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Factors influencing women's knowledge at scheduled postnatal visits: a multi-centre study in Kakamega, Kenya

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Abstract

Background/Aims Postnatal care is offered to mothers and their babies from birth and across the postnatal period. Visits are spread over the postnatal period, and a minimum of four visits is recommended. In many studies, postnatal visits in Africa have been reported to be low compared to antenatal visits. As a result of low postnatal visits, mothers are not able to utilise postnatal care services, resulting in delayed detection of and interventions for maternal and neonatal health problems, leading to high rates of maternal and neonatal morbidity and mortality. In Kenya, only 53% of mothers attend postnatal clinics; in Kakamega county, only 34% of mothers attend. This study aimed to establish factors influencing postnatal knowledge among mothers in selected hospitals in Kakamega, Kenya.

Methods The study was a descriptive cross-sectional study involving 320 postnatal mothers recruited from four sub-counties. Systematic sampling was used to select eligible study participants. Data were collected using questionnaires that assessed the participants' knowledge of postnatal care in terms of what postnatal care is, recommended postnatal care, when to attend a clinic and the services offered at postnatal care clinics. The data were entered into a database and analysed using the Chi-squared test to assess how sociodemographic and socioeconomic characteristics were associated with knowledge of postnatal care.

Results The majority of participants (73.1%) had poor or no knowledge of postnatal care and 89.7% had poor or no knowledge on when postnatal visits should be carried out. Most postnatal mothers (71.9%) received postnatal health information from health workers. Occupation ($P<0.000$), income ($P<0.000$), transport ($P<0.000$) and time taken to travel to hospital ($P=0.034$) were significantly associated with postnatal knowledge.

Conclusions Knowledge on postnatal care is poor among postnatal mothers in Kakamega. The majority of participants obtained postnatal care information from health workers, and so it is recommended that Kakamega establishes other strategies for giving information on postnatal care, such as pamphlets to mothers.

Key words: Kakamega Kenya; Maternal health; Maternal mortality; Postnatal care; Postnatal knowledge; Postnatal visits

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Background

A postnatal clinic offers scheduled visits to mothers to allow them to access postnatal care services. The World Health Organization (WHO, 2013) recommends that visits take place at 6 days, 6 weeks, and 6 months after birth of a baby, and many countries tailor their protocol based on this guideline, depending on health needs and indicators in the country. A postnatal visit offers the opportunity for the health worker to detect possible issues and plan any necessary interventions for the mother and their baby. In Kenya, four visits are recommended; within 2 days for those who deliver at home (for those who deliver in a health facility, they will be on the ward at this time and assessments will be done there), within 2 weeks, before 6 weeks and between 4 and 6 months (Ministry of Public Health and Sanitation and Ministry of Medical Services Kenya, 2012). In Africa, only 13% of women attend postnatal clinics (Warren et al, 2008). In Uganda, only 15.4% of postnatal mothers attend postnatal clinics (Izudi and Amongin, 2015). However, in Kenya, 53%

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of women attend postnatal visits within 2 weeks of birth (Kenya National Bureau of Statistics (KNBS), 2015).

Knowledge is an important factor in the uptake of postnatal care services, as it helps mothers to make a decision on when and where to seek postnatal services (Berhe et al, 2013). Lack of postnatal knowledge has been shown to affect use of postnatal services (Titaley et al, 2009). Failure to utilise postnatal services leads to increases in the rates of maternal and neonatal morbidity and mortality. Many postnatal mothers take their children to the clinics but do not consider the importance of postnatal care, particularly if they have no complications after birth (Tao et al, 2011). Miteku et al (2016) reported that many mothers in Ethiopia were not aware that they expected to attend postnatal visits because they were not given appointment by health workers.

Globally, approximately 295 000 women died because of pregnancy related problems in 2017, and more than two thirds (196 000) of these deaths occurred in sub-Saharan Africa (WHO, 2019). Inadequate postnatal care resulting from failure to attend a postnatal clinic may contribute to maternal and neonatal mortalities (Timilsina and Dhakal, 2015). The Kenya Demographic Health Survey of 2014 reported a maternal mortality of 362 per 100000 live births (KNBS, 2015).

This study was carried out because of the low attendance at postnatal visits witnessed in many health facilities in Kenya. Failure to attend the recommended visits prevents health workers from diagnosing and treating maternal and neonatal health problems. This study aimed to assess the factors that influence women's knowledge of postnatal care.

Methods

This was a descriptive cross-sectional study carried out in Kakamega, Kenya. Kakamega was divided into 12 clusters along the administrative boundaries. Simple sampling was used to select four clusters. Stratified sampling was used to select public hospitals and purposive sampling was used to select high volume facilities in the four clusters, resulting in the selection of four hospitals for the study: Butere Sub County Hospital, Shibwe Sub County Hospital, Malava Sub County Hospital and Navokholo Sub County Hospital.

Population

The sample size for the study was calculated using Fisher et al (1998), which yielded a result of 320 participants. Systematic sampling was used to recruit participants who met the inclusion criteria. To determine the participant to be recruited, every third postnatal mother who was eligible was recruited. Women who delivered babies at the study sites, who consented to participate and who were mentally sound were included.

Data collection

Data were collected by the principal researcher and two research assistants at each study site over a period of 2 months. Data were collected using an interviewer-administered questionnaire in a face-to-face interview and later entered into a database for analysis using Statistical Package for Social Sciences Version 21. The questionnaire was written in English and contained 27 closed questions that gathered data on the participants' sociodemographic and economic data (11 questions), and the participants' knowledge of postnatal care. The questions covered four topics: what postnatal care is (two questions), recommended postnatal care visits (two questions), when visits should be attended (four questions) and what services are offered at postnatal clinics (eight questions).

The questionnaire was developed by the principal researcher, and corrected by the co-authors in cases of omission or error. Pretesting was done at Manyala Sub County hospital, which had similar characteristics as the study sites but was in a different location. Pretesting was carried out on 32 participants and no changes were made, as no issues were raised regarding interpretation or comprehension of the questions.

Data analysis

Within each topic, no correct responses was classified as 'poor knowledge', 1–2 correct responses was classified as 'fair knowledge', and more than three correct responses was

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Table 1. Participants' sociodemographic characteristics

Variable	Category	Frequency, *n*=320 (%)
Age (years)	<20	17 (5.3)
	20–25	86 (26.9)
	26–30	105 (32.8)
	31–35	81 (25.3)
	36–40	24 (7.5)
	>40	7 (2.2)
Education	No formal education	18 (5.6)
	Primary	149 (46.6)
	Secondary	124 (38.8)
	College/university	29 (9.1)
Marital status	Married	277 (86.6)
	Unmarried	29 (9.1)
	Separated	14 (4.4)
Religion	Christian	307 (95.9)
	Muslim	13 (4.1)

classified as 'good knowledge'. The Chi-squared test was used to determine associations between variables and knowledge, with significance set at $P<0.05$.

The study was reviewed and cleared by Kenyatta University Ethical Committee (KU/ERC/VOL.1). The National Commission of Science, Technology and Innovation permitted the study, as did the county health department. Informed consent was obtained from the participants during recruitment and before data collection.

Results

Table 1 shows the sociodemographic characteristics of the participants. The largest proportion (32.8%) were aged 26–30 years and had received primary education (46.6%). The majority were married (86.6%) and Christian (95.9%).

Table 2 shows the socioeconomic characteristics of participants. Unemployment was common, with the majority being unemployed (57.5%) and only 7.2% being formally employed. The majority of the mothers (86.9%) had a monthly income of less than 10 000 Kshs, used a motorcycle as their primary mode of transport (63.1%) and lived less than 40 minutes away from the hospital (83.4%).

Knowledge of postnatal care

Table 3 shows participants' knowledge on postnatal care, broken down by topic. Most of the participants had no knowledge on what postnatal care is (52.2%), and only 4.1% had good knowledge. The largest proportion had no knowledge of recommended postnatal visits (44.4%), with 8.4% having good knowledge. The majority had poor knowledge on when recommended postnatal visits should be attended (65.3%). Almost half the participants had fair knowledge on the services offered at postnatal clinics (49.7%). The largest proportion of participants had no knowledge overall (41.8%), while only 4.7% had good knowledge (Table 4).

Table 5 shows where participants acquired information on postnatal care. The majority (71.9%) reported that they obtained their postnatal care information from health workers. A lower proportion (10.9%) said their source of information was from friends, with only a few (4.4%) indicating they had never heard any information concerning postnatal care.

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Table 2. Participants' socioeconomic characteristics

Variable	Category	Frequency, *n*=320 (%)
Occupation	Unemployed	184 (57.5)
	Self employed	113 (35.3)
	Formally employed	23 (7.2)
Income (kshs)	<10 000	278 (86.9)
	10 001–20 000	32 (10.1)
	20 001–30 000	5 (1.6)
	>30 000	5 (1.6)
Mode of transport	Matatu	66 (20.6)
	Motorcycle	202 (63.1)
	Bicycle	15 (4.6)
	Walking	34 (10.6)
	Taxi	3 (0.9)
Time to hospital (minutes)	<20	130 (40.6)
	21–40	137 (42.8)
	41–60	43 (13.4)
	>60	10 (3.1)

Table 3. Knowledge of postnatal care among participants

	Frequency, *n*=320 (%)			
Topic	**No knowledge**	**Poor knowledge**	**Fair**	**Good**
What postnatal care is	167 (52.2)	90 (28.1)	50 (15.6)	13 (4.1)
Recommended postnatal care	142 (44.4)	98 (30.1)	53 (16.6)	27 (8.4)
When to attend postnatal visits	209 (65.3)	78 (24.4)	22 (6.8)	11 (3.4)
Services offered at postnatal care clinics	18 (5.6)	134 (41.9)	159 (49.7)	9 (2.8)

Table 4. Level of knowledge among participants

Level of knowledge	Frequency, *n*=320 (%)
No knowledge	134 (41.8)
Poor	100 (31.3)
Fair	71 (22.2)
Good	15 (4.7)

Table 6 summarises the results of the Chi-squared test for association between sociodemographic variables and knowledge, which found no significant associations.

Table 7 shows the results of the Chi-squared test for association between socioeconomic characteristics and postnatal knowledge. Occupation ($P<0.000$), income ($P<0.000$), transport ($P<0.000$) and time taken to travel to the hospital ($P=0.034$) was significantly associated with postnatal knowledge.

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Table 5. Sources of postnatal information among the participants

Sources of postnatal information	Frequency
Health worker	230 (71.9)
Electronic media	23 (7.2)
Print media	12 (3.8)
Friend	35 (10.9)
Internet	3 (0.9)
Never heard	14 (4.4)

Table 6. Sociodemographic characteristics associated with postnatal knowledge

		Knowledge, *n*=320 (%)			
Variable	**Category**	**Poor, *n*=263**	**Fair, *n*=55**	**Good, *n*=2**	**Chi-squared**
Age (years)	<20	13 (4.9)	3 (5.2)	1 (50.0)	Pearson value=12
	20–25	72 (27.4)	14 (24.1)	0 (0)	df=10
	26–30	83 (31.6)	22 (40.0)	0 (0)	*P*=0.266
	31–35	68 (25.9)	12 (21.8)	1 (50.0)	
	36–40	20 (7.6)	4 (7.3)	0 (0)	
	>40	7 (2.7)	0 (0)	0 (0)	
Education	No formal education	15 (5.7)	3 (5.4)	0 (0)	Pearson value=5.4
	Primary	125 (47.5)	23 (41.8)	1 (50.0)	df=6
	Secondary	101 (38.4)	23 (41.8)	0 (0)	*P*=0.493
	College/university	22 (8.3)	6 (10.9)	1 (50.0)	
Marital status	Married	226 (85.9)	49 (89.1)	2 (100.0)	Pearson value=1.5
	Unmarried	26 (9.9)	3 (5.5)	0 (0)	df=4
	Separated	11 (4.2)	3 (5.5)	0 (0)	*P*=0.823
Religion	Christian	253 (96.2)	52 (94.5)	2 (100.0)	Pearson value=4
	Muslim	10 (3.8)	3 (5.5)	0 (0)	df=2, *P*=0.817

Discussion

This study assessed postnatal mothers' knowledge of postnatal care in Kakamega, Kenya. The sociodemographic characteristics of the 320 participants showed that most of the study population were relatively young postnatal women with moderate education, poor socioeconomic status and who used motorcycles as their mode of transport. Cumulatively, 65.0% of the participants were mothers less than 30 years old. The Kenya Demographic Health Survey likewise reported that the majority of mothers in Kenya were within a similar age bracket (KNBS, 2015). Anchang-Kimbi et al (2014) established maternal age has an influence on the utilisation of maternal services. Almost half of the participants in the present study had primary level education (46.6%), consistent with the Demographic Health Survey (2014) that found 50% of those attending a postnatal visit within the first 2 days of birth had received at least primary education. In this region, many women are able to access primary education because it is free, and it is common for women to get married once they have completed primary education, as a result of financial challenges,

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Table 7. Socioeconomic factors associated with postnatal knowledge

		Knowledge, *n*=320 (%)			
Variable	**Category**	**Poor, *n*=263**	**Fair, *n*=55**	**Good, *n*=2**	**Chi-squared**
Occupation	Unemployed	153 (58.2)	30 (54.5)	1 (50.0)	Pearson value=7.4 df=4 *P*<0.000
	Self employed	94 (35.7)	19 (34.5)	0 (0)	
	Formally employed	16 (6.1)	6 (10.9)	1 (50.0)	
Income (kshs)	<10 000	232 (88.2)	45 (81.8)	1 (50.0)	Pearson value=33.4 df=9 *P*<0.000
	10 000–20 000	25 (9.5)	7 (12.7)	0 (0)	
	20 000–30 000	3 (1.1)	2 (3.6)	0 (0)	
	>30 000	3 (1.1)	1 (1.8)	1 (50.0)	
Mode of transport	Matatu	51 (19.4)	14 (25.5)	1 (50.0)	Pearson value=56.6 df=8 *P*<0.000
	Motorcycle	171 (65.0)	31 (56.4)	0 (0)	
	Bicycle	11 (4.1)	4 (7.3)	0 (0)	
	Walking	28 (10.6)	6 (10.9)	0 (0)	
	Taxi	2 (0.7)	0 (0)	1 (50.0)	
Time to hospital (minutes)	<20	101 (38.4)	27 (49.0)	2 (100.0)	Pearson value=18 df=9 *P*=0.034
	21–40	121 (46.0)	16 (29.0)	0 (0)	
	41–60	32 (12.2)	11 (20.0)	0 (0)	
	>60	9 (3.4)	1 (1.8)	0 (0)	

cultural issues, early marriages (marriages that are enforced by a woman's parents at a young age in order to get a dowry) and unplanned pregnancies (KNBS, 2015). Titaley et al (2009) observed that people who are educated are more likely to be aware of their rights and make more efforts to seek out health services.

The majority of mothers in the present study were married (86.6%). This is representative of the overall marital status of women in Kakamega, as the Demographic Health Survey reported that 70% of women in the same age bracket as in this study were married. The majority of mothers (63.1%) used a motorcycle to travel, which is consistent with a study done by Nyaberi (2018) in Nyanza that also found the majority of the participants used a motorcycle to access healthcare facilities.

Postnatal knowledge

This study established that most of the participants had no or poor knowledge of postnatal care across the assessed topics. This may explain why attendance at postnatal visits is relatively low compared to antenatal visits in the region, which are at 95% (KNBS, 2015). These findings are consistent with Agus and Horiuchi (2012), who reported that lack of knowledge affects use of maternal health services in Indonesia. Kinuthia (2014) likewise observed that mothers in Kenya have low postnatal knowledge. Most participants did not know when postnatal care visits should be scheduled, which is consistent with Muiruri (2011) observations in Nyeri, Kenya. The knowledge gap established in this study is consistent with findings regarding knowledge gaps among postnatal mothers in Asmara (Beraki et al, 2020). The majority of mothers obtained their information on postnatal care from health workers, which raises concerns as to why there is a knowledge gap. Future research could explore the reasons that mothers may not understand the concept or importance of information/recommendations given by health workers and review modes of communication.

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Key points

- Providing knowledge of postnatal care to mothers is an important element of midwifery care.
- In Kakamega, the majority of participants had no knowledge of postnatal care.
- Income, occupation and time taken to reach the health facility were significantly associated with postnatal knowledge.
- Strategies for improving women's knowledge of postnatal care should be implemented in Kakamega, as this will improve the overall attendance at postnatal care appointments, allowing maternal and neonatal issues to be detected more quickly and interventions to be put in place that will reduce maternal and neonatal morbidity and mortality.

Factors associated with postnatal knowledge

The study revealed that mode of transport, occupation, income and time taken to the hospital was significantly associated with knowledge. A study done by Majumder et al (2018) in Bangladesh similarly found that occupation and family income were significantly associated with newborn knowledge, which is connected to postnatal care. It is also likely that those more easily able to get to the hospital are more likely to interact with health workers and therefore receive information about postnatal care. The majority of postnatal mothers lived 21–40 minutes away from the hospital. This is a considerable amount of time to take to access a health facility. Many studies have suggested that it is important to have hospitals within easy reach of patients, as recommended by Mwaliko et al (2014). Kitui et al (2013) suggested that short distance and time to reach a hospital may determine use of health services from a skilled health worker, potentially impacting the likelihood of a woman receiving information about postnatal care.

Limitations

Some questions required the participants to recall information and this may have caused recall bias. Some participants thought the interview would take a long time and therefore opted not to take part in the study.

Conclusions

Postnatal care knowledge is poor among mothers in Kakamega, Kenya and most of the information they do have comes from health workers. Knowledge is influenced by socioeconomic factors such as occupation, income, time taken to reach the hospital and mode of transport.

The county health department should explore strategies to increase women's knowledge of postnatal care, such as increasing the use of print and electronic media to distribute information on postnatal care. Longitudinal studies need to be done to compare the use of pamphlets with the routine method of delivering postnatal information via a health talk to antenatal and postnatal mothers. It is also important to explore health worker-related factors that affect the birth of postnatal health messages to mothers.

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Conflict of interest

The authors declare that there are no conflicts of interest.

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