

Factors Affecting Utilization of Maternal Health Care Services Among the Pnar Women of Jowai Town, West Jaintia Hills District, Meghalaya

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KEYWORDS: Maternal health. Antenatal care. Safe delivery care. Postnatal care. Pnar. Jowai.

ABSTRACT: The present study was undertaken to assess the utilization of maternal health care services and to determine the factors influencing these services among the Pnar women of Jowai town, West Jaintia Hills District, Meghalaya. Data pertaining to antenatal care, delivery characteristics, post natal care as well as socio-demographic factors such as current age, age at marriage, education and income groups have been collected from a total of 719 ever-married women belong to the reproductive age groups of 15-49 years. The results indicate that majority of the women attended antenatal care (ANC) services. Attending antenatal care services is found to be associated with the administration of tetanus toxoid injection, iron folic acid tablets and safe delivery. It is found that mothers who attended more than four antenatal checkups were 72.46%, where 64.39% of the mothers registered their first antenatal care checkups by first trimester. It is also observed that 95.64% women preferred institutional deliveries. Thus, the present finding reveals that the study population has high level of utilization of selected components of maternal health care and high level of satisfaction with the utilized services. The study further reveals that socio-demographic factors have a great influence on the utilization of maternal health care services.

INTRODUCTION

Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period (WHO, 2009). Maternal health care is an integral part of India's Family Welfare Programme. The National Population Policy adopted by the Government of India in 2000 reiterates the government's commitment to safe motherhood programmes within the wider context of reproductive health (Ministry of Health and Family Welfare, 2000). To improve the availability of and access to quality health care services, for those residing in rural and urban areas, women, and children,

the government of India has launched the National Health Mission in 2013 (National Health Portal, 2018). The NHM envisages achievement of universal access to equitable, affordable and quality health care services that are accountable and responsive to people needs.

Maternal health care includes antenatal care, delivery care and postnatal care. Antenatal care (ANC) refers to pregnancy related health care, which is usually provided by a doctor, an Auxiliary Nurse Midwife (ANM), or another health professional. Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and

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provide advice and counselling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues (Ministry of Health and Family Welfare, '97). The World Health Organization recommends that all pregnant women should have at least four antenatal care (ANC) assessments by or under the supervision of a skilled attendant which include physical, abdominal examination, laboratory investigations, ultrasound of the pregnant women and protection against anaemia, tetanus along with prenatal advice (WHO, 2006). These assessments should be spaced at regular intervals throughout pregnancy, commencing as early as possible in the first trimester. The number of antenatal care visits and the timing of the first visit are important for the health of the mother and the outcome of the pregnancy. Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries in proper hygienic conditions under the supervision of trained health professionals. The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postnatal check-ups soon after the delivery are particularly important for births that take place in non institutional settings. The incidence of maternal morbidity may be reduced through the proper utilization of postnatal care services. Recognizing the importance of postnatal check-ups, the Reproductive and Child Health Programme recommends three postnatal visits (Ministry of Health and Family Welfare, '97).

The utilization of maternal health care services is a complex phenomenon influenced by several factors. Study reveals that perceived quality of care, age, educational attainment of care seekers and socio-economic status of the women are some of the key determinants which are associated with the utilization of maternal health care services (Gabrysch and Campbell, 2009). The uptake of antenatal care (ANC) is not only for sustaining better maternal health but is also largely help to mitigate the risk of maternal mortality and morbidity (Bloom *et al.*, '99). Women's age play an important role in utilization of antenatal care services. Age of the mothers may sometimes serve as a reflection for the women's build up knowledge of health care services, which may have a positive force

on the use of health services. Moreover, because of development in health care delivery system and improvement in educational opportunities for women in recent years, younger women might have an enhanced knowledge of available health care services and place more value upon modern medicine (Elo, '92; Fosu, '94). The utilization of antenatal care services was found to be associated with women's age, educational attainment, socio-economic status and place of delivery (Kalule *et al.*, 2014). Educations of the women as well as economic status of household have strong positive association with maternal health care utilization (Chakraborty *et al.*, 2003; Prusty *et al.*, 2015). Considering the importance of health care utilization, the present study was undertaken to find out the utilization pattern of maternal health care services and secondly to identify the socio-demographic factors associated with the utilization of maternal health care services.

MATERIALS AND METHODS

The present study was conducted among the married Pnar women of Jowai town of West Jaintia Hills District, Meghalaya. Pnar are one of the five sub-groups of the Khasi tribe who occupy the Jaintia Hills lying on the eastern side of Meghalaya. The Pnar form the matrilineal society which gives the women a rightful place at home and in the community. Descent is always through the female line; succession is also through the female line. Maternal uncle is the Head of the family and he plays an important role both in the social and religious matter. The Pnar are generally endogamous within the tribe but exogamous as far as the clans are concerned. Jowai is the Headquarter of West Jaintia Hills District and is about 64 KM from Shillong which is the capital of the state of Meghalaya. The data for the present study was collected from 719 ever-married women in the reproductive age of 15-49 years with the help of structured interview schedules. Information on antenatal care, delivery characteristics, postnatal care and various socio-demographic factors such as age, age at marriage, mother's education, father's education and income groups were collected by filling up the schedule. The quantitative data were entered, sorted and analysed by using statistical package for social sciences. Chi-square test was used to examine

the socio-demographic factors which affected the utilization of maternal health care services in the present study.

RESULTS

Table 1 shows the characteristics of antenatal care (ANC) received by the Pnar women during pregnancy. It may be mentioned that ANC characteristics reported in this study are based on those received by mothers from both private and government ANC services. Majority of the women

i.e., 99.72% have attended antenatal check-up during pregnancy and around 72.46% had attended ANC checkups for more than four times. About 64.39% of the women registered their first ANC visits during the first trimesters of pregnancy. As regards to the nature of ANC services, about 98.47% of the women have received iron and folic acid tablets and 78.30% have received at least two doses of tetanus and toxoid injections during their visits to private and government ANC centres. This indicates that the nature of ANC services is fairly good among the women in Jowai town.

Table 1. Characteristics of Antenatal care (ANC) among the Pnar women (aged 15-49 years) during their pregnancy.

Characteristics	No. of women	%
1. Attending ANC check up during pregnancy Visit for ANC check: up/No, ANC check up,	717,2	99.72,0.28
2. Place of visit for check up: Hospital, Health centre, Clinic, No check up	696,14,7,2	96.80,1.95,0.97,0.28
3. Number of ANC visits during pregnancy: ≤4 times>4 times, No	196,521,2	27.26,72.46,0.28
4. Stage of pregnancy at first ANC visit: First Trimester, Second Trimester, Third Trimester, No	463,240,14,2	64.39,33.38,1.95,0.28
5. Receipt of Iron & Folic Acid Tablet: Yes, No	70811	98.47,1.53
6. Doses of Tetanus Toxoid injection: 0,1,2	3,153,563	0.42,21.28,78.30

Based on the last pregnancy for the non-pregnant women during the survey

Table 2 shows the influences of socio-demographic factors on number of antenatal care visits. Women in the age group 30-34 years (84.48%) utilized higher percentage of ANC services with more than four ANC visits. Majority of the women with age at marriage ≥25 years (i.e., 87.14%) have attended more than four ANC visits compared to those with age at marriage ≤19 years and 20-24 years. With regards to educational level, women (90.68%) and their husband (91.62%) who have completed graduate and above

have the highest percentage of women who attended more than four ANC visits than their counterpart with lesser education. Women who belong to high income groups (85.63%) have attended more than four ANC visits compared to the low income groups. The chi square test shows that all the socio-demographic factors i.e., current age, age at marriage, mother's education, father's education and income groups, shows significant association ($p < 0.001$) with the number of antenatal care visits.

Table 2. Influence of socio-demographic factors on antenatal care (ANC) visits.

Parameters	No. of women	Antenatal care visits, N (%)		Chi-square
		≤4 times	>4 times	
Age groups (Years)d"24	67	24 (35.82)	43 (64.18)	$\chi^2=54.480$, d.f.=5, $p < 0.001$
25-29	124	22 (17.74)	102 (82.26)	
30-34	174	27 (15.52)	147 (84.48)	
35-39	169	39 (23.08)	130 (76.92)	
40-44	82	33 (40.24)	49 (59.76)	
45-49	101	51 (50.50)	50 (49.50)	$\chi^2=63.420$, d.f.=2, $p < 0.001$
Age at marriage (Years)≤19	245	110 (44.90)	135 (55.10)	
20-24	262	59 (22.52)	203 (77.48)	
≥25	210	27 (12.86)	183 (87.14)	$\chi^2=116.197$, d.f.=4, $p < 0.001$
Educational level of womenIlliterate	16	13 (81.25)	3 (18.75)	
Primary	51	33 (64.71)	18 (35.29)	

Contd...

Secondary	272	101 (37.13)	171 (62.87)	$\chi^2=66.809$, d.f.=4, p<0.001
Higher Secondary	142	27 (19.01)	115 (80.99)	
Graduate and above	236	22 (9.32)	214 (90.68)	
Educational level of husband Illiterate	24	17 (70.83)	7 (29.17)	
Primary	53	23 (43.40)	30 (56.60)	$\chi^2=32.725$, d.f.=2, p<0.001
Secondary	212	63 (29.72)	149 (70.28)	
Higher Secondary	105	22 (20.95)	83 (79.05)	
Graduate and above	179	15 (8.38)	164 (91.62)	
Household Income LIG	352	128 (36.36)	224 (63.64)	
MIG	191	43 (22.51)	148 (77.49)	
HIG	174	25 (14.37)	149 (85.63)	

Table 3 shows the delivery characteristics and postnatal care after delivery. Majority of the women (95.64%) underwent institutional delivery and 98.17% of the delivery has been assisted by the health personnel. About 73.56% of the women have normal delivery whereas only 26.44% have caesarean.

Majority (73.56%) of the women have no delivery complications. With regards to postnatal care services, around 50.21% of them attended postnatal care checkups and 49.79% didn't attend postnatal care checkups after delivery.

Table 3. Delivery characteristics and post natal care (PNC) of the Pnar women (aged 15-49 years) after delivery.

Characteristics	No. of women	%
1. Place of delivery Institutional Home	680 31	95.64 4.36
2. Assistance during delivery Doctor and/or Nurse Traditional birth attendance/Elderly ladies	698 13	98.17 1.83
3. Type of delivery Normal Caesarean section	523 188	73.56 26.44
4. Delivery complication Yes No complication	188 523	26.44 73.56
Attending Postnatal check-up after delivery Yes No	357 354	50.21 49.79

Table 4 shows the influence of socio-demographic factors on place of delivery. It is found that majority of the women who underwent institutional delivery (99.42%) belong to the age groups 30-34 years and majority of those women who underwent home delivery (12.87%) belong to the age groups 45-49 years. About 99.51% of the women with age at marriage ≥ 25 years have undergone institutional delivery and those who underwent home delivery were 7.35% and their age at marriage was ≤ 19 years. In respect of the educational level, women (99.51%) as well as their

husbands (99.14%) who are graduate and above have the highest percentage that underwent institutional delivery. About 97.66% of the high income groups and 97.38% of the middle income groups underwent institutional delivery. It is also found that 93.70% of the low income group underwent institutional delivery and 6.30% underwent home delivery. The chi square test shows that the place of delivery are significantly associated ($p < 0.05$) with socio-demographic factors like age, age at marriage, mother education, father education and income groups.

Table 4. Influence of socio-demographic factors on place of delivery.

Parameters	No. of women	Place of delivery, N (%)		Chi-square
		Home	Institutional	
Age groups (Years) ≤ 24	66	0 (0.00)	66 (100)	$\chi^2=30.859$, d.f.=5, p<0.000
25-29	121	3 (2.48)	118 (97.52)	
30-34	173	1 (0.58)	172 (99.42)	
35-39	168	7 (4.17)	161 (95.83)	
40-44	82	7 (8.54)	75 (91.46)	
45-49	101	13 (12.87)	88 (87.13)	$\chi^2=16.143$, d.f.=2, p <0.000
Age at marriage (Years) ≤ 19	245	18 (7.35)	227 (92.65)	
20-24	262	12 (4.58)	250 (95.42)	
≥ 25	204	1 (0.49)	203 (99.51)	$\chi^2=23.242$, d.f.=4, p<0.000
Educational level of women Illiterate	16	1 (6.25)	15 (93.75)	
Primary	50	5 (10.00)	45 (90.00)	

Contd...

Secondary	270	21 (7.78)	249 (92.22)	
Higher Secondary	142	2 (1.41)	140 (98.59)	
Graduate and above	233	2 (0.86)	231 (99.14)	
Educational level of husband	23	5 (21.74)	18 (78.26)	$\chi^2=21.265$, d.f.=4, p<0.000
Illiterate	53	3 (5.66)	50 (94.34)	
Primary	211	9 (4.27)	202 (95.73)	
Secondary	105	0 (0.00)	105 (100)	
Higher Secondary	177	3 (1.69)	174 (98.31)	
Graduate and above	349	22 (6.30)	327 (93.70)	$\chi^2=6.409$, d.f.=2, p<0.05
Household Income	191	5 (2.62)	186 (97.38)	
LIG	171	4 (2.34)	167 (97.66)	
MIG				
HIG				

Table 5 shows the influence of socio-demographic factors on postnatal care checkups. The above table shows that majority of the women who attended postnatal care checkups belong to the age groups of 30-34 years (59.20%) and also those whose age at marriage were ≥ 25 years (58.57%). With respect to educational level, women (70.76%) and their husband (65.92%) who have completed graduate and above

shows a highest percentage who attended postnatal care checkups. Women belong to high income level (62.64%) are the majority who attended postnatal care checkups. The chi square test shows that the postnatal care are significantly associated ($p < 0.001$) with socio-demographic factors like age, age at marriage, mother's education, father's education and income groups.

Table 5. Influence of socio-demographic factors on postnatal care checkups

Parameters	No. of women	Post natal care, N (%)		Chi-square
		Yes	No	
Age groups (Years) ≤ 24	68	23 (33.82)	45 (66.18)	$\chi^2=24.945$, d.f.=5, p<0.000
25-29	124	64 (51.61)	60 (48.39)	
30-34	174	103 (59.20)	71 (40.80)	
35-39	169	93 (55.03)	76 (44.97)	
40-44	83	39 (46.99)	44 (53.01)	
45-49	101	35 (34.65)	66 (65.35)	
Age at marriage (Years) ≤ 19	246	90 (36.59)	156 (63.41)	$\chi^2=26.473$, d.f.=2, p<0.000
20-24	263	144 (54.75)	119 (45.25)	
≥ 25	210	123 (58.57)	87 (41.43)	
Educational level of women	16	3 (18.75)	13 (81.25)	$\chi^2=85.146$, d.f.=4, p<0.000
Illiterate				
Primary	51	12 (23.53)	39 (76.47)	
Secondary	273	99 (36.26)	174 (63.74)	
Higher Secondary	143	76 (53.15)	67 (46.85)	
Graduate and above	236	167 (70.76)	69 (29.24)	
Educational level of husband	24	5 (20.83)	19 (79.17)	$\chi^2=42.753$, d.f.=4, p<0.000
Illiterate				
Primary	53	15 (28.30)	38 (71.70)	
Secondary	214	100 (46.73)	114 (53.27)	
Higher Secondary	105	65 (61.90)	40 (38.10)	
Graduate and above	179	118 (65.92)	61 (34.08)	
Household Income	354	145 (40.96)	209 (59.04)	$\chi^2=24.027$, d.f.=2, p<0.000
LIG	191	103 (53.93)	88 (46.07)	
MIG	174	109 (62.64)	65 (37.36)	
HIG				

DISCUSSION

The present study examines the utilization of maternal health care services among the ever married Pnar women in the reproductive age 15-49 years of Jowai town. Ever since the integration of safe motherhood programme with reproductive health

programme for women, several efforts have been made to improve the maternal health care utilization. Pointing to the important segments and considering the agenda of programmes, the present study aimed to examine the factors significantly affecting the utilization of maternal health care among the currently married

women of Jowai town. The utilization of maternal health care is categorized into adequate pregnancy care, institutional delivery, full immunization and post natal care. The findings of the present study as expected shows that women having an institutional delivery and an adequacy in pregnancy care was much higher than the NFHS report. In the present study it was found that about 99.72% of women aged 15-49 years have attended at least one ANC visits which is higher than 84% as per reported by NFHS-4 (2015-16) in India and 64.39% of mothers had registered their first ANC visits during their first trimester of pregnancy which is higher than 59% as per reported by NFHS-4 (2015-16) in India and 53.3% in Meghalaya (IIPS and ICF, 2017). About 72.46% of mothers have made more than four ANC visits which is higher than the national level as per NFHS-4 (2015-16) in which only 51% of mothers had made four and more ANC visits. The majority, i.e., 98.47% had received IFA tablets and 78.30% had received 2 TT injections while attending ANC services. According to NFHS-4 (2015-16), in Meghalaya, the women who received IFA and 2 TT injections were 80.5% and 67.8%, respectively (IIPS and ICF, 2017). According to a study in Punjab, 92% of the women received a TT injection and 56% received IFA tablets (Garg *et al.*, 2017). It was observed that about 18.75% of illiterate women have >4 ANC visits as compared to 90.68% of graduate and above. In another study it has been reported that 44% illiterate women and 68% of graduate and above had attended three or more ANC visits. (Garg *et al.*, 2017). Around 95.64% of mothers had institutional deliveries which is higher than 51.4% as per reported by NFHS-4 (2015-16) in Meghalaya and 79% in India and 98.17% of the deliveries are being assisted by the health personnel which is higher than 53.8% as per NFHS-4 (2015-16) in Meghalaya (IIPS and ICF, 2017). The study identified several socio-demographic factors that posed to have a significant influence on the utilization of maternal health care services in Jowai town. These included women's age, age at marriage, education of the women and husband, and economic status of household. The findings are in conformity with the findings of other studies (Mahapatro 2012; Roy *et al.*, 2017; Yadav *et al.*, 2018). However, the effect of education served as the most important factors which influence health care utilization. The effect of

education on maternal health care utilization for adolescent women is much more pragmatic than that for older women. Like for instance, women in the age group of 30-34 years in the present study had a high percentage of women who attended four or more antenatal care visits, institutional delivery and postnatal care than women of 45-49 years of age. Women with higher education are more likely to know the long-term benefits of the utilization of services compared with women with less education or uneducated women. The higher educated women are, more aware about their health, availability of maternal health care services and using this awareness and information in accessing the health care services. Findings related with high influence of higher levels of women education on the usage of maternal health services are uniform with other studies in India (Pallikkadavath *et al.*, 2004; Mahapatro, 2012; Mojumdar, 2017). Husband's education also plays a similar role in accompanying the women's access to the health services. In this study, education of women and their husbands remained strong predictor of maternal health care services utilization and these results are consistent with the findings reported by other studies (Rawat *et al.*, 2015, Roy *et al.*, 2017). The study has also reveals statistically significant association between the household economic status and the rate of utilization of maternal health care services. The results reveal that women who are in socio-economically advantageous position are much more likely to use maternal health care services. The most important result from this analysis on health-seeking behaviour is that several socio-economic characteristics, particularly education of the women as well as economic status of household have strong positive association with maternal health care utilization (Mahapatro 2012; Rawat *et al.*, 2015; Mojumdar 2017).

CONCLUSION

From the present study, it was found that majority of the women i.e., 99.72% attended antenatal checkups where 64.39% registered their first ANC check ups by first trimester during pregnancy. Attending antenatal care services during pregnancy is found associated with tetanus toxoid injection, iron folic acid tablets and safe delivery in the present study. About 95.64%

of the women underwent institutional delivery and 50.21% of them attended postnatal care checkups after delivery. Those women who were in the age groups 30-34 years; age at marriage ≥ 25 years; higher educated (graduate and above) and those belong to high income groups have utilized higher percentage of maternal health care services. The present finding also reveals that the study population has high level of utilization of selected components of maternal health care and high level of satisfaction with the utilized services. The study further reveals that antenatal care; place of delivery and postnatal care of the women shows a significant association ($p < 0.01$) with the socio demographic factors like age, age at marriage, women's education, husband's education and income groups. Thus, from the present findings it can be concluded that the socio-demographic factors have a great influence on the utilization of maternal health care services among the Pnar women of Jowai town

ACKNOWLEDGEMENTS

The authors would like to express their deep gratitude to the people of Jowai Town for their cooperation in obtaining adequate data for the present study. They are also grateful to the Department of Anthropology, North-Eastern Hill University, Shillong for the support received throughout the study. The first author would like to thank the Ministry of Tribal Affairs, Govt of India for the financial assistance received in the form of National Fellowship.

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