Early postnatal care utilization among mothers gave birth in the last six weeks in remote district of Ethiopia: a cross-sectional study

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Abstract

Background majority of neonate and maternal death is occurring in the first week of delivery. Therefore, utilization of postnatal care within the first week of delivery is essential to increase the survival of both a mother and newborn. Therefore, this study was aimed to assess the use of postnatal care in the first week of delivery and factors associated among women who gave birth in the last six weeks. Method A community-based cross-sectional study was conducted in the Dano District, one of the remotest districts in the Oromia Region of Ethiopia. A total of 274 women who gave birth during the last six weeks and selected using random sampling method were included in the study. Multivariate logistic regression was used to identify factors associated with the utilization of postnatal care within the first week of delivery. Finding with a p-value less than 0.05 is considered a statistically significant association. Result early postnatal care utilization is found to be (within the first week of delivery) was 23.7 percent. Mother given appointment after delivery [AOR=4.84, 95% CI= (1.46, 16.1)], have used postnatal care previous [AOR= 7.4, 95% CI= (2.9, 18.5)] and aware of postnatal care within first week of delivery [AOR=4.27, 95% CI= (1.46, 12.49)] were more likely to use the postnatal care within first week. The qualitative finding indicated traditional beliefs during postpartum also found to affect the use of postnatal care. Conclusion The utilization of postnatal care within first week of delivery in was low in the district. Therefore, creating awareness on the benefits of early postnatal care, and designing of strategies to decrease the effect of traditional belief on postnatal care recommended to improve the coverage.

Background

Postnatal care (PNC) is defined as care given to the mother and a newborn baby immediately after the birth of the placenta and for the first six weeks of life (1). Care at the first week of life is crucial because, the majority of maternal and neonatal death occurs in this period. To decrease the death rate happen during this period, contact with the health care system at least during the first twenty-four hours and before the end of the first week is the most effective strategy (2). Therefore, it is recommended that the mothers must have immediate postnatal care within the first 24 hours, 2-3 days, 6-7 days and 6 weeks of delivery (3). But in Sub-Saharan Africa less than 50% of mothers use postnatal care within the first week of delivery (4). The utilization rate of postnatal care in Ethiopia is even lower that this rate. According to the demographic and Health survey of Ethiopia, only 17% use this service in the year of 2015 during the whole postpartum period. The utilization rate within the first three days of delivery is very low at 13 percent (5).

Three fourth of maternal mortality occur within the first week of delivery. Good quality of postnatal care is linked with low rate maternal and neonatal mortality since three fourth this mortality occurs in the first week of delivery (6). In Ethiopia, the maternal mortality rate was decreased from 767 per 100,000 of live birth to 412 per 100, 000 of live birth from the year 2011 to 2016. But this rate is still the highest compared global goal to decrease maternal mortality (5). Despite this, studies conducted in different parts of Ethiopia indicated the utilization of postnatal care with the first week of delivery is low. A study conducted in the Tigray region, northern Ethiopia, indicate only 11.9% of the mother have attended

postnatal care in the first week. Another study conducted in Amaya District, Oromia region also indicated the utilization level within the first week of delivery to about 25% (7, 8).

Previous studies have been also identified factors associated with postnatal care utilization among mothers in Ethiopia. These factors include lack of awareness, use of ANC follow up and place of delivery, place of residence (distance) and cultural beliefs during postnatal care (7, 8, 9). But, the majority of these studies conducted on the utilization of postnatal are not focused on the first week of delivery, which is the most critical period than the rest of postpartum time. Therefore, this study was designed to determine utilization rate within the first week of delivery and factors associated with it Dano District. This information is crucial to improve access to postnatal service and design modalities to increase the utilization rate (10).

Methods

Study area and period

The study was conducted in the Dano district, which is found in West Shawa Zone, Oromia Regional State which is located in western to Addis Ababa and Ambo. In 2017, the population of the district is estimated to be 12, 7002. The district situated has 23 kebeles including one urban kebele. Regarding health facilities available, there are 4 health centers, 22 health posts and 13 private clinics in the district. The study was conducted from June to July 2017.

Study design and population

The community-based cross-sectional study design was conducted among mother give birth with last weeks before data collection. Mothers were included in the study if they have lived for a mother than 6 months in the study period. But critically ill mothers were excluded from the study.

Sample size determination

The sample is determined using a single population proportion formula with an assumption of 95% level of confidence, 5% degree of precision and proportion of postnatal care utilization within the first week of delivery (25.3 %)(8) and a non-response rate of 10 % were also considered. Then correction formula was applied to the final sample size because the total population is less than ten thousand (417 mothers gave birth in the last three months in the district on average). So data were collected from 274 mothers. Besides this, two focus group discussions have been conducted with mothers in each Kebele. Health extension workers are also interviewed.

Sampling procedures

Dano district has 23 Kebeles. From this, half (twelve) kebeles were selected by the lottery method. Allocation to population size was made to those selected Kebeles. Then, the sampling frame was taken from the birth registration of health post (the list of 336 mothers). Based on this, participants were

selected using simple random sampling. Then, contact addresses of mothers were obtained. Mothers who fulfill eligibility criteria were interviewed. Focus group discussions were held with 9-11 mothers, in each of the two kebeles and two focus group discussions (FDG) on health extension workers. Participants of FDG were selected from the same registration book by purposive criterion sampling technique.

Measurement and variables

The utilization of postnatal care with the first week of delivery was the dependent variable of this study which is if mothers visited health facility with the seven days of delivery. If the mother had given birth at a health facility they are asked whether they visited a health facility within seven days after discharge.

The independent variables were socio-demographic characteristics, reproductive history of mothers and Health care provider/s and facility factors. Furthermore, maternal health service utilization and awareness of postnatal care, as well as cultural beliefs during postnatal care, were included. All variable are measured through responses of mother.

Data collection procedure

Data were collected by Interviewer administered structure questionnaire and focus group discussion. For quantitative data, the questionnaire was first prepared in English and was translated to Afan Oromo for data collection. The translation was done by experts who are fluent in both languages. Study participants were interviewed through face to face by diploma holders' health professions who know the area. The training was provided for data collectors on the aim of the study, methods and how to approach respondents before the actual data collection is carried out.

The qualitative data were collected by focus group discussion with the main purpose of collecting information on traditional practices and beliefs during postnatal care. Each FGD with a mother consists of 9 participants using an open-ended topic guide. Discussions were held with health extension workers who came from kebele where data collection is taken place. The discussions were audio recorded after consent was obtained.

Data processing and analysis

Data were analyzed by investigators using the Statistical package for social sciences (SPSS) version 20. First, all questionnaires are coded and entered into a computer and cleaned before analysis was preceded. Then data were described using frequency distribution, percentages, and measure of central tendency like mean and standard deviation. To identify factors associated with early postnatal care utilization, the crude odds ratio with its 95% confidence interval was calculated using bivariate Logistic regression analysis. Based on this, variables that have an association (p-value of ≤ 0.05) with the dependent variables were entered into a multivariate binary Logistic regression model. The adjusted Odds ratio (OR) was determined. Explanatory variables with p-value less than 0.05 were accepted as a

statistically significant association. Narration, table of frequency and graphs were used to present the result of this study.

Thematic analysis was used to analyze qualitative data. Before the analysis is started the recorded data were transcribed and translated to English. Next, the raw qualitative data categorized and labeled into three themes. Categories of groups were based on related ideas and concepts under some selected themes based on the guideline tools. Data were then summarized under the theme. Finally, findings were triangulated with the findings of the quantitative results.

Data quality assurance

The questionnaire was pretested on 5% of the sample size in kebele that was not selected. Based on the findings and lessons from the pre-test, some ambiguous questions were omitted and others were arranged. Data collection is then supervised and checked every day for completeness before the respondents leave. Any in the completed question was corrected.

Results

Socio-demographic characteristics

A total of 274 mothers with the first six weeks of delivery were participated in the study with a 100% response rate. Accordingly, 137 (50 %) of respondents belong to the age group 18-25 years with a mean age of 26.74 (SD of ± 5.43) years. Of the interviewed respondents about 154 (56.2%) were protestant, 265 (96.7%), and 113 (41.2%) were completed primary education. Regarding occupation, 241 (88%) of the respondents were unemployed housewives, followed by merchant 14 (5.1%), 9 (3.3%) government employees and the rest 14(5.1%) were employees of private organizations. Regarding the household income, 164 (59.9%) earns less 500 ETB (17.34 USD 2019 value) (Table 1).

Maternal health characteristics

Mothers are asked for history abortion as well as history delivery, antenatal care, and postnatal care use. From total respondents, 21 (7.7%) had a history of abortion and two third (75.5%) had ANC during their last pregnancy. From the mother interviewed in this study, 39 (14.2%) of mothers have experience at least one type of pregnancy-related complication. Similarly, out of the total respondents, 65 (23.7%) of mothers visited the health facility for postnatal care service within the first week of delivery. From mothers who had given birth in a health facility, about 124 (89.2%) were given postnatal care appointments. Of those, 1 (0.8%), 36 (29%), 23 (18.5%) and 64 (51.6%) were given postnatal care appointments at less than 24 hours, within 2-3 days, within 6-7 days and on six weeks, respectively (Table 2).

Awareness of postnatal care

Out of all participants, about 181 (66.1%) had awareness about PNC within one week services. From those who had awareness about the PNC services, a large percentage of respondents had heard about immunization services for their children 91 (50.3%) followed by advice on dangers signs after delivery (29.8%). About 29 (16%) of respondents indicated postnatal care visit is to take family planning service information. Less proportion of responded mothers showed that they have information on hygiene (1.7%). Similarly, the respondents indicated that they have less information on physical examination for mothers (1.1%), as well as newborn (1.1%) (Table 3).

Factors associated with the use of PNC within the first week of delivery

Table 4 indicates the factors found to be associated with postnatal care utilization with the first week of delivery in the Dano district. Accordingly, mothers who had appointed by health professionals for PNC Visit before discharge were more likely to return for postnatal care [AOR=4.84, 95% CI= (1.46 - 16.1)] than to those who had no appointed by health professionals during discharge from delivery care. Mothers who have postnatal care in their previous delivery are also more likely to use postnatal care within the first week of delivery [AOR= 7.4, 95% CI= (2.9, 18.5)].

The finding showed, mothers who had awareness of PNC within one week services were 4.2 times more likely utilized PNC within one week of delivery as compared to those who had no awareness [AOR=4.27, 95% CI= (1.46, 12.49)]. Socio-demographic and other health service factors did not indicate a statistically significant association with the utilization of postnatal care with the first week of delivery.

Barriers for attending postnatal care within the first week of delivery

Focus group discussion which composed of 48 of the participants was conducted based on six major thematic areas which then merged into three major themes. Three themes were problems mothers face during childbirth, reasons that hinder mother from PNC use with the first week of delivery and cultural belief and practices on postnatal care within one week.

Both health extension workers and mothers identified problems that some mothers face during the first week of delivery. The discussant indicated that there are problems like severe headache, shivering, severe vaginal bleeding, abdominal pain, delaying of the placenta, and obstructed labor and death of neonate. This idea is summarized with what 34 years old mother said that she faced severe headache and abdominal cramp during her delivery. But they have also indicated that, lack of information on when to visit the health facility. The following quote was taken from one of the ideas raised by mothers.

“... I had usually faced severe headache and abdominal cramp during my past deliveries, and I lost nine days aged newborn, in my second delivery, as no one informed me to visit a health facility.”

Furthermore, mothers groups are asked why mothers in their village do not attend postnatal care early. Accordingly, mothers indicated they are not informed to visit the health facility until 45 days. The reasons why they visit after 45 days of delivery are for the purposes of receiving their child immunization and family planning services. To support this, a mother of 38 ages old forwarded her lack of information about the utilization of PNC within one week service saying:

“... I don’t have any information to utilize PNC service within the first week of delivery but to visit health facilities after 45 days of delivery for the purposes of receiving my child immunization and family planning services.”

Participants also identified different traditional and cultural beliefs during the postpartum period which may hinder postnatal care use. Based on the discussion points raised participants reasoned out mainly believe that mothers’ body doesn’t get strength until for 40 days of delivery to go somewhere. Culturally they fear exposure to sunlight may cause of illness called “michii” to mother and newborn. There is also fear an evil spirit may affect the mother and newborn because their life not yet established. So discussants argued mother should carry sharp (metals) such as spears whenever she wants to go out to protect from evil spirits as evil is believed to fear such metals. Little baby (newborn) also should be accompanied with dry cow dung. In support of this, a 38 years old mother says that:

“...Our culture and tradition as descended down from our elders discourage us (postnatal mothers) not to go to the health facility for PNC within first months of delivery because they (postnatal mothers) will suffer from illnesses resulted from sunlight (michii) and evil spirit if they move out of the home. In addition, it is believed that postnatal mothers wouldn’t have enough energy to go out of the home before 40 days of delivery.”

Health extension also strengthened the issues which have been raised by mothers. According to them, low utilization of postnatal care within the first week of delivery was the distance of their from the health facility, lack transportation, and cultural believes and lack of trust in health services.

It also recognized by health extension workers cultural beliefs and practice during postpartum period prominently affect postnatal use. The discussants underlined that because of the fear of the health problems which caused by sunlight (michii) and fear of evil spirits on newborn and mother, they are not allowed to go out of the home. To avert this problem mothers have culturally advised to carry sharp metals like spear and awl (mutaa) in case she goes out. Going out with a child are believed to culturally protect the mother and newborn from evil. While they are in the home they have to put metal under the pillow and leg. Health extension also pointed out that mothers should be kept in closed curtains until for 40 days of delivery to protect from sun rays (lights) that could raise problems on newborns. It is also a means of protection from exposure to gusts eyes that could be associated with evil eyes. To support this idea one of 26 years health extension workers said:

“... until for 40 days of delivery mother should be kept in closed curtain and she is advised culturally to stay at home because of the fear of sun rays that could cause problem to newborn, and should not be openly seen by guests eyes that could be associated with evil eyes.” says a 26 years old community health extension worker.

Discussion

The present study indicated nearly one fourth (23.7%) of mothers have visited the health facility for postnatal care either after discharge from delivery care or home delivery. This finding is higher than the finding of Demographic and Health Survey 2016 (17%) postnatal care utilization rate at the country level (5). This is because DHS data covers many areas of the country which consists of higher and lower utilization areas. However, the utilization rate is higher than the rate in northern Ethiopia. A study conducted in northern Ethiopia, Dembecha in 2015 indicated less than one percent of (0.8%) mothers visit health facilities within 2-7 days of delivery (11). This may be due to factors such as time difference that could be an improvement in accessing and utilizing health care service through time. A study conducted in The Oromia region, Amaya district, indicated a similar level of utilization (25.3%) of PNC within the first week of delivery (8).

On the other hand, the result of the current study is lower than that of the study conducted Kenya (33%), Malawi (41%) and Mozambique (40%) (5), these indicated maternal health care better in other sub-Saharan Africa countries than Ethiopia.

Provision of appointment to women to return for postnatal care with after health facility delivery is another factor increases use. This finding is similar with a study done in Addis Ababa, which indicated women who were counseled and given appointments for postnatal care service were a more likely return to visit within a service after discharge (12). This could be because mothers given appointment means they are better informed by health workers on the benefit of attending and risks of not attending. It also indicates a lack of quality in postnatal care in which counseling should be part of maternal care.

Furthermore, mothers who have used postnatal care during previous delivery were more likely to use postnatal care with the first week of delivery. This is most probably due to the fact that women who had used PNC in the past have greater knowledge, adequate information, and more access to proper counseling offered from health professionals. This finding is similar to the study done in Addis Ababa in 2016 (12). The previous history can be attributed to the fact that women who had PNC in health institutions have a greater opportunity to get exposed to health education related to PNC services at the time of visit. Thus, mothers are likely to get to learn about the benefits and availabilities of PNC services.

Having awareness about postnatal care and its advantage is also increasing the utilization rate. In this study mothers who had awareness of PNC within one week services more likely utilized PNC within the first week of delivery. The result of the study conducted in Amaya, Oromia, Ethiopia in 2016 (8), and in Tanzania in 2009 (13) also stated that awareness increases the demand for PNC within one-week utilization. This implies that, a need to provide health information dissemination about postnatal care.

Focus group discussion also pointed out lack of information among mother when to return to the health facility as the mother indicated that they will not go to the health facility until 45 days after delivery.

Factors such as complications during labor and delivery, the distance of health center from the mother's home, advice on complications during the postpartum period were not significantly associated with postnatal care utilization in this current study. However, the same factors had shown a strong significant association with PNC within the first week utilization as indicated in the study conducted in Amaya (8). Most probably the possible reasons, in this current study area, there are relatively better governmental based infrastructures and the presence of health professional providers in all health centers.

Reasons for not attending postnatal care were also identified in this study through focus group discussion with mothers and health extension workers. It is found that cultural beliefs have a great impact on the use of postnatal care due to beliefs and practices. Mother in the postpartum period should be kept in a closed curtain with low access to sunrays for 40 days after delivery to protect from evil spirits and guests (visitors) eyes that could be associated with evil eyes. In addition, this tradition as descended down from elders discourages mothers not to go out of living home within one week because it is believed that the mother suffers from illness result from sunlight (michii) and evil spirits.

Furthermore, the focus group discussion finding pointed out that, mothers in the postpartum period couldn't have enough energy to go out of the home before 40 days of delivery. This finding is supported by the discussion with health extension workers that the mother has to travel long distances to reach to health facilities which may take more than one hour. This finding is also similar to the result stated in study conducted in Hadiya Zone South Ethiopia (14). It signals there are limited behavioral change messages on the importance of postnatal care and discouraging harmful traditional beliefs within the community. The home to the home provision of service by health extension workers does not also focus on postnatal care. Mothers are also indicated that an appointment to return to the health facility is given to 45 days after delivery.

This is also another issue raised as a barrier to hinder delivery mothers from the utilization of PNC services within one week of delivery. In line with this, the distance of delivery mothers' home from the health centers and inadequate economic background of the rural households are the crucial factors in determining whether or not to utilize PNC services within one week in the study area.

This study has strength in indicating the level of postnatal care utilization within the first week of delivery which is the critical time for maternal and neonatal mortality. But, it approached the research question under study through a cross-sectional study, so it cannot indicate a temporal relationship between factors and the outcome. Since the study interviewed mothers within six week after delivery there is possibility of recall bias for certain question. Beside this, this study does not address the service side factors which may also contribute low utilization of postnatal care.

Conclusions

The current finding revealed utilization of postnatal care within first week of delivery low (23.7%) even though it is higher than the national level. It is only half to the utilization rate of institutional delivery (48.2%). Mothers appointed to return for postnatal and have awareness of PNC more likely to use postnatal care within the first week of delivery. The study also revealed the importance of traditional belief as one of the important barriers to the use of postnatal care. Therefore, woreda health offices, regional health bureau should work in improving awareness of mothers on the importance of early visit postnatal care through community networks and health extension programs. The concerned bodies also should create a dialogue on how to decrease the impact of traditional beliefs. Finally, there should be a strong qualitative study that explores the role of traditional beliefs on maternal and neonatal health in the postnatal period.

Abbreviations

AOR: adjusted odds ratio; ANC: antenatal care; FDG: focus group discussion; PNC: postnatal care; OR: Odds ration; SPSS: statistical software for social science; SD: standard Deviation;

Declarations

Ethics approval and consent to participate

Ethical clearance and an official letter of cooperation were obtained from the Ethics and Research Committee of Wollega University and given to Dano district health office. After getting permission from the woreda's office, the request letter was sent to the respective PHCU and health extension workers. Informed verbal consent was obtained from each study participant. To keep the confidentiality of data, no personal identifiers were taken from study participants. The FDG record was also kept confidential and destroyed after the analysis was finished.

Consent for publication: Not applicable

Availability of data and materials

The datasets generated and/or analyzed during the current study are not publicly available because is about a specific area but are available from the corresponding author on reasonable request.

Authors' contributions

ZA: initiated the research, designed method, analyzed data and participate in writing a final manuscript. DW designed method participated in data analysis and writing reports, BE designed methods, write a result and prepare a manuscript. All authors read and approved the final manuscript.

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Conflict of interest

Authors declare no conflict of interest

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Tables

Table 1: Socio demographic characteristics in Danno district, Oromia, Ethiopia, 2017

Variables	Frequency	Percent
Age in years		
<25	137	50
25-35	120	43.8
35+	17	6.2
Religion		
Orthodox	85	30
Muslim	35	12.8
Protestant	154	56.2
Ethnicity		
Oromo	252	92
Amara	21	7.6
Tigre	1	0.4
Place of residence		
Urban	51	18.6
Rural	223	81.4
Current marital status		
Married	265	96.7
Unmarried	6	2.2
Divorced	3	1.1
Mothers' level of education		
No formal education	133	48.5
Primary education	113	41.2
High school education and above	28	10.3
Partner level of Education		
No formal education	100	36.5
Primary education	114	41.6
High school education and above	60	21.9
Occupation of mother		
Employer	14	5.1
Merchant	14	5.1
Daily laborer	5	1.8
House wife	241	88
Husband occupation		
Farmer	229	83.6
Employer	11	4
Merchant	23	8.4
Daily laborer	11	4
Income		
<500ETB	164	59.9
500-1500ETB	84	30.6
1500-2500ETB	26	9.5

Table 2: Maternal health service utilization in Dano District Oromia regional state, Ethiopia, 2017

Variables	Frequency	Percent
Postnatal care use with the first week of delivery		
Yes	65	23.7
No	209	76.3
Time taken from mother's home to health facility		
Below 30 minutes	66	24.1
About 30 minutes to an hour	58	21.2
Above one hour	150	54.7
Place of delivery		
Home	135	49.3
Health center	108	39.4
Health post	6	2.2
Government hospital	24	8.8
Privet clinic	1	0.4
Numbers of hours mother stay in facility after delivery in hours (n=139)		
<6	39	28
6-24	20	14.4
>24	80	57.6
Delivery attendants		
Health profession	132	48.2
Health extension workers	6	2.2
Traditional birth attendant	95	34.7
Others	41	15
Having appointment PNC within one week from health profession (n=139)		
Yes	124	89.2
No	15	10.8
Advised possible postpartum complications		
Yes	112	40.9
No	162	59.1
Advised for possible newborn complications		
Yes	112	40.9
No	162	59.1

Table 3: awareness about postnatal care follow-up with the first week of delivery in Dano district, Ethiopia, 2017

Variables	Frequency	Percent
Mothers heard on PNC within first week services		
Yes	181	66.1
No	93	33.9
Type of PNC service mothers know (n=181)		
Physical examination for mother	2	1.1
Physical examination for baby	2	1.1
Provision of family planning	29	16.0
Provision of immunization	91	50.3
Advising on danger signs after delivery	54	29.8
Advising on hygiene	3	1.7

Table 4: Factors associated utilization of postnatal care within the first week delivery among mothers in Dano district, Oromia, Ethiopia, 2017

Variables	Utilization of PNC within one week (%)		COR (95% CI)	AOR (95% CI)
	Yes	No		
Maternal level of education				
No formal education	23 (17.3%)	110 (82.7%)	0.323(0.13- 0.78)	1.264 (0.3- 5.3)
Primary education	31 (27.4 %)	82 (72.6%)	0.584(0.25- 1.39)	1.076 (0.29-3.97)
High school education	4 (44.4%)	10 (55.6%)	1.00	1.00
Partner level of Education				
No formal education	18(18%)	82 (82%)	0.474 (0.23- 0.99)	1.227 (0.34-4.38)
Primary education	28 (24.6%)	86 (75.4%)	0.703 (0.35- 1.4)	0.727 (0.25-2.14)
High school education	19 (31.7%)	41 (68.3%)	1.00	1.00
Income				
<500ETB	39 (23.8%)	125(76.2%)	0.374(0.11- 1.29)	0.686 (0.15-3.05)
500-1500ETB	14 (16.7%)	70(83.3%)	0.240 (0.06- 0.89)	0.210 (0.04-1.05)
1500-2500ETB	7 (46.7%)	8(53.3%)	1.0509(0.22- 5.00)	.689 (0.09- 5.22)
>2500ETB	5 (45.5%)	6(54.5%)	1.00	1.00
Parity				
<4	51 (27.4%)	135 (72.6%)	1.99(1.036- 3.85)	2.47(0.866- 7.053)
>=4	14 (15.9%)	74 (84.1%)	1.00	1.00
ANC follow up				
Yes	60(29%)	147(71%)	5.06(1.939- 13.2)	1.52(0.4- 5.72)
No	5(7.5%)	62((92.5%)	1.00	1.00
Complications during labor and delivery				
Yes	19(35.2%)	35(64.8%)	2.05(1.08- 3.9)	2.17(0.88- 5.38)
No	46(20.9%)	174(79.1%)	1.00	1.00
Appointed for PNC before discharge				
Yes	56 (45.2%)	68 (54.8%)	12.90 (6.03- 27.6)	4.84(1.46- 16.1)**
No	9 (6%)	141 (94%)	1.00	1.00
Time took to reach health facility from home				
Less than 30	27 (40.9%)	39 (59.1%)	4.25(2.169- 8.339)	2.59(0.979- 6.879)
30'to 60'	17 (29.3%)	41 (70.7%)	2.55(1.228- 5.283)	2.14(0.817- 5.558)
Above 1 hour	21 (14%)	129 (86%)	1.00	1.00
Mother advised by health professional on postpartum complications				

Yes	50 (44.6%)	62 (55.4%)	7.90(4.131- 15.122)	1.38 (0.285- 6.686)
No	15 (9.3%)	147 (90.7%)	1.00	1.00
Advice on neonatal complications				
Yes	50 (44.6%)	62 (55.4%)	7.90(4.131- 15.122)	1.68(0.389- 6.854)
No	15 (9.3%)	147 (90.7%)	1.00	1.00
Use of PNC during previous delivery				
Yes	29(63%)	17(37%)	9.09(4.534- 18.258)	7.4(2.9- 18.5)**
No	36(15.8%)	192(84.2%)	1.00	1.00
Heard of PNC within first week of delivery				
Yes	60 (33%)	121 (66.9%)	8.73(3.366- 22.628)	4.27(1.46- 12.49)**
No	5 (5.4%)	88 (94.6%)	1.00	1.00