

Factors Associated to Utilization of Post-Natal Care At 48 Hours: A Case Study of Kanyama 1st Level Hospital in Lusaka, Zambia

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Abstract

The post-natal period is the critical stage in the prevention of maternal and neonatal deaths. Zambia has recorded a decline in maternal mortality from 597(2007) to 398/100 000 (ZDHS 2014). WHO recommends that all post-natal women must be reviewed within 48 hours after delivery to avert maternal and neonatal mortality rate.

This study was therefore conducted to assess the factors affecting the utilization of post-natal services at 48 hours at Kanyama first level hospital with over 1,000 deliveries every month.

A mixed survey (employing both quantitative and qualitative methods) was completed by 197 women using a structured questionnaire. Quantitative was cross sectional while qualitative a case study. Informants included health workers and mothers who had delivered within 6 days at this hospital. The data was analyzed using STRATA 13 for quantitative, descriptive and inferential statistics.

Key findings: *utilization of post-natal services at the hospital was poor at 6%. No information was given to women to report back within 48 hours, inadequate space and staff to implement this guideline and no association between PNC utilization and social economic, demographic and geographic factors.*

Conclusion: *The survey showed that utilization of PNC at 48hrs was low. Social economic, demographic and geographic factors were not associated with PNC utilization.*

To improve utilization, increase on staffing, improve on space, provide information to mothers and implementation of guidelines.

Keywords: *Postnatal Care, Utilization, maternal mortality.*

Background

The days and weeks after child birth (the postnatal period), is the critical phase in the lives of mothers and newborn babies. Major changes occur during this period which determine the well-being of mothers and newborns. Yet, this is the most neglected time for the provision of quality services. Lack of appropriate care during this period could result in significant ill health and even death. Rates of provision of skilled care are lower after childbirth when compared to rates before and during childbirth. Most maternal and infant deaths occur during this time (World Health Organization, 2013).

It is inconceivable that, globally more than one million babies die on their first day of life each year, making the day of birth the most dangerous for babies in nearly every country (report 2015, Singh A, Bupe et al. 2016). It is equally frightening that over half a million women die from childbirth related complications every year (Ashford, 2004 in Nankwanga 2004). Almost all deaths occur in developing countries; with the highest number in Sub Saharan Africa (SSA) and South Asia. Most of the newborn deaths in SSA occur among children delivered at home or outside the health facility (Sines et al. 2007). These deaths are mainly as a result of poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery and the first critical hours after childbirth and lack of newborn care (Bupe et al. 2016). The non-availability of skilled health workers may yet be another contributing factor. Joana Armstrong et al (2009) in a study conducted in Tanzania on the use of antenatal and perspectives of post-natal care (PNC) found that one of the common reasons for low PNC was the unavailability of services for mothers as most services provided targeted children with little attention paid to the mother unless where there was a serious complication.

There is ample evidence in areas where studies have been done that, most of the factors that lead to neonatal and maternal deaths could be averted through post-natal check-ups (Titaley et al. 2009 and

Gosh, 2010). Post-natal care (PNC) is defined as the care given to both mother and the newborn immediately after birth (within 24 hours) and for the first six weeks of life, with the aim of ensuring optimum health for both mother and newborn (WHO, 2015). The care received in PNC includes the full physical examination, providing care, monitoring for danger signs, promoting breastfeeding, health education and counselling to the mother on health life styles. PNC visit also include family planning options and immunizations.

Domiciliary visits are also recommended in the first week to ensure continuum of care. However, this is difficult to implement in low resource countries due to logistical and human resource challenges. The World Health Organization (WHO) recommendations on PNC prescribe that, for every uncomplicated vaginal birth in a health facility, mother and newborn should receive PNC within 24 hours. In case of delivery at home, the first PNC contact should be at least within 24 hours of birth. Regardless of place of delivery, at least their additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48 -72hours) between 7 and 14 days and 6 weeks after birth (WHO 2013). However, less than a quarter of mothers and newborns in developing Africa receive PNC within 48 hours of delivery (UNICEF 2015).

The 2013-14 Zambia Demographic Health Survey (ZDHS) showed some improvement in the survival rates of infants and of children under age 5 in recent years. Statistics show that the under-five mortality rate dropped from 128 deaths per 1,000 live births in 2003 to 75 deaths per 1,000 live births in 2013-14, and infant mortality declined from 76 deaths per 1,000 live births in 2003 to 45 deaths per 1,000 live births in 2013-14. In spite the fact that nearly two-thirds of deliveries occur in health facilities, there have been only marginal improvements in neonatal mortality (NNM) in the past 10 to 15 years, from 29 deaths per 1,000 live births between 1999 and 2003 to 24 deaths per 1,000 live births between 2009 and 2013. This scenario may be explained in part by the low level of PNC (16%). Moreover, one-third of home delivered newborns are even less likely to receive PNC within the first 2 days (8%) than those delivered in a health facility (19%) (CSO 2014). In addition, the maternal mortality rate has reduced from 597/100 000 (2007) deliveries to 398/100 000 (2014). This is still high and unacceptable considering that the government has prioritized maternal health with emphasis on no women should die while giving birth.

Post-natal coverage remains low in Zambia despite the services being provided free in all public health facilities. The 2013-14 ZDHS reports an increase in coverage from 39% (2007) to 63%. Although mothers are informed during antenatal care (ANC) through health education on the importance of postnatal care at 48 hours after delivery the coverage is quite low than the recommended 80% by the Ministry of health (MOH).

Skilled personal have been placed in most health facilities to provide quality maternal health services including introduction of direct midwifery training and opening up of midwifery schools to respond to the inadequate numbers of midwives. However, despite these interventions, most women do not access post-natal services as expected which puts them at risk of developing complications within 48 hours after delivery. A study conducted by Fisun et al (2015) on impact of integrated obstetric and neonatal services on utilization of postpartum maternal services found that utilization increased after integration of maternal services. For some years now in Zambia, maternal health services have been integrated but the country still records low coverage. A number of studies have been conducted on post-natal care with focus on seven days and six weeks only leaving out 48 hours' observations which has in the recent years shown to be critical.

Statement of a problem

The Ministry of Health has put in a number of measures to improve maternal health services such as opening of more nursing training schools, training of midwives and placement of skilled health personnel in health facilities, procurement of equipment , training of Community Health Assistants (CHA) and training of Safe Motherhood Action Groups (SMAGs) in communities with the aim of sensitizing communities on the importance of reproductive health with special emphasis on the pregnant women and newborn. Development of Pregnancy, Childbirth and Postnatal Care Guidelines (PCPNC) and Domiciliary Visit Guidelines and Newborn Guidelines has been done to give direction to health workers on when post-natal should be done, what to look out for, timing and where it should be

conducted, that's either at a health facility or home. The guidelines are important to health workers, policy makers, training institutions and maternal and child health managers/officers in setting up and maintaining maternity and newborn health services (WHO PNC guidelines, 2013). However, despite the mentioned interventions and availability of free PNC services, Zambia has continued to record low PNC coverage below the national target of 80%. Although the latest coverage at 48 hours has improved from 39 % (ZDHS, 2007) to 63% (ZDHS 2013-14), few mothers are accessing the services considering that most maternal complications such as post-partum hemorrhage occur within this period. The study aims to look at factors that are preventing women from utilizing PNC services at 48 hours at Kanyama 1st Level Hospital.

Significance of the study

Maternal mortality is quite high in Zambia (398/100 000, 45/1000) and it has been observed that most of the deaths occurs within the 48 hours after delivery. Most maternal deaths are due to post-partum hemorrhage 39.8%, Hypertensive disorders (13.9%), pregnancies with abortive outcomes 9% and non-obstetric complications including cardiac, malaria and HIV/AIDS, accounts for 23.7% (MDSR report, 2015). These problems if detected and treated early can avert loss of lives. Findings of the study will influence policy direction through strengthening the existing PNC guidelines and help health workers and mothers to understand the importance of PNC within 48 hours.

Kanyama 1st level Hospital was selected due to the high number of deliveries recorded at the facility among the five 1st level Hospitals in Lusaka District. According to the 2016 Annual Labour Ward report for Lusaka District Health Office, Kanyama recorded 11,363 deliveries while Matero Ref 1st level Hospital recorded 8,040, Chipata had 7,106 deliveries Chawama had 5,053 deliveries, and Chilenje recorded a total of 3,712 deliveries.

Objectives

General objective

The main aim of the study is to determine factors that influence utilization and non-utilization of post-natal services at 48 hours at Kayama first level hospital.

Specific objectives

1. To determine the proportion of women who received post-natal care services within 48 hours of delivery at Kanyama 1st Level hospital.
2. To determine women's awareness of post-natal services within 48 hours of delivery.
3. To determine the socio-economic and demographic factors that influence utilization of post-natal services within 48 hours of delivery.

Literature review

Introduction

Many scholars have looked at utilization of post-natal services among women and newborns. However, most studies have concentrated on post –natal services at six days and six weeks yet the first 48 hours after delivery are crucial due to complications like secondary post-partum hemorrhage which accounts for about 40% of maternal deaths. According to the ZDHS 2013-14 PNC at 48 hours has improved from 39 % to 63% in 2007. As the MDG era has ended and we move towards the sustainable development goals, mother and child health continues to be an important agenda.

Factors associated with low uptake of post-natal services

The move towards Universal access to health will probably eliminate factors associated with low uptake of post-natal services. Numerous studies have been conducted on the low use of postnatal care services and varying results have been found.

Socioeconomic status

Numerous studies have shown that the (Dhaher, 2008; Rahman, 2011; Ntambue, 2012; Matijasevich, 2009; Kabakian-Khasholian, 2005; Agha, 2011; Amin, 2010; Anson, 2004; Babalola, 2009; Baqui, 2008; Islam, 2002; Dhakal, 2007; Halder, 2007; Iyoke, 2011; Jat, 2011; Liu, 2011; Levine, 2004) higher the socioeconomic status of the mother, the more likely she was to access postnatal care. The implications are that the majority of poor people may not have access to post-natal care regardless of the other factors. This may in part touch on the issues of access to health services where the other variables are the same. In over 31 Countries reviewed, this trend was true and in Pakistan where a voucher system was used for women who had delivered post-natal care improved (WHO, 2015).

Kogan & Leary (1990) carried out a study to determine the variables that were associated with returning for postnatal services on a sample of 13,921 registered women. The study identified SES, level of education, parity, age, language, marital status and adequacy of prenatal services as the variables associated with postnatal service utilization.

Level of education

Most studies evaluated indicated marked variations in the use of postnatal care according to the level of education of the women investigated – or their partners. Compared to women who had received no formal education, women who had attended primary education were more likely to use postnatal care (Agha, 2011; Babalola, 2009; Sharma, 2007; Sing, 2012; Levine, 2004) and women who had completed secondary school were the most likely to access postnatal care (Matijasevich, 2009; Kabakian, 2005; Dhakal, 2007; Halder, 2007; Jat, 2011; Sharma, 2007; Sing, 2012; Stupp, 1994). In three studies, the duration of maternal schooling was found to be positively correlated with postnatal care use (Anson, 2004; Mullany, 2007; Ram, 2006). Compared with other women, those with husbands who had completed secondary school also appeared more likely to use postnatal care (Dhakal, 2007; Jat, 2011; Levine, 2004). In Lebanon, an educational intervention to emphasize the importance of postnatal care led to a marked increase in the use of such care (Kabakian, 2005).

In Zambia, a study by Banda (2017) on levels of knowledge on PNC and its associated factors found that 81% of the respondents did not have knowledge on PNC with regard to timing of PNC activities conducted in the PNC clinic and benefits of utilization of post-natal care services. The study further revealed that knowledge on PNC was significantly associated with the level of education and was high among women with tertiary education than primary education.

Bupe et al in a study on factors associated with post-natal care for newborns in Zambia found that mothers who delivered 'from home' were less likely to go for post-natal care at 48 hours compared to those who delivered from facilities. The study showed that only 16% of newborns received post-natal services at 48 hours. The study also found that proximity to the facility and economic status of these households for newborns had an effect on whether they accessed PNC or not. Further, the results showed that women who had access to the media and more educated were more likely to utilize post-natal services than uneducated ones.

Occupation

The income-earning occupations of women and their husbands appear to influence the women's use of postnatal care. It has generally been observed that, women married to men with professional, technical or managerial occupations were more likely to use postnatal care than women married to manual laborers (Rahmann, 2011). Similarly, women married to men with well paid jobs were more likely to use postnatal care than women married to farmers (Halder, 2007). In China, women with high paying jobs were more likely to use postnatal care than other women (Anson, 2004).

Geographical determinants

Globally there is evidence that postnatal care was more commonly used by women living in urban areas than by their rural counterparts (Rahmann, 2011; Babalola, 2009; Halder, 2007; Jat, 2011; Sing, 2012; Tang, 2008). In several studies, distance to the nearest health facility was also found to be associated with use of postnatal care services. This is true for many countries including Zambia where women generally walk long distances to access health services and the same facilities are poorly manned

or may not have the medicines and the skilled manpower. This tends to encourage home delivery and it is the reason that the government has scaled up the training of skilled manpower and embarked on the construction of new health facilities.

In a study by Choolwe et al. (2017) on predictors of Antenatal Care (ANC), skilled birth attendance, and post-natal care utilization among the remote and poorest rural communities of Zambia showed that receiving at least one ANC from a skilled personnel, HIV testing during pregnancy, delivering at a health facility with a Skilled Birth Attendant (SBA) were the only predictor variables that significantly increases utilization of PNC within 48hours after delivery.

Religion and ethnicity

In many studies conducted globally no clear link seems to exist between religion and ethnicity and post-natal services. However, such studies will probably be best done in countries with huge populations and diverse religious background.

Methodology

Research design and study setting

A mixed method design was done, a concurrent parallel approach was utilized, with the quantitative being cross sectional and qualitative being a qualitative case study. Both qualitative and quantitative data was collected for the purposes of breadth and depth understanding and corroboration. Quantitative data was collected from consenting mothers who were attending post-natal care after a week of delivery. On the other hand, qualitative data will be collected from key informants such as midwives, nurses and doctors. The point of interface for the two data strands was at data interpretation.

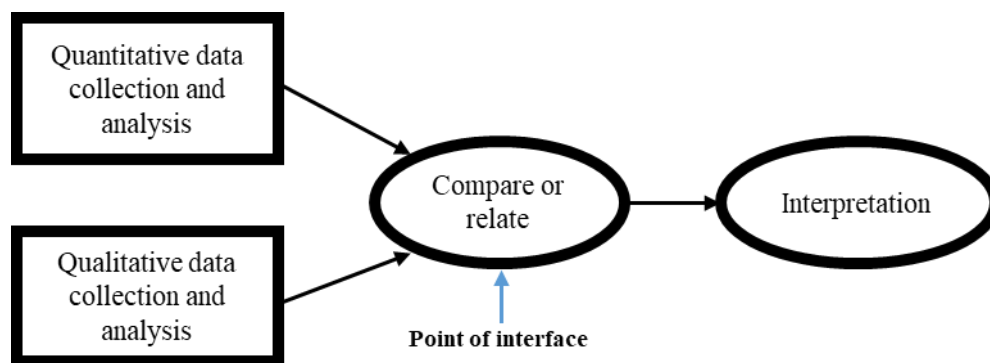


Figure 2. Flowchart of the basic procedure the two data types will take in this study

Study population

The study population was all women attending postnatal care after 6 days of delivery. The survey incorporated key informants such as midwives, nurses, doctors and senior hospital administrative members. The study included women that gave birth from Kanyama Hospital. All women that did not give consent to participate in the survey were excluded. Additionally, the study excluded all women accessing postnatal care services from Kanyama Hospital provided that they did not deliver from the same hospital.

Study site

The study was conducted at Kanyama 1st Level Hospital in Kanyama constituency which is under Lusaka district. Kanyama is composed of three wards; Kanyama ward, Harry Mwanga Numbula ward and Mukolo ward with a total population estimated at 370, 000 (UNICEF situation report, 2016). The total number of clinics in Kanyama is five of which three are health posts. Kanyama 1st Level hospital has an approximate number of 1000 deliveries per month.

Sampling method

The health facility was conveniently selected. A probability sampling method known as systematic sampling method was used to select the study sample. Systematic sampling involved the selection of

every “Kth “case drawn from a sampling frame at fixed interval. First and foremost, the sampling frame must be drawn by the researcher and the first element of the sample must be selected randomly.

Sample size calculation

Quantitative sample

$$n = \frac{z^2 p(1-p)}{e^2}$$

196 women were eligible for the study.

Qualitative sample

Qualitative research participants were purposely selected. Purposive sampling is often determined on the basis of theoretical saturation (the point in data collection when new data no longer adds insights on the research questions).

The study collected data from key informants in the following sub categories; hospital management, midwives, nurses and medical doctors. One participant was selected from each category for a semi-structure interview. Since this was a purposive sampling, there was no need for a sampling frame. The study had a working sample size of 8 with an equal number selected from hospital management, midwives, nurses and doctors. This number may have increased according to the data that was to be generated until saturation point.

Study variables

Dependent variable

In this study, the outcome variable was dichotomous (use or non-use of the post-natal care services). Reproductive women attending post-natal care services after 6 days of delivery were asked if they attended post-natal care within 48 hours of delivery. The World Health Organization recommends that regardless of place of delivery, at least three additional postnatal contacts by all mothers and newborns, on day 3 (48 -72hours) between 7 and 14 days and 6 weeks after birth (WHO, 2013).

Independent variables

Independent variables in this study were chosen based on the reviewed literature on factors that influence the utilization of post-natal care. Table 1 shows a list of independent variables which are exclusively defined in table 2.

Table 1. Study Variables

DEPENDENT VARIABLE	INDEPENDENT VARIABLES
PNC within 48 hours of delivery (Yes/No)	Woman’s age
	Woman Education Level
	Fathers education level
	Household income level
	Parity
	Marital Status
	Employment status
	Time taken to the facility
	Clients perception
	Mode of transport to health facility
	Area of residence
	Distance to the health facility
	Women’s occupation
	Husband occupation
	Religious status
	ANC attendance

	Place of ANC
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Statistical analysis

Quantitative data

Data entered in Microsoft excel were exported to STATA 13 for analysis. Univariate analysis was done to obtain descriptive statistics on background characteristics. All categorical data was presented in proportions and frequencies. Standard deviation, means and confidence intervals was used to present continuous variables.

The study further determined the association between the independent variables and the dependent variable using the Chi-square test (χ^2). Significant variables at bivariate level were included in the multiple regression models to generate the adjusted odds ratios (aOR). A hierarchy modelling strategy using global p-values was used to eliminate variables with the highest value. A p-value <0.05 was considered statistically significant in this study. After Adjusting for confounding, a final model which shows factors that influence PNC utilization was presented and interpreted using odds ratios.

Due to the nature of the study, qualitative data was only collected from key informants, as such, the sample size was too small. The researcher simply read the notes or transcripts several times in order to come up with different codes. The two data streams were triangulated to provide a detailed understanding of the factors associated with utilization of postnatal care within 48 hours of delivery.

Qualitative data

Qualitative data were analyzed using thematic analysis procedure. Audiotapes raw data from Key informant interviews (KII) were first transcribed in verbatim and compared with written notes to ensure data accuracy and completeness. Written transcripts were read several times to come up with key words and all key statements were highlighted. Identified themes and sub themes were reviewed by the researcher and all similar themes were grouped together. Qualitative data were triangulated with quantitative data to give an in-depth understating of the factors influencing utilization of post-natal care within 48 hours of delivery.

Data collection tool and method

Quantitative data were collected using a pretested structured questionnaire to interview women face to face and shall contain closed ended questions. The questionnaire collected information on socio-demographic characteristics, history of previous and current pregnancy and PNC awareness. Other questions included items on knowledge on PNC, postnatal care timing, activities conducted in postnatal clinic and the benefits of utilizing postnatal care services. A room free from distractions and for maintenance of privacy was prepared for collection of data. Each interview lasted for 20 to 30 minutes.

Qualitative data were collected from key informants using guided interview approach. The research assistants used an audio tape to record the entire interview and at the same time take notes of the responses.

Validity

Validity was ensured by including all the necessary information in the research instrument and constructing the questions clearly using simple language which the respondents understood. Experts such as an obstetrician and the research supervisors were requested to examine the questions to determine whether they would elicit the desired responses on the variables of interest. Trust worthiness was ensured by considering the criteria of credibility, dependability, applicability and transferability for qualitative data.

Reliability

The research instrument was tested before the actual study was conducted. The same research instrument was used to collect data from all the respondents. A pilot study was conducted at Kanyama 1st Level Hospital to pretest and assess the validity of the data collecting tool and methodology. The respondents were systematically selected.

Ethical consideration

The proposal was submitted to Excellence in Research Ethics and Science (ERES) (Ethics committee) and Ministry of Health to sort for approval of conducting the study. Written permission was obtained from the Lusaka Provincial and district health offices and Kanyama hospital Medical superintendent. The purpose and nature of the study was explained to the respondents as well as how the results would be utilized to allow participants to make an informed voluntarily.

Data analysis and presentation of results

Introduction

Chapter four (4) focuses on data analysis and presentation of results. The estimated sample size for the quantitative study was 205 women. However, only 197 women completed the survey indicating a response rate of 96% and a non-response rate of 4%. Six (6) participants participated in the in-depth interviews.

Section A: Socio-demographic characteristics of the respondents

Table 1 presents the socio-demographic characteristics of the 197 women who participated in the exit interviews. About one third (35.7%) of the respondents were aged between 20-24 years while only 8.2% were aged between 35-49 years. The average age for the study population was 25 (SD 0.39) years while the average number of children a woman had was three (SD 0.1). Slightly over half of the women had attained primary education while only 2.6% had attained tertiary education. The study showed that 8 in 10 women (84.8%) women interviewed were married while only 66.3% were staying with their partners at the time of the data collection.

As indicated in Table 1 93.9% of the women were from high density areas and over two thirds (72.4%) were unemployed. The average individual and household income for most women ranged from K1000 to K1900.

Table 2. Socio-demographic characteristics of the respondents

Variable	Respondents (n)	Percent (%)
Age group		
15-19	29	14.8
20-24	70	35.7
25-29	57	29.1
30-34	24	12.2
35-49	16	8.2
Mean age	25.4 Years	SD (0.39) 95%CI (24.6 - 26.1)
Education		
Primary	111	56.6
Secondary	80	40.8
Tertiary	5	2.6
Marital status		
Married	167	84.8
Unmarried	30	15.2
Staying with partner		
Yes	130	66.3
No	66	33.7
Residence		
Low density	-	-
Medium density	12	6.1

High density	185	93.9
Employment status		
Employed	53	27.6
Not employed	139	72.4
Number of children		
1	52	26.4
2	65	33
3+	80	40.6
Mean number of children	3 children	SD (0.1) 95%CI (2.3 - 2.7)
Income		
Less than K500	10	17.2
K500-K900	20	34.5
K1000-K1900	21	36.2
K2000-K3000	3	5.2
Above K3000	4	6.9
Household Income		
Less than K500	2	1.2
K500-K900	24	15
K1000-K1900	63	39.1
K2000-K3000	42	26.1
Above K3000	30	18.6

SD – Standard deviation CI – 95% confidence interval

Source: Field data - 2018

Section B: Postnatal care within 48 hours

Postnatal care within 48 hours

POST-NATAL CARE RECEIVED IN 48 HOURS

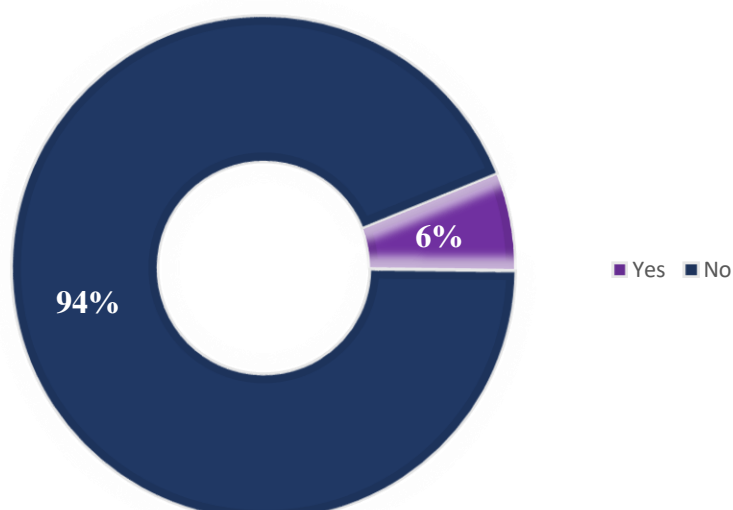


Figure 4. Proportion of women who received post-natal care within 48 hours after delivery

Figure 4 shows the proportion of women who received post-natal care within 48 hours after delivery. Women attending post-natal care after 6 days were asked if they received post-natal care services within

48 hours after delivery. Of the 197 interviewed women, only 6% received post-natal care within 48 hours of delivery while 94% did not.

Section C: Factors associated with postnatal care utilization within 48 hours after delivery

Table 2 indicates different socio-economic demographic, geographic and cultural factors that were tested for significance to determine if there was an association between the independent and the dependent variables. Pearson chi square and fisher's exact test were used to test for significance. It is worth noting here that all the considered socio-economic demographic, geographic and cultural factors were not statistically significant.

Table 3. Factors associated with postnatal care utilization within 48 hours after delivery

Variable	Postnatal care utilization		P-Value
	Yes	No	
Age group			
15-19	16.7 (2)	15.2 (27)	0.977*
20-24	33.3 (4)	35.4 (63)	
25-29	25 (3)	51 (28.7)	
30-34	16.7 (2)	12.4 (22)	
35-Max	8.3 (1)	8.4 (15)	
Education			
Primary	58.3 (7)	55.6 (99)	0.314*
Secondary	33.3 (4)	42.1 (75)	
Tertiary	8.33 (1)	2.3 (4)	
Marital status			
Married	83.3 (10)	84.4 (151)	0.925
Unmarried	16.7 (2)	15.6 (28)	
Staying with partner			
Yes	50 (6)	68.5 (122)	0.185
No	50 (6)	31.5 (31.5)	
Residence			
Medium density	-	6.7 (12)	0.354
High density	100 (12)	93.3 (167)	
Employment status			
Employed	40 (4)	27 .1 (48)	0.376
Not employed	60 (6)	72.9 (129)	
Number of children			
1	25 (3)	27.4 (49)	0.984*
2	4 (33.3)	31.8 (57)	
3+	41.7 (5)	40.8 (73)	
Income			
Less than K500	25 (1)	17.3 (9)	0.444*
K500-K900	-	36.5 (19)	
K1000-K1900	75 (3)	32.7 (17)	
K2000-K3000	-	5.8 (3)	
Above K3000	-	7.7 (4)	
Household Income			

Less than K500	10 (1)	0.7 (1)	0.236*
K500-K900	20 (10)	13.8 (20)	
K1000-K1900	30 (3)	39.3 (57)	
K2000-K3000	3 (3)	26.2 (38)	
Above K3000	1 (10)	20 (29)	
Happy with delivery services			
Happy	100 (12)	94.9 (166)	0.421
Unhappy	-	5.1 (9)	
Times of ANC attendance			
1-2 times	66.7 (8)	49.7 (89)	0.256
>2 times	33.3 (4)	50.3 (90)	
Privacy observed during post-natal examination			
Yes	36.4 (4)	43.5 (74)	0.642
No	63.6 (7)	56.5 (96)	
Are there cultural barriers towards you attending post-natal care			
Yes	8.3 (1)	10.1 (18)	0.842
No	91.7 (11)	89.9 (160)	

**fisher's exact test - zero (no observation)*

Source: Field data – 2018.

Bivariate logistic regression

Table 4 shows the predictor variables for post-natal care utilization within 48 hours of delivery. Predictor variables included all socio-economic demographic, geographic and cultural factors. Women in group 30-34' years were 1.2 times more likely to utilize post-natal care services than the 15-19 years (OR=1.22, 95% CI: 0.15 - 9.43). Women that attained tertiary education were 3.5 times more likely to utilize post-natal care services than those who attained primary education (OR=3.53, 95% CI: 0.03 - 0.15). With regard to marital status, married women had less odds of utilizing post-natal care services within 48 hours after delivery than unmarried women (OR=0.19, 95% CI: 0.19 - 4.46).

In this study, women staying with their male partners were less likely to utilize post-natal health care than women not staying with their partners (OR=0.45, 95% CI: 0.14 -1.48). Women with high parity had high odds of utilizing post-natal services within 48 hours of delivery than women with a low parity (OR=1.11, 95% CI: 0.25 - 4.89). Increasing household income reduced the odds of utilizing post-natal care services within 48 hours after delivery (OR=0.45, 95% CI: 0.01 -1.04). Despite showing the odds ratios, none of the factors listed in the table was statistically significant (refer to P-Values in table 4).

Table 5 depicts the number and characteristics of the sampled key informants. 80% of the respondents were females while 20% of the key informants were males.

Table 5. Qualitative data respondents

Key Informants	Number	Sex
Medical doctor	1	Male
Nursing officer	2	Females
Registered midwife	2	Females
Hospital management	1	Male

A total six (6) Key informants who participated in the in-depth interviews were health care professionals. Data was collected using an interview guide. A series of structured questions were asked to key informants. When asked to approximate the number of women who deliver from the hospital in a day, the nursing officers and registered midwives approximated the number of hospital deliveries to be between 40-50 births in a day. When further asked the approximate time taken for women to be

discharged after delivery, the registered midwife had this to say “.... usually we discharge women within 6 hours of delivery if they have no complications, however, if a woman has complications after delivery, we make them stay longer for us to adequately attend to them”. The nursing office said “....it depends with how the woman recovers after delivery, however, if there are no complications presented, the average time taken to discharge woman is within 5 hours after delivery.”

Key informants were further asked if the hospital had enough human resource to provide postnatal care services. A general concern emanated from almost all the key informants stating that the provided human resource was not enough to attend to women when they come for postnatal care. The hospital management key informants said they did not have enough midwives to provide the services and they sometimes resorted to using registered nurses for postnatal care services. It is worth noting here that despite the hospital not having enough human resource, hospital management staff said they had enough facilities i.e. space to provide postnatal care services.

During the in-depth interview, a registered nurse was asked about the reasons why women do not attend post-natal care within 48 hours after delivery and her response was:

“..... women don’t generally come for post-natal care within 48 hours after delivery because they are only told to come back to the hospital after 6 days.”

“.....the main reason why women are told to come after 6 days for post-natal health care is because we have limited space and human resource.”

On the other hand a registered midwife did not see the need for women to attend post-natal care within 48 hours after delivery. The midwife had this to say when asked why she women are not coming for post-natal care within 48 hours after delivery:

“.....if someone hasn’t developed any problems or complications, I think they don’t see it fit to attend postnatal care within 48 hours after delivery.”

Further key informant interviews collected data showed that the hospital has no adequate space to keep women for a long period of observation after giving birth. Despite this, it was generally noticed that most key informants felt that although the hospital did not have excess delivery space, the labor ward provided enough privacy for women to give birth. However, the hospital has enough facilities to provide post-natal care services.

Discussion of results

Introduction

After birth, bleeding and infection pose the greatest risk to the mother’s life, while preterm birth, asphyxia, and severe infections pose the greatest risk to newborn (WHO, 2010). Most maternal and infant deaths are avoidable due to available healthcare interventions that prevent and manage complications during and after birth. This study aimed to assess factors associated with postnatal care utilization at 48 hours.

Socio-demographic characteristics of the respondents

The information on demographic characteristics was essential for interpretation of the study findings. Most of the women interviewed in our study were aged between 20-24 years while the average age was 25 years (Table 1). Most women had attained primary school education (56%), were married at the time of the study (84.7%) and were staying with their partners (66%) in low density areas (93%). A large percentage of the women were unemployed (72.4%) with an average an average number of 3 children (40%). Table 1, shows that most (36%) had earned an income between K1, 000 to K1, 900 Kwacha with a similar household income (39.1%).

Eighty percent (80%) of the key informants were females and 20% were males. The key informant’s group was composed of nurses, midwives, doctors and staff from the hospital management (Table 5).

Postnatal care within 48 hours

Postnatal care within 48 hours reduces the risk for women and the newborn from severe bleeding and infections. In this study, postnatal care utilization among reproductive age women was 6% (figure 4). These findings are relatively low than the national PNC utilization. According to the national study done in Zambia in 2017, PNC utilization within 48 hours stood at 16%. Studies have further shown that

most mothers do not visit health facilities after birth (WHO, 2013). As of 2012, Ethiopia only had 13% of the mothers using postnatal care (Central Statistical Agency, 2012). Other countries like Nepal have shown a significant increase in the number of women utilizing postnatal care. A study done in 2014 showed that 40.9% women attended postnatal care within 48 hours after delivery (Vishnu et al., 2014). Our qualitative findings show that women are told to attend postnatal after 6 days after delivery not 48 hours after delivery and one of the reasons for this due to inadequate space at the health facility. This is reflected in the following response by one Registered Midwife “.....women don't generally come for post-natal care within 48 hour after delivery because they are only told to come back to the hospital after 6 days.”

“.....the main reason why women are told to come after 6 days for post-natal health care is because we have limited space and human resource.”

This in itself provides a reason why postnatal care attendance is low at Kanyama 1st level hospital. The World Health Organization recommends that regardless of place of delivery, at least three additional postnatal contacts by all mothers and newborns, on day 3 (48-2 hours) between 7 and 14 days and 6 weeks after birth (WHO, 2013).

Factors associated with postnatal care utilization within 48 hours after delivery

It is generally said that education is an important component for an effective service delivery system. Different studies have shown that educated women are more likely to utilize postnatal care services as they better understand where to obtain or access PNC services. Education often empowers women to gain access to health promotion messages and better understand provided services (Raghupathy, 1996).

Other studies have shown that educated women are more aware of health-related problems and that they are knowledgeable on where to find the services. This puts them at a greater advantage of using postnatal care services than the less educated women (Chakraborty et al., 2003). Despite this, our study did not find any association between education and PNC utilization (Table 4).

A cross sectional survey done in Ethiopia established a link between postnatal care utilization and parity. According to the study findings, women who had four and more children were found to be less likely to utilize postnatal care services compared to those that had lesser children. Similar results have been shown in Indonesia (Titaley et al., 2010) and India (Jat et al., 2011) where women with two or more children were less likely to utilize postnatal care services than women who were pregnant for the first time. Contrary to the findings in other countries, our study shows that there was no association between the number of children that a woman had and postnatal care utilization.

A study done in South Africa in 2017 showed that age of the mother was an important factor that influences postnatal care utilization. The study established that women aged 25 – 34 years were more to achieve the recommended postnatal care (Larsen et al., 2017). Some studies have shown that young women are more likely to attend postnatal care compared to older women. Older women feel they already know what to do after delivery and end up staying home. In our study, we did not find any association between the age of the mother and postnatal care utilization. However, qualitative data showed that women are only told to attend postnatal care after 6 days. This is depicted in the following narrative “.....women don't generally come for post-natal care within 48 hour after delivery because they are only told to come back to the hospital after 6 days.”

A study done in Nepal shows that mother from financially well to do households were more likely to attend postnatal care and immediate postnatal care. It was further established that women from rich household had enough resources to spend on hospital bills and other related deliveries. Other documented reasons show that mothers from high socioeconomic households are more likely to be aware of the benefits of obtaining postnatal care services as such information is usually made available from different media sources such as newspapers, television and others (Vishnu et al., 2014). Our study findings are not in line with the Nepal study as we did not establish an association between household income and postnatal care utilization (Table 4).

Conclusion

This study established that postnatal care within 48 hours after delivery at Kanyama 1st level hospital is generally poor. The study further examined the effect of different social, economic and demographic

factors that influence utilization of postnatal care services at Kanyama 1st level hospital. Although literature shows a number of factors that influence utilization, our study established no association between postnatal care utilization and all the considered socioeconomic, demographic and geographic factors considered in the study (Age, parity, marital status, education, employment status, income, area of residence, frequency/time of ANC attendance etc.).

Recommendations

Based on the finding of this study, there is need for midwives to continue sensitizing women on the importance of attending postnatal clinic at 48 hours following delivery. Community sensitization on post-natal care should also be carried out by the Safe motherhood action groups. In addition, health workers at this hospital should be reoriented to the PNC guidelines through workshops and seminars and Nurse Managers should regularly supervise the staff to ensure that they adhere to the guidelines. The guidelines must be made available to health workers who must be able to implement them accordingly. There is also need to strengthen the current capacity for the hospital to provide postnatal care service within 48 hours after delivery and not only after 6 days. A larger study at multiple sites should be conducted to see the magnitude of the problem if any.

Strengths and limitation of the study

This study had a number of strengths and limitations. The study took advantage of women attending postnatal care after 6 days and used exit interviews for data collection. This enabled us to minimize recall bias as most women still remembered the delivery process and the services they received. The study was population based and a representative sample size. It was conducted rigorously using standard protocols and highly trained data collectors. Additionally, the survey had a relatively high response rate of 96%.

Kanyama 1st level hospital is government owned and as such the results of this study presents a missed opportunity to compare postnatal care utilization with private owned hospitals. The study largely considered factors from the end users (Mothers) and overlooked the structural parameters from the supply side. Another weakness that was observed during the study was that women are generally told to attend their first postnatal after 6 days, as such those attending within 48 hours after delivery could have done so due to encountered complications. This could have posed a statistical challenge in establishing real time factors that influence utilization of postnatal care as most women would have done it out of developed complications.

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