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Original article

A DESCRIPTIVE STUDY ON THE MIDWIVES' ACCEPTANCE OF UMBILICAL CORD CLAMPING IN THE GREATER KABALE DISTRICT IN UGANDA.

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Abstract

Introduction:

Timely and appropriate umbilical cord clamping was found to be key in reducing neonatal death. Despite current guidelines recommending when to clamp the umbilical cord, some midwives in the Greater Kabale District continued to use immediate cord clamping.

Aim:

The study assessed the acceptance 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 coefficient of 0.87 was used to gather quantitative data for the study. Data were analyzed with descriptive tools of percentage, frequency, mean, and standard deviation. Ethical approval was obtained from the university research ethics committee.

Results:

The study revealed a 41% acceptance rate among the respondents. Respondents' age, years of practice, and health facility were statistically significant to midwives 'acceptance of umbilical cord clamping.

Conclusion:

Although the WHO recommended delayed umbilical cord clamping, the acceptance of this procedure is still very low among midwives in Greater Kabale District. Therefore, there is an urgent need to educate and sensitize midwives on the health benefits of delayed clamping to be able to improve their acceptance.

Recommendations:

Regular Continuing Medical Education for the midwives is necessary to keep them to equip them with updated information and getting informed which can have a great impact on the acceptance. Mentorships and support supervision for the health facilities offering maternal health services should be done and emphasize the benefits of DCC to the newborn.

Keywords: Midwives, Acceptance of Umbilical Cord, Clamping, Submitted: 2023-06-05 Accepted: 2023-06-06

1. Background to the study:

Clamping the umbilical cord is an essential skill that midwives commonly perform on all infants after delivery. This skill is vital for the survival of the newborn. It is a blood vessel-filled tube-like structure that facilitates the exchange of substances between the fetus and the placenta.

Umbilical Cord Camping (UCC) is a routine practice of using a clamp bound onto the baby's umbilical cord 2-5 cm from the abdomen to separate the infant from the placenta (Ministry of Health, 2022).

The World Health Organization (WHO) developed recommendations for when to cut the umbilical cord and distributed them to all countries to enhance baby outcomes and lower infant mortality rates, particularly in developing nations.

The guideline recommends clamping of the cord should be done within 1-3 minutes of birth or waiting for 5 minutes until there is no more pulse in the umbilical cord (Ibrahim et al., 2017). The guidelines further indicate that immediately after the baby needs immediate resuscitation, the cord can be clamped in less than the 60s and resuscitate the baby (Leslie et al., 2018).

According to studies, the clamping of the cord can be delayed for 60 to 180 seconds after birth, or until the line stops pulsating to allow the best possible blood transfusion for the infant from the placenta ((Fogarty et al., 2018; Sellers, 2018; Ciubotariu et al.,2018). Throughout the first 60 seconds, most placental transfusion occurs and is more after 180 seconds before clamping of the cord, and is less when attaching within 15 to 30 seconds after birth (Ciubotariu et al., 2018). In a situation necessitating immediate newborn care like in asphyxia, the WHO recommends the cord be clamped and cut to separate the baby and transfer to the prepared area to initiate resuscitation. This allows for the baby's position adjustment and easy re-assessment during resuscitation. Both term and preterm babies should wait at least one minute after delivery before the cord is clamped (Bianchi et al., 2021).

Qian et al., 2019 & Marzec et al., 2020, also confirmed that when delaying clamping the cord was able to reduce the risk of blood cell transfusions compared to ICC. Babies, especially the preterm, have comparable hematological advantages and hemodynamic stability from the delayed clamping, which is risk-free. Nevertheless, ICC is still a common practice in many nations, despite the overwhelming evidence in favor of delayed clamping of the cord, and only a small number of organizations have enacted policies concerning it (Zhu et al., 2020).

The application of delayed cord clamping (DCC) during childbirth is made possible in large part by midwives. Research on midwives' acceptance of and use of umbilical cord clamping (UCC) and its function in supporting DCC is, however, scarce. According to a study by Marzec et al., 2020), midwives were more likely to accept to practice DCC after receiving training on its advantages. The study also discovered that midwives who had attended fewer deliveries were more likely to postpone cord clamping than midwives who had seen more births. Midwives expressed worries about potential dangers related to delayed cord clamping in research by (Erlandsson et al., 2020) and a lack of information and direction on when the cord can be clamped.

According to a systematic study by Fogarty et al. (2018), while midwives generally accepted to implementation of DCC, it was greatly varied between contexts and was impacted by things like personal beliefs, clinical recommendations, and training.

To date, a study conducted in Uganda about cord clamping methods among health workers highlighted the newborn benefits of clamping the cord after the initiation of normal respiration and sustainable cardiac activity (Roed et al., 2021). The midwives' acceptance of cord clamping with even these known benefits and timing was not well explained, and still, limited studies about the same were found. Most studies conducted have looked at the practice and knowledge but still were not exhaustive. In the study area, there is

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no data regarding midwives' acceptance of umbilical clamping. Thus, the need for conducting this study to assess the midwives' acceptance of umbilical cord clamping in the Greater Kabale district in Uganda.

2. Research Methods:

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 both Midwives, doctors, and a few obstetricians. Greater Kabale district comprises three districts that are Rukiga, Kabale, and Rubanda which was formally called Kabale district. It is boarded by the following district; Rukungiri and Kanungu in the north and the latter in the northwest, and the neighboring countries Rwanda and Congo to the east and 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 is having an average number of 174 midwives and a relatively high turnup 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. There are many health partners in the area supporting health centers in rewarding their practices like the Results Based Financing project (RBF) which has improved onpatient care. Therefore, the midwives in this area must help the newborn benefit from the essential new newborn services. Despite the number of equipped health facilities and all the government interventions, there is still a relative number of infant mortalities 41.6 per 1,000 live back according to Uganda Demographic Health Survey (UDHS), 2016). Thus, the need to conduct the study in this area.

2.3. Sampling techniques:

2.3.1. Sample size determination:

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

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 facilities at levels 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. Study population:

2.5.1. Inclusion criteria:

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

2.5.2. Exclusion criteria:

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

2.6. Data collection tools:

After a thorough review of the literature, a self-structured questionnaire with two parts was created and utilized to gather information about this study. To examine for acceptance, quantifying question items were developed using the Acceptability of Intervention Measure tool to get meaningful data to aid a deeper understanding of midwives' acceptance of umbilical cord clamping as per the guidelines. The items about questions were grouped and organized to suit the Likert scale for easy analysis. The statements were about the existence of the WHO protocol on delayed cord clamping.

The Acceptability of Intervention Measure (AIM) tool was created by Weiner and his colleagues in 2021, a psychometric assessment of this tool was done to measure implementation outcomes, and its validity was also examined and documented. It was found valid with Cronbach's alfa of 0.87-0.9 and discovered to be useful in evaluating the acceptance of intervention (Weiner et al., 2021).

The author's permission was permitted. The author requested and received permission to allow the use of the tool. The tool had five questions that are graded on a Likert-type scale from 1 to 4: (1) strongly disagree (2) disagree, (3) agree (4) strongly agree. Comparing the numerical rating with the different levels of approval. The respondents checked in the box next to the number that most accurately describes their acceptance of the umbilical cord clamping practices.

2.7. Data collection procedure:

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

2.8. Data Management and Analysis:

Data were 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 are in line with what the finding of this study will be (Das et al., 2021).

2.9. Quality Control:

2.9.1. 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 helped to establish and achieve the instrument's face and content validity. 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 was hired to clarify the questionnaire to determine its suitability for evaluating the hypotheses that have been developed. For generalizability, to ensure the internal consistency of the questions, a Cronbach's alpha of 0.8 was used. According to a psychometric study that was done to assess the implementation outcomes of the Intervention Measure (AIM), the tool was tested and had a Cronbach's alpha of between 0.8-0.9 of the items developed about assessing for the acceptance. These values are already above the average and therefore the tool is considered varied (Weiner et al., 2017).

2.10. Ethical Considerations:

Ethical approval was sought from the responsible committee and DHOs. 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.

2.11. 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.

2.12. 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.

2.13. Non-maleficence:

During the duration of the study, the respondents won't be subjected to any known harm.

2.14. Dissemination of results:

The study results were compiled into a dissertation and defended publicly. Second, the results of this study will be shared among the facilities that participated in the study. Copies of the dissertation report were presented to the Department of Nursing, ACEPUTOR in the library, and DHO's office in the greater Kabale district. In addition, results will be presented to a wider audience such as at research dissemination conferences, and will be published in an appropriate journal.

2.15. Bias:

2.15.1. 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.

2.15.2. Respondent bias:

thorough explanation of the study and reasons for participating in the study was done.

3. Results And Discussion:

The results of the analysis of the data collected will be presented in this chapter. The study assessed the Midwives' acceptance and practice of umbilical cording clamping in the greater Kabale district in Uganda. The study data was collected from one hundred and seventy-four (174) midwives in the study setting and all the data collected were found suitable for analysis. The results were presented as per the research questions and discussed according to the hypotheses.

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 the age interval that constitutes 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 center III, 29.9% work at health center IV, and 29.9% work at hospitals. This implies that the facility with the highest percentage of respondents is the health center 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 the majority of the respondents (32.8%) have only spent 5-10 years as a midwife.

3.1. Research Question One: To what extent is the midwives' acceptance of delayed umbilical cord clamping in the Greater Kabale District in Uganda?

Table 2 is a tabular presentation of the respondents' response on the acceptance of delayed um-

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	55	31.6
	Nursing Officer	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 acceptance of delayed umbilical cord clamping in the Greater Kabale District in Uganda.

Item	**Mean**	**Standard deviation**	**Remark**
The delayed umbilical cord clamping recommendations meets my approval.	2.3	0.87	Reject
Clamping the umbilical cord as per the DCC guidelines is appealing to me.	2.4	0..91	Reject
I like clamping of the umbilical cord as per the DCC standard recommendation.	2.4	1.86	Reject
I welcome DCC guidelines and I implement it.	2.4	1.09	Reject

bilical cord clamping in the Greater Kabale District in Uganda presented using the mean and the standard deviation; it shows that items 1, 2, 3, and 4 have mean values of 2.3, 2.4, 2.4, and 2.4 respectively. The response rate was 100 %. All the midwives who were not well at the time of data collection were to be excluded. Also, those who were working in private health facilities were excluded and were not counted in the 174. This was because their exposure may be different since their supervisors visit them regularly. Following the already established criterion mean of 2.5, all the items' mean values are below the criterion mean hence the statements were rejected. This implies that midwives in the Greater Kabale District of Uganda rejected the statements that the delayed umbilical cord clamping recommendations meets their approval; clamping the umbilical cord as per the DCC guidelines is appealing to them; they like clamping the umbilical cord as per the DCC standard recommendation; and that they welcome the DCC guidelines and implement it.

Mean=10.2±6.2; median=10.

From the analysis of the four items that determined the level of midwives' acceptance of delayed umbilical cord clamping in the Greater Kabale District of Uganda; Table 3 reveals that 59 % of the midwives showed a low level of acceptance of the procedure while 41% showed a high level of acceptance. This implies that the acceptance rate of delayed umbilical cord clamping is very low. The analysis also showed a mean value of 10.2±6.2 and a median of 10 for the level of acceptance.

3.2. Hypotheses:

3.2.1. Ho 1:

There is no significant difference in the acceptance of delayed umbilical cord clamping among the 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 about the midwives' acceptance of delayed umbilical cord clamping in the GreaterKabale District in Uganda was at a 0.05 significance level. The table shows that there is a significant difference in the responses based on age (0.001), job title (0.000), facility type (0.000), and years in service (0.000) as their respective p-values are below 0.05. However, there is no significant difference in their acceptance level based on gender as the p-value is greater than 0.05.

4. Discussion of Findings:

In general, the study showed low acceptance of umbilical cord clamping among midwives, and some bio-demographic data were statistically significant, which meant that they can have an impact on midwives' acceptance of umbilical cord clamping. According to the findings above, there were substantial differences in the midwives' acceptance of delayed umbilical cord clamping depending on their years of experience, work title, and facility level. According to a study done by Rousseal et al., (2022) employees who had been employed for more than ten years were eager to adopt DCC. This is feasible because they are anticipated to have received sufficient instruction and are capable of carrying it out based on their comprehension of the advantages of DCC to a newborn.

4.1. Objective One: examine the acceptance of delayed umbilical cord clamping among midwives in the Greater Kabale District in Uganda.

As revealed, the midwives' acceptance of delayed umbilical cord clamping was low at 41%. This is supported by the result of the study conducted by Rana et al., (2019), which found that staff were willing to implement delayed umbilical cord clamping. However, their willingness to implement DCC was enhanced by multiple factors, such as experience and awareness of the guidelines, to name a few.

According to Chowdhury et al. (2022), their findings revealed the willingness to implement DCC was high and was influenced by the baby's condition, the type of delivery, and the time of the delivery. However, the present study did consider the factors influencing health worker acceptance,

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

Acceptance	Acceptance score range	Frequency	Percentage
Low acceptance	0-12	103	59
High acceptance	13-16	71	41
Overall	**0-16**	**174**	**100**

Table 4: Difference in the midwives' acceptance of delayed umbilical cord clamping the in the Greater Kabale District in Uganda.

	n	Mean Score	p-value
Age			
25 - 30 years	25	8.2±2.6	
31 – 40 years	79	13.2±0.7	0.001*
41 – 50 years	52	9.8± 2.8	
51 – 60 years	18	9.1±1.3	
Job Title			
Enrolled midwife	77	8.6± 1.2	0.000*
Registered	55	14.6±0.9	
Nursing Officer	42	8.2± 1.9	
Facility Type			
Health Centre III	70	10.1±0.5	0.000*
Health Centre IV	52	10.6±0.7	
Hospital	52	13.7±1.5	
Years in Service			
< 4	26	9.2±1.5	
5-10	35	9.9± 0.5	0.000*
11-15	57	13.1±0.9	
>16	56	10.1±2.7	
Gender			
Male	1	10.6±0.7	0.130
Female	173	9.8±1.5	

and it may be hard to know how willing they were to implement DCC since the two previously discussed studies did not quantify their results. Additionally, it reported a significant difference in the respondents' attitude towards UCC based on gender and years of practice while profession and nationality showed a significant difference in the practice of UCC. The study concluded that the respondents' attitude towards UCC is positive in the study setting but the practice is still very low. Although, the study had measured the variables with the right tools; the method of data analyses and result reporting were not adequate.

The findings of another study done by Rana et al. (2019), revealed that DCC was a simple procedure the staff's willingness to implement it depended on their trust in the facility's leadership. The study concluded that facility factors and individual factors affect the willingness of staff to implement DCC, and government intervention alone is vital in influencing the staff to implement according to standards (Rana et al., 2019).

5. Conclusion:

The study results show that Midwives' acceptance of delayed umbilical cord clamping is still

low in the greater Kabale District of Uganda.

The age of the respondent, title, and health facility type was significant to the midwives' acceptance of umbilical cord clamping.

6. Recommendations:

The government should ensure that all the midwives are updated in case they are new changes in the guideline before they can instruct them to start implementation.

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.

Continuing medical education for staff should also be emphasized to equip them with updated information.

More studies can be done to determine the acceptance of midwives in a large population and inform whether it is the major cause for them not to implement the DCC.

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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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