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Predictors of Postnatal Care Services Utilisation among Women of Childbearing Age in Kenya: A Facility-Based Study

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Globally, approximately 295,000 women die annually as a result of pregnancy and childbirth-related complications. Sub-Saharan Africa accounts for 66 % of the estimated maternal deaths. Maternal death occurs during the first 24-48 hours up to 42 days post-delivery. The major causes are haemorrhage, sepsis, and hypertensive complications, which can be prevented by effective utilisation of postnatal care services. To improve maternal, new-born and infant health and reduce mortality ratio, which reciprocates the quality of services received during the early postnatal period. The objective of the study was to determine the factors influencing the utilisation of postnatal care among mothers attending St. Joseph Mission Hospital, Taita/Taveta County. A descriptive cross-sectional study design was adopted, and a convenient sampling technique was used to sample 145 postnatal mothers. The findings showed that the majority of mothers who utilised postnatal care were between the ages of 21 and 32 years; their parity was between 2(25.2%) and 3(24.4%) children. Inferential analysis revealed that education and occupation $p=0.00$, religion $p=0.008$, knowledge $p=0.001$ when to start PNC $p=0.000$, decision maker $p=0.008$ and importance $p=0.001$ were significantly associated factors in the utilisation of postnatal care. The study concluded that most postnatal mothers attended postnatal care visits at 2 weeks post-delivery and only attended one or two visits during the entire postnatal period. The study recommends that more awareness of postnatal care should be emphasised at a facility level, community level, and the entire county level to ensure that mothers are given updated information on PNC services during the ANC.

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INTRODUCTION

Maternal death is a common problem globally in the developing and sub-Saharan Africa countries. These deaths occur during the postnatal period, caused by pregnancy and birth related complications, and happen within the first 24-48 hours through 6 weeks post-delivery. Effective postnatal care services are core to prevention and management of these complications, which is the most neglected in developing and sub-Saharan Africa countries (Labial et al., 2015). Rwabufigiri et al., (2018) inferred that postnatal care in 25 countries in Africa Kenya included indicated that two thirds of postnatal mothers do not receive postnatal care services. Direct cause of deaths includes postpartum haemorrhage, sepsis, birth defects, prematurity, injuries, and low birth weight (Wamalwa et al., 2012). According to studies carried out in Northwest Ethiopia by Akibu, et al., (2018), the utilization of postnatal care was 57.5% which is low according to WHO recommendations. They inferred that the factors which influence this include education, income, environment, social-demographic, cultural, communication and transport. Kenya National Bureau of Statistics (2010) report indicates that, only 7% attended postnatal care within 2days, 27% 3days-6weeks, and 5% within 6weeks. In the coast region only 40.3 attended the postnatal care, with care within 1-2days 8.5%, 3-6days 2.3%, and within 6weeks 1.9% in which Taita/Taveta County is included (KDHS, 2020). According to Kenya National Bureau of Statistics (2015), maternal mortality rate remains high per 100000 live births. In particular, the recorded MMR as per geographical distribution is as follows, West Pokot 395.1, Lamu 371.4, Garissa 338.4, Uasin

Gishu 306.1, Mombasa 304.3, Samburu 294.6, Turkana 257.1, Taita/Taveta 223.1, and Marsabit 220.1. PNC is one of maternal new born health indicator which the government of Kenya is putting effort towards achieving UN sustainable goal no.3 and vision 2030 (UN, 2019). In Taita/Taveta county maternal mortality ratio is high at 221.3/100000 live births, studies done emphasised on ANC, immunisation, family planning, facility delivery and nutrition. Hence there is need to carry out the study to establish the factors influencing the mothers to utilize the PNC in SJMH, since it is a core service to maternal and new-born wellbeing.

METHODOLOGY

A cross-sectional study design was employed. Questionnaire to gather data from the respondents. The study area was St. Joseph Mission Hospital (SJMH), situated at the Ikanga sub-location, Voi Sub-County, Taita/Taveta County. Taita/Taveta county maternal mortality ratio is high at 221.3/100000 live births. Hence there is need to carry out the study to establish the factors influencing the mothers to utilize the PNC in SJMH, since it is a core service to maternal and new-born wellbeing

Sample Size Determination

Fischer's formula (Fischer et al 1998) was used to determine the sample size

$$n = \frac{z^2(p)(q)}{d^2}$$

Whereby; **n** = the preferred sample size (if the target population is larger than 10000); **Z** = the standard normal deviate at the required confidence interval (1.96); Normal deviation at

the desired confidence interval value is 95%, which corresponds to 1.96; p = No research has been carried out in Taita/Taveta County on factors influencing postnatal care uptake previously, thus an assumed prevalence of 50% will be used in the computation of the minimum sample size required for this study.

$$n = \frac{3.8416 \times 0.5 \times 0.5}{0.0025} = 384$$

As the target population is less than 10000, the following formula was used to calculate the final sample size.

$$nf = \frac{n}{1 + (\frac{n}{N})}$$

Where: nf = the preferred sample size (when the target population is less 10000); n = the desired sample size (when the target population is more than 10000); N = the estimate of population size.

In this study the target population was 200 postnatal mothers.

$$\text{Therefore; } nf = \frac{384}{1 + (\frac{384}{200})} = 132 \text{ postnatal mothers.}$$

To take care of attrition, 10% of the sample size is added:

$$\frac{10}{100} \times 132 = 13.2$$

$$= 13.$$

$$132 + 13 = 145$$

$$N = 145$$

Therefore, final sample size will be **145** postnatal mothers. A convenient sampling technique was used to recruit 135 postnatal mothers who participated in the study. Therefore, a selection of members from the target population were interviewed as they came for the services.

Table 1: Sample Frame

Category	Population	Sample	Percentage	Sampling Technique
Mothers attending 24 to 48 Hours Postnatal Visit	80	45	22.5%	Convenient Sampling Technique
Mothers attending 7 days Postnatal Visit	50	35	17.5%	Convenient Sampling Technique
Mothers attending Two weeks Postnatal Visit	70	55	27.5%	Convenient Sampling Technique
Total	200	135	72.5%	Fischer's Formula

Data Collection Tools

Structured questionnaire was used to collect information from participants. The questionnaire contained standardized questions established from the specific objectives.

Data Analysis

Quantitative data was cleaned, coded and analysed using the Statistical Package for Social Sciences version 21 computer software programme. Both descriptive and inferential statistics was to analyse the objectives.

RESULT

Social Demographic Factors and Utilisation of Postnatal Care Services

The study found that respondents' marital status had no significant association with their utilisation of postnatal care ($X^2 = 19.746, p = 0.072$). The highest number of respondents in the category that utilised postnatal care services were married (73.3%). The chi-square test on the independence of the dependent variable with the level of education ($X^2 = 31.304, p = .000$) showed that there was a significant association between the level of education and postnatal utilisation with the respondents who had attained primary (39.3%) and secondary (29.6%) level of education being the majority seeking PNC. The test was equally significant, with $p < 0.05$ in relation to the respondent's occupation and the dependent variable. The chi-square test result was $X^2 = 32.330, p = .001$. Respondents whose occupation

was not casual, permanent, self-employed or contract but fell under the 'others' category at 39.3% showed the highest number utilising PNC services. With a $p < 0.05$, there was a significant association between religious affiliation and utilisation of postnatal care ($(X^2 = 17.319, p =$

.008). Cross tabulation of the two variables showed the majority represented by Christians at 64.4%, followed by Muslims at 34.1%. Respondents from the Hindu faith sought PNC least, with a representation of 2 (1.5%) (Table 2).

Table 2: Relationship between social demographic factors and utilisation of postnatal care services

Parameters		Number of visits by respondents		Chi-Square Test		
		Count	Per cent	Chi (X ²)	df	p-value
Marital status of respondents	Married	99	73.3	19.746	12	0.072
	Single	21	15.6			
	Widowed	4	3			
	Separated	6	4.4			
	Divorced	5	3.7			
	Total	135	100			
Level of education of respondents	Primary	53	39.3	31.304	9	0
	Secondary	40	29.6			
	College/ University	18	13.3			
	Others	24	17.8			
	Total	135	100			
Occupation	Casual	22	16.3	32.33	12	0.001
	Permanent	10	7.4			
	Self-employed	33	24.4			
	Contract	17	12.6			
	Others	53	39.3			
	Total	135	100			
Religious affiliation	Muslims	46	34.1	17.319	6	0.008
	Christians	87	64.4			
	Hindu	2	1.5			
	Total	135	100			

Relationship between Awareness Level and Utilisation of Postnatal Care Services

To gauge the awareness level of the respondents, they were asked several questions regarding their knowledge of postnatal care, source of information on postnatal care and when to begin PNC. The feedback was analysed and is presented in Table 3. The respondents who answered the question on the meaning of the postnatal satisfactorily were categorised as having knowledge (1), and those who did not know the meaning were categorised as not knowledgeable (2). The majority of the respondents were aware of the meaning of postnatal care (65.9%), and those without the knowledge of postnatal care were 34.1%. Regarding their source of information, most of the respondents learnt about postnatal care from health care givers during

antenatal care or intrapartum (49.6%), 25.9% friends and neighbours; the least of respondents learnt postnatal care from media; radio (10.4%), television (8.9%), and newspaper (5.2%). The researcher further sought to find out awareness of the appropriate time to start PNC. The majority of the respondents (44.4%), believe the postnatal care should begin at two weeks post-delivery; others perceived it should begin after 7 days (31.1%) and the least respondents (24.4%) within 48 hours post-delivery. This indicates that most of the postnatal mothers received the first postnatal care at 2 weeks post-delivery on their awareness of the importance of postnatal care. As shown in Table 3, the majority of the respondents, 69.6% (94), were aware of the importance of postnatal care, while 30.4% (41) were not aware. The study found that those who were knowledgeable about postnatal care (65.9%) were significantly more

likely ($X^2 = 16.433$, $p = .001$) to utilise postnatal care. The source of information, with the highest represented by respondents acquiring information about postnatal care from healthcare givers (67%), was found to be insignificant ($X^2 = 10.897$, $p > .05$) in relation to utilisation of postnatal care. Thus, there was no significant association between the source of information and utilisation of postnatal care. Those who indicated that the

ideal time to begin postnatal care was either 1 week or 2 weeks post-delivery represented the highest category for visits for PNC. With a $p=.000$, the association was significant with a Chi-square statistic of $X^2=26.670$. Those who had high regard for postnatal care were significantly ($X^2 = 16.098$, $p = .001$) highly likely to seek postnatal care.

Table 3: Relationship between awareness level and utilisation of postnatal care services

Parameters		Number of visits by respondents		Chi-Square Test		
		Count	Percent	Chi (X^2)	df	p-value
Knowledge about postnatal care	Knowledgeable	89	65.9	16.433	3	0.001
	Not knowledgeable	46	34.1			
	Total	135	100			
Source of information on postnatal care	Radio	14	10.4	10.897	12	0.538
	Television	12	8.9			
	Newspaper	7	5.2			
	Friends/ Neighbours	35	25.9			
	Health caregivers	67	49.6			
	Total	135	100			
When to begin postnatal care	within 48Hrs post delivery	33	24.4	26.67	6	0.000
	7 days post delivery	51	37.8			
	2 weeks post Delivery	51	37.8			
	Total	135	100			
Importance of postnatal care	Yes	94	69.6	16.098	3	0.001
	No	41	30.4			
	Total	135	100			

Relationship between Cultural Factors and Utilisation of Postnatal Care

Upon enquiry on whether the Taita culture allowed mothers to leave the house post-delivery, the responses showed that 98.5% were not allowed to leave the house post-delivery. Only 1.5% were allowed to leave the house post-delivery. This trend did not have a significant bearing on their utilisation of postnatal care. A chi-square test of independence result of ($X^2 = 1.760$, $p = .624$) shows that permission or no permission to leave the house post-delivery has no significant association with the utilisation of postnatal care. Culture dictates who attends to the mother; hence, the research sought to find out from the respondents who preferred to have attended to them during postnatal visits. The highest number of respondents who had ever utilised postnatal care preferred being attended to

by both male and female attendants at 45.9%, followed by 40% who favoured the services of female attendants. 8.1% cited their mother-in-law, and 5.9% traditional birth attendants. The chi-square test showed no significant association between the type of caregivers allowed to attend to the respondents and their utilisation of postnatal care ($X^2 = 8.476$, $p = .487$). The test was insignificant since $p > 0.05$. With a $p < 0.05$, there was a significant association between a person deciding on whether to seek postnatal care and their utilisation of postnatal care ($X^2 = 17.531$, $p = .008$). Where the decision was made by the respondent's husband, the likelihood of seeking postnatal care was highest at 46.7%, followed by the decision by the respondent (40%). 12.6% of the minority who had utilised postnatal care were prompted by their parents (Table 4).

Relationship between Facility Factors and Utilisation of Postnatal Care Services

Observation of the majority of respondents who stated that the health facility was accessible (74.1%) showed that there was an association between the distance to access PNC and utilisation of postnatal care services. The study found that mothers who could access postnatal care services were significantly ($X^2 = 8.611$, $p = 0.035$) oriented to utilise the postnatal care services (*Table 4.*). The means of transport, quality of health care service by the providers, the attitude of the health care service providers and the time that they took to serve the respondents while rendering postnatal care were factors that were captured by the data collection tool. The majority accessed health facilities: 34.1 % by walking, 26.7% by matatu, 21.5% by taxi, and 17.83% by motorcycle, as shown in *Table 5*. The majority viewed the provider's attitude as very good 40%, good 26.7%, excellent 17.8%, average 11.9%, poor 3% and very poor 0.7%. The researcher also sought to know how the respondents viewed the postnatal services offered at St. Joseph Mission Hospital. *Table 5* also illustrates the majority of respondents view postnatal services as very good 41.5%, good 28.1%, average 17.0%, excellent 8.1%, poor 4.4% and very poor 0.7%. On the issue of time taken, the majority of the respondents spent between 20-40 minutes (53.3%), 40-60 minutes 31.9%, and the least spent 5-20 minutes 8.9% and over 60 minutes 5.9%. The chi-square statistics measuring these facilities-related factors against the actual utilisation of the postnatal care service by the respondents all showed $p > .05$. As shown in the table, these are means of transport ($X^2=14.984$, $p=.091$), quality of health care service by the providers ($X^2=23.807$, $p=.068$), attitude of the health care service providers ($X^2=8.245$, $p=.914$) and time taken to serve the respondents ($X^2=16.685$, $p=.054$).

Table 4: Relationship Between Cultural Factors and Utilisation of Postnatal Care

		Number of visits by respondents				Total		Chi-Square Test		
		One	Two	Three	Four	F	%	Chi(X2)	df	p-value
Permission to leave the house post delivery	Yes	0	1	1	0	2	1.5	1.76	3	0.624
	No	50	50	27	6	133	98.5			
	Total	50	51	28	6	135	100			
Care givers allowed to attend the respondents	Traditional birth Attendants	5	1	2	0	8	5.9	8.476	9	0.487
	Female health care givers	19	22	10	3	54	40			
	Mother in law	5	6	0	0	11	8.1			
	Both male and female attendants	21	22	16	3	62	45.9			
	Total	50	51	28	6	135	100			
Decision maker to seek postnatal care	Self	17	17	20	1	55	40.7	17.531	6	0.008
	Husband	29	25	5	4	63	46.7			
	Parents	4	9	3	1	17	12.6			
	Total	50	51	28	6	135	100			

Table 5: Relationship between facility factors and utilisation of postnatal care

		Number of visits by respondents				Total		Chi-Square Test		
		One	Two	Three	Four	Count	Percent	Chi (X2)	df	p-value
Accessibility of postnatal care services	Yes	44	35	17	4	100	74.1	8.611	3	0.035
	No	6	16	11	2	35	25.9			
	Total	50	51	28	6	135	100			
Means of transport of respondents	Walking	24	14	6	2	46	34.1	14.984	9	0.091
	Motor cycle	5	12	5	2	24	17.8			
	Matatu	9	15	12	0	36	26.7			
	Taxi	12	10	5	2	29	21.5			
	Total	50	51	28	6	135	100			
Rating of Care by the respondents	Very poor	1	0	0	0	1	0.7	23.807		0.068
	Poor	2	3	1	0	6	4.4			
	Average	4	9	7	2	22	16.3			
	Good	7	19	11	1	38	28.1			
	Very Good	28	16	9	3	56	41.5			
	Excellent	8	4	0	0	12	8.9			
	Total	50	51	28	6	135	100			

		Number of visits by respondents				Total		Chi-Square Test		
		One	Two	Three	Four	Count	Percent	Chi (X2)	df	p-value
Attitude of service providers to respondents	Very poor	1	0	0	0	1	0.7	8.245	9	0.914
	Poor	1	2	1	0	4	3			
	Average	4	6	5	1	16	11.9			
	Good	14	10	10	2	36	26.7			
	Very good	19	24	9	2	54	40			
	Excellent	11	9	3	1	24	17.8			
	Total	50	51	28	6	135	100			
Time taken for respondents be attended	5-20 mins	7	4	1	0	12	8.9	16.685	9	0.054
	20-40 mins	32	25	10	5	72	53.3			
	40-60 mins	10	17	15	1	43	31.9			
	Over 60 mins	1	5	2	0	8	5.9			
	Total	50	51	28	6	135	100			

DISCUSSION

Influencing of Social Demographic Factors on Utilization of Postnatal Care

The age, marital status, parity, education level, awareness and autonomy of the respondents were examined. These were found to have an influence, to an extent, on the utilisation of postnatal care services. In relation to their ages, those who were aged between 21 and 32 years (33.3%) showed the greatest responsiveness to PNC. The study findings agree with other previous studies by Rwabufigiri et al. (2018) whose findings reported that younger mothers utilised postnatal care services more than the elderly. The number of children the mother has also had an impact on the utilisation of the postnatal services. The low parity mothers are more likely to utilise the postnatal care services than those with high parity. This is probably because the number of children adds constraints to the resources, especially in the low-resource setting, and this could be the reason why there is no or low utilisation of PNC services. The level of education, occupation and religious affiliation of the respondents influence their decision to seek postnatal care services. The reviewed literature supports the link between these three variables. According to Rwabufigiri et al. (2018), it is about 'the higher the education level, the higher the occupation improves the social and economic status of the women and improves their social status. Women who are employed have increased autonomy in decision-making and choosing the quality of health care services they want independently. They are more likely to utilise the postnatal care services as they are financially stable; mothers who are not employed are likely not to utilise postnatal care services because they depend on the spouse for decision-making and financial support; thus, when they are not supported and encouraged, they are likely not to seek for postnatal care services. (Tiruneh et al., 2017). Hence, to seek PNC'.

Awareness Level on Utilisation of Postnatal Care among Postnatal Mothers

The study findings indicated that those who were knowledgeable about postnatal care were more likely to utilise postnatal care, supported by Muchemi and Gichogo (2014), who maintain that awareness created about PNC to the mothers motivates them to seek care at the recommended time. The source of information, as determined by the analysed data, does not matter even though Workineh et al. (2014) maintain that exposure to mass media has a strong influence on awareness, which has implications for the utilisation of postnatal care services. From the findings, however, the most important thing would be how the information is conveyed and whether or not the intended recipient understands the message. The healthcare givers are the main source of information on PNC for the mothers attending St. Joseph Mission Hospital, Taita Taveta County. The general findings on the awareness level of the respondents are consistent with the arguments made by Workineh et al. (2014), who found that mothers who were aware of the risks of not seeking postnatal care services during the postpartum period were most likely to use the service than those who were not aware.

Cultural Factors Influencing Utilisation of Postnatal Care

The study findings on the impact of cultural beliefs and practices showed that where the decision was made by the respondent's husband, the likelihood to seek postnatal care was highest at 46.7%, followed by the decision by the respondent (40 %). The support of the husband, whether emotional or financial, plays a major role for the women during the postnatal period. The majority of the respondents had been secluded for a period of three months (54.8%) and 40 days (43.0%). This, according to the traditions, requires the mother to stay indoors until they recover, keeping the baby warm or keeping off from bad eyes and omen. This agrees with the study conducted by Mukonka et al. (2018). However, this cultural practice did not deter the majority of the women from Taita County from seeking

postnatal care services. The cultural factors show that permission or no permission to leave the house post-delivery does not have a bearing on the mothers' utilisation of postnatal care. This was the same in the case of who was allowed to attend to the new mother post-delivery. Though the highest number of respondents (45.9%) had been attended to by both male and female attendants for postnatal care, the person who preferred to provide the service was not a factor associated with the decision to seek PNC.

Health Facility Factors Influencing Utilisation of Postnatal Care

Access to the health facility was found to be important for the mothers, as further emphasised by Muchemi and Gichogo. (2018), who state that logistical barriers such as inaccessible transportation and long waits during appointments limit the likelihood of postpartum visits by mothers. The majority of the women attending St. Joseph Mission Hospital in Taita County who stated that the health facility was accessible (74.1%) could easily access the hospital. These were able to walk (34.1%) or use matatu (16.3%) to the facility. The analysis of findings revealed that means of transport, quality of health care service by the providers, attitude of the health care service providers and time taken to serve the respondents had insignificant association with the respondents' utilisation of postnatal care services. This could be explained by other determining factors that include the respondents' awareness of the importance of PNC and the subsidised cost of the PNC services at St. Joseph Mission Hospital in Taita County.

CONCLUSION

The study sought to determine the factors influencing the utilisation of postnatal care services in the St. Joseph mission. The study concluded that social demographic factors such as age, marital status, parity, education level and autonomy have an influence on PNC. The study also concluded that the level of awareness had an important impact on mothers' utilisation of postnatal services. This enables them to know the

importance of PNC and follow the schedules as recommended. Again, the study concluded that cultural factors had an influence on who made the decision to attend the postnatal clinic. The study also concluded that facility factors such as accessibility, the cost of services, the attitude of the mothers towards postnatal care services, the attitude of the service providers, and time spent during the visits have an influence on service utilisation.

Recommendations

From the study findings, the following recommendations were made;

- There is a need for healthcare facilities and providers to make concerted efforts to increase knowledge about the importance of the postpartum visit, enhance the use or design of medical encounters, identify community resources, and develop targeted interventions. The prenatal care visit can be used by the health care providers as an early opportunity to educate women about the importance of PNC.
- Healthcare providers in all the county health facilities and policymakers should raise greater awareness about postnatal complications and involve more community influencers and stakeholders in mobilising ideas and resources to increase postnatal care service utilisation.
- Male involvement should be encouraged to support women in decision-making on the utilisation of postnatal care services.

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