

Factors Affecting Utilization of Postnatal Care Services: A Mixed Methods Study Among Women who Recently Completed a Pregnancy in Rural Malawi

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Abstract

Postnatal care (PNC) in the first six weeks after birth is crucial for early diagnosis and treatment of complications to mothers and their new-born babies. However, about 40% of women in low and middle income countries do not use PNC services so that 2/3 of maternal deaths occur during postnatal period. This study aimed at assessing factors that affect the use of PNC services among women in rural Malawi. We used both quantitative and qualitative methods. A cross-sectional survey was undertaken in two rural villages in Malawi in June 2017. A structured questionnaire was administered to 73 women who had completed a pregnancy between 0-12 months before the interview. Two focus group discussions with women and two in-depth interviews with midwives were also conducted. Descriptive statistics and chi-square tests were used for analysis of quantitative data. Content

analysis was used to analyze qualitative data. Out of the 73 participants, 69.9% (n=51) reported to have used PNC services within six weeks after they had completed a pregnancy. Mode of transportation (p-value=0.022) and presence of complications (p-value=0.03) were found to be significantly associated with PNC service utilization. Qualitatively, the most cited reasons for not using PNC services were lack of knowledge of the existence of PNC services, lack of transport money, and cultural beliefs. Over half of the women who were involved had used PNC services although many more had no knowledge thereof. To increase utilization and knowledge of PNC services, community awareness needs to be intensified.

Key words: PNC utilization, Andersen and Newman model, Malawi

1.0 Introduction

Postnatal care (PNC) is defined as the care that is provided or given to women and new-born babies in the first six weeks after birth (Byrom, Edwards, & Bick, 2010). Some of the PNC services include immunisation, family planning, physical examination, health education on mother and child care and treatment and counselling services. WHO recommends focused postnatal care visits within 6 to 48 hours, 3 to 7 days and 6 weeks after birth. This is done to ensure both the woman's and child's physical and mental wellbeing (WHO, 2013).

The principal objectives of PNC services are to support the mother and her family in the transition to a new family constellation, early diagnose and treat complications of the mother and infant, refer the mother and infant for specialist care when necessary, counsel on baby care, support exclusive breastfeeding and counsel and provide contraception service (Workineh, 2014).

Despite its importance, PNC period is generally the most neglected in Low and Middle Income Countries (LMICs) and most mothers and new-born babies do not receive postnatal care services during the critical first few days after delivery (Jehan, et al., 2009). A WHO (2015) report states that every day in 2015, about 850 women died

due to complications and child birth. From the 850 women, 550 were from Sub-Saharan African countries and 130 from Southern Asia. The risk of a woman in developing countries dying from a maternal related cause during her life time is about 33 times higher compared to a woman in developed country (WHO & UNICEF, 2017). Non-utilization of PNC services is one of the contributing factors to the risk the deaths after giving birth. The recent findings by the WHO, United Nation International Children's Emergency Fund and United Nations Population Fund, show that a woman living in Sub Saharan Africa has one out of 16 chances of dying after childbirth (WHO, 2013). Postnatal care programs are among the weakest of all reproductive and child health programs in the region.

Some of the reasons that affect the utilization of PNC include the knowledge of the mothers about PNC, the level of education of the woman, access to health services, lack of counselling of PNC and decision making power of the mother (Limelih, Andealam, Zerfu, & Berihum, n.d.; Nankhwanga, 2011; Sakala & Kazembe, 2011; Tesfahum, Worku, Mazengiyya, & Kifle, 2014; Wangali, 2011).

A study done in Kenya to investigate the factors that affect the utilization of postnatal care services at Central Provincial General Hospital in Nyeni, showed that out

of 240 women, only 14.2% of the women used the service (Wangali, 2011). The stated study found that the knowledge of the women on PNC services was one of the leading factors to the utilization of the services. The results from the study show that 33.3% of the respondents had poor knowledge on postnatal services, 24.2% had inadequate knowledge, 22.9% had adequate knowledge whilst only 19.6% had very good knowledge of PNC services. Knowledge also affects women's capabilities to make their own decisions about seeking health care and constrains their ability to exercise their reproductive right (Dhakal et al., 2007; Lagro, Liche, MUMBA, Roosmalen, & Ntebeka, 2006; Nabukera et al., 2006; Nankhwanga, 2011). According to Workineh and Hailu (2014) mothers who were autonomous to make health decisions by themselves were about 13 times more likely to utilize PNC services than those whose health care decision was made by other people.

Literature has shown that socio-demographic factors like education, marital status and occupation have an effect on utilization of PNC services. According to Wangali (2011) and the Malawi Multiple Indicator Cluster Survey Report (MICS) of 2006, education level of the women also affects the utilization of PNC services. The Malawi MICS Report of 2006 reported that women with secondary education or higher education are more likely to go for PNC services within 42 days after delivery (54%).

Based on Anderson and Newman model of health-seeking behavior, the use of health care services is a function of three sets of characteristics: predisposing characteristics, enabling characteristics, and need characteristic (Andersen & Newman, 2015). According to the model, predisposing factors can be characteristics such as race, age, and health beliefs. For instance, an individual who believes health services are an effective treatment for an ailment is more likely to seek care. Examples of enabling factors could be family support, access to health insurance, one's community etc. Need factors represents both perceived and actual need for health care services ("Andersen healthcare utilization model," 2018). Therefore, this study investigated predisposing, enabling and, need factors that affect utilization of PNC services in rural Malawi.

2.0 Methods

This was a cross sectional study where a concurrent convergent mixed design was used. A concurrent convergent mixed method design collects both qualitative and quantitative data at the same time and analyze them separately and then results are compared (Castro, Kellison, Boyd, & Kopak, 2010). The reason for mixing these methods was to objectively assess the factors associated with PNC utilization and to further explore the reasons for low PNC utilization (using qualitative methods) in the study area (Creswell & Clark, 2011). The study was conducted at Kabudula Health Centre and in villages within its catchment area. Kabudula Health Centre is located in Lilongwe which is in central region of Malawi. Kabudula health Centre is under Lilongwe District Health Office.

We targeted women of childbearing age (15-49 years old) who had completed a pregnancy in the health facility within 12 months before the study. The women were those living within the Kabudula catchment area. Selection criteria was: a woman who was willing to participate, went to Kabudula Health Centre to receive care, who is in the reproductive age group (15-49 years old) and also who had given a live birth a year or less than a year before the study. We also targeted health providers working in the maternity ward of the facility. For the quantitative component, a multistage sampling technique was used to sample the study participants. The Health Centre has two Traditional Authorities (T/As), thus T/A Kabudula and T/A Khongoni, one village was selected from each T/A. Simple sampling was used to select two villages and systematic sampling to get to households. The following equation was used to calculate the sample size:

$$n = \frac{Z^2 \times P \times (1-P)}{e^2}$$

In this formula n is sample, Z is the confidence interval at 90% (with 1.645 z-score), P is the proportion of PNC utilization which is taken from the literature and e is the marginal error. With this the sample size was calculated to be 73 with a 10% for nonresponse rate and data loss.

A structured close ended questionnaire was administered to 73 women. Interviews were held in the villages at the participant's house. The questions addressed predisposing, enabling and need factors to PNC use. The variables of interest included age, parity, marital status, education, occupation and religion as predisposing factors. Enabling factors included distance to the facility, indirect cost of service and informal payments. Need factors included information on perceived susceptibility, seriousness of the complication and mode of delivery.

Data were analyzed using both univariate and bivariate analysis. In univariate analysis, frequencies, distributions, means and proportions were calculated to describe each variable on its own. While for bivariate analysis, Chi-square tests were used to analyze the data. The tests were used to show the relationship between PNC utilization and the knowledge or awareness of PNC, presence of complication and also decision making power of the mothers. Any relationship at a p-value less than 0.05 was taken to be significant. StataCorp. 2014. *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP) was used for the analysis.

For qualitative data, two focus group discussions with women and also 2 in-depth interviews with midwives were undertaken. Purposive sampling was used to identify women to be included for focus group discussion and midwives to be included in in-depth interviews. One focus group discussion was undertaken per village. This data was analyzed using content analysis. This method of analysis is used to analyze textual content or verbal content which is transcribed (Kothari, 2004).

2.1 Ethics approval and consent to participate

The National Commission of Science and Technology

Ethical Commission (protocol number 17/05/1834) granted ethical clearance for the study. We also sought permission from Lilongwe District Health Officer to collect data in the designated catchment area. We obtained written consent from all study participants; fingerprints were accepted as signatures for participants who could not read and/or write. Participants were protected by numerically coding the survey and transcribed materials to keep responses confidential.

3.0 Results

3.1 Socio-demographics

A total of 73 women took part in this study. Out of these 69 (94.52%) were married. The age of the women ranged from 17 to 44 years with a mean of 25.48 years and a mode of 20 years. Church of Christ Christians made up 32.88% of the interviewed women. 21.92% were Catholic Christians and 23.29% were CCAP Christians. From the total women who were interviewed, 45(61.64%) women do not know how to read or write. 70.91% of the total respondents depend on farming and 15.07% were doing nothing for a living. Those who have reached primary school level made up 97.26% (71) and 21.16% (15) of these have reached secondary school level. 2 women from the total interviewed women said that they have never gone through any formal education. Parity, which is the number of children a woman has given birth to ranges from 1 to 8 children with a mean of 2.73. Table 1 shows the sociodemographic characteristics of the

Table 1: Sociodemographic characteristics N=73

Variable	N	%
Marital status		
Married	69	94,52
Divorced	2	2,74
Widowed	2	2,74
Literacy level		
Literate	28	38,36
Illiterate	45	61,64`
Occupation		
Nothing	11	15,07
Business	6	8,22
Farming	55	75,34
Domestic worker	1	1,37
Education level		
No formal education	2	2,74
Primary school	56	76,71
Secondary school	15	20,55
Characteristic	Mean	SD
Age	25.48	6.15
Parity	2.73	1.73

participants.

3.2 Predisposing factors

Age, child gender, parity, marital status, education, occupation and religion were the predisposing factors. The results showed that there is no significant association between PNC utilization and age (p-value=0.430), child gender (p-value=0.74), parity (p-value=0.755), education (p-value=0.372), occupation (p-value=0.653) and religion (p-value=0.843) of the mother. Among all the predisposing factors marital status of the mother showed to be statistically associated with PNC utilization with a p-value of 0.063 which is less than 0.1. In addition to this, education was found to affect PNC utilization qualitatively as reported by both Kabudula women and health care providers:

“First is education level. Most of the women have never gone to school. So they follow what our culture states. Most women do not have a source of information to know when safe motherhood starts and end. Another thing are the beliefs that people from the village have concerning safe motherhood. So it is hard for some to leave such beliefs even after being educated. They don’t also know which one is good and which one isn’t.” (A female health centre midwife, in-depth interview).

3.3 Enabling factors of PNC utilization

This study included distance, indirect costs, informal payments, mode of transportation, decision making power and husband help as some of the enabling factors that affect the utilization of PNC services. Table 2 shows the results for enabling factors of PNC utilization. The table shows that transportation mode is statistically associated with PNC utilization with a p-value of 0.022 which is less than 0.1

Qualitatively, women reported that husband help has an influence on their utilization of PNC services as shown in the statements below.

“Some husbands just tell us to go to the health facility without giving us any kind of help which discourages us from utilizing the services but some husbands escort their wives to the facility on a bicycle”. (A mother, FGD, Village 2).

3.4 Knowledge of PNC services

During this study, women were asked if they knew any health services that are provided during the PNC period to either the mother or the child or both. One question provision, vaccination and family planning services.

In this report, the service knowledge was grouped into knowledge levels that are used in assessment. Those

who did not know any service were grouped to have no knowledge. Those who knew one or two services were grouped to have low knowledge while those who knew

3-4 services were grouped to have moderate knowledge. Finally, those who knew 5-7 services were grouped to have high knowledge.

Table 2: Statistical association between PNC service utilization and some enabling factors

Enabling factor	PNC utilization N=73		
Transport Mode	Yes	No	
Walking	17	15	P-value= 0.022
Own bicycle	25	5	
Hired bicycle	9	2	
Total	51	22	
Decision making power	Yes	No	
Husband only	16	8	P-value= 0.881
Wife only	24	9	
Both husband and wife	11	5	
Total	51	22	
Husband help	Yes	No	
Financial support	40	17	P-value= 0.632
Emotional support	4	0	
Escorted me	6	4	
Took care of the child	0	0	
Took care of the household	0	0	
Reminded me	0	0	
Total	50	21	

Qualitatively, women reported that husband help has an influence on their utilization of PNC services as shown in the statements below.

“Some husbands just tell us to go to the health facility without giving us any kind of help which discourages us from utilizing the services but some husbands escort their wives to the facility on a bicycle”. (A mother, FGD, Village 2).

3.4.1 Knowledge of PNC services.

During this study, women were asked if they knew any health services that are provided during the PNC period to either the mother or the child or both. One question with multiple responses was asked which required the mother to mention or choose any service that is provided

during the PNC period. The services that included were; blood pressure examination, physical examination, baby growth monitoring, urine examination, supplementary provision, vaccination and family planning services.

In this report, the service knowledge was grouped into knowledge levels that are used in assessment. Those who did not know any service were grouped to have no knowledge. Those who knew one or two services were grouped to have low knowledge while those who knew 3-4 services were grouped to have moderate knowledge. Finally, those who knew 5-7 services were grouped to have high knowledge.

Table 3: Summary of Knowledge level of the women and their PNC utilization

Knowledge level	Counts	PNC utilization	Never used PNC
No knowledge (0)	47 (64.4%)	30 (63.8%)	17 (36.2%)
Low Knowledge(1-2)	26 (35.6%)	21 (80.8%)	5 (19.2%)
Moderate knowledge(3-4)	0	0	0
High Knowledge(5-7)	0	0	0
Total	73 (100%)	51 (69.9%)	22 (30.1%)

The results show that about 35.62% of the women had low knowledge concerning the services that are provided during PNC period and the rest (64.38%) do not have any knowledge concerning PNC services as shown in Table 3. Nevertheless, the relationship between the knowledge level of the mother concerning PNC with the utilization the service is statistically insignificant with p-value of 0.131 which is more than 0.1.

Figure 1 shows that all the women who had the knowledge about family planning, vaccination, baby growth monitoring and urine examination services have gone for PNC services. Five women out of the 7 who had knowledge about supplementary services of PNC have used the PNC services. The results also indicate that no woman had the knowledge about blood pressure examination service.

Qualitatively, some women reported that PNC services helped to protect the child from any diseases that might develop immediately after delivery.

"PNC service are important because they help to know if the child has any diseases that may develop after being born."

(A mother, FGD, Village 2).

Some mothers reported that PNC period is the time when the mother gets counselled on how to raise a child also what food to give the child.

"This time is also important because it is during this time when health providers tell us what food to give the child that will include all the essential food groups. This helps the child to grow healthy." (A mother, FGD, Village 2).

The study reports that the health care providers tell the women about PNC services. Despite this, it is also reported that some women are not educated about the service.

"They have to tell us the importance of PNC. We get to have a picture of any intervention that is happening at the facility through the HAS or the health care providers. But for PNC we are not really made aware of its importance. That the reason you see that we are not saying much about this topic." (A mother, FGD, Village 1).

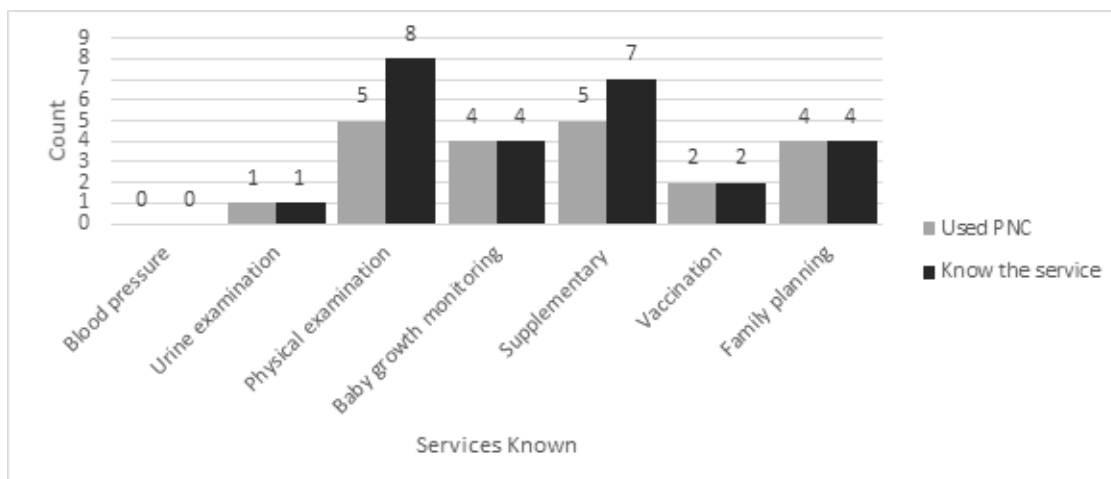


Figure 1: Knowledge of different services provided by PNC and PNC utilization

3.5 Need factors that affect PNC utilization

Delivery mode, the presence of complications, the type of complications and the seriousness of the complication were some of the need factors that affect

PNC service utilization. Out of all these services presence of complication and seriousness of complication showed an association with PNC utilization with a p-value of 0.03 and 0.093 respectively.

Table 4: Statistical association between Presence of complications and PNC utilization

Presence of complication	PNC utilization		Total	Value
	No	Yes		
No	20	34	54	$\chi^2(1)=4.6916$
Yes	2	17	19	p-value=0.030
Total	22	51	73	

Table 4 shows that from the total 54 women who said they did not have complications during their delivery and pregnancy, 34 said they used PNC. The remaining who said they had complications during their pregnancy and delivery, 17 women used PNC services.

Women who said they had complications after delivery were asked to rate the seriousness of the complications. Out of the total 19 women who experienced complications, 18 rated the complication to be very serious while the remaining one rated the complication as moderate. From the 18 women who rated the complication to be very serious, 16 used PNC services.

4.0 Discussion

It is recognized worldwide that postnatal care is important in maintaining and promoting health of women and their newly born babies. This ensures positive physical and mental well-being of both the woman and the child (WHO, 2013). This study found that there was a 69.9% utilization of postnatal care services at the study site. This utilization is lower than the recommendation made by the Road Map to accelerate the reduction of maternal and neonatal deaths in Malawi which is pegged at 80%. The low utilization could be due to factors discussed below.

Out of the predisposing factors of PNC that this study included, marital status and education level of the women were associated with utilization of PNC services. The results showed that married women used PNC services at a higher percent (71%) than those who were not married. These findings may mean that married women get encouragement and help from their spouses unlike unmarried women. The help may include financial and also mental help. These findings are similar to what Elkhoudri, et al., 2017 found that single mothers are associated with no PNC usage (Elkhoudri, Baali, & Anor, 2017).

Qualitatively, the study found out that education status of the woman has an effect on the utilization of PNC services. This may be true because educated

people are more knowledgeable about health issues than uneducated (Zimmerman, Woolf, & Haley, 2015). Additionally, educated people are able to understand basic things than those who have never gone to school (Zimmerman et al., 2015). Educated people are also able to read some of the posters and get to know things faster than uneducated people (Mohan et al., 2015). This is similar to the findings by Mohan et al (2015) who stated that education could help women attain greater autonomy and capability for negotiating with the family members and communities to access services and educated mothers are capable of demanding better health and public services.

Mode of transportation and knowledge level of women concerning PNC services were found to be significantly associated with PNC service utilization out of all enabling factors. This study found that there was a high percentage of non-PNC service users in women whose mode of transport to the facility was walking than any other mode of transport. This shows that long distances to the facility with lack of better transportation mode make medical care burdensome. Women find it hard and discouraging to walk to the facility to receive PNC services as a result they do not utilize the services. Walking to the facility also consumes a lot of time that the women could use to do some beneficial activities. So due to this, women prefer to stay at home than to walk a long distance to the health facility to receive a service. This is also associated with source of income of the mother because some of the modes of transport require money. This is in line with a study by Titaley, et al (2010) who reported that many women in rural areas walk to the facility, which mostly discourages them if the distances are long and also when they are weak after labour as a result they do not utilize PNC services (Titaley, Hunter, Heywood, & Dibley, 2010).

From the FGD results, women in the study site are only aware of the importance of PNC to the child and not to the mother. Most women reported that PNC services help to protect the child from diseases and also help to know if the child has any diseases. Most women were

not aware of the importance of PNC to the mother. Only few women knew that the mother is checked if there is any blood loss and if it is present then it is controlled. This shows that women do not utilize PNC services because they lack knowledge concerning PNC. Lack of knowledge may be brought about due to low education levels, also lack of source of trustworthy information and also lack of training from the health care provider. This low knowledge also leads to low PNC service utilization because women do not know where to get the services, at what time and also the importance of PNC services. This is similar to what Wangali, 2011 found out that 44.2% of the respondents did not attend PNC visits because they had no knowledge while 49.5% failed to report for PNC visits because they did not think it was necessary. Furthermore, Elkhoudri, et al., 2017 reported that 87% of the women who were interviewed lacked information concerning PNC services and as a result they did not receive PNC services. The findings from this study contradict with Tesfahun, et al., 2014 who found out that the majority (84.39 %) of mothers were aware that they were supposed to receive PNC services after delivery but they chose not to receive the services (Tefahum et al., 2014).

Our study did not find a significant association between distance from the villages to the health facility with the use of PNC services. Despite this, the authors expected to find the opposite because long distances discourage mothers to utilize or seek health care services than short distances as shown by other studies. For example, an increase in distance or travel time to the nearest health care facility was associated with fewer PNC and ANC visits as reported by Simkhada et al (2007) (Simkhada, Teijlingen, Porter, & Simkhada, 2007). Distance limits women's willingness to seek health care services particularly when appropriate transport is scarce and communication difficult (Wangali, 2011).

Findings of our study revealed that out of all the need factors that affect the utilization of PNC services, presence of complication and seriousness of the complications were found to be significantly associated with utilization of PNC services. This could be because women with complication during their pregnancy will try to look for guidance and help from health providers to control the complications and also prevent the reoccurring of these complications. This shows that women with complications are driven by fear to utilize the services than those without complications. According to Titaley et al., 2010 participants only perceived health care services to be necessary if obstetric complications occurred. Furthermore, a study by Limenih et al., 2016 showed that women who faced birth related complications were 2.58 times more likely to use PNC services than those who did not have any complications (Limenih et al., n.d.).

In addition, seriousness of the complication also affects PNC service utilization. Women who perceive a complication to be very serious are more likely to go for a PNC visit than those who perceive it as not serious (Tefahum et al., 2014). This can be justified that knowledge on obstetric danger signs and symptoms during postpartum is an important factor in encouraging mothers and their families to attend health care service at the earliest opportunity with the intention of managing the obstetric signs and symptoms before developing serious effects (Amenu, Mulaw, Seyoum, & Bayu, 2016).

Our study showed that there were no enough midwives to attend to the women at the facility. This shows that the health care providers did not have enough time to attend to the women due to low number of health care providers at the facility. The mothers also lacked interest of taking the child to the hospital for PNC utilization even when they are told about its importance due to lack of attention from the health care providers. This is similar to a study by (Elkhoudri et al., 2017) which found that the quality of the patient-provider relationship determines the PNC use. This factor was cited by 42% of women; as an obstacle to using PNC services. Furthermore, the study emphasized that personnel health behaviours is an important determinant of the health services utilization.

5.0 Conclusion

In conclusion, the utilization of PNC service is low in the study area. Only 69.9% of the mothers use PNC services which is lower than the 80% utilization as recommended by the Road Trip to accelerate the reduction of maternal and neonatal deaths. Some of the reasons why PNC is low include; lack of motorized transportation to use for the long distances, lack of knowledge concerning PNC and presence of complications. We recommend that the government should develop and implement a system of community based service delivery in order to increase PNC utilization rate. Health education and/or community awareness should also be intensified in order to increase knowledge levels of the importance of PNC utilization.

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