

## Research Article

# Factors Associated with Failure to Attend Four Recommended Postnatal Care Visit in Rwanda

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## Abstract

Maternal mortality is still a public health concern in Sub-Saharan Africa. The higher prevalence of maternal mortality in Sub-Saharan Africa is partially attributed to inaccessibility of postnatal care services. In Rwanda only 43% of women had postnatal checkup within the first two days after delivery. This study aims to determine the level of PNC 4<sup>th</sup> standard visit attendance and factors associated with failure to attend four recommended PNC. This cross-sectional study was conducted among childbearing women seeking health care services in 10 health centers of Masaka District hospital in Rwanda. Structured questionnaire was used to collect data. The findings showed that of 398 women who participated in the study, 53.8% were aged between 18-27 years, 47.0% completed only primary education, and 59.5% of women were married. A total of 343 (86.2%) failed to attend four recommended postnatal care visit. The findings from multivariate analysis showed that women with no health insurance had higher risk of failing to attend four recommended postnatal care visit. However, no statistical significance observed (AOR=1.342; 95% CI: 0.351-5.136; P=0.668). Women who did not receive information about PNC after delivery had significantly higher risk of failure to complete four recommended PNC standards visit (AOR=2.894; 95% CI: 1.422-5.887; P=0.003). Lack of knowledge on the importance of PNC was significantly associated with failure to complete four recommended PNC standards visits (AOR=3.396; 95% CI: 1.684-6.849; P=0.001). Attendance of four recommended PNC visit is low in Rwanda. There is a need to continue to educate mothers the importance of attending four recommended PNC.

**Keywords:** Postnatal care visit; PNC; Maternal mortality

## Introduction

The pregnancy period is very sensitive from the conception 42 days after birth delivery. From the conception antenatal care standard visit period should be monitored to avoid maternal and neonatal death. Both mother and child should be under follow up from birth date till 2 weeks or 42 days after delivery to avoid maternal and child death. The first six weeks of life is especially critical for newborns and mothers [1]. In low income countries, almost 40% of women experience complications after delivery and an estimated 15% develop potentially life-threatening problems [2].

Every year in Africa, are registered 125,000 mothers against 870,000 newborns die within the first week after birth, yet this is when coverage and programs are at their lowest along the continuum of care [3]. However PNC programs are registered among the weakest of all reproductive and child health programs in the region. Each year, are registered at least 1.16 million of African babies die in first 28 days of life and 850,000 of these children don't live past the week they are born. It has been documented that, 10 to 27% of newborn deaths could be prevented through attending of recommended postnatal care [4-6].

A pooled meta-analysis of demographic health surveys from 10 Africa countries showed that Postnatal Care (PNC), whether provided by a skilled or unskilled provider, is protective against both neonatal

death outcomes. Unskilled PNC on day 1 was associated with a 32% decrease in the probability of death compared to no PNC on day1. Both skilled and unskilled PNC by day 7 were associated with reduced neonatal death during days 2 to 7 [7].

A study conducted in Tanzania found that less than one in four women in Morogoro region reported having visited a health facility for postnatal care. Individual-level attributes positively associated with postnatal care use were women's education of primary level or higher, having had a caesarean section or forceps delivery, and being counseled by a community health worker to go for postnatal care at a health facility. In Tanzania lower postnatal care attendance was associated with having delivered at a hospital, health center, or dispensary and having had severe swelling of face and legs during pregnancy [8].

A recent study conducted in Uganda found that 50% of mothers used early PNC services for their most recent delivery in the 2 years preceding the survey. The same study found that women's residence, education level, religion, wealth status, marital status, occupation, antenatal care attendance, place of delivery, birth order, perceived accessibility of health facilities, and access to mass media messages were associated with greater use of early PNC. Furthermore, the Ugandan study reported that the percentage of women received early PNC was much higher among women who delivered at a health facility, either a public facility (63%) or private facility (65%), versus

only 9% among women who delivered at home [9].

According to Rwanda Demographic Health Survey published in 2015, 43% of women had postnatal care visit in the first 2 days after delivery, 30% of women conducted a checkup within 4 hours, 8% in 4 to 23 hours and 5% within 1 to 2 days. The report demonstrated that 65% of no educated women do not attend postnatal care. Regarding the skilled health care providers, only 43% of postnatal care services were given by doctors, nurses, medical assistant, midwives and/or community health workers. Unfortunately 57% of postnatal care services were provided by no skilled health care providers just in first two days after birth. In general the women who did not give birth at health facility, who living in rural areas, those who were with no education level and those who were with lowest wealth quintile were mostly and likely not to attend postnatal care services [10].

Very recently, a study conducted in Rwanda on the facilitators and barriers to PNC attendance found that there is little awareness in the community of what the PNC package is; PNC 4 in particular is not well understood; PNC visits by Community Health Workers (CHWs) are well accepted and valued; Providers perceive PNC 4 as an added burden to an already high workload; Community structures exist to better disseminate key messages about PNC, but have not yet been effectively utilized [11].

Safe motherhood programs emphasized on the importance of postnatal care checkup and recommend that all women to attend postnatal care visits within 2 to 7 days following delivery may reduce the maternal and infant mortality in low income countries. The objective of this study was to investigate the factors associated with failure to attendance of recommended postnatal care visit.

## Materials and Methods

This cross-sectional study was conducted among women seeking health care services in 10 selected health centers of Masaka District hospital, Kicukiro District. This study was approved Ethical Committee of School of Health Sciences, Mount Kenya University Rwanda and that of Masaka District Hospital.

The study population consisted of all reproductive age women registered and planned to come for postnatal consultation after having birth in health centers of Masaka Hospital. The study include women aged between 18 to 49 years old and have gave birth in selected health facilities in the last 42 days. Yamane (1967) formula was used to estimate the sample size with additional 9% to increase the sample size. A total of 398 women were recruited in the study. Structured questionnaire was used to collect among study participants. Prior to data collection the objective of the study was explained to study participants and a signed consent form was given to all study respondents.

The primary outcome of this study was the number of PNC 4<sup>th</sup> standard visit. Individual and health care factors associated with attendance of PNC 4<sup>th</sup> were assessed. Data were analyzed using SPSS version 21. Descriptive statistics was used to describe study variables and to estimate the level of PNC attendance. Logistic regression was used to estimate the factors associated with PNC 4<sup>th</sup> standard visit. AOR with 95% CI were calculated, a significant level of 0.05 was considered.

## Results

A total of 398 women participated in the study, the sample characteristics according to number of PNC attendance is presented in Table 1.

The findings presented in Table 1 showed that the majority 214(53.8%) of women who participated in the study were aged between 18-27 years. Of 55 women who completed four recommended PNC, 31(65.4%) were young women aged 18-27 years. However, statistical relationship observed between age group and postnatal care attendance.

Concerning the education level, nearly a half of respondents 187(47.0%) completed only primary education. The majority of women who completed four standards PNC visit 29(52.7%) completed secondary education or university. Despite, the higher proportion of women with high education level, no statistical relationship observed between education level and PNC visits.

No statistical significance was observed between marital status and attendance to PNC. The majority, 237(59.5%) among women who participated in the study were married and almost, 31(56.4%) of women who attended four PNC were married.

The majority of study participants 325(81.7%) were Christian. Of 55 women who completed four PNC visit, 43(78.2%) were Christian. No relationship observed between the attendance of PNC visit and participants religion. Concerning the nature of employment, around 329(82.7%) respondents were self-employed. The majority, 343(88.7%) of respondents has the monthly income of 20000Rwf.

A total of 172(43.2%) of women reported that they travel 1 to 2 Km to reach the nearest health center and 21(38.2%) women among who seek for PNC four standard visit were from 1 to 2 Km and the study did not demonstrated the relationship between PNC attendance and the distance to the nearest health facility. The study result showed that a half of women 201(50.5%) were in category three of UBUDEHE and more than a half 30(54.5%) of women who attended fourth PNC standard visit belong in that social class. No significant relationship between social class category and PNC attendance observed.

The findings showed the statistical relationship between the type of insurance and the attendance to PNC fourth standard visit where of 55 women who completed 4<sup>th</sup> required PNC 27(48.1%) used other health, RSSB, MMI etc ( $P < 0.015$ ). The study result demonstrated a statistical relationship between PNC fourth attendance and receiving PNC information after delivery where 41(74.5%) among 55 women received information. Generally 231(58.0%) didn't receive information about PNC services ( $P < 0.001$ ).

The findings showed also about the means of transportation more than a half 211(53.0%) of respondents used public transport to reach nearest health facility and 35(63.6%) of 55 women attended PNC fourth standard visit used also the public transport. No statistical relationship was observed between attendance of PNC visit and means of transport to the nearest health facility.

The findings of the study demonstrated that there was a statistical relationship between PNC fourth attendance and knowledge of the importance of PNC. More than a half of respondents 237(59.5%) did

**Table 1:** Sample characteristics by number of postnatal care visit.

Variables	Total n(%)	Postnatal care visit		P-value
		Less than 4 n=343(86.2%) n (%)	4 Standard PNC visit n= 55(13.8%) n (%)	
Age group				0.678
18-27	214(53.8)	183(53.4)	31(56.4)	
28 and above	184(46.2)	160(46.6)	24(43.6)	
Education level				0.299
No formal education	39(9.8)	35(10.2)	4(7.3)	
Primary	187(47.0)	165(48.1)	22(40.0)	
Secondary and above	172(43.2)	143(41.7)	29(52.7)	
Marital status				0.523
Married	237(59.5)	206(60.1)	31(56.4)	
Single	129(32.4)	108(31.5)	21(38.2)	
Separated/Widowed	32(8.0)	29(8.5)	3(5.5)	
Religion				0.755
Christian	325(81.7)	282(82.2)	43(78.2)	
Muslim	20(5.0)	17(5.0)	3(5.5)	
Other religion	53(13.3)	44(12.8)	9(16.4)	
Nature of Employment				0.837
Employed	69(17.3)	60(17.5)	9(16.4)	
Self-employed	329(82.7)	283(82.5)	46(83.6)	
Household monthly income				0.414
≤20000	353(88.7)	37(10.8)	8(14.5)	
>20000	45(11.3)	306(89.2)	47(85.5)	
Distance to the nearest health facility				0.704
Less than one km	83(20.9)	70(20.4)	13(23.6)	
1-2 km	172(43.2)	151(44.0)	21(38.2)	
2km and above	143(35.9)	122(35.6)	21(38.2)	
Social class category				0.230
Category 1	50(12.6)	47(13.7)	3(5.5)	
Category 2	147(36.9)	125(36.4)	22(40.0)	
Category 3	201(50.5)	171(49.9)	30(54.5)	
Type of used health insurance				<b>0.015</b>
CBHI	237(59.5)	212(61.8)	25(45.5)	
Other Insurance, RSSB, MMI etc	128(32.2)	101(29.4)	27(49.1)	
No insurance	33(8.3)	30(8.7)	3(5.5)	
Received PNC information after delivery				<b>&lt;0.001</b>
Yes	167(42.0)	126(36.7)	41(74.5)	
No	231(58.0)	217(63.3)	14(25.5)	
Means of transport to the nearest health facility				0.089
Walking	187(47.0)	167(48.7)	20(36.4)	
Using public transport	211(53.0)	176(51.3)	35(63.6)	
Knowing the importance of PNC				<b>&lt;0.001</b>
Yes	161(40.5)	120(35.0)	41(74.5)	
No	237(59.5)	223(65.0)	14(25.5)	
Waiting time at health facility				0.074
Less than one hour	192(48.2)	158(46.1)	34(61.8)	
1-2 hours	134(33.7)	122(35.6)	12(21.8)	
3 hours and more	72(18.1)	63(18.4)	9(16.4)	

**Table 2:** Factors associated to the failure of attending 4 PNC standard visits.

Variables	AOR	95% CI	P-value
Type of used health insurance			
Other types of Insurance e.g RSSB, MMI	Ref.		
CBHI	1.439	0.758-2.732	0.266
No insurance	1.342	0.351-5.136	0.668
Received PNC information after delivery			
Yes	Ref.		
No	2.894	1.422-5.887	<b>0.003</b>
Knowing the importance of PNC			
Yes	Ref.		
No	3.396	1.684-6.849	<b>0.001</b>

RSSB: Rwanda Social Security Board; MMI: Military Medical Insurance

not known the role of PNC and only 41(74.5%) of 55 who attended PNC fourth standard visit knew the role of PNC ( $P < 0.001$ ).

About waiting time, according to the study findings, no relationship between the attendance to PNC visit and waiting time at health facility observed. Nearly a half of study participants 192(48.2%) wait the service for at least less than an hour (Table 2).

Logistic regression analysis was used to investigate the factors associated with failure to attend 4 PNC standards visits. The findings showed that women with no health insurance had higher risk of failing to attend four recommended postnatal care visit. However, no statistical significance observed (AOR=1.342; 95% CI: 0.351-5.136;  $P=0.668$ ). Similar, women who used community health based insurance are more likely to fail to attend 4 standards postnatal care visits compared to those who used other types of insurance, but not significant association observed (AOR=1.439; 95% CI: 0.758-2.732;  $P=0.266$ ).

We found that women who did not received information about PNC after delivery had significantly higher risk of failure to complete four recommended PNC standards visit (AOR=2.894; 95% CI: 1.422-5.887;  $P=0.003$ ). Lack of knowledge on the importance of PNC was significantly associated with failure to complete four recommended PNC standards visits (AOR=3.396; 95% CI: 1.684-6.849;  $P=0.001$ ).

## Discussion

The main objectives of present study were determine the level of attendance and the factors that affect the attendance to PNC 4<sup>th</sup> standard visit among women aged between 18-49 years old in Kicukiro District, Rwanda.

The level of PNC 4<sup>th</sup> standard visit attendance done after birth is an important indicator of wellbeing status, especially among women and their neonates to evaluate the success of maternal and child health program, of any health institutional, or even at national level, and it is generally assumed that attendance of PNC 4<sup>th</sup> standard visit is very low. In this study the level of PNC 4<sup>th</sup> standard visit was 13.8%. This prevalence is much lower that what reported by Rwanda Demographic health survey in 2015 which was 43%. The discrepancy is due to sample size, the present study was conducted in only one district hospital while the DHS is countrywide survey.

In contrast to the level of postnatal care attendance observed in

this study, a study conducted among women in the Tigray region in Ethiopia found that only 8% of women obtained postnatal care. I was reported that women who did not receive postnatal care reported lack of awareness of the services. A possible explanation for the low attendance at postnatal care in Tigray-Ethiopia could be that the researchers only considered postnatal services given by skilled health professionals, whereas the our study we considered postnatal care given both by community health workers. Additionally, it could be that in Rwanda there is more places for postnatal care by the women.

The current study demonstrated that lack of adherence to health insurance as individual factor influenced the failure to attend PNC 4<sup>th</sup> standard visit. Lack of knowledge of the importance of PNC contributed to the failure to the attendance on PNC fourth standard visit. Lack of information about PNC after delivery, influenced the poor attendance to PNC fourth standard visit (AOR= 2.894; 95% CI: 1.422-5.887;  $p$ -value=0.003). Similarly a study conducted by Izundi & Amongin found that lack of information about postnatal schedules, and delivery at public health facilities compared with delivery at private facilities, reduced women's receipt of early postnatal care [13].

Delivering at a health facility increases the chances of skilled birth attendance, which plays a vital role in ensuring that mothers receive comprehensive care, including postnatal care soon after delivery. Another possible explanation for this finding is that delivery at a health facility ensures access to emergency obstetric care to deal with complications during labor, which may also expose women to postnatal care. Bieng conducted in one district hospital and lack of information on place of delivey and delivery mode are the major limitations of this study.

## Conclusion

In the context of low postnatal care use reported in this study, programs should direct efforts towards reaching women who do not avail themselves of postnatal care as identified in our study. Lack of health insurance, lack of knowledge on the importance of PNC standard visits were the major factors that contribute to the failure of the attendance of PNC fourth standard visit. The results underscore the importance of supporting facility-based deliveries and also ramping up efforts for home visits by community health workers offering early postnatal care services.

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