Contributions of midwives in the implementation of facility-based maternal death review (MDR) in selected health facilities in Ashanti Region, Ghana

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Abstract:
Background: Facility-based maternal death review is one of the tools used by the government of Ghana to improve the quality of maternal health care and reduce maternal mortality. It is known that Ghanaian midwives participate in the implementation of the maternal deaths reviews in the country, but little is known about their contributions in this process. The aim of this study was to explore and describe the contributions of midwives in the process of facility-based maternal death review in selected health facilities in the Ashanti Region. Methods: The study used a qualitative descriptive design with individual semi-structured interviews. Interviews were conducted with 20 midwives from eight district hospitals, one regional referral hospital, and one teaching hospital. Interviews were digitally recorded and analyzed through thematic content analysis technique. Results: The results indicate that midwives are actively involved in the implementation of facility-based maternal review. Three major themes emerged from their contributions: (1) reporting and documentation of maternal deaths; (2) assessment of probable causes of deaths; and (3) implementation of interventions for improvement. Conclusion: This study brings insight into the roles played by midwives in the implementation of the facility-based maternal death review in Ghana’s Ashanti Region. It highlights the expanded roles of midwives in the absence of physicians and the need for advanced midwifery training in the country. Further research looking at the impacts of their contributions is needed.

Key words: Implementation of facility-based maternal death review; Ghana; maternal death; maternal health; midwives’ contributions
Introduction

Maternal mortality is a public health problem in Ghana, as it is in many developing countries. Maternal mortality accounts for the majority of deaths of women in the reproductive age in developing countries. Approximately 1500 women die daily, and over 500,000 yearly owing to complications of pregnancy [1]. Sub-Saharan Africa has the highest maternal mortality rate (MMR) in the world. It is estimated at 620 per 100,000 live births compared to 240 deaths per 100,000 in South East Asia and 21 per 100,000 deaths per 100,000 births in the European Region [2]. The risk of women in sub-Saharan Africa to die from complications of pregnancy during their life time is higher than their counterparts in other parts of the world. Globally, the life time risk of women to die from complications during pregnancy and childbirth is estimated at 1:140. In sub-Saharan Africa the risk stands at 1:31 compared to 1:2,900 in Europe [2].

The causes of maternal deaths are known, and are similar for each maternal death across the world [3]. In Ghana, several factors have been identified as contributors to maternal deaths. Some of these factors include the delay in seeking medical care, difficulty in transportation to hospital, the delay of health workers to promptly attend to the client, and religious beliefs [4, 5]. It is acknowledged that these factors can be prevented with minimum cost even in countries with poor resources. Maternal Death Review (MDR) is seen as one of the interventions that can be implemented without major cost to improve the quality of maternal healthcare services, thereby reduce maternal mortality. It serves as a tool to identify why and where this death occurs, and serves to promote, protect and fulfill the obligation of the highest attainable Right to Health, and Right to Life for preventable maternal deaths. It looks beyond the numbers by studying the causes and avoidable factors behind each death, leading top actions to improve quality of care on the basis of the findings [6].

The literature describes several methods for maternal death review and includes community-based review, confidential inquiry, survey of severe morbidity or near misses, clinical audit, and facility-based review [7]. Facility-based maternal death review, which is also called a surveillance cycle consists of five stages: case identification, data collection, analysis of findings, recommendations and action, and evaluation. The aim of the facility-based MDR is to trace the passageways of women who died, through the health care system and within the health facility, in order to ascertain preventable issues that could change and improve maternal care yet to come. It is an educational process for health care professionals who take care of women with pregnancies and its related issues, and for students in training. It also serves as a way to make health providers answerable for their actions [8].

From the foregoing, the Republic of Ghana developed the national policy on maternal death review and packages to assist in the reporting of cases of maternal deaths from health facilities to districts. Maternal death review committees were established in all tertiary hospitals, regional referral hospitals, and district referral hospitals [9]. It is known that midwives are in the forefront of maternal health care delivery in Ghana. They have more contact hours with pregnant women than any other group of health workers. Midwives are the first to collect and record information of their clients during their visits to the health facilities. The quality of this information is critical not only to provide maternal care, but also to monitor and evaluate maternal deaths. It is also known that in countries that have acute shortages of health professionals, the role of midwives and nurses are constantly expanded to meet the needs of clients and the health care systems. Ghanaian midwives participate in the implementation of MDR, but little is known about their contributions in this process. It is, therefore, important to explore and describe their contributions in the implementation of MDR at the health facilities.

Material and Methods

Design

The study used a qualitative descriptive, exploratory design with semi-structured individual interviews. Qualitative research involves a systematic, interactive, and subjective approach to describe life experiences, and to present them in a meaningful way. The descriptive exploratory nature of the design allows the researchers to gain a deeper understanding of the contributions of midwives in the implementation of facility-based MDR process from their own perspectives [10].

Setting

The study took place in six health facilities in the Ashanti Region of the Republic of Ghana. These facilities included one teaching hospital, one regional referral hospital, and four district referral hospitals.

Sample and Sampling

The study used purposive sampling to select midwives who have been continuously working for at least two years from the date of data collection and involved in the implementation of the MDR at their
families. The potential participants who met the above inclusion criteria were identified by the senior management of the participating health facilities. The final sample consisted of 20 midwives who met the inclusion criteria and accepted to participate in the study.

Data collection

The semi-structured individual interviews were conducted by one of the researchers from the 1st to 30th September 2012. The interview schedule included open-ended questions, which derived from the five stages of the World Health Organization facility-based MDR cycle [7]. All the informants preferred to be interviewed at their work places. The interviews began like a social conversation and gradually moved to become highly interactive. Probing questions were used when appropriate to enhance the richness of data. The researchers used field notes to capture body language and facial expression of the interviewees [11]. Each interview lasted between 30 to 40 minutes. The interviews were digitally recorded; checked for quality, transcribed, and key findings discussed within 24 hours. Data collection ceased after 20 interviews when saturation of themes was reached [12].

Data management and analysis

The researcher used a letter and a number to code the interview schedule, while the same code was used to identify the individual informant’s audio recording. Each of the 20 respondents was coded as M1 to M20, where M means midwife, followed by the number 1 to 20, depending on the time of the interview. The interviews were immediately transcribed verbatim in order to refrain from missing relevant data. A follow-up was held to review and verify the transcripts with the informants the following day. No major changes were requested by the informants.

Thematic content analysis was used to process the transcribed data. The process included familiarization, identification of thematic framework, indexing, charting, mapping and interpretation [13]. The researchers developed a coding scheme in which the theme and sub-themes were labeled, categorized and summarized, followed by charting, which involved rearranging the data within sub-themes. The emerged sub-themes were organized and interpreted to draw relationships between codes to aid easy presentation.

Rigour

Trustworthiness was ensured through confirmability, dependability, credibility, and transferability [14]. Confirmability was achieved through prolonged engagement, reflexivity and triangulation of data, using independent coding, and peer evaluation. To ensure dependability, the coding process was evaluated at different phases by an independent coder. Neutrality was ensured through the strategy of conformability by keeping appropriate distance between the researchers and informants to avoid influencing the findings. Participants were ensured that whatever information they are giving will not have any impact on their academic life or the type of care they will receive. After coding the data, the transcripts and audio-tapes were made available for an independent coder for recoding.

Data was coded and recoded several times and compared with the themes and categories identified by the independent coder. Transferability was observed by providing detailed descriptions of the informants’ characteristics, the informants’ description of the phenomenon, as well as the researcher’s observations in reporting the findings.

Ethical considerations

The study received ethical approval from the Ethics Committees of the University of the Western Cape in South Africa and the Ministry of Health of the Republic of Ghana. Permission to access the facilities was obtained from the respective managers. Each informant signed a consent form before the interview.

Results

Of the 20 informants, 9 (45.0%) where from the district hospitals, 3 (15.0%) were from the regional hospital, and 8 (40.0%) were from the teaching hospital. All of them had a diploma in midwifery as the highest academic qualification. With regard to their positions, 9 (45.0%) were working as Principal Midwifery Officers, 6 (30.0%) as Senior Midwifery Officers, 2 (10.0%) as Staff Midwives, 1 (5.0%) as a Deputy Director, 1 (5.0%) as a Senior Staff Midwife, and 1 (5.0%) as Midwifery Officer. In term of continuous working experience as midwives, 3 (15.0%) had respectively 2 and 5 years of continuous working experience as midwives, 2 (10.0%) had respectively 10 and 15 years of continuous working experience as midwives, and 10 (50.0%) had more than 20 years of continuous working experience as midwives.

Three main themes and nine sub-themes, which described the duties and activities undertaken by midwives in the implementation of MDR in the six health facilities, emerged from the thematic content analysis of the data. The literature review and the WHO (2004) facility-based MDR process assisted the researchers to identify themes from the data. It also assisted in comparing the prescribed roles of health
workers (especially those who work directly with pregnant women such as the doctors and midwives) to the informants’ roles that were identified in this study. Some information on MDR, in general, which has some relationship with the themes that were identified, were also used in the discussion. Extracts from the informants were used to support the descriptions of these themes. The exact language and phrases that were used by the informants were maintained, but for additional clarity and the flow of lexes, some grammatical amendments were made. Table 1 provides a summary of the emerged themes with the corresponding sub-themes.

**Theme 1: Reporting and documentation**

As indicated in Table 1, certification, notification, and writing of incident reports are the three sub-themes of the administrative role of midwives in the implementation of facility-based MDR.

**Certification of maternal death**

It entails confirming a woman’s death as a maternal death, signing and providing a copy of the death certificate to relatives. This task is mainly performed by the most senior midwife on duty in the absence of a physician. “Maternal death is usually certified by the medical doctor, but where there is no medical doctor; the most senior midwife on duty does certify maternal death”. (M10)

**Notification of maternal death**

This sub-theme involves the completion and submission of relevant documentation to the public health unit of the hospital. “We fill the death notification form and submit it to the public health nurse in-charge who will further submit it to the district director and an audit is organized for us to meet in the hospital here”. (M6)

**Writing of incident reports**

The sub-theme involves the writing of a brief narrative report about the clients and the events surrounding the time of death. The report is prepared by the midwife in-charge of the management of the deceased client. It is submitted together with the completed notification of maternal death. “We write a narrative report about the client, a brief summary of the condition on admission and the events surrounding her death, and attach it to the death notification form”. (M3)

**Theme 2: Assessment of probable causes of maternal death**

The contributions of the midwives in the assessment of probable causes of maternal death include: collection and documentation of data, analysis and interpretation of data, and the formulation of recommendations and plan of actions for improvement.

**Collection and documentation of data**

This entails a critical review of the medical and nursing/midwifery records of the deceased women, and the description of the care provided by midwives. Midwives performed these tasks regardless of the presence of a physician. “We review the nursing and midwifery records of the mother to establish the care provided from the time she was admitted up to her death. We also looked at the treatment she received and her response to treatment”. (M2)

It emerged that the most senior midwife takes the responsibility to compile a comprehensive report of the data collected. “As a senior midwife, I take the responsibility to document everything about the client; all that was done for the patient before she died in the nurses’ note”. (M20)

**Analysis and interpretation of data**

The activities of this sub-theme are organised by midwives in preparation of the facility-based MDR committee meeting. It involves a pre-audit meeting of the midwifery/nursing personnel where the collected data is processed in order to establish the probable causes of death. “We have a pre-meeting where all midwives attend, especially those who attended to women who died in the health facility. The nursing and midwifery clinical audit data of different units are presented. Questions are raised regarding circumstances surrounding death, for example, the interventions given when the condition was changing, if the doctor was called on time and so on just to know if the midwives have the knowledge on what she should have done. And if they need knowledge on active management of first stage of labour so these are some of the things we talk about”. (M12)

The most senior midwife serving in the facility-based MDR takes the responsibility to compile the final midwifery report to be submitted to the facility-based MDR committee meetings. “After this meeting, I have to finalize the midwifery report and submit it to the audit team”. (M1)

**Formulation of recommendations and plan of actions for improvement**

This sub-theme refers to the input given by midwives in the interpretation of the audit report, and recommendations that are formulated by the facility-based MDR committee. The sub-theme is well captured in the description below: “During the audit meeting the medical doctor presents the report to the committee for discussion ... and as I said, the medical doctor gives his/her report and I add whatever he
might miss based on our pre-audit meeting and I answer all the questions related to midwifery. I give midwifery perspectives in the formulation of the recommendations and plan of actions”. (M8)

Theme 3: Implementation of interventions for improvement

As indicated in Table1, this sub-theme include: the dissemination of the recommendations and plan of actions, the implementation of the plan of actions, and the monitoring of the interventions.

Dissemination of the recommendations and plan of actions

It is mainly performed by midwives serving in the audit committees through information sharing sessions and written memos.

Information sharing sessions are mainly used in Teaching and Regional hospitals. “As a midwife serving in the audit committee of the hospital, I organise information session with the midwives after each audit meeting to inform them about the recommendations of the committee. We also reflect on the actions to be taken and their implications in our daily activities”. (M10)

Written memos are commonly used by midwives working at the District hospitals. “For me as a midwife serving in the committee, I always write a memo to the management and the heads of the clinical units to inform them about the recommendations of the committee”. (M19)

Implementation of the plan of actions

It emerged that all midwives are actively involved in the implementation of the recommendations and plan of actions formulated by the audit committee. “Yes, we implement recommendations...every single midwife is fully involved in the implementation of the recommendations of the committee”. (M3)

Monitoring the implementation

This is mainly performed by midwives/nurses in charge of the unit, though it is not limited to the in-charges. “The in-charge makes sure that all recommendations are carried out”. (M6)

Peer monitoring is also done as expressed by the following informant: “We supervise ourselves during handing over and ward meetings. If I am taking over and I look through the folder and I see that something was not done, I make sure I remind you (referring to the colleague) about the way it should be done”. (M6)

Discussion

Reporting and documentation

The reporting and documentation activities undertaken by midwives in cases of maternal death, which emerged from this study, are consistent with the first stage of the facility-based MDR process and the national protocol on MDR. Prompt reporting of maternal death is essential for the initiation of the MDR’s activities and it should be done immediately by the healthcare professionals who are attending to the client at the time of death [7, 15]. According to the World Health Organization guidelines [7], certification of maternal death should be done by specialist health care professionals who care for pregnant women. The national protocol stressed that maternal death certification can be done by the most senior midwife on duty in the absence of a specialist or a medical doctor. Even in the presence of a medical doctor, the midwife is still expected to provide the necessary documentation and information, which is required for certification to be carried out [15].

Midwives involvement in the certification of maternal death in the context of Ghana is a subject of concern. Maternal death certification requires specialized competencies, which is not currently provided in midwifery training. The ability of midwives to effectively perform this task may be questionable. This concern was raised by one informant who is a member of the MDR team at regional level. Her concern is captured in the following statement: “Midwives certify maternal death just like the doctor but most of them are not able to establish if maternal death was due to direct or indirect causes”. This observation is justified by the lack of advanced training programmes at Master’s level in midwifery in the country. Most midwives are thus trained at diploma or bachelor’s degree level. These programmes do not prepare them to the level of competencies required to accurately certify maternal death.

Assessment of probable causes of maternal death

The activities performed by midwives under this theme are congruent with the facility-based MDR guidelines and the national protocol on MDR. According to the facility-based MDR process, evidence of maternal deaths at the health facility must be collected and documented accordingly. Furthermore, all gathered evidence should be analysed effectively to arrive at the cause of death of the woman [7].

As shown in this study, midwives play an active role in providing recommendations. As major stakeholders in the care of pregnant women, it is encouraging that they are actively involved in providing needed recommendations, to improve service delivery, which eventually reduces the needless deaths of pregnant women. It is emphasized
that midwives’ active participation in the process of formulating recommendations in maternal death can promote their commitment and likelihood of the implementation of proposed recommendations and actions. This may also lead to women getting more attention and support from these midwives [16].

**Implementation of interventions for improvement**

The contributions of the midwives under this theme are congruent with the last two stages of the facility-based MDR process and the national protocol of MDR. As shown in this study, midwives, as key stakeholders in the delivery of maternal healthcare, seem to be committed in the roles that they play in the implementation of the recommendations, which is preceded by the dissemination of the decision made by the facility-based MDR committee. The active role of midwives in the implementation of recommendations has a positive implication in reducing maternal death, whilst improving the general health of women [7].

The facility-based MDR guidelines state that all recommendations must be monitored and evaluated to bring improvement into the health service delivering system. The process of monitoring and evaluation is done by considering procedures that are used in service delivery whilst also examining shortcomings or problems that might be associated with recommendations that are given [7]. In most cases, the informants reported that they check each other during the period of implementation. It is clear that everybody is involved in monitoring implementation of the recommendations.

**Conclusion**

The results of this study suggest that midwives are making great contributions in the implantation of facility-based MDR. These contributions range from case identification to monitoring of the recommendations. The results of this study also highlight the expanded roles played by nurses and midwives in most developing countries. As discussed in this study, midwives are expected to take-up certain responsibilities, which, they are not trained to do and they would not otherwise do at facilities that have medical doctors. The results also highlight the need for highly skilled midwives, especially at facilities that do not have medical doctors, and the need for support to enhance continuous learning. Although the results of this study have provided insights into the contributions of midwives in the implementation of the facility-based MDR at their facilities, the impacts of their contributions on maternal health services are yet to be determined.

**Competing interest**

The authors declare that they have no competing interests.

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Table 1: List of themes and sub-themes of the midwives’ contributions in the implementation of facility based MDR in Ashanti Region, Ghana

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