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Maternal Death Surveillance and Response: Factors Affecting its Implementation in Mtwara Region, Tanzania

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Abstarct

Background: Tanzania like many other developing countries continues to experience alarming levels of maternal deaths despite a number of years of implementing Maternal Death Surveillance and Response (MDSR) strategies. This study examined the factors influencing MDSR implementation in Mtwara region, Tanzania.

Methods: This is a mixed methods with quantitative and qualitative data collection approaches. Semi-structured interviews were conducted to 84 health workers and in-depth interviews to 15 facility and district committee members. Logistic regression analysis for the quantitative data was done using STATA version 14, and p-value<0.05 were considered statistically significant. Qualitative data was analyzed using a thematic analysis.

Result: Overall proportion to maternal deaths reviewed as per National MDSR guidelines were 50.5%, and the percentage of implemented MDSR recommendations was only 34.6%. The factors influencing attendance in the review meeting includes knowledge of MDSR recommendations (p=0.03) and perception of increases workload (p=0.03). The pressure from RHMT on MDSR performance and involvement of different stakeholders were reported to facilitate implementation of MDSR recommendations. However, the factors which reported to hinder its implementation includes; inactive MDSR Committees as a results of inadequate capacity building in terms of poor support to implement MDSR recommendations, heavy workload and lack of motivation.

Conclusion: The overall implementation of MDSR in Mtwara region is low. This is due to inadequate capacity building and support of implementation process. The Government and RHMT need to strength training programs on MDSR to district and facility committees, ensure timely financial support and regular supportive supervision.

Keywords: Maternal Death; Surveillance; Response and Implementation

Abbreviations: MDSR: Maternal Death Surveillance and Response

Introduction

Maternal Death Surveillance and Response (MDSR) is a model of routine identification, notification, quantification and determination of causes and associated factors of maternal deaths and the use of this information to respond with actions that will prevent future deaths [1]. Globally, it is estimated that around 303,000 women die every year following pregnancy and childbirth complications. The burden is higher in developing countries with Sub Saharan Africa and South Asian countries being the main contributors of almost 99% of all maternal deaths [2-4]. Most of maternal deaths are preventable and should be eliminated as called for by the Commission on the Status of Women [5].

Understanding exactly why a woman died in pregnancy or around the time of childbirth is a crucial first step towards preventing other women from dying in the same way [6]. A maternal death surveillance and response (MDSR) system is a proper system that gives the right information to provide specific solutions and guides the appropriate actions to prevent future deaths [6]. According to WHO, the implementation of MDSR involves establishing an entire system to link surveillance and review of maternal deaths at facility and community levels [7].

Tanzania like other Sub Saharan African countries has made unsatisfactory progress as some decline in Maternal Mortality has

been noted but not fast enough to reach its targets on improving maternal health and subsequently reported to be among 30 countries that accounted for 58% of global maternal deaths [8-10]. The country launched the MDSR system in May 2013 aiming at reduction of maternal mortality by providing timely review of maternal deaths at service delivery points, identify avoidable factors, setting local standards and providing technical support to health care facilities to execute planned actions to improve care at all levels of health systems.

For many years WHO had identified MDSR as a life-saving intervention to significantly reduces preventable maternal deaths [11]. WHO standards requires that; identification and notification of every maternal death to high authorites should take place within 24 and 48 hours; and are properly investigated and reviewed within seven days in order to determine the medical causes of this death and other factors that may have contributed [6]. However, the implementation of MDSR is still not at an optimal level in most countries particularly in sub-Saharan Africa [11]. A study done in Kenya has cited that county-level efforts have not functioned as per WHO guide as only 12% of all maternal deaths were identified and only half of these were reviewed [12]. Other studies in four Sub-Saharan African countries including Tanzania assessed the MDSR implementation status have reported that, MDSR system does not function adequately to fulfill the aspiration to capture every facility-based maternal deaths and no routine MDSR tracking system exists among health facilities [13].

Mtwara region is among Tanzanian regions that started implementing MDSR in 2016. However, the region has continued to face the increased maternal deaths from 147 deaths per 100,000 live births (2016) to 161 deaths per 100,000 live 2018 [14]. Maternal deaths report of Tanzania in a year 2018 reported Mtwara to be in sixth position with 76 maternal deaths above other twenty regions including its neighboring regions of Lindi and Ruvuma which reported 48 and 58 maternal deaths respectively [15]. Ever since MDSR was introduced in Mtwara, there are no documented evidence on the factors facilitating its implementation and the barriers faced by different levels of health care delivery systems.

This study aimed at examining the implementation of MDSR and its influencing factors among health facilities in Mtwara region. It is also expected that this study will provide an understanding of the issues surrounding its implementation and eventually help programmers and policymakers to make evidence-based decisions on the program planning, prioritize the resources for the MDSR process and scaling up to improve the performance of the system. It will also act as a benchmark for the health managers within the health facilities, CHMTs and RHMT respectively to take remedial action plans and implement strategies based on not only the estimated number of maternal deaths but also understanding why and where the women died so that it can be easy to make the follow-up about the problem. In addition, the study findings will serve as a reference for further studies and influencing actions and advocacy in the health sector.

Methodology

Study design

This was a mixed method study, with quantitative and qualitative approaches used to obtain the data.

Study population

The study population comprised of health workers working in maternity and RCHC departments, district and health facility key MDSR committee members and all health facility maternal deaths that occurred from 2016 to 2018 in the sampled health facilities.

Study area

The study was conducted in Mtwara region. The region has 232 health facilities, comprising of 6 hospitals, 21 health centres and 205 dispensaries. Both hospitals serve the entire population of Mtwara region as it receives referrals from six frontline hospitals, Health Centres and dispensaries (government and non-government owned). The study was conducted in two Regional Referral Hospitals, four district hospitals and seven Health Centres that provide Kemon services during the study period. These facilities were selected based on their referral functions in Comprehensive Emergency Obstetrics and Newborn Care for lower-level health facilities. Given the burden of maternal deaths it carries and the extent of the rollout of MDSR, there were several other compelling factors pushing the researcher to prefer Mtwara region as a study area within the overall regions in Tanzania. Among others are the definite increasing trends of facility-based maternal deaths despite a number of years of implementing MDSR.

Study duration

The study was conducted between March 2019 and July 2019.

Inclusion criteria

a) Being an MDSR committee member or MDSR focal person

b) Have attended at list one review meeting (for key informants)

c) Working at maternity or RCHC department for at least six months

Exclusion criteria

Member of the committee who will have any other special official responsibilities.

Sample size calculation

Choice of sample size is influenced by confidence needed in the data, margin of error that can be tolerated, types of analyses to be undertaken and size of the sample population and distribution.

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The sample size for health workers was estimated using the simplified formula for proportion called finite population correction developed by Yamane (1967:886) that can substantially reduce the necessary sample size for small populations (Israel, 2003).

$$n = \frac{N}{1+N(e)^2}$$

Where: n ⍰ the sample size,

N ⍰ the population size ≈106

e ⍰ the level of precision ≈ 5 %

Therefore:

$$n = \frac{106}{1+106\ (0.05)^2}$$

⍰ 83.79446 ≈ 84

n ⍰ 84 health workers

Sampling technique and sample size

Quantitative part: Simple random sampling was employed in the selection of workers to be interviewed in each health facility and all heath facility-based maternal deaths reviewed forms of 2016 to 2018 were reviewed.

Proportional to size sampling was used to determine the number of health workers to participate in each facility. Using the calculated sample size, the sampling fraction was obtained by taking the estimated sample size (n= 84) divide by the total number of health workers (N= 106). The sampling fraction (0.79) was then used to determine the number of health workers per facility. A health worker in all the maternities in identified facilities were assigned by numbers then simple random sampling was employed in the selection of those to be interviewed in each facility.

Qualitative part: Purposive sampling technique was used to obtain key informants among MDSR committee members at the facility and districts based on their knowledge, roles, and expertise in the MDSR process (Palinkas et al., 2016). The sampling procedure in this part was guided by the principle of saturation.

Therefore, sample size of this study was 84 health workers, fifteen key MDSR committee members and 174 maternal deaths reviewed forms

Variables: The dependent or outcome variable was MDSR implementation. Independent variables were Awareness, attitude and perception of the health workers towards MDSR implementation

Data collection tools

Quantitative study: A data abstraction form developed by the researcher in English Language version was used to collect information through a review of maternal death reviewed forms and birth registers. A semi-structured questionnaire adapted from previous studies was used to collect information from health workers at maternity and RCHC departments [16,17] was used to interview service providers working in maternity departments to generate data on providers and managerial factors that influence the implementation of MDSR.

Qualitative study: The interview guide adopted from previous studies was modified and used to collect information on the factors which influencing MDSR implementation from Key members of MDSR committees of the district and facilities, through in-depth interviews.

Validity and reliability: Validity was achieved by reviewing each question and providing opinion on whether the items covered the research objectives or not.

Data analysis and interpretation: The Quantitative data collected using semi-structured questionnaires and abstraction forms were pre-coded, entered, cleaned and stored on a daily basis. Collected data was double-checked to ensure data validation and consistency before, during and after data entry. Data was exported to the STATA version 14.0 for analysis. Univariate analysis was used to describe single variables using frequency distributions tables and charts. Bivariate analysis was employed to establish an association between variables. Pearson Chi-Square test to assess factors influencing MDSR implementation and p-value of <0.05 was used as a cut-off point for significance level at 95% confidence intervals.

Qualitative data was analyzed using a thematic analysis framework of [18]. First, the audio record of the interviews was fully transcribed and translated into English Language. Then, the translated material was coded manually. Different codes in the text were merged to form categories and subcategories which were combined into thematic areas. Finally, the result was presented in narration by triangulating with quantitative findings.

Recruiting and training research assistants: Before data collection, two research assistants were recruited and trained for one day on the study methodology and data collection procedures so that they can be able to help with the data collection process. They were midwives from other facilities which were not included in the study.

Ethical clearance: Ethical clearance was granted by MUHAS Institution Review Board. Also, permission to conduct the study was sought from Mtwara Regional Administrative Secretary. Direct consent from participants was obtained. To maintain confidentiality, the anonymity of the study participants was assured by not recording their names. Permission to review maternal death reviewed documents was obtained from chairperson and secretaries of each district and facility MDSR committees in the study sites. All forms and files were reviewed in the matrons' offices. The audio records and written information was kept confidential and restricted to the research team.

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Result

Quantitative results

Study participants' distribution: A total of 84 Health care workers from 13 Health facilities were interviewed during the study period. Majority 78 (92.9%,) of the participants were Nurse-Midwives surpassing Clinicians, 63 (75%) of the participants were from hospitals and maternity departments having the highest proportion of (92.9%) of all health workers participated (Table 1).

Table 1: Distribution of study participants.

Variable	Frequency (N)	Percentage (%)
A cadre of Health worker		
Clinician (CO/MD)	6	7.1
Nurse midwife	78	92.9
Section of the health facility		
Maternity ward	78	92.9
Reproductive and Child health clinic	6	7.1
Facility level		
Health center	21	25
Hospital	63	75

Proportion of Maternal death reported and reviewed: A total of 174 maternal deaths were reported and recorded in three years (2016 to 2018) in the region whereby, two regional referral hospitals reported the highest number of maternal deaths of 43 and 30 respectively. Health centers contributed the least. Of the above reported maternal deaths only 107(61.5%) were reviewed. Six of the facilities had all their maternal death reviewed while one facility had 2 maternal deaths but none of these were reviewed. Of the above reviewed maternal deaths, only 54(50.5%) were reviewed timely as per the National MDSR guideline (Table 2).

Table 2: Proportion of maternal death reported and reviewed (2016-2018).

Name of Health Facility	Maternal Death Reported	Maternal Death Reviewed Routinely N (%)	Maternal Deaths Reviewed Timely N (%)
Ndanda	43	39(90.7)	39(100.0)
Ligula	30	22(73.3)	0
Tandahimba	29	15(51.7)	0
Newala	25	8(32.0)	8(100.0)
Mkomaindo	23	5(21.7)	0
Mangaka	6	6(100.0)	3(50.0)
Chiwale	4	4(100.0)	0
Likombe	4	2(50.0)	2(100.0)
Nanguruwe	4	2(50.0)	2(100.0)
Chihangu	2	0	0
Kitere	2	2(100.0)	0
Mahuta	1	1(100.0)	0
Michiga	1	1(100.0)	0
Overall	174	107 (61.5)	54 (50.5)

The extent of implementation of MDSR recommendations: The overall percentage of implemented MDSR recommendations were 34.6% however, none of the facilities implemented above 50% (figure 1).

Factors which influencing MDSR implementation among health facilities: Factors which influencing the implementation of MDSR were grouped into managerial and provider factors. At univariate analysis, about 95.2 % of the health workers reported to have MDSR committees in their health facilities, yet only 43 %

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reported to have ever attended in MDR meeting. Moreover, 67.9 % of the respondents knew some recommendations from maternal death review committees in their health facilities, whereas 91.7 % of the respondents noticed an improvement in maternal health care as a result of MDSR (Table 3).

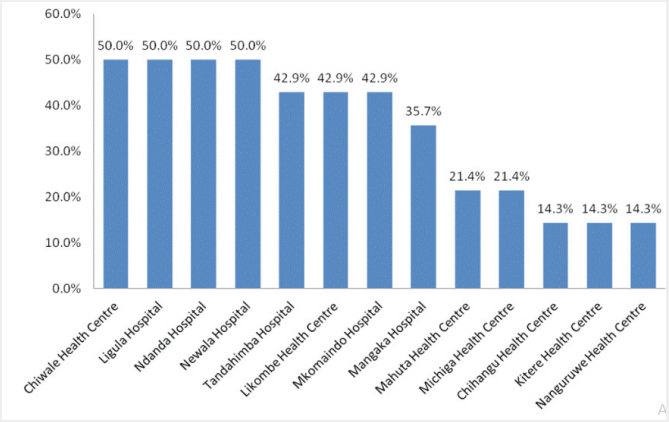

Figure 1: The facility implementation of regional MDSR recommendations.

Table 3: Managerial factors that influence the implementation of MDSR among health workers in Mtwara region.

		Attended in MDR		
Variables	**Frequency (%)**	**Yes**	**No**	**X2(P-Value)**
A cadre of Health worker				
Nurse midwife	78(92.9)	34(94.4)	44(91.7)	
Clinical Officer	1(1.1)	1(2.8)	-	
Medical Doctor	5(6.0)	1(2.8)	4(8.3)	2.42(0.30)
Section of the health facility				
Maternity ward	78(92.9)	35(97.2)	43(89.6)	
Reproductive and child Health clinic	6(7.1)	1(2.8)	5(10.4)	1.81(0.18)
Knowledge of having an MDSR committee in the health facility				
Yes	80(95.2)	33(91.7)	47(97.9)	
No	4(4.8)	3(8.3)	1(2.1)	1.77(0.18)
Knowledge of availability of core MDSR committee members				
Yes	72(85.7)	34(94.4)	38(79.2)	
No	12(14.3)	2(5.6)	10(20.8)	3.92(0.05)
Senior staff members attend the MDR meeting				
Yes	74(88.1)	34(94.4)	40(83.3)	
No	10(11.9)	2(5.6)	8(16.7)	2.42(0.12)
Knowledge of MDSR recommendations				
Yes	57(67.9)	29(80.6)	28(58.3)	
No	27(32.1)	7(19.4)	20(41.7)	4.66(0.03)
Knowledge of implementation of MDSR recommendations in the facility				
Yes	50(59.5)	25(69.4)	25(52.1)	
No	34(40.5)	11(30.6)	23(47.9)	2.57(0.11)
Noticed the improvement in maternal health services				
Yes	77(91.7)	35(97.2)	42(87.5)	
No	7(8.3)	1(2.8)	6(12.5)	2.55(0.11)

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Attendance in Maternal Deaths Review meetings was used as a proximal measure in MDSR implementation. The bivariate analysis shows a knowledge on the availability of core MDSR committee members was significantly higher (85.7 %) among health workers who had ever attended in MDR meeting compared to 14.3% that had never attended (p =0.05). Also, there was a statistically significant difference in the attendance in MDR meetings among health care workers in relation to having Knowledge of MDSR recommendations (p=0.03) (Table 4).

Table 4: Univariate and Bivariate analysis of the providers' factors influencing the implementation of MDSR (n=84).

		Attendance in MDR		
Independent variables	**Frequency**	**Yes**	**No**	**X2(p-value)**
AWARENESS				
Health workers know the main objective of MDSR				
Yes	82(97.6)	36(100.0)	46(95.8)	
No	2(2.4)	-	2(4.2)	1.54(0.22)
MDRS objectives communicated health workers				
Yes	77(91.7)	32(88.9)	45(93.8)	
No	7(8.3)	4(11.1)	3(6.3)	0.64(0.43)
Trained on MDR				
Yes	2(2.4)	-	2(4.2)	
No	82(97.6)	36(100.0)	46(95.8)	1.54(0.22)
ATTITUDE				
Feel encouraged to implement MDSR				
Yes	81(96.4)	34(94.4)	47(97.9)	
No	3(3.6)	2(5.6)	1(2.1)	0.72(0.40)
MDSR affect how you provide maternal health services				
Yes	38(45.2)	18(50.0)	20(41.7)	
No	33(39.3)	15(41.7)	18(37.5)	
Not stated	13(15.5)	3(8.3)	10(20.8)	2.48(0.29)
PERCEPTIONS				
Implementing MDSR inconveniences you				
Disagree	82(97.6)	34(94.4)	48(100.0)	
Agree	2(2.4)	2(5.6)	-	2.73(0.10)
Implementing MDSR increases your workload				
Disagree	73(86.9)	28(77.8)	45(93.8)	
Agree	11(13.1)	8(22.2)	3(6.2)	4.61(0.03)
		Attendance in MDR		
Independent Variables	**Frequency**	**Yes**	**No**	**X2(P-Value)**
MDSR improves maternal health services				
Disagree	2(2.4)	1(2.8)	1(2.1)	
Agree	82(97.6)	35(97.2)	47(97.9)	0.04(0.84)
Your capacity built by the Council/district to Implement MDSR				
Disagree	29(34.5)	12(33.3)	17(35.4)	
Agree	55(65.5)	24(66.7)	31(64.6)	0.04(0.84)

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The level of awareness of MDSR was high among health care workers interviewed. About 97.6% of the health workers who participated in the study knew the main objectives of MDSR while 91.7% said that the objectives have been communicated to all health workers in the maternity department. Moreover, 97.6%) of the respondents were not trained on MDSR though, none of these factors were significantly associated with participation in Maternal Deaths Review meeting (Table 5).

Table 5: Summary of Qualitative Results (As Reported "by MDSR committee members.

Codes	Categories	Sub-Categories
The committee is not active	Factors hindering MDSR implementation	Inactive MDSR Committees at facility and district levels
MDSR Committee does not meet on a regular basis		
Ever since I took this post we have never met to review maternal deaths		
We are failing to implement most of the issues in maternal death due to absence of MDSR training		Inadequate capacity building on MDSR and Obstetric emergencies
Majority of health workers are not aware of the importance of MDSR		
Nobody ever attended an MDSR training		
Some of the HCPs were involved in the regional MDSR reviews		
We conduct MDR by experience from HCPs who attended regional MDSR reviews		
None of the maternity staff members attended the MDSR training		
No single staff member who knows the MDSR exactly how it should be done		
Orientation on MDSR was given very briefly by the CHMT members		
Newly employees are not oriented on obstetric emergencies		
No one from this facility trained on MDSR		
Supervision from district level is very weak		
We lack regular supervision from RCHMTand CHMT		
RCHMT/CHMT should not leave us behind		
We don't implement on resolutions that emerge from MDSR reviews		Inadequate support to implement MDSR recommendations at facility level
We lack support from CHMT to implement the action plans		
No CHMT member who have ever attended the facility MDSR recommendations		
None of the day district MDSR committees meets to discuss facility action plans		
A major constraint in implementing or delaying the MDSR resolutions inadequate and late financial support		
We have stopped performing operations since 2018 because our sterilizer is not working and CHMT has never responded to our request.		
Shortage of doctors in the maternity department		Inadequate number of skilled providers and heavy workload
Sometimes we fail to conduct maternal death review meeting due to shortage of staff		
Poor attendance in the review meeting and continous education sessions		
Codes	**Categories**	**Sub-Categories**

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Sessions		heavy workload
One should double the shift because of a shortage		
You may find one managing all sections alone		
Level of education is a challenge		
Getting obstacle in providing CEmONC		
Don't even know how to use Partograph		
We have been implementing MDSR by a personal call		Lack of motivation to facilitate the implementation of MDSR activities
MDSR activities were not budgeted in the hospital plan		
You force people to attend a maternal deaths discussion meeting		
We lack financial support and motivation to implement MDSR activities		
Leaders blame nurses		Blaming culture from higher authority during MDSR meeting at all levels
Sometimes you find the cause of maternal death was due to doctor's negligence.		
Important information about deaths are hidden to avoid blames from the management		
Feedback is given in the form of frightening		
We work under pressure from CHMT/RHMT		
CHMT are too harsh during a review meeting		
People scare to express the truth		
The strong influence of RHMT	Factors which facilitating MDSR implementation	Pressure from RHMT on MDSR performance
Follow up from RHMT if delays of reporting maternal deaths		
Held responsible by ZRCHCO when delayed to notify maternal death		
The regional team meets the relatives of the deceased at the community level		
Involves laboratory department		Integration of MDSR and obstetric emergency issues into different departments
Established hospital blood collection committee		
Donate to stock the blood bank for pregnant women		
Everyone is participating fully in obstetric emergencies		
Codes	**Categories**	**Sub-Categories**
Some partners support the implementation of recommendations		Involvement of stakeholders and developing partners in the implementation of recommendations
GIZ supported EmONC training and short course for anesthetists		

Qualitative result

In order to ensure the rigor of this study researchers found that, there was a need to probe more information qualitatively in order to get a further description of the factors influencing MDSR implementation among health facilities whereby two categories were merged with several subcategories. However, most of the qualitative data complemented the quantitative data.

Factors hindering MDSR implementation

Inactive MDSR Committees: In qualitative findings, most of the key informants reported that committees are available in their facilities and districts though they are weak, as a result, majority of the maternal deaths were not reviewed. Moreover, at the district level there is inconsistent meetings to review facility's MDSR recommended action plans due to ad-hoc activities, overwhelming

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tasks, lack of team spirit and accountability within the MDSR committees.

"committee is available but does not meet on a regular basis, members are willing to meet for maternal death review, but the challenge is overwhelming of tasks and ad hoc activities, for instance, in this month is difficult to find either chairperson or any CHMT member for a meeting since everyone has other important task to fulfill..." (Resp 09).

Inadequate capacity building on MDSR and Obstetric Emergencies: Majority of key Informants described that Lack of the MDSR training, irregular Supportive Supervision and inadequate resources were among impediments for the capacity to implement maternal death surveillance and response activities at district and facility levels. Below is a quote of key informant who reported that;

"The official training of MDSR did not involve any staff member from maternity department and the way I see it is a weakness because no single staff knows the MDSR exactly how it should be done and even orientation was given very briefly... (Resp 06)

Having known that adequate supportive supervision could be used as an opportunity to improve the knowledge and skills of health staff members if carried out in a respectful and non-authoritarian way. Most of the respondents proved that there had been irregularity of Supportive Supervision from the high authority that hinders the implementation of MDSR at the facility level and once happened does not conduct in a facilitative approach that could promote mentorship, joint problem-solving and communication between administrators and clinical staff conducting MDSR. One of the respondents narrated below:

"Supervision from the district level is very weak. For example, often it may pass some months without supervision while we have the district offices located in vicinity to the hospital premises rather we depend only to the DNO and DRCHCo to solve our immediate challenges..." (Resp 06)

Inadequate support for the implementation of MDSR recommendations: Moreover, key informants reported that insufficient resources in terms of finance, material, and supplies often hinder the implementation of MDSR at the facility level. Some key informants reported that failure to implement resolutions recommended by the MDSR committees has been facilitated by insufficient and late disbursement of the fund provided to support facilities to implement recommended interventions. One of the key informants said;

"...a major constraint in implementing or delaying MDSR resolutions is a deficit in financing the intervention suggested by the health facilities. For example, it comes a time when the health facilities fail to procure even fuel for an ambulance, especially between July and September..." (Resp 07)

Lack of motivation to facilitate the implementation of MDSR activities: Motivation deficits narrow the individual's commitment in the implementation of the MDSR as some of the respondents proved to have untimely maternal deaths reviews and non-adherence to schedules for the MDSR committees. Some health workers reported being reluctant to change at all no matter how much time you spend to empower them. The phenomenon is the same even to leaders at the district level, who do not want to recognize their positions and roles in the MDSR implementation leading to delays everywhere.

"For two years we have been implementing the MDSR by a personal call since management justified that the activity was not budgeted in the current hospital plan probably until the financial year 2019/2010. Therefore, you ought to force people to attend maternal deaths discussion meetings and implementing the recommendations..." (Resp 01)

Factors which facilitating the MDSR implementation

Pressure from RHMT/CHMT: The presence of regional pressure, as well as national policy, was narrated to be among the factors facilitating MDSR implementation in most of the facilities that participated in this study. Majority of Key informants reported the contribution of Regional Health Management Team in the implementation of MDSR that, it has gone even further to facilitate CHMTs and health facilities to sensitize the community on identification and notification of community-based maternal deaths, yet managed to coordinate joint maternal deaths discussions between district hospitals in order to improve referral process. This has been narrated by one of the respondents who said that;

"I think among factors contribute to the implementation of MDSR is the strong influence of the regional level. For example, if reporting of maternal deaths delays for more than 24 hours, you will be held responsible by the regional RCHCo..." and they used to go to the community after review session in order to address the identified gaps which results from community delays (Resp 01 and 06)

Integration of MDSR and the Obstetric emergency issues into different departments : Furthermore, the presence of teamwork within MDSR Committee members and some health workers towards a mandatory review of maternal death were other factors reported by some respondents. They have narrated that in some health facilities where MDSR is strongly upheld obstetric emergencies are integrated within all departments. Everyone in these facilities need the best outcome for every pregnant woman who came for obstetric care, as verbalized by most of respondents;

"In the course of implementing the MDSR resolutions, the laboratory department plays a very potential role, for example; they recently established a norm for every patient undergone surgical operation regardless of the admitting ward should donate to stock blood for pregnant women. In fact, it helped us a lot ..., meanwhile,

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the Medical Officer In-charge sensitized and we establish hospital blood collection committee following MDSR recommendations and laboratories staff took it seriously..." (Resp 06)

Involvement of stakeholders and development partners in the implementation of MDSR recommendations: However, in some cases implementation of MDSR was highly regarded to be an interpretation of the achievement of management at the regional level in maternal health partnership. What was clearly evidenced in this study was the correlation between the implementation of MDSR in Mtwara region and the collaboration of RHMT with all potential stakeholders such as development partners, government agencies (MSD, Blood Bank and NHIF) and political entities. This is what some of the participants had to say;

"GIZ supported EmONC training at all facility levels and short course for anesthetists for CEmONC health centers.., They had a work plan in the hospitals and CEmONC facilities monthly.., They supported facilities with IPC and SOPs materials..." (Resp 06, 04, and 07)

Discussion

This study was conducted to examine the implementation of the maternal deaths surveillance and response and its facilitating factors among health facilities in Mtwara region. This chapter presents the discussion of findings and strives to discover the meaning of the findings and to relate them with the available literature. It gives more details on what a good MDSR approach might involve.

The proportion of maternal death reviewed as per guideline

A significant reduction of maternal mortality in any country requires counting every case and collecting information to permit an effective response that prevents future deaths [19]. Implementation of Maternal death surveillance and response in Mtwara region is lower than what is required by the national policy, justified by the proportion of reviewed maternal deaths by 61.5%. Non-adherence to the National MDSR guideline was also justified by proportional of timely reviewed maternal deaths of about 50.5% amongst reviewed deaths. World Health Organization Survey on MNCAH Policy Indicator done in 67 countries stressed that having both national policies to notify all maternal deaths in the country and a policy to review all maternal deaths are essential indicators for the implementation of the MDSR system [20]. This survey justifies Tanzania being among Low and Middle-Income countries that fall under the group of partial implementation of MDSR, despite having a policy for reviewing all maternal deaths and availability of maternal deaths notification policy, yet no data that exist to show MDSR committees functionality [21].

A study done to assess MDSR implementation in the WHO African Region also found a small number of maternal deaths being reviewed in many countries with 57% of respondents reported that there was fear of disciplinary action [22]. The results above are a little bit higher from that of evaluation of MDSR implementation in 23 districts in Guinea which reported a low proportion of only half (50.2%) of all maternal deaths reported in 2016 [23]. However, this results is lower than that from Oyam district in Uganda which reported a proportion of maternal deaths reviewed from 2008 to 2011 to be 71% [16] but results were obtained from only six facilities of one district with 68 maternal deaths within four years, while that of Mtwara was the representative of the whole region from thirteen health facilities with 174 maternal deaths in three years. Furthermore, the results of this study were higher than that of the study done in Kenya which reported a very low proportion of only 20% reviewed maternal deaths among those recorded via the Health Management Information System [7].

A report from the knowledge-sharing meeting and the findings of the evaluation of the South African MDSR insisted that a committee to review maternal death should meet shortly after the death has occurred, while the events that took place are still fresh in the memories of all relevant parties [11]. In this study the attendance of health workers in maternal death review meetings which was used as a proximal measure of MDSR implementation was found to be low about 43% but higher than 34.8 % of health workers reported in the study of Oyam [16].

Qualitative findings have reported that the review process in most of the facility is low due to the lack of awareness on the importance of MDSR as well as inadequate knowledge and skills to conduct maternal death review among committee members. Additionally, shortage of staff members, workload and lack of financial motivation made difficult for the facilities to review maternal deaths in a timely manner. However, majority of the district Informants has realized that review of maternal deaths even at the district level is not conducted due to ad-hoc activities, lack of commitment and flexibility among key committee members and lack of team spirit within the team. These responses were different from that of the study done in Arua Regional Referral Hospital in Uganda which reported absence of the leaders in the review sessions being a barrier to the review process as there would be inadequate technical guidance in the meeting hence the feedback of review results and recommendations would be ineffective [24]. Another study which was done in Senegal also reported other factors somehow similar to the above that; bad quality of information in medical files, non-participation of the head of the department in the review meetings and lack of feedback to the staff who did not attend the meeting were the main barriers to the implementation of maternal death review [25].

Therefore, support from high authorities during facility maternal death review sessions as well as physical participation as recommended by the guideline is mandatory in order to empower effective and timely review process.

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The extent of facility implementation of regional MDSR recommendations

Formulating appropriate recommendations and then implementing them is one of the most challenging parts of the MDSR process despite being critical steps to successful implementation [13]. The results of this study revealed that the overall percentage of facility implementation of regional MDSR recommendations was 34.6%. This is different from the study done in Senegalese which reported a lack of communication between the review committees and staff which makes it difficult to implement the recommendations. The results above were low compared to those found in Guinea which reported 45% of implemented MDSR committees' recommendations among districts [23].

The majority of Key Informants described that there are no realistic contents in the facility recommendations rather they prepared them to complete the narrative summary forms and fill the report for submission to the district. Respondents continued to describe that even those recommendations from the regional MDSR meeting were not efficiently implemented since there was no mechanism in place to ensure follow up neither individual assigned and held responsible for monitoring the implementation process.

The key findings of the WHO survey done in 2016 insisted that monitoring systems are important for determining if and how MDSR findings and recommendations have been implemented to track actions and outcomes [26]. An assessment of MDSR implementation in Kagera and Mara reported different results that, majority of the assessed facilities reported to have assigned individuals responsible for follow up on specific recommendations [13]. Moreover, Key Informants described the factors that hinder the implementation of regional recommendations at the facility level as a delayed response to the implementation of recommendations that requires support from the CHMTs. Additionally, insufficient and late disbursement of the fund provided by the government to the facilities were other challenges to the implementation of recommendations. However, communication of MDSR recommendations and involvement of all concerned stakeholders including development partners to the implementation process were reported to facilitate staff's morale on MDSR implementation. Another study done in Morogoro Tanzania has reported similar factors with that of this study as; insufficient staff commitment, managerial support, and human and material resources to be the reasons for weak involvement of health workers and poor implementation of recommendations [27]. However, A study done in eight major hospitals in Dar es salaam Tanzania reported that, the effects of failure to implement review recommendations by hospital administration is to demoralize the audit team after noting repeatedly consecutive deaths being associated with the same avoidable factors [17].

Therefore, failure to respond and implementing MDSR recommendations at all levels is the main weakness in the implementation of the MDSR strategy which in turn facilitates the reluctance of health facilities to reflect a real cause of maternal death and find a way to the permanent solutions [16]. Factors which influencing the implementation of Maternal Death Surveillance and Response in Mtwara Region The qualitative part of this study explores the overall factors influencing MDSR implementation among health facilities in Mtwara region. Inadequate capacity building by means of training and supportive supervision on MDSR has a significant effect on the implementation of MDSR. The available evidence has shown that all sampled health facilities have a relatively low proportion of maternal deaths reviewed compared to the national standards as justified with the expressed effects of lacking training and refresher training on MDSR that could create a conducive atmosphere to influence nurturing, encouragement and expression of preparedness to implement the MDSR. This is comparable to the study done in Arua Regional Referral Hospital in Uganda which advocated training to play an important role in the implementation of MDSR in Uganda [24].

Similarly, regular and scheduled supportive supervision visits that are cascaded down the health system were explicitly addressed at each level to lack and consequently hinder the understanding and implementation of MDSR. This is comparable to the study done in Oyam district in Uganda which reported the same effects of limited supportive supervision on the MDSR activities whereby Health Workers could not appreciate the kind of supportive supervision that could have contributed to low coverage of maternal deaths reviewed in Oyam district [16]. Moreover, a study done to assess the implementation of MDSR in Kagera and Mara regions Tanzania narrated that, staff commitment and engagement with the process of implementation including attending to the review meetings were facilitated with supportive supervision [13].

This study proved a motivation deficit as the result of insecurity, low morale, increased workload and incompetence of some health care providers enough to create inefficiency in MDSR activities. To support all of the above findings, an evaluation of MDSR implementation in WHO African Region reported almost similar results of factors hindering MDSR implementation whereby, an informal assignment of implementation of recommendations, lack of staff motivation and workload, Limited human resources, inadequate funding- lack of a dedicated budget, lack of defined feedback mechanism for tracking and evaluating MDSR implementation in some countries and lack of sharing success stories from either of the countries were consistently cited. Moreover, this evaluation describes further overall and overarching factors hindering implementation for each step in the MDSR cycle as insufficient technical, human and financial resources to fully institutionalize MDSR, and the Response is the weakest component of the cycle with barriers faced in making effective recommendations and implementing them [22].

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Actually, what has been explored here is a mutual relationship between these aspects of adequate knowledge, regular supportive supervision and intrinsic Staff motivation with MDSR implementation. Never the less, whatever it might be, the view presented here runs into the serious shortcomings in Council Health Management Teams to weaken these interventions. This study considers the relevance of training and supervision for the understanding of the process of MDSR than weighing the academic and professional achievements while motivating as a powerful energy that drives and excites health care workers resulting in their maximum contribution. This is supported by a study done in Mara which insisted that, if Tanzania wishes to change the MDSR system at the local level, training and supervision to the facility-level providers is mandatory [28].

This study found a close follow-up of RHMT that brings collateral benefits to some of the health facilities by creating the resilience needed to withstand challenges and continuity of MDSR implementation. Such advocacy at the highest possible administrative level for support and resources was earlier recommended by WHO's survey [6] on the global implementation of Maternal Death Surveillance and Response, and further supported by Mara and Kagera' study in Tanzania [13] that suggested the role of RRCHC tracking the progress of MDSR implementation.

Furthermore, this study is like that of Mara and Kagera, we found that teamwork brought by individual's accountability has essentially accelerated progress in the MDSR implementation in some facilities. The involvement of different stakeholders was strongly applauded by some respondents to influence the implementation of MDSR recommendations. These results are consistent with Oyama's study [16] which asserted that the MDSR recommendations should be communicated to all concerned stakeholders for action and remedy of the gaps identified. Therefore, involving multiple actors to support MDSR guarantee successful implementation rather than the health sector alone [6].

Limitations

The key informants could have been biased in giving the required information in this study. This was minimized by the use of well-structured questionnaires and guides the participants during its filling to ensure that the information given was relevant to the study objective. Additionally, the participants were given sufficient time for an adequate recalling. Biases in data coding might have occurred, this was minimized by carefully coding data per study objective.

Conclusion and Recommendations

The overall implementation of MDSR in health facilities at Mtwara region is low, whereby factors reported hindering were inactive MDSR committees at district and facility levels, lack of MDSR training, inadequate supportive supervision and inadequate support to implement MDSR recommendations. Therefore, the Regional Health Management Team (RHMT), MOHCDGEC and PO-RALG needs to strength already available strategies for MDSR implementation at all levels to enhance timely identification, notification, review and reporting all maternal deaths as per National policy. They need to consider training programs for MDSR addressing two broad goals: To teach how to conduct a facility-based maternal review, contents of clinical summary and steps of implementing MDSR and to produce functional MDSR committees that can navigate and negotiate those varying environments of maternal deaths they encounter. Nevertheless, CHMT supervision should not be conducted only during incidences of maternal deaths when staff members are overtly grieved but should have regular visits using available opportunities. Moreover, this study was conducted in one out of 26 regions of Tanzania Mainland, studies that will involve more than one region are recommended so as to understand an extensive coverage of MDSR implementation countrywide.

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Conflicts of Interest

The authors declared that they have no, real or perceived, direct or indirect conflicts of interest that relate to this publication.

References

1. WHO (2013) Maternal Death Surveillance and Response Technical Guidance. Geneva, Switzerland.
2. WHO (2018) Maternal Mortality.
3. WHO (2015) Trends in Maternal Mortality: 1990 to 2015. Geneva, Switzerland.
4. GTR (2015) Guidelines for Maternal Death Surveillance and Response (MDSR): Region of the Americas. Panama, USA.
5. United Nations (2015) Global stratergy 2016-2030.
6. World Health Organization (WHO) (2016) Time to respond: A report on the global implementation of Maternal Death Surveillance and Response. P. 51.
7. Smith H, Ameh C, Godia P, Maua J, Bartilol K, et al. (2017) Implementing Maternal Death Surveillance and Response in Kenya: Incremental Progress and Lessons Learned. Glob Health Sci Pract 5(3): 345-354.
8. Okonofua F, Imosemi D, Igboin B, Adeyemi A, Chibuko C, et al. (2017) Maternal death review and outcomes: An assessment in Lagos State, Nigeria. PLoS One 12(12): 1-11.

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9. WHO (2014) Trends in Mternal Mortality: 1990-2013. Estimates by WHO, UNICEF, Unfpa, The World Bank and the United Nations Population Division. World Health Organization.
10. Mpambije CJ, Magesa FB (2017) Poor Maternal and Child Health in Tanzania amidst Plenty: Review from Tanzania's Grand Corruption Scandals from 2005-2015. J Adv Soc Sci Humanit 3(1): 1-15.
11. Scott H, Dairo A (2015) Maternal Death Surveillance and Response in East and Southern Africa. J Obstet Gynaecol Canada. 37(10): 915-921.
12. Koblinsky M (2017) Maternal Death Surveillance and Response: A Tall Order for Effectiveness in Resource-Poor Settings. Glob Heal Sci Pract 5(3): 333-337.
13. Bruno (2018) Assessment of Maternal and Perinatal Death Surveillance and Response (MPDSR) Implementation in Kagera and Mara Region, Tanzania. Kagera, Tanzania.
14. (2018) President's Office Regional Administraration and Local Government. RHMT Annual Plan 2018-2019. Mtwara, Tanzania.
15. (2018) MoHCDGEC. P. 1.
16. Agaro C, Beyeza-Kashesya J, Waiswa P, Sekandi JN, Tusiime S, et al. (2016) The conduct of maternal and perinatal death reviews in Oyam District, Uganda: A descriptive cross-sectional study. BMC Womens Health 16(1): 1-14.
17. Nyamtema AS, Urassa DP, Pembe AB, Kisanga F, Roosmalen JV, et al. (2010) Factors for change in maternal and perinatal audit systems in Dar es Salaam hospitals, Tanzania. BMC Pregnancy Childbirth 29(10): 5-7.
18. Braun V, Clarke V (2006) Using thematic analysis in psychology. Qualitative Research in Psychology 3(2): 77-101.
19. Hounton S, Bernis DL, Hussein J, Graham WJ, Danel I, et al. (2013) Towards elimination of maternal deaths: maternal deaths surveillance and response. Reprod Health 10(1): 1-8.
20. World Health Organization (WHO) (2016) Maternal, newborn, child and adolescent health Maternal Death Surveillance and Response - progress.
21. WHO (2019) Global MDSR implementation status. p. 1-4.
22. Surveillance PD (2018) MPDSR implementation in the WHO African region.
23. Millimouno TM, Sidibé S, Delamou A, Olatoyossi K, Bello A, et al. (2019) Evaluation of the maternal deaths surveillance and response system at the health district level in Guinea in 2017 through digital communication tools. Reprod Health 16(1): 5.
24. Victor A (2018) Maternal Death Survellance and Response: Barriers and Facilitators in Arua Regional Referral Hospital. Makerere, Uganda.
25. Dumont A, Tourigny C, Fournier P (2009) Human Resources for Health Improving obstetric care in low-resource settings: implementation of facility-based maternal death reviews in five pilot hospitals 11: 1-11.
26. Bandali S, Thomas C, Hukin E, Matthews Z, Mathai M, et al. (2016) Maternal Death Surveillance and Response Systems in driving accountability and influencing change. Int J Gynecol Obstet 135(3): 365-371.
27. Hamersveld KTV, Bakker ED, Nyamtema AS, Akker TVD, Elirehema HM, et al. (2012) Barriers to conducting effective obstetric audit in Ifakara: a qualitative assessment in an under-resourced setting in. Trop Med Int Heal 17(5): 652-657.
28. Armstrong CE, Lange IL, Magoma M, Ferla C, Filippi V, et al. (2014) Strengths and weaknesses in the implementation of maternal and perinatal death reviews in Tanzania: Perceptions, processes and practice. Trop Med Int Heal 19(9): 1087-1095.

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