

Evaluation of Effectiveness of Continuous Professional Development in Clinical Practice among Nurses and Midwives in Meru County, Kenya

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Abstract

The global Maternal Mortality Rate (MMR) is 223 per 100,000 live births, with hemorrhage being the leading cause of death. In Sub-Saharan Africa, the need for nurses and midwives is increasing. Incidentally, only 3.5% of the world's health staff are accountable for 27% of the disease burden. The depicted heavy workloads have largely contributed to poor participation in Continuous Professional Development activities among nurses and midwives. Meru County's MMR burden, which exceeds the global MMR, remains a concern. However, the Nursing Council of Kenya stipulates a total of 20 CPD hours to be met annually for all nurses. The aim of the study was to evaluate the effectiveness of CPD in clinical practice among nurses and midwives in Meru County. This study seeks to inform the public on the gaps in the uptake and implementation of CPD, and provide recommendations to improve its effectiveness. The study utilized both the qualitative and the quantitative techniques, and adopted Randomized Clinical Trial design. A sample of 78 nurses and midwives was obtained from a target population of 98. Quantitative data was collected using questionnaires and case studies, and analyzed using SPSS version 26, to derive descriptive statistics, while qualitative data was collected through interview schedule checklists and observation, and was analyzed thematically. Pearson's chi square tested the relationship between knowledge and CPD uptake in clinical practice ($p=0.00$) at 95%CI. Paired t-test compared means within the control and intervention groups ($t=1.000$). Despite the provision and use of BEmONC guidelines, major gaps were observed in Active Management of Third stage of labour (17.9%) and also in completion of the partograph (mean=1.7). Despite the efforts to maintain competence levels in clinical practice, gaps pertaining to standardization still exist. The study recommended continuous training to bridge quality gaps and need in clinical practice among nurses and midwives

Keywords: *Continuous professional development, Effectiveness, Maternal mortality rate, Clinical, Nurses, Midwives*

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1.0 Introduction

According to the Nursing and Midwifery Board of Australia (2016), the process through which professionals maintain, expand, and enhance their knowledge, skills, and competence; as well as cultivate professional and personal attributes necessary for success in their line of work is known as continuous professional development, or CPD. Globally, the top five causes of maternal mortality in women of all ages include hemorrhage, hypertensive disorders, embolism, abortions and sepsis, which account for over 75% of all maternal fatalities, with sepsis alone accounting for 10% (Bill & Mellinda Gates, 2021).

In Sub-Saharan Africa, the need for nurses and midwives is apparently increasing due to capabilities deficit, in which approximately 3.5 percent of the world's health staff is accountable for 27 percent of the disease burden (Hwang et al., 2018). Therefore, the shortage of nurses and midwives has been directly observed to be a major cause of poor participation in CPD activities. This means that the nurses and midwives do not get an opportunity to update their knowledge and skills required for competent management of women and newborns, resulting in complications during pregnancy, childbirth and the postpartum period. In Meru County, the SDG report of 2021 and Vision 2040 report illustrate an MMR burden of 291/100,000 live births in 2019. This burden remains a concern, considering that the leading causes of maternal and neonatal morbidity

and mortality include the post-partum hemorrhage and birth asphyxia. These observations pose a threat to the targets of SDG number three, which aims to lower the world wide maternal and infant mortality rates to 70 for every 100,000 live births, and 12 for every 1,000 living births respectively, by 2030.

Continuous Professional Development programs are therefore critical to nurses' and midwives' long-term education, and are a necessary part of preserving their knowledge and skills (Kelley et al., 2017). As stipulated by NCK, nurses and midwives are required to complete 20 hours of CPD annually (Maingi, 2017). The mission of the International Confederation of Midwives' (ICM) is to fortify Midwives Associations and to progress the occupation of obstetrics on a global scale, and to boost nurses and midwives autonomy (Nove, 2018). The objective of this study is in line with one of the ICM's five strategic goals that emphasize the need to strengthen continuous midwifery education programs, and the function of the midwife as an educator (Fullerton, 2013).

2.0 Materials and Methods

This was an evaluation study that utilized both qualitative and quantitative techniques, and adopted randomized controlled trial design. The study participants included nurses and midwives from Kanyakine, Muthara, Githongo and Nyambene Sub-County Hospitals in Meru County, Kenya. The study involved a baseline survey that was carried out to identify knowledge gaps

and factors that affect nurses and midwives' participation in CPD activities, which influence maternal and neonatal outcomes. A total of 78 sampled Nurses and midwives were involved in the study, from a target population of 98, with 90% response rate. Blinding was utilized in allocating participants to either the control or intervention groups. Systematic random sampling was used to recruit the respondents. Data was collected using questionnaires, interview schedule checklists and case studies. Pilot study was done in Isiolo Sub-County Hospital, to test reliability and validity of the study tools. Triangulation was utilized in order to yield more valid data as opposed to using a single method. Quantitative data was analyzed using SPSS version 26, to derive descriptive statistics. Findings were presented in tables, charts and figures. Pearson's chi square was utilized to test the relationship between the nurses and midwives knowledge and CPD uptake in clinical practice. Paired t-test was used to compare means inside the two groups (control and intervention). On the other hand, qualitative data was analyzed using themes that emerged from the interviews. The study sought approval from the Chuka University Research, Ethics and Review Committee and a permit from the National Council for Science and Technology. Approval was also obtained from the specific sub-county hospitals, and from the Meru County Government. Ethical considerations on study participation was

adhered to and the participants signed the informed consent.

“The paper conclude that despite the efforts put in place to ensure nurses and midwives maintain competence levels in clinical practice, there are gaps pertaining standardization of competences”

3.0 Results and Discussion

The baseline survey was completed by 78 respondents from the 4 selected sub-county hospitals; namely, Muthara, Nyambene, Kanyakine and Githongo Sub-County Hospitals in Meru County. 70 out of 78 participants returned the study tools, hence representing a 90% response rate. Findings on gender indicate that the females comprised 77.1% (n=54) and the males 22.9% (n=16). Regarding the respondents age, majority of the participants (42.9% (n=30)) were aged between 32-36 years. The study further established that majority of nurses and midwives (72.9% (n=51)) are KRCHNs. The commonly identified deployment area was labour ward (37.1% (n=26), while the key job role was 'Nurse' (41.4% (n=29)).

Figure 1

Present Job Title

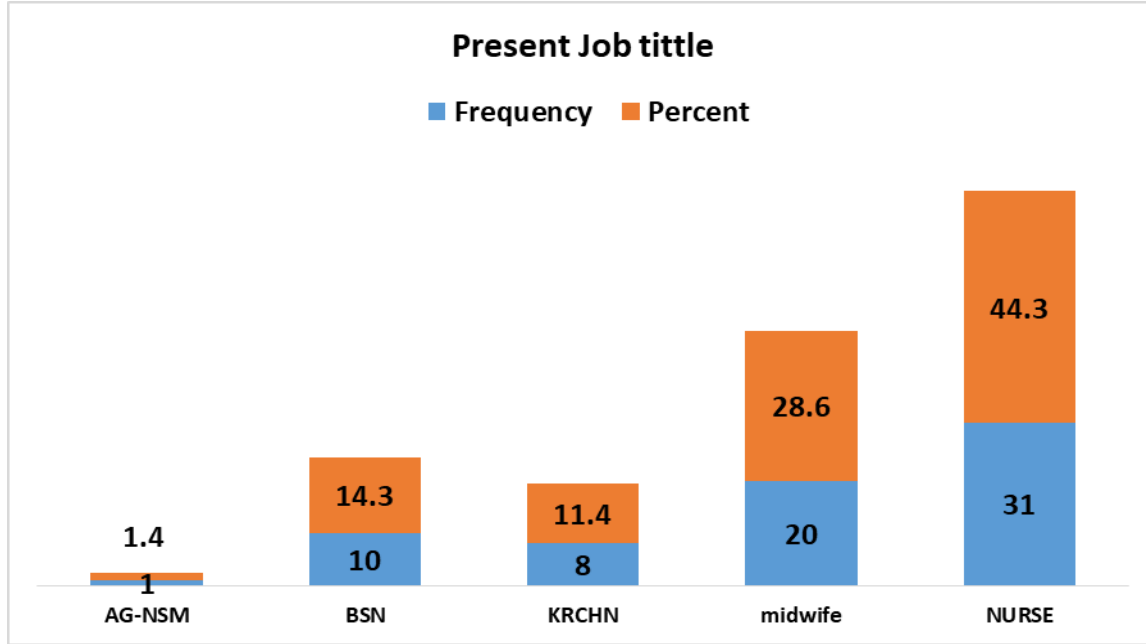


Figure 1 shows results on participation in CPD activities. Most of the respondents (68.6%) have participated in professional development activities within the last 6 months. However, a notable percentage

(12.8%) has not engaged in professional development activities for more than 2 years. This implies that there may be differences in knowledge based on levels of CPD uptake.

Table 1

Last participation in CPD

Participate in professional development activity	Frequency	Percent
less than a month ago	6	8.6
1-6 months ago	42	60
7-11 months ago	5	7.1
1-2 years ago	8	11.4
more than 2 years	9	12.8
Total	70	100

Results in table I reveal varied engagement in workshops and seminars

where a more balanced distribution across engagement levels is observed, with a

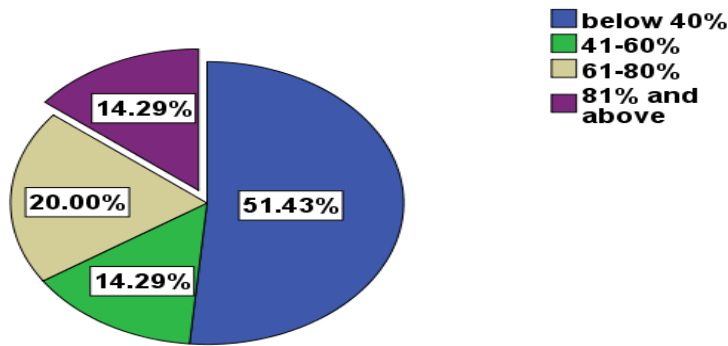
significant percentage of respondents participating in CPDs less often or often. In figure 2 below, majority, 51.4% of respondents reported that they utilize below 40% of their weekly competent time on patient care, clinical training, and clinical instruction. While 14.3% of

respondents spend between 41% and 60% of their weekly competent time. This suggests that a significant portion of respondents allocate less than half of their time to CPD activities.

Figure 2

Competent time spent per week by the respondents

Approximate proportion of weekly competent time utilized on patients care, clinical training and clinical instruction.



Results in table 2 reveal that a majority of respondents 62.9% often used manuals as

reference materials, among other midwifery clinical reference materials.

Table 2

Respondents level of Utilization of midwifery clinical reference materials

Variable	Frequency	Percent
Facility Utilize WHO Patograph		
Yes	42	60.00%
No	26	37.10%
Don't know	2	2.90%
Updated MOH Document Available		
Yes	26	37.10%
No	17	24.30%
Don't know	27	38.60%
Usage of Manual as Reference Material		
Not at all	16	22.90%

Less often	44	62.90%
Monthly	3	4.30%
Weekly	2	2.90%
Everyday	5	7.10%
<hr/>		
Do you have any Program on Safe Motherhood Concerns		
Yes	11	15.70%
No	51	72.90%
Don't know	8	11.40%

Table 3 below indicates results on factors influencing CPD uptake.

Table 3

Participant's responses on Factors influencing CPD uptake

Statement	Strongly Agree (Frequency)	Agree (Frequency)	Disagree (Frequency)	Strongly Disagree (Frequency)	Mean	Std. Deviation
FACILITATORS						
CPD sessions accessible with captivating themes	12 (17.1%)	15 (21.4%)	38 (54.3%)	5 (7.1%)	2.51	0.864
Employer encourages to take part in CPD	15 (21.4%)	40 (57.1%)	10 (14.3%)	5 (7.1%)	2.07	0.804
CPD Registration system is easy	33 (47.1%)	15 (21.4%)	13 (18.6%)	9 (12.9%)	1.97	1.09
Adequate facilities to provide CPD	29 (41.4%)	15 (21.4%)	16 (22.9%)	10 (14.3%)	2.1	1.105
BARRIERS						
Unplanned swaps to work timetables make it difficult to meet CPD requirements	12 (17.1%)	24 (34.3%)	28 (40.0%)	6 (8.6%)	2.4	0.875
Lack of adequate staff poses challenge to be engaged in CPD	17 (24.3%)	25 (35.7%)	23 (32.9%)	5 (7.1%)	2.23	0.904
My duty as a caretaker at home challenges CPD uptake	8 (11.4%)	26 (37.1%)	23 (32.9%)	13 (18.6%)	2.59	0.925
Duty period presents a	17 (24.3%)	12	22	19	2.61	1.133

challenge to CPD uptake		(17.1%)	(31.4%)	(27.1%)		
CPD participation affects time for personal activities	8 (11.4%)	28 (40.0%)	22 (31.4%)	12 (17.1%)	2.543	0.9118
Too busy to attend CPD	5 (7.1%)	22 (31.4%)	37 (52.9%)	6 (8.6%)	2.63	0.745
It will be quite impossible to achieve expertise assessment skills for CPD	5 (7.1%)	26 (37.1%)	27 (38.6%)	12 (17.1%)	2.66	0.849
I lack courage to be assessed on my competency skills	4 (5.7%)	17 (24.3%)	25 (35.7%)	24 (34.3%)	2.99	0.909
Work atmosphere doesn't encourage CPD learning	11 (15.7%)	12 (17.1%)	32 (45.7%)	15 (21.4%)	2.73	0.977
I feel discouraged to attend CPD sessions	17 (24.3%)	11 (15.7%)	22 (31.4%)	20 (28.6%)	2.64	1.143
I have challenge applying CPD knowledge into practice	8 (11.4%)	27 (38.6%)	12 (17.1%)	23 (32.9%)	2.71	1.051
I encounter language barrier in CPD sessions	22 (31.4%)	8 (11.4%)	15 (21.4%)	25 (35.7%)	2.61	1.266
My employer doesn't offer financial support on CPD	22 (31.4%)	14 (20.0%)	18 (25.7%)	16 (22.9%)	2.4	1.16
CPD sessions not affordable	10 (14.3%)	18 (25.7%)	21 (30.0%)	21 (30.0%)	2.76	1.042

To assess nurses' and midwives' knowledge on charting the patograph, the respondents were required to complete a case study, the completion gave an impression of inadequate competence. The challenges faced by respondents in the completion of the patograph was depicted thematically in the following quotations:

"I have no time to fill the patograph"- nurses and midwives

"There is too much work I don't think I can complete this work" - nurses and midwives

"We are very few staff during the shifts so I don't think it will be possible to fill this patograph" - nurses and midwives

To assess the nurses' and midwives' knowledge and skills in midwifery clinical practice, the researcher compiled results from the interview schedule checklist. Pertaining antenatal care competencies, nurses and midwives demonstrated good understanding of the Expected Date of Delivery (EDD) based on the Last Menstrual Period (LMP). However, areas with poor responses, where improvement is needed, included counseling on the formulation of an individual birth plan and recognizing danger signs. Competencies on normal labor depicted that nurses and midwives generally have a good understanding of practices during normal labor, However, there are instances where immediate actions during labor, such as active management of the third stage of labor 12(17.9%), require more attention. In regard to immediate newborn care, there is need for improvement in areas such as assessing the APGAR score 18(26.9%) and performing parts of the newborn resuscitation procedure 55(82.2%),

where correct responses are lower compared to other aspects. Concerning postpartum care, nurses and midwives seem to have a good understanding of counseling on postpartum danger signs and prevention of breast engorgement. However, there are areas, such as achieving proper breast attachment to minimize nipple cracking 22(32.8%), where improvements could be made. The results revealed from inferential statistics were through hypothesis testing.

The study noted that there is no statistically significant relationship between the nurses' and midwives' knowledge and CPD uptake in clinical practice. Chi-square test was used to assess the statistical significance. The table below presents the results, where ($X^2=17.716$, $P=0.00$) with a $df=2$. The associated p-value is .000, indicating that the relationship between nurses and midwives' knowledge and CPD uptake is statistically significant at the significance level ($p < .05$). This therefore indicated rejection of the null hypothesis.

Table 4

Relationship between the nurses and midwives' knowledge and CPD uptake in clinical practice.

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.716 ^a	2	.000
Likelihood Ratio	17.301	2	.000
Linear-by-Linear Association	13.505	1	.000
N of Valid Cases	70		
Chi-square value=17.716, P=0.000 df=2			

Paired Samples Test was further conducted for the baseline survey to show a

comparison of knowledge and skills in midwifery clinical competencies within the

intervention and control groups. The results are shown in Table 5

Table 5

Paired t-test results within means of intervention and control groups

		Paired Samples Test								
		Paired Differences						t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference					
Pair					Lower	Upper				
1	correct_intervention - correct_crlt	-.067	.365	.067	-.203	.070	1.000	29	.326	
2	Incorrect_intervention - incorrect_crlt	-.067	.450	.082	-.235	.101	-.812	29	.423	

These results indicate that there is no statistically significant deviation in correct scores between the intervention and control groups. The small mean suggests that both groups have similar levels of knowledge and skills related to midwifery clinical competencies at the beginning of the research.

Discussion

Objective one of this research sought to identify knowledge and skills gaps on the midwifery clinical competencies among nurses and midwives in Meru County Kenya. The goal of the Worldwide Midwifery Strategy 2018–2030 (WHO, 2019), which was created to help achieve SDG 3 by 2030, is to assist in decreasing the universal maternal mortality ratio to less than 70 deaths for every 100,000 live births. Globally statistics indicate that more than half of the maternal deaths result from hemorrhage, hypertensive disorder, and infection. In order to reduce the cases, medical interventions outlined by the United Nation need to be put in place (WHO,

2016). An ideal BEmONC facility must have seven specific signal functions, including: - (i) administrate parenteral antibacterial, (ii) administrate uterogenic drugs for performing AMSTL, and bar of postnatal hemorrhage, (iii) using parenteral anticonvulsants for the direction of pre-eclampsia/eclampsia, (iv) extremity separation of reproductive structure, (v) removal of retained products, (vi) performing assisted canal delivery, and (vii) performing basic baby resuscitation) (UN, 2016).

The results from the study shows that there are gaps that exist in the standard practices for midwifery clinical competencies. Despite acknowledging provision and use of BEmONC, there still exists the need to engage the nurses and midwives in ongoing trainings to standardize midwifery practices. Further, there is need to scale up on strategies to improve organization and provision of continuous learning with an aim of improving the nurses’ and midwives’ knowledge, skills and competencies.

Results indicate that nurses and midwives generally have a good understanding of practice; hence, are competent. However, there are instances where immediate actions during labor, such as active management of the third stage of labour 12(17.9%), indicated major gaps; thereby necessitating more attention.

According to study recommendations given by Fissahaye (2023), there is need to emphasize on utilization of AMTSL as a hypercritical engagement for PPH hindrance, and requires that it be offered to all women during childbirth by accomplished health care providers. Annual statistics reveal an estimated 1.4 million mothers who do not get a close pattern of AMTSL during childbirth, leading to lost opportunities for preventable PPH (WHO, 2017). Based on the definition by the International Federation of Gynecology and Obstetrics (FIGO) and the International Confederation of Midwives (ICM), the correct use of AMTSL still has major gaps in practice.

According to Ford (2015), the third phase of labor is the biggest risk period for PPH since the womb could continue to contract properly after giving birth. Thus, it was determined that the most frequent cause of PPH was uterine atony. Gudeta (2018) came to the conclusion that the high prevalence of PPH and unfavorable prognosis continue to be a significant health issue in developing nations, particularly those in Sub-Saharan Africa. Further, Amanuel (2021) provided compelling evidence in a study to suggest that women who had labored for longer than

24 hours were 3.4 times more probable to have PPH than women who had labored for less than 24 hours. Hemorrhage appears to be the main cause of death for women after childbirth. Only if midwives and nurses are eager to put the necessary skills into practice and improve mother outcomes will this be avoided.

Further, results showed gaps in the knowledge and skills as depicted in the completion of the partograph as a tool for monitoring progress of labor. Findings revealed major inconsistencies in filling correctly and interpreting the different parameters, especially the fetal parameters. Knowledge on charting decent in this study had a mean of 1.70 which gave an impression of inadequate knowledge. Yisma et al. (2013) agrees by noting that very few respondents could satisfactorily complete and interpret the fetal descent on the partograph. On a positive note, the respondents in this study were well versed in completing the baseline parameters with a mean of 1.2. This could be attributed to the fact that the general parameters recorded on the partograph are quite straight forward to chart, hence its ease.

Abebe (2013) found that only 45% of partographs were completed, and of these, fewer than 30% were “satisfactorily” completed, while the remaining 70% were partially completed. Qualitative data outlined negative aspects of the partograph revealing gaps in completeness and accuracy manifest in partograph halfway filled; lack of knowledge in the initial charting, especially of the cervical dilatation and tie allocation; inconsistency in charting the different parameters; wrong charting of the different

parameters, and unclear charting of the contractions. These gaps are clearly revealed from another study by Wakgari (2015). All these inconsistencies translate to lack of knowledge in completing the partograph, hence the difficulty experienced in interpretation and consequent decision pertaining management of women in labour.

Some nurses and midwives verbalized challenges in completing the partograph. A few statements made included *“We are very few staff during the shifts so I don’t think it will be possible to fill this partograph”* - nurses and midwives. Opiah et al. (2012) conducted a study that determined the reasons why the partograph was not used during labor, including the use of other monitoring methods, personnel shortages, lack of training, and unavailability of the partograph. It is crucial to remember that partographs should be used regularly and consistently as they aid in the diagnosis and treatment of delayed and obstructed labor. Most of these complications can lead to maternal morbidity and mortality. There’s need therefore to conduct frequent practical education forums to refresh the nurses and midwives competence in the use of partograph. Sensitization can also be made on the need for proper attitude towards usage of partograph in order to prevent its utilization as a formality.

Results on CPD uptake indicated that a significant portion (38.5%) found the sessions accessible and captivating, while a larger group (54.3%) disagreed. This suggests room for improvement in session design and accessibility. A more positive aspect revealed further that most nurses and

midwives (57.1%) felt encouraged by their employers to participate in CPD. In addition, nearly half of the respondents (47.1%) agreed that CPD registration system is easy. However, a considerable percentage (30.3%) disagreed, indicating potential concerns with user-friendliness or clarity. In a study by Feldacker et al. (2017) the perspective on CPD was broader. According to their research, CPD is crucial in supporting provision of healthcare services. Their study reiterates the need for action addressing pay, working conditions, health instructions, certification and regulation, and data systems would be necessary to achieve long-term gains in CPD.

The results outlined major barriers to CPD uptake, including unplanned work schedule changes (40%), lack of adequate staff (35.7%), balancing CPD with caretaking duties (32.9%) and duty periods (31.4%), balancing CPD with personal activities (40%) and feeling overloaded (52.9%), lack of courage for competency assessment (35.7%), and discouraging work atmosphere (45.7%). These findings agree with findings from the study conducted by (Davis et al. (2012). These findings highlight challenges in balancing work schedules with CPD commitments, indicates potential workload burden and staffing issues. Further, the participant’s responses showed that there were significant concerns as pertains CPD uptake; hence the need for reflection on personal commitment and time management. Agreeably, Mlambo (2021) concluded that participants complained about their current conditions for CPD, identifying clear barriers and challenges to include lack of funding for CPD, staffing

levels, time allocation for study, lack of organizational support because of negative cultural practices, CPD design and delivery; and limited choice of CPD activities.

4.0 Conclusion

Despite the efforts put in place to ensure that nurses and midwives maintain competence levels in clinical practice, there are still gaps pertaining standardization of competences. To enhance CPD uptake, it is important to address potential barriers, adopt tailor made interventions, and promote a culture of continuous learning. The BEMONC curricular has detailed the procedures required for up-to-date service delivery, and implementation and maintenance through continuous monitoring and evaluation.

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5.0 Recommendations

To bridge quality gaps, nursing and midwifery regulatory bodies, learning institutions, hospital managers, nursing officers-in-charge and the ministry of health should consider tailor-made skills-based courses that meet the changing trends in managing maternal and newborn conditions. It is highly recommended that trainings be conducted as pertains to midwifery competencies and in line with the ICM guidelines. This will ensure that gaps in knowledge and skills required to improve maternal and neonatal outcomes are adequately addressed. This will also sensitize nurses and midwives on the need to continuously update their skills as required by the emerging needs in the practice.

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