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Original Article

FACTORS DETERMINING IMPLEMENTATION OF MANUAL VACUUM ASPIRATION SERVICES AMONG HEALTH CARE WORKERS IN KAKUMIRO HEALTH CENTRE IV KAKUMIRO DISTRICT. A CROSS-SECTIONAL STUDY.

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ABSTRACT

Background

In Uganda, out of 314,300 abortions that occur approximately 93,300 women are treated for complications of unsafe abortion mainly by using manual vacuum aspiration (MVA). However, poor and rural women whose access is constrained by infrastructural and financial limitations cannot receive safe post-abortal MVA services. The main aim of the study was to establish factors determining the implementation of manual vacuum aspiration services among healthcare workers in Kakumiro Health Centre IV Kakumiro District

Methods

This was cross-sectional descriptive that employed both qualitative and quantitative data collection methods. Using a purposive sampling method, 32 respondents were selected and a structured questionnaire was used to collect data. The collected data was analyzed and presented into tables, graphs, and tables using Microsoft Excel.

Results

The study showed that midwife factors were 22(68.7%) had received training about performing MVA, 19(59.4%) had experience of 1 – 5 years in performing MVA, 17(53.1%) never had confidence in MVA and 26(81.2%) were not willing to perform MVA. Health facility factors revealed that 23(71.9%) reported the availability of MVA equipment sometimes, 23(76.7%) reported the presence of faulty MVA equipment, 21(65.6%) reported the absence of strong opioid drugs and 24(75%) reported presences of inadequate staff for performing MVA.

Conclusion

Both individual and health facility-related factors hindered utilization of MVA.

Recommendation

Strategies are needed to enhance the utilization of MVA like offering training, constant supply, and recruitment of more midwives to offer MVA.

Keywords: *Manual Vacuum Aspiration, Health Care Workers, Kakumiro Health Centre Iv.*
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Background

Manual Vacuum Aspiration (MVA) is a procedure that uses a vacuum source to remove retained products of conception from the uterus through the cervix for incomplete abortion during the provision of PAC services, (WHO 2015). According to reproductive health guidelines, MVA can be performed by; medical officers, Clinical officers and Nurses and Midwives (Klingberg-Allvin 2015), because unsafe abortions will continue to occur yet quality post-abortion care (PAC) in which MVA is a component remains essential to reduce morbidity and mortality (Kok and Odland 2016). The procedure is recommended for the treatment of miscarriage during the first trimester because of its safety, efficacy, and lower risks of causing endometrial damage such as Asherman's syndrome, (Kakinuma et al, 2020). MVA has an effectiveness and safety of 98% when performed by a trained doctor, nurse, or midwife under strict aseptic conditions which minimizes the risks of infections and hemorrhage, (MacCormac et al, 2018). Globally, about 4.7 – 13.2% of maternal deaths result from 45% of the 73 million unsafe abortions which could be prevented by timely access and use of MVA, (WHO, 2021). The use of MVA has been approved as the best choice for removing products of conception in most low-resource setting countries where there is no access to skilled gynecologists since the procedure can be performed by midwives and nurses with physician backup if needed, (Suphanchaimat et al, 2013). Further still, abortion is the fourth leading cause of these maternal deaths (Baig, & Mubeen, 2018). When abortion treatment is performed using recommended methods such as manual vacuum aspiration (MVA) women are freed from mortalities and morbidities since it is an extremely safe procedure. (Castleman and Kapp 2020).

In England and Wales, nearly 40% of abortions are performed using MVA due to the presence of adequate service providers and supportive policies (Sally & Joanne, 2017). As a result only 30 women for every 100,000 unsafe about die which is not the case in the rest of the world (Ganatra et al, 2017).

In Africa nearly half of all abortions occur under the least

safe circumstances leading to a variety of complications, (Ganatra et al, 2017). The utilization of MVA is very low in the region for example in Nigeria only 19.7% of women who are indicated to have MVA services receive it, (Anozie et al, 2019). In other countries like Malawi, health workers possess knowledge and skills of doing MVA but the population is unaware of its availability, (Orland et al, 2019). This therefore leads to abortion contributes to around 18% of Malawi's maternal mortality with limited use of MVA, (Benson et al. 2015)

In East Africa, the non-legalization of abortions leads to 2.4 million women not seeking MVA services even those with uninduced abortions as they fear social consequences, (Rasch, Sorensen, Wang, Tibazarwa & Jager, 2014). Furthermore, Women in need of abortion services in Kenya often resort to unsafe procedures leading to complications that require urgent medical intervention such as the use of MVA, (Susheela, 2017).

In Uganda, it is estimated that in 2013, 314300 abortions occurred and 93,300 women were treated for complications of unsafe abortion mainly by using MVA, (Guttmacher Institute, 2017). Most remote areas in Uganda lack access to skilled health providers and adequately equipped facilities to offer MVA services, (Nteziyaremye, 2020). Ugandan midwives have been trained on MVA in the management of incomplete abortion mothers but a lack of confidence hinders them from using the method, (Bacon, Ellis, Rostoker & Olaro,2014). The study aims to assess factors determining the implementation of manual vacuum aspiration services among health care workers in Kakumiro Health Centre IV Kakumiro District.

Specific Objectives

- ✓ To establish health worker-related factors determining the implementation of manual vacuum aspiration services among health care workers in Kakumiro Health Centre IV Kakumiro District.
- ✓ To identify health facility-related factors determining the implementation of manual vacuum aspiration services among health care workers in Kakumiro Health Centre IV Kakumiro District.

METHODOLOGY

Study Design and rationale

The study used a descriptive cross-sectional study that employed quantitative and qualitative methods of data collection. It was a cross-sectional study because data collection and management were within a short period.

Study setting and rationale

The study was conducted at Kakumiro HCIV Bwanswa Sub-county in Kakumiro District. It is located 32 kilometers from Mubende District. Kakumiro is found off Mubende Kagadi Road neighbored by Mubende, and kibale districts which are all located in the west of Uganda. It offers services such as immunizations, post-abortion care, reproductive health services, and deliveries among others. The facility was chosen due to a high number of unsafe abortion-related complications registered at the health facility which require health worker's implementation of MVA.

Study population

The study consisted of Health care workers (HCW) offering MVA service, including midwives, doctors, nurses, and clinical officers at Kakumiro HCIV Kakumiro District at the time of the research

Sample size determination.

The sample size was 32 HCWs offering MVA service. It is within range of the number recommended by UNMEB.

Sampling procedure

Convenience sampling methods were applied in this research to obtain the required number of respondents. The researcher offered the opportunity to any healthcare worker who performed MVA services and was willing to participate in the study. This was continued until a total of 32 respondents was achieved.

Inclusion Criteria

All healthcare workers offering MVA services and can consent to all the studies were considered for the study and had to voluntarily consent to the study

Dependent Variable

Implementation of MVA services.

Independent Variables

The independent variables were; health worker-related factors and health facility-related factors.

Research Instruments

Questionnaires comprised of both structured and unstructured questions were used This was divided into three sections i.e. demographic characteristics, health worker-related factors and health facility-related factors. The tool was pretested among 4 health workers at Kambugu Health Centre III and necessary adjustments were made.

Data collection Procedure

An introductory letter from the school administration was obtained and presented to the Kakumiro Health Center IV administration for permission to conduct this study. Following acceptance of the study at the health center, voluntary consent was sought after explaining the purpose and objectives of the study to the respondents. Questionnaires were issued to midwives to fill on their own and assistance was offered on the questions that were not understood. Data was collected for four days with eight respondents involved on each data collection day.

Data Management

Data from each questionnaire were cross-checked for completeness and accuracy before being entered into the computer using Excel for final analysis and missing gaps were corrected immediately.

Data Analysis
Data was analyzed using Microsoft Excel 2019 and results were presented in the form of frequency tables, figures, and narratives using frequency and percentages.

Ethical considerations
Following Approval by the supervisor, the researcher obtained written approval from Lubaga Hospital Training School to conduct the research. Permission was obtained from the health Centre IV in charge and written informed consent was obtained from all respondents before filling the questionnaire. Anonymity, confidentiality, privacy, and no financial incentives were ensured throughout the study.

RESULTS

Table 1: Socio-demographic characteristics of respondents n = 32

Variable	Category	Frequency	Percentage (%)
Age (years)	20 – 29	6	18.8
	30 – 39	18	56.2
	40 – 49	8	25
	More than 50	0	0
Level of education	Certificate	19	59.4
	Diploma	11	34.4
	Degree	2	6.2
	Masters and above	0	0
Working experience (years)	<1	3	9.4
	1 – 3	6	18.8
	3 – 5	5	15.6
	>5	18	56.2
Religion	Muslim	9	28.1
	Christian	23	71.9
	Traditionalist	0	0
	None	0	0
Marital status	Single	7	21.9
	Married	24	75
	Divorced	1	3.1

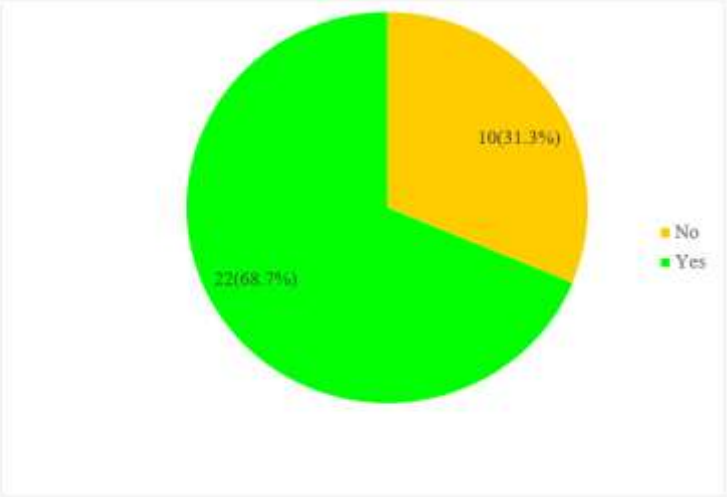
Table 1 shows that; most of respondents, 18(56.2%) were aged 30 – 39 years while the least 6(18.8%) were aged 20 – 29 years. The majority of respondents, 19(59.4%) had a certificate level of education while only 2(6.2%) had a degree. Most of the respondents, 18(56.2%) had a working experience of more than 5 years while few 3(9.4%) had working experience of less than 1 year. Majority of respondents, 23(71.9%) were Christians while only 9(28.1%) were Muslims. Majority of respondents, 24(75%) were married while only 1(3.1%) had divorced.
Health worker-related factors influencing utilization of MVA

Table 2: Awareness of indications of MVA (n = 32)

Variable	Frequency	Percentage (%)
Management of obstructed labor	0	0
Removal of retained products of conception	27	84.4
Initiation of abortion	5	15.6
Treatment for fibroids	0	0
Total	32	100

The majority of respondents, 27(84.4%) knew that MVA is indicated for the removal of retained products of conception after incomplete abortion while the minority 5(15.6%) knew that MVA is indicated for initiation of abortion.

Figure 1: Training about performing MVA (n = 32)



Most of the respondents, 22(68.7%) had received training about performing MVA while the least 10(31.3%) did not receive training about performing MVA.

Table 3: Place of training (n = 22)

Variable	Frequency	Percentage (%)
Training school	13	59.1
Hospital training	0	0
Workshop/ Seminar	5	22.7
On job training	4	18.2

Table 3 shows that; most of the respondents, 13(59.1%) were trained at training school while only 4(18.2%) received on-the-job training.

Table 4: Experience of performing MVA (n = 32)

Variable	Frequency	Percentage (%)
Less than 1 year	6	18.8
1 – 5 years	19	59.4
6 – 10 years	5	15.6
More than 10 years	2	6.2
Total	32	100

Most of the respondents, 19(59.4%) had experience of 1 – 5 years in performing MVA while the minority 2(6.2%) had the experience of more than 10 years in performing MVA.

Figure 2: Possession of confidence in performing MVA (n = 32)

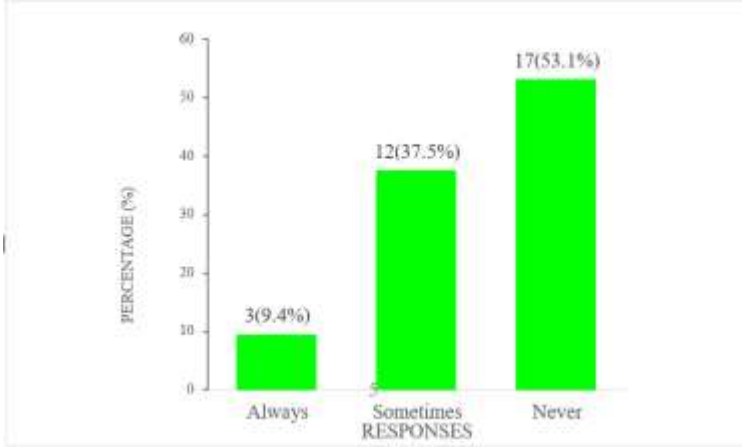


Figure 2 indicates that the majority of respondents, 17(53.1%) never had confidence in MVA while the minority 3(9.4%) had confidence in performing MVA.

Table 5: Religious teachings against MVA (n = 32)

Variable	Frequency	Percentage (%)
MVA is a form of murder	5	15.6
MVA is a sin	23	71.9
The fetus holds life in it	3	9.4
Opposes what is written in the holy books	1	3.1
Total	32	100

Table 5 shows that; the majority of respondents, 23(71.9%) regarded MVA to be a sin while only 1(3.1%) mentioned that it opposes what is written in the holy books.

Table 6: Attitude towards MVA (n = 32)

Variable	Frequency	Percentage (%)
Strongly agree	4	12.5
Agree	7	21.9
Disagree	16	50
Strongly disagree	5	15.6
Total	32	100

Table 6 shows that; half of the respondents, 16(50%) disagreed that MVA is necessary while only 4(12.5%) strongly agreed.

Figure 3: Willingness to perform MVA (n = 32)

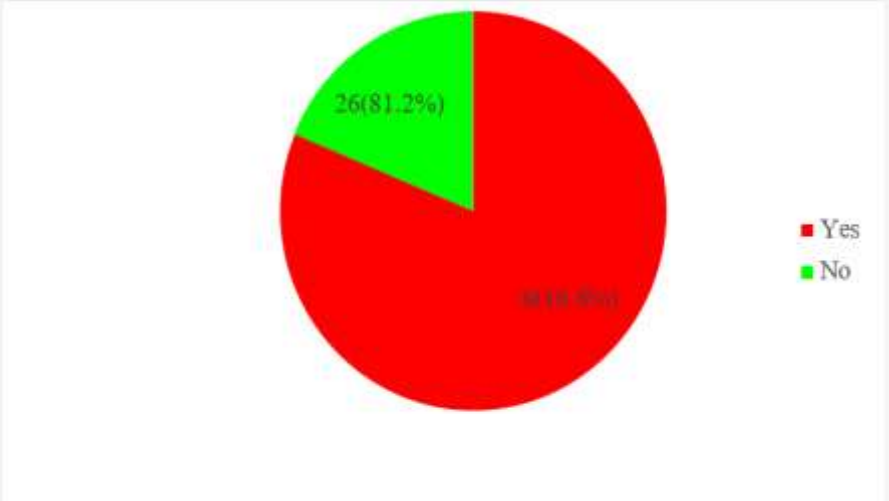


Figure 3 shows that; the majority of respondents, 26(81.2%) were not willing to learn about MVA while only 6(18.8%) were willing to learn more about MVA.

Health facility factors influencing utilization of MVA

Table 7: Availability of MVA equipment at the facility (n = 32)

Variable	Frequency	Percentage (%)
Availability of equipments		
Always	7	21.9
Sometimes	23	71.9
Never	2	6.2
Total	32	100
State of equipment available at the health facility		
Good working condition	4	13.3
Broken	3	10
Faulty	23	76.7
Total	30	100

Table 7 shows that; the majority of respondents, 23(71.9%) reported the availability of MVA equipment sometimes while only 2(6.2%) mentioned never had equipment. The majority of respondents, 23(76.7%) reported the presence of faulty MVA equipment while a minority 3(10%) reported broken equipment.

Figure 4: Drugs used during MVA that were out of stock (n = 32)

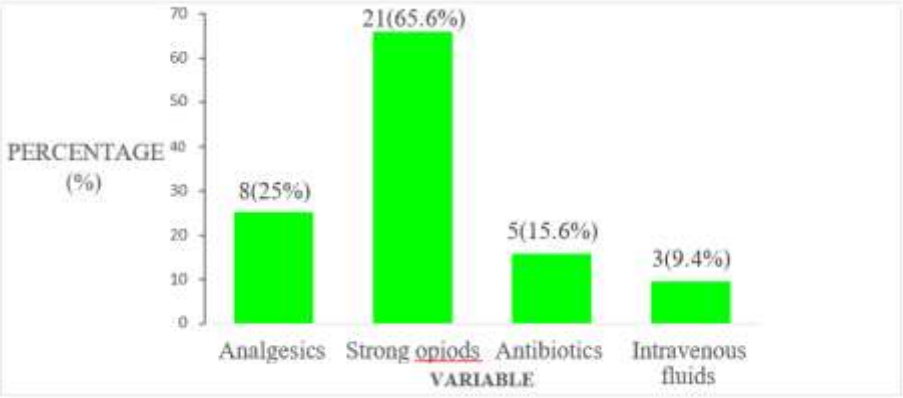


Figure 4 shows that; the majority of respondents, 21(65.6%) reported the absence of strong opioid drugs while

the minority of 3(9.4%) mentioned the absence of intravenous fluids.

Table 8: Guidelines available for performing MVA at the health center (n = 32)

Variable	Frequency	Percentage (%)
WHO guideline	14	14
Charts	6	18.8
None	12	37.5
Total	32	100

Table 8 shows that; most of the respondents, 14(43.7%) reported the availability of WHO guidelines for MVA while only 6(18.8%) had charts.

Figure 5: Staffing of the health center (n = 32)

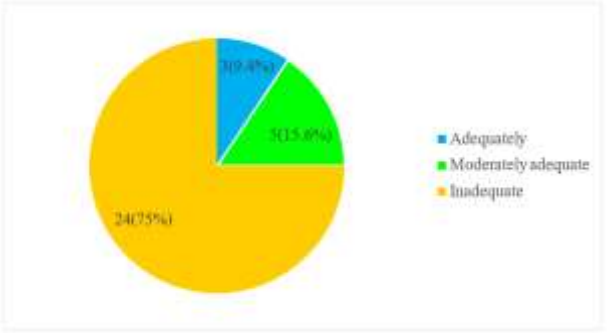


Figure 5 shows that the majority of respondents, 24(75%) reported the presence of inadequate staff for performing MVA while the minority 3(9.4%) reported adequacy of staff for performing MVA.

Table 9: Health facility policies and rewards that support MVA (n = 32)

Variable	Frequency	Percentage (%)
Supportive policies for MVA.		
Yes	32	100
No	0	0
Total	32	100
Rewards for performing MVA		
None	32	100
Yes	0	0
Total	32	100

Table 9 shows that; all respondents 32(100%) reported that health facility policies support MVA and were never given any reward for performing MVA.

Discussion

Demographic characteristics of respondents

The study findings revealed that most of the respondents, 19(59.4%) had a certificate level of education. This was probably because a lower level of academic qualification is associated with inadequate knowledge about some aspects of medical services like MVA hence hindering its performance. This is in line with a study by Chinchilla (2014) which showed that most of them had a certificate education level.

Study findings revealed that most of the respondents, 18(56.2%) had a working experience of > 5 years. This might be because longer experience increases expertise in the performance of various procedures like MVA thereby increasing its implementation. This was contrary to a study by Bourret et al, (2020) done in DRC which revealed that 75.8% of midwives had the experience of 15 years.

Individual-related factors influencing utilization of MVA

Findings revealed that the majority of respondents, 27(84.4%) knew that MVA is indicated for induction of abortion. This might be because MVA is most commonly used during abortion and this might lead to low utilization rates since abortions are illegal in Uganda. The findings disagreed with those of a study by Kemei et al, (2021) done in Kenya revealed a high degree of awareness about MVA with 49.4% being aware of MVA as a WHO-recommended treatment for septic abortion

The study findings revealed that most of the respondents, 22(68.7%) had received training about performing MVA, and only 4(18.2%) received job training. This might be due

to a lack of funds for workshops and hence the need to receive job training. The findings are in agreement with the study by Pyne and Ravindran (2021) done in India which revealed that only 40% of health workers were trained regarding MVA. In support of the latter, a study by Kemei et al, (2021) done in Kenya revealed that only 33% had undergone PAC training.

According to the study, findings revealed that the majority of respondents, 22(68.7%) never had confidence in MVA. This might be due to fear of uterine perforations encountered during MVA hence likely to decrease its performance. The findings are in line with a study by Kung et al, (2021) done in Mexico revealed that a lack of confidence in doing MVA among 73% of participants decreased the frequency of offering MVA. Similarly, a study by Bacon et al, (2014) done in Uganda found that midwives who lack confidence in doing MVA did not offer it to patients.

According to the study findings the majority of respondents, 23(71.9%) regarded MVA to be a sin. This might be because religious leader lacks factual knowledge that MVA can be used as a treatment for incomplete abortion but instead perceive it as only indicated for inducing abortion. The findings were in line with a study by by Okolo and Abalogu (2021) done in Nigeria described that the religion well states that; the church disapproves of all forms of procedures directly purposed to destroy an embryo, blastocyst, zygote, or fetus since it holds human life. Furthermore, Nsemo et al (2021) revealed that 16% experienced religious opposition to offering MVA services.

According to the study, findings revealed that the majority of respondents, 26(81.2%) were not willing to learn more about MVA. This might be because most midwives lacked skills in performing MVA. This is in agreement with the study by Catherine et al, (2017) done in Zambia revealed that a negative attitude towards MVA hinders the performance of MVA as few healthcare providers are willing to offer MVA and these perform it in secrecy. Similarly, a study by Chinchilla et al, (2014) done in Honduras revealed that 45% of health workers were unwilling to adopt the use of MVA.

Health facility factors influencing utilization of MVA

According to the study, findings revealed that the majority of respondents, 23(71.9%) reported the availability of MVA equipment sometimes. This might hinder the daily performance of MVA since sometimes the equipment might be lacking. This was in line with a study by Cleeve, (2019) done in Uganda reported that the unavailability of MVA equipment decreased its utilization hence opting for misoprostol. However, these disagreed with a study by Kemei et al, (2021) done in Malawi which found out that 61.7% had adequate MVA kits. Similarly, a study by Bourret et al, (2020) done in the Democratic Republic of Congo revealed that 63.7% had a consistent supply of MVA kits.

According to the study, findings revealed that the majority of respondents, 21(65.6%) reported stock out of strong opioids. This might be due to inadequate supply by the national medical stores thus may hinder its provision of MVA. The finding agreed with a study by Cook et al, (2017) done in Malawi revealed that an inconsistent supply of drugs used drug MVA hinders the implementation of the procedure.

According to the study, findings revealed that the majority of respondents, 24(75%) reported the presence of inadequate staff for performing MVA. This could be due to inadequate staffing by the KCCA which may increase the workload thereby reducing the timely provision of services to mothers who deserve it. The findings agreed with a study by Teffo and Rispel (2017) done in South Africa revealed that lack of human resources to offer abortion services like MVA.

According to the findings, all respondents, 32(100%) were never given any reward for performing MVA. This could be because MVA is part of midwives' professional practice and this might demotivate midwives from performing the procedure. The findings agreed with a study by Ndembi et al, (2019) carried out in Gabon revealed that a lack of motivation for doing MVA discouraged them from offering services to the mothers. Similarly, a study by Tran et al, (2021) found that unmotivated health workers are unlikely to offer timely MVA services to those who need it

Conclusions

Lack of on-the-job training and confidence in performing MVA as well as religious unacceptance of MVA were the individual factors hindering the implementation of MVA. Health facility-related factors such as unavailability of MVA, inadequate staffing, unsupportive policies, and poor motivation were negatively affecting the implementation of MVA.

Recommendations of the study

Kakumiro Local Government

Kakumiro Local Government should ensure a consistent supply of MVA equipment and strong opioids that were reported lacking at the facility.

Kakumiro Local Government should recruit more staff at the facility to increase the manpower needed to conduct the procedure.

Kakumiro Health Centre IV management

The health center should set up supportive policies for midwives who perform MVA like rewards for those who perform it more frequently as it will energize them.

Onjob training should be offered to midwives to update their clinical knowledge of performing MVA.

Health Workers

Health workers should develop self-esteem in performing MVA which will enhance their confidence regarding the procedure.

To researchers

Researchers are encouraged to conduct similar or related studies about MVA to develop a wide body of information regarding the method.

Implication to nursing practice

Less attention has been paid to MVA implementation by health workers which leaves mothers without receiving the required services thus highly contributing to maternal morbidity and mortality related to abortion.

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ABBREVIATIONS AND ACRONYMS

FIGO: International Federation of Gynecology and Obstetrics
HMIS: Health Management Information System
KCCA: Kampala Capital City Authority
MVA: Manual Vacuum Aspiration
NGO: Non-Government Organization
PAC: Post Abortion Care
RHU: Reproductive Health Uganda
SPSS: Statistic Package for Socio–Sciences
UNMEB:Uganda Nurses and Midwives Examination Board
WHO: World Health Organization

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Conflict of interest

The authors have no competing interests to declare.

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