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Original Article

Prevalence and factors influencing home deliveries among postnatal mothers attending the young child clinic at Orum health centre IV in Otuke district, a cross-sectional study.

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ABSTRACT

Background:

Home delivery in poor resource countries remains a major challenge. The aim of this study was to determine the prevalence and factors influencing home deliveries among postnatal mothers at Orum Health IV in Otuke district.

Methods:

This study utilised a cross-sectional descriptive study design using a quantitative approach on a total of 145 respondents. A structured questionnaire was used to collect data. Data entry and analysis were done using SPSS version 23.0. Univariate analysis was done using descriptive statistics to describe independent variables, which were presented as frequencies and percentages. Bivariate analysis was done using Chi-Square ($\chi 2$) or Fischer's exact to find the association between the dependent and independent variables.

Results:

The respondents had a mean age of 26.17 years, with half aged 25-30. Most were married (71.7%), nearly a third had secondary education (35.9%), over a third were Catholic (39.3%), and half were farmers (50.3%). Most respondents (71%) were satisfied with the quality of delivery services, though many reported inadequacies in equipment (52.4%) and staffing (62.1%). The majority of respondents attended at least one ANC visit, with 60% attending fewer than four times. Most had given birth before, and 72.3% had no history of home deliveries, and only 7.8% were satisfied with traditional birth attendant (TBA) services. The prevalence of home delivery was found to be 17.9.

Conclusions:

The findings suggest that while the majority of respondents were satisfied with the quality of delivery services and the care provided by female health workers, significant issues remain regarding the availability of equipment, adequate staffing, and privacy during delivery, which need to be addressed to improve overall patient satisfaction.

Recommendation:

Enhance community education programs focused on the importance of facility-based deliveries and engage local leaders, TBAs, and healthcare workers to disseminate accurate information about the risks associated with home deliveries.

Keywords: *Home delivery, postnatal mothers, young child clinic (YCC), Otuke district*
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BACKGROUND

Home delivery is a practice of childbirth in a non-clinical setting that takes place at a mother's or significant other's home rather than in a health care facility setting (Ibrahim, Beyene, Selamu, & Yoseph, 2017). (Chea et al., 2018). According to the Sustainable Development Goals (SDGs), skilled birth attendance under goal 3, target 3.1 and indicator 3.1.2 is reported as a very important aspect in reducing maternal morbidity and mortality.

In Africa, less than 50% of births are attended to by skilled health workers (S. Chea et al., 2018). In 2010, the maternal mortality ratio (MMR) in low-income countries (LMICs) was 15 times higher than that of high-income countries (Chea et al., 2018). Sub-Saharan Africa (SSA) had the highest MMR at 500 maternal deaths per 100000 live births and had neonatal mortality of 35 per 1000 live births every year, which was associated with poor management during labour and delivery (Mazalale et al., 2015). In 2015, the sub-Saharan Africa (SSA) region alone accounted for approximately 66% of maternal deaths, with home deliveries being one of the key contributing factors (S. Chea et al., 2018).

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Studies done among East African countries indicate that home delivery ranged between 26% (Chea et al., 2018) to 66.7% (Otieno Ogolla, 2015). In Tanzania, although health facilities are closer to rural households than in many African countries, more than half of children are delivered at home despite a high coverage (94%) of antenatal care (ANC) (Mrisho et al., 2007).

Uganda's Maternal Mortality Rate (MMR) has persistently remained one of the highest in the world, with 336 deaths per 100,000 live births (UDHS, 2016). In a study conducted in Busia, only 47% of pregnant women in the country receive at least four antenatal visits, and a mere 17% receive their first antenatal visit during the first trimester (Anyait, Mukanga, Oundo, & Nuwaha, 2012). Furthermore, only 41% all births occur within health facilities. The situation is more serious in rural areas, where only 36% of the deliveries occur in health facilities compared to 79% for urban areas (Anyait et al., 2012).

In rural Uganda, traditional birth attendants (TBAs) assist in most deliveries (Newell, Spillman, & Newell, 2017). However, experts agree that the risk of stillbirth or death due to intrapartum–related complications can be reduced by about 20 per cent with the presence of a skilled birth attendant ('Delivery care', 2015).

A number of organisations have implemented various interventions to improve access to maternal health services, including ANC and skilled delivery attendance, such as health worker capacity building, male partner involvement in ANC, music, dance, and drama groups, among others (Haruna, Dandeebo, & Galaa, 2019).

Therefore, because of the generally limited information in the study setting to explain why home deliveries have persistently remained high, the need for further studies has become imperative. The study therefore aims to determine the prevalence and factors influencing home deliveries among postnatal mothers at Orum Health IV in Otuke district.

METHODOLOGY

Study design

A cross-sectional descriptive study using a quantitative approach was used to determine health facility factors associated with home deliveries among postnatal mothers attending the young child clinic at Orum Health Centre IV in Otuke district. The design was chosen because it's the most appropriate for data collection at a single point in time, which was the objective of the study. Quantitative method was chosen because it allows more information from more respondents in less time.

Study setting

This study was conducted at Orum Health Centre IV in Otuke district, Lango sub-region in Northern Uganda. It was specifically conducted at YCC, which operates from Monday to Friday every week. YCC had two (2) staff members every day working from 9 am to 5 pm, with roughly 20 mothers per day attending the clinic.

Otuke is located approximately 66 kilometres (41 miles) east of Lira town, the largest city in the sub-region. This location lies approximately 310 kilometres (190 miles) north of Kampala. The district covers a total area of 1,549.8 km2 (598.4 sq mi).

Orum Health Centre IV is one of the public health centres in Otuke district serving the Lango. The health centre offers both outpatient and inpatient services. Otuke District is bordered by Agago District to the north, Abim District to the Northeast, Napak District to the East, Amuria District to the Southeast, Alebtong District to the south, Lira District to the southwest and Pader District to the northwest. It serves a population of approximately 86000.

The major services offered at the health facility include inpatient services such as surgery, gynaecology and obstetrics care, medicine, dentistry, and orthopaedics, while the outpatient services include immunisation, HIV counselling and testing, and elimination of mother to child transmission (eMTCT) and antenatal care services. The young child clinic (immunisation) runs from Monday to Friday.

Study populations

This study focused mainly on postnatal women attending the young child clinic at Orum Health Centre IV in Otuke district.

Study procedure

Approval letter was obtained from Mulago Health Tutors College Research and Ethics Committee and Orum Health Centre IV administrators before approaching eligible participants for the study. A pilot study was carried out using a consecutive non-probability sampling on a total of ten participants, from which responses were obtained for one day using the developed questionnaire.

Quantitative method of data collection was used. This approach helped to generate quality information that was used to give meaning to numbers. This involved the collection of numerical data in order to explain, predict, and control phenomena of interest. The collected data were presented in tables, graphs, and charts. A structured questionnaire containing systematically arranged questions was administered and filled out for about 10-15 minutes.

Sample size determination

The sample size was determined using the single proportion formula of Fischers etal. as follows:

$n = (Z\ \alpha/2)2\ P\ (1-P)/e2$

Where;

n = sample size needed

Z α/2=level of statistical significance at 95% confidence interval (standard value 1.96)

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P= proportion of home delivery from previous study, i.e., 59% (Anyait et al., 2012)
e=maximum acceptable marginal error- 5% (0.05)
Therefore, **n0 1.962 (0.59) (1-0.59)/ (0.05)2**
n0= **372** participants
Using the finite population factor for sample size adjustment by Glenn D. Israel 1994

$$n = \frac{n0 \times N}{n0 + (N-1)}$$

Where: **N** = total number of mothers attending young child clinic in a month =200

$$n = \frac{372 \times 200}{372 + (200-1)}$$

n = 131 participants
A 10 % increase in sample size will be included to give room for attrition. Therefore, the total sample size will be **145** participants.

Sampling techniques
This study used a consecutive non-probability sampling method to obtain the study population because it involves the collection of data from all subjects that are available, as long as they meet the inclusion criteria, which makes the sample a better representation of the entire population.

Eligibility criteria
Inclusion criteria
The study included all postnatal mothers attending the young child clinic at the time of data collection and consented to the study at Orum Health Centre IV, Otuke district.

Exclusion criteria
Mothers whose children were very ill and therefore could not give the required information.
Mothers who declined to give informed written consent to participate in the study.
Mentally incapacitated mothers who couldn't give the required information

Data management
Data collection methods and instruments
All study participants were given a unique participant identification number that was recorded on the questionnaire.
Questionnaires were administered to capture information about the prevalence of home deliveries.

Data entry and cleaning
After data collection, the questionnaires were checked for accuracy and completeness of the information collected. The data were entered, coded, and cleaned using Statistical Package for Social Sciences (SPSS) version 23.0.

Data analysis
Analysis was done using Statistical Package for Social Scientists (SPSS) version 23.0. Univariate analysis was done using descriptive statistics to describe independent variables such as age, education level, marital status, occupation, parity, and address, which were presented as frequencies and percentages. Bivariate analysis was done to find the association between dependent and independent variables using cross tabulation, where categorical data (binary, ordinal, or nominal data) was tested using Chi-Square (X2). Numerical (continuous) variables were analysed to determine the measures of central tendency (mode, mean, range, variance, standard deviation). Results were then represented in text, tables, and graphs.

Measurement of variables
The dependent variable of the study was the place of delivery, while the independent variables were the factors influencing the place of delivery.

Quality control (validity and reliability)
Content validity of the study instruments was ensured by incorporating relevant questions from other previous research studies, which were checked by experts, including my supervisor.
Reliability was ensured by piloting the study instrument on a total of ten participants for one day, so as to enable modification of the tools to be used.

Ethical consideration
Approval
The approval to carry out the study was obtained from Mulago Health Tutors College Research and Ethics Committee. Permission was also sought from the administrators of Orum Health Centre IV, including the person in charge of the young child clinic. A formal letter was issued by the University and presented to the person in charge of Orum Health Centre IV before starting data collection.

Consent
A written informed consent form containing the purpose of the research, benefits, risks, and the rights of the participants was read to all respondents. They were later asked to consent to the study after they had acknowledged that they understood and agreed to participate in the study. Consent was obtained by a written signature or a thumbprint for those who were not able to write.

Privacy protection
Privacy was ensured by interviewing the respondents in a private place that couldn't be accessed by anyone, and all the information and data collected were entered into SPSS and immediately secured with a password.

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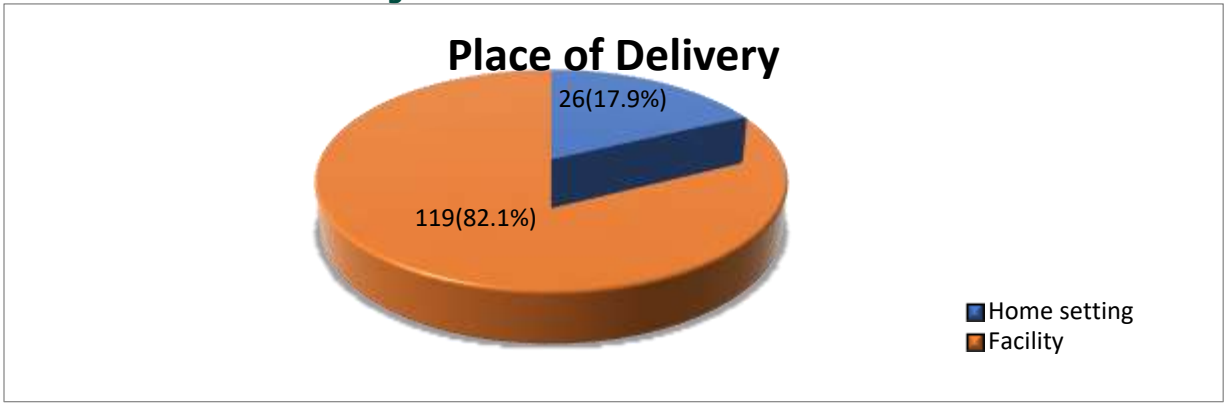
Confidentiality
Data collection was done by the researcher and kept in a place that had restricted access. All information obtained from participants was kept confidential by using initials, not their full names. Only the research team had access to the collected data.

RESULTS

The respondents had a mean age of 26.17 years, with half aged 25-30. Most were married (71.7%), nearly a third had secondary education (35.9%), over a third were Catholic (39.3%), and half were farmers (50.3%). 26(17.9%) of the respondents delivered their most recent child from home.

Prevalence of home deliveries
26(17.9%) of the respondents delivered their most recent child from home.

Figure 1: Prevalence of home deliveries



N= 145 Source: Primary data 2023)

Factors influencing home deliveries
On health facility factors, the majority of the respondents 96(67.6%) were satisfied with the services offered during the previous delivery, less than half 54(37.2%) paid for the delivery care services, the majority 103(71%) of the respondents reported to have been satisfied with the quality of delivery service received and more than half 76(52.4%) reported inadequacy of the equipment at the facility. Majority 90(62.1%) reported inadequacy of health workers at the facility, over two third 94(64.8%) of the respondents were not satisfied with privacy provided, 99(68.3%) respondents agreed that the health facilities provided privacy during delivery and majority of the respondents 103(71%) were attended to by female health workers during their previous pregnancy in the hospital.

Table 1: Health facility factors associated with home deliveries

Variable	Frequency(N)	Percentage (%)
Service satisfaction		
Yes	96	67.6
No	46	32.4
Delivery payment		
Yes	54	37.2
No	91	62.8
Quality satisfaction		
Yes	103	71
No	42	29
Adequacy of equipment		
Yes	69	47.6
No	76	52.4
Adequacy of health workers		
Yes	55	37.9
No	90	62.1
Privacy satisfaction		
Yes	94	64.8

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No	51	35.2
Privacy provision		
Yes	99	68.3
No	46	31.7
Sex of health workers		
Male	42	29
Female	103	71

N= 145 Source: Primary data 2023)

On obstetric factors, majority of them 140(96.6%) reported to have at least attended one ANC, about 3/5 of them 87(60%) attended below four times, more than half of the mothers 75(51.7%) had no close relatives with history of home deliveries, almost all the mothers 136(94.4%) had given birth before with the majority 99(72.3%) having no history of home deliveries. Majority of the respondents 97(78.2%) perceived home deliveries as very risky, more than half 81(58.7%) had no prior complications during child birth, in 83(57.2%) of respondents, both partners were involved in decision making pertaining delivery place, over 101(69.7%) mothers knew about the onset on labour, over a third 50(34.5%) perceived TBA has being relevant and only 10(7.8%) were satisfied with the services offered by TBA.

Table 2: Health facility factors associated with home deliveries

Variable	Frequency(N)	Percentage (%)
ANC attendance		
Yes	140	96.6
No	5	3.4
Frequency of attendance		
Below 4	87	60
4 and above	58	40
Relatives (home delivery)		
Yes	70	48.3
no	75	51.7
Other children		
yes	136	94.4
no	8	5.6
History of home deliveries		
Yes	38	27.7
No	99	72.3
Perception towards		
More convenient	2	1.6
Safe	25	20.2
Risky	97	78.2
Birth complications		
Yes	57	41.3
No	81	58.7
Decision maker		
Both husband and mother	83	57.2
Mother	36	24.8
Others	26	18.0
Labour onset		
Yes	101	69.7
No	44	30.3
TBA relevance		
Yes	50	34.5
No	95	65.5

N= 145 Source: Primary data 2023)

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DISCUSSION

Prevalence of home deliveries

The study findings revealed that 17.9% of mothers delivered in a home setting and 82.1% of mothers delivered in a hospital setting. This finding is fairly low compared to a study conducted in Busia district (Uganda), which indicated that only 41% of all the births occur within health facilities (Anyait et al., 2012) and is still lower than that conducted in rural coastal Kenya, which reported home deliveries of over 26 % (Moindi et al., 2016). This low prevalence could have resulted from the fact that the sample size was small and the samples were taken from a facility setting, not in the community, which may have caused underestimation of the prevalence. It could also be due to the extensively improved measures put in place by the Ministry of Health to reduce home deliveries in the country.

Factors influencing home deliveries

The finding revealed that most mothers who delivered at home were not satisfied with the privacy at the nearest facility. They could be afraid to expose themselves to people who are in the environment. The findings concur with the research conducted in Tanzania, which revealed that the lack of privacy in some of the health facilities was also mentioned as a contributing factor for home delivery (Mrisho et al., 2007). Furthermore, the findings revealed that mothers who were satisfied with the services at the facility were unlikely to deliver from home. This could be a result of poor-quality services offered due to a lack of equipment and the inadequacy of health workers. This agrees with a study conducted in Zambia, which reported that most women tend to deliver at home because of poor quality of services at the clinic due to non-availability of nurses, negative experiences with nurses during ANC visits, or delivery during their previous pregnancies (Sialubanje, Massar, Hamer, & Ruiter, 2015). The study further agrees with the study conducted in Nepal, which indicated that lack of medication and inadequate equipment at the health facility, along with the absence of an operating theatre, X-ray machines, and laboratories for blood testing, were identified as reasons for bypassing nearer birthing centres (Shah et al., 2018).

The finding revealed that mothers who attended ANC had a lower chance of home delivery than their counterparts. Among them, those who attended less than four times were more prone to home delivery than their counterpart. This could be because of the inadequate information they get during ANC visits, as they spend less time, thus having less information about possible complications of home deliveries. The study also revealed that mothers with a history of home deliveries were more prone to it. This could be because most of them perceive home deliveries to be more convenient and safer. A similar finding was reported in a study conducted in coastal Kenya, where mothers with a history of a home delivery were more likely to continue delivering at home (S. K. Chea et al., 2018)

Home deliveries were also found to be less pronounced among mothers who had previously experienced birth complications. This could result from their awareness about the dangers and possible complications of home deliveries. The study agrees with the result of the study by Moindi et al, which revealed that mothers who have previously delivered successfully with no complications tend to deliver at home than the young new mothers (Moindi et al., 2016). The study further revealed that mothers who didn't have the power to decide for their reproductive health preferences were most likely to deliver at home. This study concurs with the one done in rural Bangladesh, where women have hardly any access to decision-making related to care seeking during delivery in the family, thus they end up delivering from home (Sarker et al., 2016). Furthermore, mothers who perceived TBA to be relevant were more likely to deliver from home. Most people considered TBAs as trusted and experienced figures in the community, a faith which usually prompts women to opt for home delivery with the help of a TBA (Sarker et al., 2016).

CONCLUSION

The findings suggest that while the majority of respondents were satisfied with the quality of delivery services and the care provided by female health workers, significant issues remain regarding the availability of equipment, adequate staffing, and privacy during delivery, which need to be addressed to improve overall patient satisfaction. A lower proportion of women attending the young child clinic at Orum health centre IV delivered in a home setting (17.9%), while the majority delivered in a hospital setting.

RECOMMENDATION

The community, with the help of the Village Health Teams, should establish a good and suitable referral system linked to health facilities with reproductive and child health services, such as emergency transport services for emergency obstetric care for mothers who start feeling labour pain at night.

Women should also be educated on danger signs so that they seek medical attention on time. This will bridge the gap in knowledge on safe delivery.

Health education interventions to communities should be designed to focus on advising health facility delivery in order to increase knowledge on safe delivery, as well as positively changing respondents' attitudes towards health facility delivery.

Massive campaigns on the indirect contributing factors, such as teenage pregnancy, rape, and defilement cases, with the aim of preventing unwanted pregnancies.

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LIST OF ABBREVIATIONS

ANC: Antenatal Care
CEMOC: Comprehensive Emergency Obstetric Care
HIV: Human Immunodeficiency Virus
LMICs: Low-Middle-Income Countries
MMR: Maternal Mortality Ratio
SDGs: Sustainable Development Goals
SPSS: Statistical Package for Social Sciences
SSA: Sub-Saharan Africa
TBAs: Traditional Birth Attendants
UDHS: Uganda Demographic Health Survey
YCC: Young Child Clinic

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CONFLICT OF INTEREST

No conflict of interest declared

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