ORIGINAL RESEARCH: MIDWIVES' KNOWLEDGE AND PRACTICE OF MIDWIFERY-LED CARE MODEL IN EMBU COUNTY, KENYA

SUMMARY

The midwifery-led care model improves maternal and neonatal health outcomes. For midwives to autonomously utlise a midwifery-led care model, they must know what it entails within available practice guidelines. Little is known about practitioners' knowledge and practice of this model in Embu County. The study found that there are gaps in knowledge and implementation of midwifery-led care in Embu. We recommend educating midwives about midwifery-led care, and the introduction of this model into the region as a means of strengthening midwifery practice to improve maternal and neonatal health outcomes.

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INTRODUCTION

The current global situation sees a threat to midwifery practice related to limited midwifery autonomy, which is associated with poor maternal and neonatal health outcomes.[1] In the Italian context, a study on The Midwifery-Led Care Model: A Continuity Of Care Model In The Birth Path, indicated that midwifery models respond to quality and the needs of women not only during the pregnancy but also during the post-partum phase.[2] A lack of knowledge on what the midwifery-led care model entails hinders midwifery-led care practices.[3] Midwives need to understand factors that hinder the initiation of this model.

Autonomy in care decision making is one of the key aspects of the midwifery-led model. Midwives have always struggled in systems that do not allow their independence, hence denying them a voice in care decisions.[4] In some studies, midwives report frustration with policies that deny them autonomy and narrow their scope of practice.[4] Midwifery-led care has not been fully adopted in sub-Sahara Africa, an area that comprises low and middle-income countries. A lack of clear guidelines in most countries is a contributing factor to this.[5]

Midwifery practice guidelines are crucial in directing and defining parameters for midwifery care.[6] Unfortunately, there are no available midwifery care guidelines in Embu County that spell-out the midwifery-led care model for low-risk pregnant women. Promoting maternal and neonatal well-being remains a priority healthcare for attainment of the Sustainable Development Goal No.3.[7] Studies have shown that the globally-effective strategies towards women's and their newborn's health are access to critical interventions and effective health workers.[1] The threat to midwifery practice is not different in Embu County and Kenya at large despite the rich evidence that midwife-led care is the most crucial factor in attaining improved maternal and neonatal health outcomes.[8] There appears to be no reliable literature on the knowledge and practice of midwifery led care in Embu County. Therefore, this study set out to determine midwives' knowledge and practice of midwifery-led care in Embu County.

METHODOLOGY

The study was carried out in two level four hospitals of Embu County. Embu has one Level 5 hospital, four Level 4 hospitals, 11 Level 3 and 77 Level 2 health facilities. Level 4 hospitals have specialised personnel comprised of anaesthesiologists, gynaecologists, radiologists and paediatricians. Level 5 is the county referral hospital offering all services of a Level 4 and more comprehensive services to include research and medical training. Embu, the capital of Embu County, is a largely metropolitan area with a population of 608,599, located on the south-eastern foothills of Mount Kenya, 130kilometers (81miles) from Nairobi.

A survey study design was adopted. The study population was made up of 60 midwives offering preconception, antenatal, natal and postnatal services in the two hospitals. There were 25 midwives working in Siakago hospital and 35 midwives working in Runyenjes. Midwives who were willing to take part in the study were included. Midwives not willing to participate and those who were on rotational clinical placement were excluded. However, this study had a total population sample of 60 midwives.

Data were collected in July 2022. Structured paper questionnaires were given to midwives by the researcher to gather quantitative data. Completed questionnaires were anonymously deposited into a return box in the midwives' duty room and were later collected by the researcher. The questionnaires had three sections: the first section assessed demographic information; the second section assessed knowledge of midwifery-led care and the third section assessed practice of midwifery-led care. The structured questionnaires were pre-tested in another Level 4 hospital. This is because health care services offered and midwives' characteristics are more comparable with those in Siakago and Runyenjes Level 4 hospitals. Ambiguous questions detected were rephrased appropriately to improve clarity. The pre-test sample was 10% of the study sample. Therefore six midwives were selected for pre-testing. Data were analysed using the Statistical Package for Social Science (SPSS) software. Descriptive statistics which included frequencies and percentages were included. For inferential statistics, chi-square test and regression analysis were used to draw inferences on the relationship between midwives' knowledge and practices of midwifery-led care model.

ETHICAL CONSIDERATIONS

Authorisation to undertake the study was obtained from Chuka University Institutional Ethics and Research Committee (CUIERC). A research permit was sought from the National Commission for Science, Technology and Innovation (NACOSTI), permit number NACOSTI/P/22/18309. Relevant authorities in Embu County health department, and all the Level 4 hospitals were informed about the study and gave permission for data collection in their institutions. Participants were fully informed of the purpose of the study and that participation in the study was voluntary.

RESULTS

The research targeted 60 midwives. This was a total population sample. All 60 questionnaires were administered, with responses from 55 participants. This represents an excellent response rate of 92 percent.

Table 1 indicates a general summary of lack of knowledge (76.4%, n=42) of the midwives on midwifery-led care model. The majority of the midwives (90.6%, n=47) said they did not know what midwifery-led care entails while a few of them (9.4%, n=8) said that they understood the model. Midwives who strongly agreed and those who agreed were grouped together as having good information on the model (36%, n=20) and those who strongly disagreed, disagreed and those not sure were considered to be poorly informed (64%, n=35) as shown in *Table 2*.

***Table 1:* Midwives' knowledge of midwifery-led care model (n=55)**

Item	Yes (%)	No (%)
Do you know what midwifery-led care model is all about?	8 (9.4)	47 (90.6)
Knowledgeable on labour and birth related topic(s) that the woman/partner/ significant other may wish to discuss	9 (18.8)	46 (81.3)
Have information on birthing preference(s) including water birth	10 (12.5)	45 (87.5)
Know the importance of mobilising and changing positions during childbirth	35 (68.8)	20 (31.2)
Aware of benefits of rest, massage, including reflexology, consider environment e.g. dimming of lights, music refreshments - light diet/isotonic fluids	5 (6.2)	50 (93.8)
Aware of pain relief options e.g. labour in water, Transcutaneous electrical nerve stimulation (TENS), hypnobirthing, visualization	10 (15.6)	45 (84.4)
Choices for third stage management of labour are well known	5 (9.4)	50 (90.6)
Importance of skin-to-skin contact is understood	26 (50.0)	29 (50.0)
Conversant with timing of cord clamping	11 (21.9)	44 (78.1)
Summary	**Good knowledge**	**Poor knowledge**
	13 (23.6%)	42 (76.4%)

Table 2: **Likert scale on midwives' information about midwifery-led care model (n=55)**

Item	Strongly agree N (%)	Agree N (%)	Disagree N (%)	Strongly disagree N (%)	Not sure N (%)
I have adequate knowledge on variety of upright and preferred birthing positions for mothers	7 (12.7%)	19 (34.5%)	28 (50.9%)	1 (1.8%)	0
Midwifery-led care model views pregnancy, birth and puerperium as normal physiological process	2 (3.6%)	18 (32.7%)	7 (12.7%)	5 (9.2%)	23 (41.8%)
In midwifery-led care model, the midwife is the lead professional in planning, organising for care to low risk pregnancy from prenatal to postnatal	4 (7.3%)	5 (9.1%)	16 (29.1%)	2 (3.6%)	28 (50.9%)
In this model unnecessary care interventions like episiotomy, instrumental birth, caesarean section and pharmacological analgesia are reduced	2 (3.6%)	13 (23.6%)	4 (7.3%)	2 (3.6%)	34 (61.8%)
Appropriate referrals of mothers requiring different specialist care are done by midwives	3 (5.5%)	2 (3.6%)	7 (12.7%)	40 (72.7%)	3 (5.5%)
Low risk pregnancy, birthing process and postnatal care can be offered by midwives safely	41 (74.5%)	6 (10.9%)	5 (9.2%)	2 (3.6%)	1 (1.8%)
Summary	**Well informed**		**Poorly informed**		
	20 (36%)		35 (64%)		

Table 3 shows that majority of midwives do not practice midwifery-led care (75%, n=41). Limitations were brought about by low resource availability such as lack of transcutaneous electrical nerve stimulation (TENS) machines. According to Kenyan guidelines on management of third stage of labour, active management is mandatory to both low-risk and high-risk mothers. This restricts midwives from offering physiological management of third stage. A few (25%, n=14) demonstrated good practice of midwifery-led care.

Table 3: **Midwives' practice of midwifery-led care model (n=55)**

Facility	Yes N (%)	No N (%)
Labour and birth related topic(s) that the woman/partner/significant others may wish to discuss are taught	16 (31.2)	38 (68.2)
Various birthing options including water birth are offered	0	55 (100)
Mobilising and changing positions during labour and childbirth are done	25 (43.8)	30 (56.2)
Massage, including reflexology considering environment e.g. dimming of lights, music, refreshments - light diet/isotonic fluids are practiced	7 (9.4)	48 (90.6)
Pain relief options offered e.g. labour in water, Transcutaneous electrical nerve stimulation (TENS), hypnobirthing, visualization	0	55 (100)
Choices for third stage of labour management discussed with the mother and partner	0	55 (100)
Skin-to-skin contact is practiced	47 (87.5)	8 (12.5)
Timing of cord clamping is appropriate	13 (21.9)	42 (78.1)
Summary	**Good practice**	**Limited practice**
	14 (25%)	41 (75%)

In *Table 4*, the majority of the midwives (81.8%, n=45) confirmed that midwifery-led care is not practiced in their health facilities while (12.8%, n=7) were not sure whether the model is in practice or not. The main hindering factor seems to be a lack of knowledge (72.7%, n=40) followed by lack of autonomy in midwifery generally (20%, n=11) and a lack of support (7.3%, n=4). The majority (70.9%, n=39) recommended training of midwives as one strategy of introducing the model into their facilities. Others (20%, n=11) proposed empowerment of midwives by giving them autonomy to make care decisions while (9.1%, n=5) suggested expansion of midwives' scope of practice. The majority of midwives (68.2%, n=38) expressed lack of motivation due to limited autonomy and professional fulfillment, others (17.3%, n=9) felt over worked and suffered burnout. Most of the midwives (49%, n=27) said evidence informed maternal and neonatal health care guidelines are rarely available while (20%, n=11) said evidence-based care guidelines are not available at all. Very few midwives (12.8%, n=7) practice upright maternal birthing positions while the majority guide women the lithotomy (59.9%, n=32) and (21.9%, n=13) dorsal positions (*Table 4*).

> *"The study concluded that there were gaps in knowledge and practice of midwifery-led care model in Embu County."*

Table 4: **Information on midwifery-led care model practice by midwives (n=55)**

Facility	Frequency (N)	Percentage (%)
Is midwifery-led care model practiced in this hospital?		
No	45	81.8%
Yes	3	5.4%
Not sure	7	12.8%
If not practiced, what are the hindering factors?		
Lack of knowledge on the model	40	72.7%
Lack of autonomy in midwifery generally	11	20%
Lack of support	4	7.3%
What possible strategies would you suggest for introduction of the model in the hospital?		
Train midwives about the model	39	70.9%
Empowering midwives by giving them autonomy to make care decisions	11	20%
Expand midwives' scope of practice	5	9.1%
What is your experience in your daily midwifery care services?		
I feel highly motivated due to autonomy and professional fulfillment	5	9.1%
I feel highly demotivated due to lack of autonomy and professional fulfillment	38	68.2
Midwifery is a subordinate practice	3	5.4%
Over worked and burnout	9	17.3%
What is the availability of evidence informed maternal and neonatal health care policies and guidelines?		
Readily available	3	5.4%
Available	7	12.8%
Sometimes available	7	12.8%
Rarely available	27	49%
Not available	11	20%
Maternal positions of birthing mostly practices		
Upright	7	12.8%
lithotomy	32	59.9%
dorsal	13	21.9%
others e.g. lateral	3	5.4%

A Likert scale in *Table 5* shows low levels of midwifery-led care in practice. There is a lack of autonomy in midwifery practice. The majority of midwives (69%, n=38) disagreed that they autonomously give care during prenatal, birth and postnatal periods to low-risk pregnant women. There are no midwifery-led care units where midwives are solely in charge of maternal and neonatal health care as indicated by (85.4%, n=47) of midwives. The majority of midwives, (87.3%, n=48) agreed that care given to low-risk pregnant mothers is a shared responsibility by midwives, doctors and other health care professionals.

Table 5: **Likert scale on the level of midwifery-led care practices (n=55)**

Item	Totally agree N (%)	Agree N (%)	Disagree N (%)	Totally disagree N (%)	Don't know N (%)
Midwives autonomously give care during prenatal, birth and postnatal periods to low-risk pregnancy	3 (5.5)	3 (5.5)	5 (9.1)	38 (69.0)	6 (10.9)
There is a midwifery-led care unit where midwives are solely in charge of maternal and neonatal care	0	3 (5.5)	3 (5.5)	47 (85.4)	2 (3.6)
Care given to low risk mothers is a shared responsibility by midwives, doctors and other health professionals	48 (87.3)	5 (9.1)	2 (3.6)	0	0
Summary	**Highly practiced**		**Less practiced**		
	21 (38%)		34 (62%)		

By using the Chi square test, the findings in this study indicated a significant statistical relationship between midwives' knowledge and practice of the midwifery-led care model, where calculated X2 of 7.05 was greater than the critical X2 of 3.841 significant at 0.05 with degree of freedom at 1. This showed that there was a significant relationship between midwives' knowledge and practice of midwife-led care in Embu County. Further analysis was done using Pearson's and Spearman's rho correlation. It was found that the relationship between knowledge and practice was significant at 0.01 level (2-tailed).

DISCUSSION

Midwives' knowledge on the midwifery-led care model: Results in *Table 1* indicate a general summary of poor knowledge (76.4%, n=42) of the midwives on the midwifery-led care model. Moreover, the majority of midwives (90.6%, n=47) said they do not know what midwifery-led care model entails while a few of them (9.4%, n=8) said that they knew what the model is all about. This is similar to other studies that found out that lack of knowledge on what midwifery model of care entails, hinders midwifery-led care practices.[3] Additionally, there is evidence of lack of knowledge on the model using a Likert scale (*Table 2*). Midwives who strongly agreed and those who agreed were grouped together as having good information on the model (36%, n=20) and those who strongly disagreed, disagreed and those not sure were considered to be poorly informed at (64%, n=35).

Midwives' practice of midwifery led care model: Findings of this study in *Table 3* indicate that majority of midwives demonstrated limitations to practice of midwifery-led care (75%, n=41) while a

few (25%, n=14) demonstrated good practice of midwifery-led care model. To add to this, majority of the midwives (81.8%, n=45) confirmed that midwifery-led care model is not practiced in their health facilities while (12.8%, n=7) were not sure whether the model is in practice or not. The main hindering factor being lack of knowledge on the model (72.7%, n=40), followed by lack of autonomy in midwifery generally (20%, n=11) and lack of support (7.3%, n=4). The results are supported by some studies where midwives reported frustrations by policies that denied them autonomy and narrowing their scope of practice.[4,9,10] The majority (70.9%, n=39) recommended training of midwives as one strategy of introducing the model into their facilities. Others (20%, n=11) proposed empowerment of midwives by giving them autonomy to make care decisions while (9.1%, n=5) suggested expansion of midwives' scope of practice. The majority of midwives (68.2%, n=38) expressed lack of motivation due to limited autonomy and professional fulfillment (17.3%, n=9) felt over worked and suffered burnout. Most of the midwives (49%, n=27) said evidence informed maternal and neonatal health care guidelines are rarely available while (20%, n=11) said the evidence-based care guidelines are not available at all. Very few midwives (12.8%, n=7) practice upright maternal birthing positions while majority are practicing the lithotomy (59.9%, n=32) and (21.9%, n=13) dorsal positions (*Table 4*). The findings in this study agree with the study in Ethiopia that identified a relationship between knowledge and practice of care providers.[11] Likert scale in *Table 5* indicate that midwifery-led care model is less practiced (62%, n=34). The majority totally agreed that care given to low risk mothers is a shared responsibility by midwives, doctors and other health professionals (87.3%,n=48). This results to fragmenting the continuity of care. The findings are supported by a scoping review on midwifery continuity of care.[12]

CONCLUSION

The study concluded that there were gaps in knowledge and practice of midwifery-led care model in Embu County. The study also concluded that a lack of knowledge on what the midwifery model of care entails hinders midwifery-led care practices. The study recommends engaging key stake holders for an effective intervention to educate midwives about the midwifery-led care model. This will enable subsequent introduction of the model in this county aiming to strengthen midwifery practice for improved maternal and neonatal health outcomes.

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"The study recommends engaging key stake holders for an effective intervention to educate midwives about the midwifery-led care model."

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