad soaked in less than five minute.

^b Checked perineum for tears, discharge or pus.

^c Counselling on frequent and exclusive breast feeding.

^d Observe how mother breastfeeds, and help the mother to improve the technique.

^e Assess for movements, muscle tone, swelling/bruises at the presenting part, congenital malformations.

^f Demonstrate how to keep baby in skin-to-skin contact.

Nearly 42.9% of the mothers were illiterate, 58.1% of the mothers were house wives, and all of them (100%) were Hindus. About 54.3% were from joint family, and 57% belonged to ST. Majority of (91.9%) of the mothers had husbands involved in agriculture or labour. The other characteristics of postnatal mothers are shown in table 1.

As shown in table 2, out of 210 mothers, who delivered in last one year, 151 (71.9%) received post natal check up within 10 days of delivery. Out of these, 77 (36.6%) received one postnatal check-up, 39(18.5%) two, 31 (14.7%) three and only 4 (1.9%) received four post natal check-up. 142 (67.6%) received first postnatal care

within 24 hours of delivery, 6 (2.9%) in 2-3 days and 3 (1.4%) between 4-7 days of delivery. 59 (28.1%) didn't receive any post natal check-up. The 57.6% mothers said that, most common reason of not receiving post natal check-up was that, they were not aware about this and nobody visits for this. In present study, only 22.8% mothers answered 'yes' to the question -'do you know, there is a need for check-up within 10 days after delivery.

As shown in table 3, post natal care can be affected by several factors. It was observed that, education of mothers (P= 0.003) was important contributing factor with utilization of postnatal care (OR =2.545; 95%CI: 1.375-4.714), and mother, who were house wives, utilized PNC 2.980 times more (95%CI: 1.600-5.548) (P=.000). Mothers who belonged to general, and other cast utilized PNC 2.076 times more (95%CI: 1.095-3.935) PNC then ST (P=.024).The study also showed that husbands education was important. Who had some schooling, utilized PNC 3.421 times more (95%CI: 1.691-6.921) (P=.000). If husband was in service or business, they utilized PNC 3.143 times more (95% CI: 0.696-14.193). The study also showed that place of delivery and person conducting delivery had a significant effect on PNC services utilization. Mother who used hospital delivery utilized PNC 19.968 times more (95% CI: 5.584-71.411) (P= .000) than the mothers who delivered at home. Similarly mothers whose delivery was conducted

by trained person, utilized PNC 11.479 times more (95%CI: 4.298-30.657) ($P=0.000$). The mother who knew about the need of PNC, utilized PNC 3.404 times more (95%CI: 1.362-8.508) ($P=0.000$). No significant association was found with variables like age of mother, type of family, family size, income, live birth and occupation of husband.

As shown in table 4, regarding coverage of maternal care components, during postnatal check-up within 7 days after delivery, counselling was done on frequent and exclusive breast feeding in 80.1%, asked for fever in 88.0%, asked checked and respond to post-partum haemorrhage in 78.1%, checked perineum for tears/discharge or pus in 74.8% and checked for foul smelling lochia in 53.6%. The coverage of new-born care components within 7 days after delivery, weight measured in 90.0%, observed how mother breastfeeds, and helped the mother to improve the technique in 76.8%, checked for condition of cord in 72.8%, and general well-being - assessment for movements, muscle tone, swelling or bruises at the presenting part, congenital malformations - was checked in 66.8%. In 58.9% of new-born it was demonstrated how to keep baby warm with skin-to-skin contact.

Discussion

Postnatal care is essential in maintaining and promoting the health of the woman and the new-born baby, while providing an opportunity for health professionals to identify, monitor and manage health conditions, that may develop in the mother and new-born during the postnatal period.^[1] In most developing countries, however, postnatal care may occur only if provided through home visits, because geographic, financial, and cultural barriers typically limit care outside the home during the early postnatal period.^[14]

Jat et al, in factors affecting the use of maternal health services, showed that only 37.4% women received any PNC within two weeks of delivery in Madhya Pradesh.^[15] In the present study it was found that 71.9% of mother received post natal check-up within 10 days of delivery. Paudel, et al, demonstrated in study determinants of postnatal maternity care service that, 79.0% mothers had used the postnatal services.^[16] Bhattacharjee S. et al, in Darjeeling district, reported that the rates of utilization of postnatal care was 72.6%.^[17] Singh Abhishek et al, in study of Socio-Economic Inequalities in the Use of Postnatal Care in India, reported that 44% of the mothers received any PNC check-up within 48 hours

of giving birth, 45% of the new-borns were checked within 24 hours and around 62% of the babies did, however, eventually receive two or more check-ups within the first 10 days after birth.^[18]

World Health Organisation has reported that, the first 24 to 48 hours are the most critical time for postpartum woman.^[1] It indicates that, postpartum women should receive first post natal check-up within 2 days after delivery. In this study, 67.6% mothers received first postnatal check-up within 24 hours of delivery, 2.9% between 2-3 days and 1.4% between 4-7 days of delivery. Srivastava RK and Kansal S reported that, 31 to 36 % respondent received first post natal check-up within 24 hours.^[19] Sitrin Deborah et al reported that, the proportion of mothers and new-borns who received a home visit within three days after birth was 57% in Bangladesh, 11% in Malawi, and 50% in Nepal.^[20]

In the present study, 28.1% mothers didn't receive post natal check-up, and most common reason of not receiving post natal check-up was that mother was not aware about this and nobody visited in 57.6% cases. Achrya LB, Cleland J stated that the main reason for the non-use of postnatal health services is the lack of awareness, or not perceiving a need for it. Lack of awareness might be related to illiteracy and lack of particular health services in accessible area.^[21]

In the present study, 36.6% of mother received one postnatal check-up, 18.5% two, 14.7% three, and only 1.9% received four post natal check-up. Sitrin Deborah et al reported in Malawi that, 39% women received just one home visit, 51% two to three visits, and 6% received four or more.^[20] Shah H et al, in a Study of assessment of maternal health service utilization in rural area of Surat district Gujrat, reported that 50.7% PNC visits was at home - out of these, in 31.6%, only one visit was done, in 39.6% cases, two PNC visits were done, and three or more visits were made in only 6.5% of cases.^[22]

In this study, education of the mother and knowledge of mother about need of postnatal check-up were significantly related with PNC utilization. Study conducted by Paudel et al showed that, the level of awareness and education of mother (OR=2.42) were strong explainers of for PNC service.^[16] Other studies also reported similar finding with level of awareness, education of mother and PNC utilization.^[17,23-25] So, the education of mother is a positive factor for utilisation of postnatal care in our study, which is similar to study conducted in different parts of India, Nepal and Nigeria.^[8,26-28]

In our study literacy of husbands was significantly related with utilization of PNC services. A similar observation was reported by Ranganath TS in study on utilization of maternal services in urban slums and also by Hazarika Indrajit in a study of women's reproductive health in slum populations in India. This indicates the impact of education on awareness and utilization of maternal services by the population.^[23,29]

Our study showed, that the mother who delivered in hospital, utilized PNC more than the mother who delivered at home, and mothers whose delivery was conducted by trained person was 11.479 times more utilizing PNC than the case involving untrained persons. Dhakal S et al reported that the women, who delivered in the hospital, were ten times (95% CI= 4.64 to 23.7) more likely to have received postnatal care than the women who delivered at home.^[9] Tadashi et al, reported that, the women who delivered at home, had lower rates of postpartum health care service utilization, than women who delivered at medical facilities.

Postpartum women, who deliver at home, may not have the opportunity to utilize health care services.^[30] Similar finding were reported in other studies.^[16,31] Utilization of antenatal and delivery care services has positive impact on the use of PNC which is similar with other study.^[25,32-36] Sitrin Deborah et al showed that, the mothers and new-borns delivered outside facilities, were 48% more likely to receive a home visit within three days after birth - this finding didn't match with this study.^[20]

No significant association in this study was found with variables like age of mother, type of family, family size, income, live birth and occupation of husband. Ranganath TS reported similar finding in the study on utilization of maternal services in Bangalore.^[23]

The World Health Organization and a global review of the WHO-led Partnership for Maternal, New-born & Child Health recommend community level postnatal care for all mother and new-borns. The key interventions include immediate and exclusive breastfeeding, warming of the infant, hygienic cord care, appropriate feeding practices, and timely identification of danger signs with referral and other services. ^[1, 37-39] In our study, coverage of maternal care components during postnatal check-up within 7 days after delivery, was 53 to 88%, and coverage of new-born care components was 38 to 90% reported.

Conclusion

The present study exposed the fact that educations of mother, occupation of mother, education of husband, cast, delivery place, person who conducts delivery and awareness of mother about the need of early PNC were significant contributing factors for utilization of post natal care. Female education is related with enhancing the economic status of mothers, female empowerment, awareness of mother and independent decisions making capacity of mothers. Therefore, in the present study, it was concluded that the role of education, especially of female education in tribal area, is important contributing factor associated with utilization of postnatal care.

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