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MIDWIVES' PRACTICES OF UMBILICAL CORD CLAMPING IN THE GREATER KABALE DISTRICT IN UGANDA. A CROSS-SECTIONAL STUDY.

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Abstract

Introduction:

The midwives' practices of umbilical cord clamping continue to be challenging, thus requiring the question of what practices can be implemented and the responsible person for practicing them. The study assessed the practices of umbilical cord clamping among midwives in the Greater Kabale District in Uganda.

Methods:

The study employed a cross-sectional study design with a sample size of 174 midwives practicing at 17 public health facilities in the study area. A self-structured questionnaire with a reliability of coefficient 0.87 was used to gather quantitative data for the study. Data was analyzed with descriptive tools of percentage, frequency, mean, and standard deviation. Ethical approval was obtained from the appropriate research committees.

Results:

The study revealed only 35% of the respondents practiced umbilical cord clamping according to the World Health Organization's (WHO) recommended guidelines. The results further revealed that age, job title, facility type, and years in service were statically significant with p-values of less than 0.05.

Conclusion:

Although the WHO recommended delayed umbilical cord clamping, the practice of this procedure is still very low among midwives in the Greater Kabale District. There is an urgent need to educate and sensitize midwives on the health benefits of delayed clamping practice.

Recommendations:

Regular Continuing Medical Education for the midwives is necessary to equip them with updated information and getting informed which can have a great impact on their practice of umbilical cord clamping according to recommended guidelines. Mentorship and support supervision for the health facilities offering maternal health services should be done and emphasize the benefits of DCC to the newborn.

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1. Background to the study.

The midwives' practices of umbilical cord clamping continue to be challenging, thus re-

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quiring the question of what practices can be implemented and the responsible person for practicing them. Delaying cord clamping for three minutes while the infant is on the mother's belly should not be too challenging during routine deliveries. The complications are more pronounced for infants delivered via cesarean section or those requiring assistance shortly after birth. However these infants might gain the most from delayed cord clamping; thus, the practicability of adopting a "wait a minute" strategy (Askelöf et al., 2017). This study aims to describe the practices of umbilical cord clamping in the greater Kabale district in Uganda.

2. Research Methods.

The methodology described in this paper is similar to that by (Atuheire, Manuel, and Udo-Peretomode, 2023) who described the midwives' acceptance of umbilical cord clamping in the greater Kabale district in Uganda.

2.1. The Study Design.

The study was, cross-sectional descriptive and employed a quantitative approach. This design was selected because it was able to describe phenomena under investigation and thus being suitable for this cross-sectional study.

2.2. Study Area.

The study was carried out in the Greater Kabale district in Uganda. It is situated in South Western Uganda, about 286 kilometers away from the capital city of Kampala in the southwestern part of Uganda. It has over 31 public health facilities, 17 health facilities at level III, 7 health centers IV, and 7 hospitals. All these facilities provide maternal and child health care services under the care of Midwives, doctors, and a few obstetricians. Greater Kabale district comprises three districts that are Rukiga, Kabale, and Rubanda which was formerly called Kabale district. It is bordered by the following districts; Rukungiri and Kanungu in the north and the latter in the northwest, and the neighboring countries Rwanda plus Congo to the east south, and west. It is approximately 143 kilometers by road, southwest of the city of Mbarara, the largest city in Uganda's Western Region. It has having average number of 185 midwives and a relatively high turn up of pregnant women who deliver in the health facilities. Also, some women come from neighboring countries like Rwanda Congo, and Tanzania to seek care and delivery services which makes the facilities busier.

2.3. Sample size determination.

The sample size was determined using the sampling frame technique since there were few midwives in that area. All the 174 midwives were purposively selected to take part in the study.

2.4. Sampling procedures and techniques.

2.4.1. Sampling.

A total of 174 midwives were purposively selected to participate in this study. Purposive sampling was employed to select the required number of health facilities. To obtain the actual sample size, all public health centers III, IV, and hospitals were selected. Purposive sampling was used to select the respondents since the health workers work in shifts and one can hardly find all of them at the facility at the same time. This total number of respondents helped us answer the question for the three study objectives.

2.5. Inclusion criteria.

Midwives working in the selected health facilities for this study, who had consented to participate are available and accessible during the data collection period.

2.6. Exclusion criteria.

Midwives not clinically stable at the time of data collection were excluded. Also, those working in private health facilities were excluded because their practices may not be the same since they are always under supervision. Midwives who were absent time of data collection and those not working in the labour ward.

2.7. Data collection tools:

After a thorough review of the literature, a self-structured questionnaire with two parts was created and utilized to gather information to answer research questions.

2.8. Data collection procedure.

Permission from the review board and then from the Director of Hospitals and district health officers' permission will be sought. In turn, the researcher will explain the study to the head of obstetrics, area managers, and the In-charges of the health facilities. These will later introduce the research to the respondents. The researcher will explain to the respondent about the study and a self -self-administered questionnaire and acceptability tool was administered to 174 midwives purposive selected health facilities and hospitals from April 20th to May 10th, 2023 by the researcher and the 6 trained research assistants. Questionnaires were retrieved on the spot after adequately filled.

2.9. Data Management and Analysis.

Data was treated with the utmost security; Questionnaires were kept under lock and key and only accessed by the researcher. For confidentiality purposes, no respondents' names were used. An Excel spreadsheet was used to enter data for cleaning the SPSS version 25. Descriptive statistics such as the mean was used and the chi-square test was used to see if the results in the literature were in line with the findings of this study (Das et al., 2021).

2.10. Quality Control.

2.10.1. Validity, reliability, and generalizability

The developed tool was reviewed by the supervisor, who evaluated it and confirmed that the items were pertinent to the research field. This will help establish and achieve the instrument's face and content validity of the tools. To ensure clarity, appropriateness, and that the instrument included all pertinent components of the study objectives, expert reviews by one senior midwife, one obstetrician, and one pediatrician were considered. A qualified statistician will be hired to clarify the questionnaire to determine its suitability for evaluating the hypotheses that have been developed. For generalizability, Cronbach's alpha was calculated and ensure the internal consistency of the questions. The target of above 0.7 since it is the average score and the sample size is large 174 respondents (Bujang et al., 2018). These values are already above the average and therefore the tool is considered varied (Weiner et al., 2017).

2.11. Ethical Considerations.

For ethical approval, the Institutional Review Boards (IRB) of the ACE-PUTOR was consulted. After receiving the cover letter, the researcher then submitted it to the Mbarara University of Science and Technology IRB, which then permitted data collection. The required application forms and copies of the research protocol are attached.

Autonomy: Before distributing the questionnaire, informed consent was requested from respondents verbally and in writing. There was no force, manipulation, or improper incentive; participation was entirely voluntary. The right to voluntarily withdraw from the study at any time was properly disclosed to the respondents.

Confidentiality: All information acquired from the responses was treated with the highest confidentiality. To prevent any information provided from being linked to any particular respondent, respondents will be asked not to provide their names or phone numbers on the response form.

Beneficence: There is no direct benefit to the person; nonetheless, it is hoped that the information about umbilical cord clamping that the research has revealed may help healthcare professionals change their practice. Non-maleficence: During the duration of the study, the respondents won't be subjected to any known harm.

Bias:

Response Bias: This was managed by keeping the question open with many options to choose from and the tool for data collection was kept short.

Respondent bias: A thorough explanation of the study and reasons for participating in the

study was done.

3. Results and discussion.

Table 1 shows the demographic distribution of the study respondents; it revealed that for the age distribution 14.4% are aged 25-30years, 45.4% are aged 31-40 years, 29.95 are aged 41-50 years, and 10.3% are aged 51-60 years. This implies that age interval that constitute the highest percentage among the respondents is 31- 40 years accounting for 45.4% of the total respondents. Furthermore; based on job title/description; 44.3% are enrolled midwives, 31.6% are registered midwives, and 24.1% are nursing officers. This implies that enrolled midwives constitute the highest percentage among the respondents accounting for 44.3% of the respondents.

Additionally, based on the type of health facility distribution, 40.2% of the respondents work at health centre III, 29.9% works at health centre IV, and 29.9% works at hospitals. This implies that the facility with the highest percentage of respondents is the health centre III. The midwives gender distribution was also analyzed and as shown in the table; 0.5% are male while 99.4% are females. Furthermore, number of years in service distribution shows that 14.9% have spent less than 4 years in service, 20.1% have spent between 5-10 years, 32.8% have spent 11-15 years, and 32.1% have spent over 16 years in service. This implies that majority of the respondents (32.8%) have only spent 5-10 years as a midwife.

Research Question : To what extent are the midwives' delayed umbilical cord clamping practices in the Greater Kabale District in Uganda?

Table 2 show a tabular presentation of the mean and standard deviation of the respondents' responses on the midwives' practices of delayed umbilical cord clamping in the Greater Kabale District in Uganda; it shows that items 1, 2, 3, 4, 5 and 6 have mean values of 3.0, 2.3, 2.1, 2.2, 1.9 and 2.7 respectively. In accordance with the already established criterion mean of 2.5, items 1 and 6 mean values are above the criterion mean hence the statements were accepted. This implies that midwives in Greater Kabale District of Uganda affirmed that the umbilical cord clamping guidelines that is available in their facility is the current one; and that clamping of cord was by use forceps.

From the analysis of the six items that determined the level of midwives' practice of delayed umbilical cord clamping in Greater Kabale District of Uganda; Table 3 reveals that 65% of the midwives showed low level of practice of the procedure while 35 % showed high level of practice. This implies that only few (35 %) of the sampled respondents actually practices DCC to some high extent.

H_0 2: There is no significant difference in the practice of delayed umbilical cord clamping among midwives in the Greater Kabale District in Uganda.

Table 4 shows the result of the hypothesis testing of the difference in the responses of the respondents in relation to the practice of delayed umbilical cord clamping among midwives in the GreaterKabale District in Uganda at a 0.05 significance level. The table shows that there is a significant difference in the responses based on age (0.003), job title (0.000), facility type (0.000), and years in service (0.000) as their respective p-values are less than 0.05. However, there is no significant difference in their practice of the procedure based on gender as the p-value (0.370) is greater than 0.05.

4. Discussion of Findings.

In general, the study showed low practice of umbilical cord clamping among midwives, and some bio-demographic data were statistically significant, which means they can have an impact on midwives' practices of umbilical cord clamping. According to the findings. According to a study by Chowdhury et al., (2022), health professionals at levels II and III were better equipped to implement DCC than those at levels IV and hospitals. In comparison to high-level facilities, which primarily handle complex cases, this is more likely to occur because at this level these facilities only receive and deliver uncomplicated cases.

Table 1: **Bio-Demographic data of respondents**

			Frequency	Percentage
Age		25 - 30 years	25	14.4
		31 – 40 years	79	45.4
		41 – 50 years	52	29.9
		51 – 60 years	18	10.3
Total			**174**	**100**
Job Title		Enrolled midwife	77	44.3
		Registered Nursing Officer	55	31.6
			42	24.1
Total			**174**	**100**
Facility Type		Health Centre III	70	40.2
		Health Centre II	52	29.9
		Hospital	52	29.9
Total			**174**	**100**
Years in Service		< 4	26	14.9
		5-10	35	20.1
		11-15	57	32.8
		>16	56	32.1
Total			**174**	**100**
Gender	Male		01	0.6
	Female		173	99.4
Total			**174**	**100**

Table 2: **Mean of respondents' responses on the practices of delayed umbilical cord clamping among midwives in the Greater K abale District in Uganda**

Item	Mean	Standard Deviation	Remark
The umbilical cord clamping guidelines that is available in my facility is the current one.	3.0	0.84	Accept
The available guidelines are there as per Ministry of Health Uganda, with emphasising minute delayed umbilical cord clamping.	2.3	0.93	Reject
The umbilical cord clamping guidelines are displayed in the labor ward.	2.1	1.40	Reject
I understand the current umbilical cord clamping guidelines.	2.2	0.38	Reject
I always follow the guidelines when clamping umbilical cord.	1.9	0.61	Reject
I use forceps to clamp the umbilical cord	2.7	0.75	Accept

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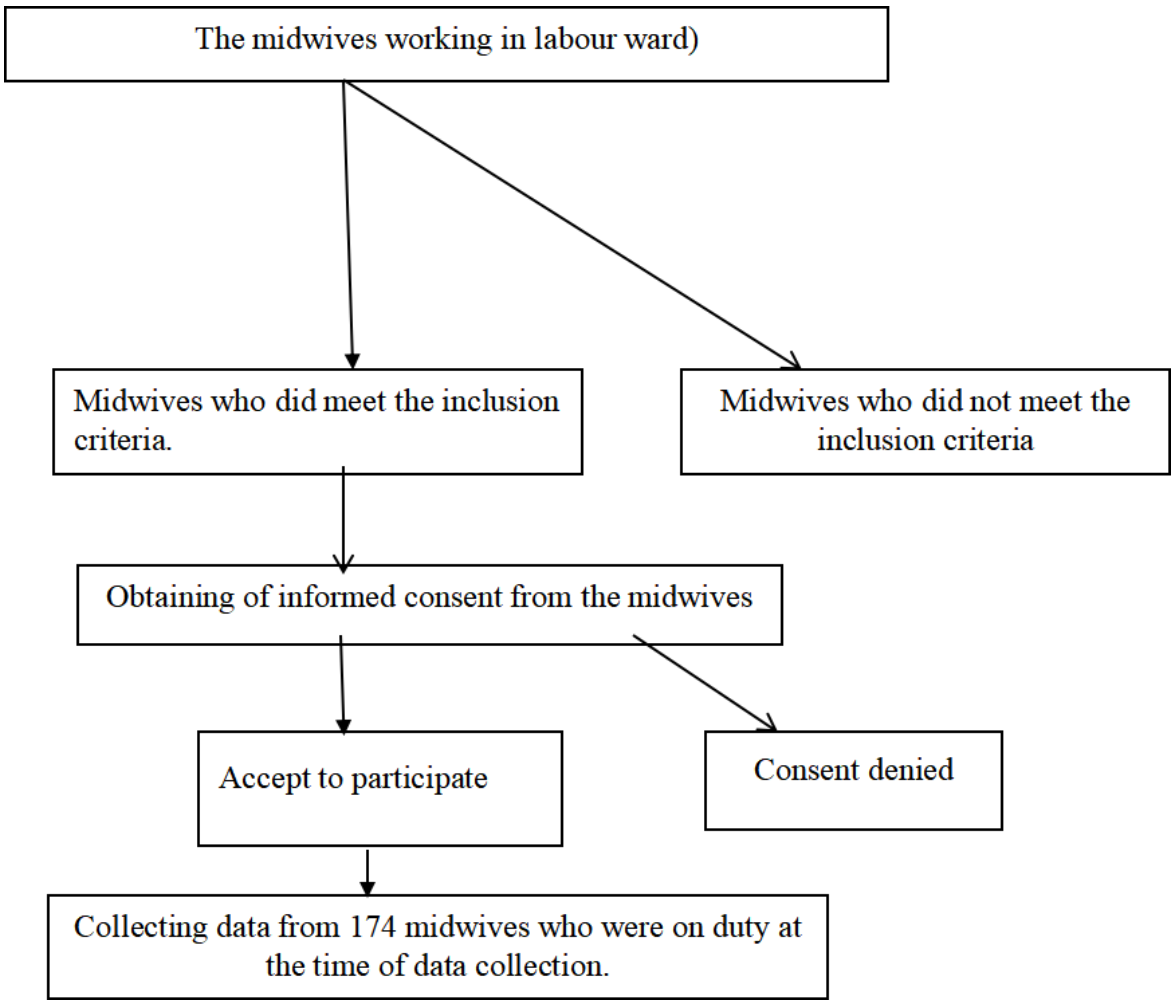

Figure 1: **Flow chart showing how data was collected from the midwives.**

Table 3: **Midwives' practices of delayed umbilical cord clamping in the Greater Kabale District in Uganda**

Practice	**Practice score range**	**Frequency**	**Percentage**
Low practice	0-18	113	65
High practice	18-24	61	35
Overall	**0-24**	**174**	**100**

Mean=16.7±6.2; median 16.5.

This study found low practice (35%) of umbilical cord clamping among the midwives in the Greater Kabale district. An interventional research study conducted in two Indian states in 2022 revealed that, in the pre-assessment, 41% of the respondents practiced DCC. The planned interventions of regular training, monitoring, and funding of the healthcare workers for nine months were implemented, and a change in practice was noted following these interventions. 74% practice of delayed umbilical cord clamping was noted after implementing the interventions (Chowdhury et al., 2022).

A study conducted by Ibrahim et al. (2017) in Saudi Arabia revealed that the practice of delayed cord clamping was low. Only 42% of the respondents affirmed the presence of UCC guidelines in their facility, and 32% confirmed a specific time set for UCC at their facility. However, the level of practice needed to be quantified, so it was dif-

Table 4: **Difference in the practices of delayed umbilical cord clamping among midwives in the Greater Kabale District in Uganda**

Item	n	Mean Score	p-value
Age			
25 - 30 years	25	13.2±0.3	
31 – 40 years	79	18.0±1.2	0.003*
41 – 50 years	52	14.6±2.8	
51 – 60 years	18	16.1±1.6	
Job Title			
Enrolled midwife	77	15.6±1.2	0.000*
Registered	55	22.9±0.7	
Nursing Officer	42	10.2±1.4	
Facility Type			
Health Centre III	70	11.1 ±0.2	0.000*
Health Centre II	52	21.6±0.3	
Hospital	52	14.0± 1.1	
Years in Service			
< 1	26	9.2±1.5	
1-3	35	11.9 ±0.5	0.000*
4-5	57	13.1 ±0.9	
>5	56	23.1±2.7	
Gender			
Male	25	16.8±0.4	0.370
Female	149	16.4±0.8	

ficult to determine how low the common practice of umbilical cord clamping was among the study respondents.

Results of an online cross-sectional survey conducted by Leslie et al. (2018) among obstetricians and gynecologists found that DCC was practiced by the majority (67%), and they did it for all normal-term babies, with over 70% practicing early clamping for near and preterm babies. The level of practice was high, which can be due to differences in the cadre since this study only considered obstetricians as gynecologists. Also, being an online study, it may give an incomplete picture of what is being done.

Mwamba (2022), in the study conducted in 2022 among midwives, found that only 40% of the respondents practiced DCC for normal babies. Furthermore, the results show that 51 % could not practice DCC due to a lack of guidelines in their facilities. The results further informed that the delivery's lack of time and resuscitation equipment prompted them to practice early cord clamping.

5. Conclusion.

1. There is a low level of practice of delayed umbilical cord clamping among midwives in the Greater Kabale District of Uganda.
2. The age of the respondent, title, and health facility type were significant to the midwives' acceptance of umbilical cord clamping.

6. Recommendations.

1. The government should ensure that all the midwives are updated in case there are new changes in the guidelines before they can instruct them to start implementation.
2. Regular mentorships and support supervision for the health facilities offering maternal

health services should be done and emphasize the benefits of DCC to the newborn.

7. Acknowledgement.

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8. List of abbreviations.

ICC: Immediate Cord Clamping
DCC: Delayed Cord Clamping
WHO : World Health Organization
UCC: Umbilical cord Clamping

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10. Conflict of interest.

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