Delay in Seeking and Receiving Emergency Obstetric Care in Eritrea.

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Abstract

Objective: To determine the extent of and main reasons for failure or delay in seeking and receiving emergency obstetric care.

Methods: The study was a case control analytic study that studied women who died due to an obstetric complication (cases) and those who survived a severe life threatening obstetric complication, near misses, in the same community (controls). Avoidable factors were identified by the families of the cases and the controls, the near misses themselves and the health workers. The study involved quantitative and in-depth qualitative, investigation of the causes factors and circumstances surrounding maternal deaths and the life threatening condition of the near misses.

Findings: Failure to seek medical care and the four delays in seeking and receiving medical care came out as the most pertinent avoidable factors for maternal death. The factors that were identified as avoidable in the controls include: delay in decision to seek medical care (42 %) followed by delay in reaching care (25 %) and poor quality of service (25 %).

Conclusion: Failure to seek medical care and the four delays in seeking and receiving medical care are the most pertinent avoidable factors for maternal death.
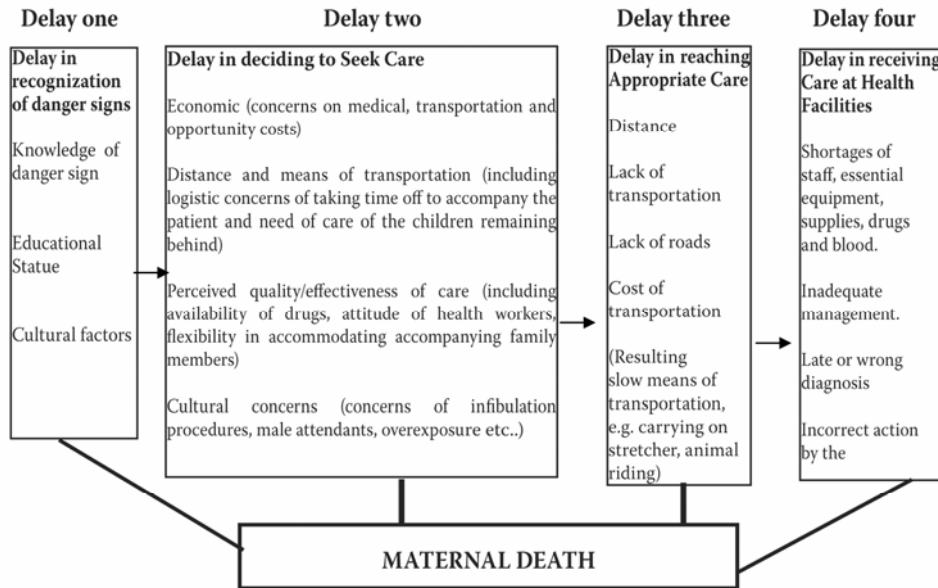
Keywords: Maternal deaths, near misses, determinants, antenatal care, delivery, seeking medical care, warning signs.

Introduction

The 2002 Eritrean Demographic and Health Survey (EDHS) data 1 revealed that delivery usually (73 percent) takes place at home and is performed by a non professional, who may be a trained or untrained traditional birth attendant (43 percent) or relatives or

Fig. 1: Maternal Mortality Conceptual Frame Work

Delay one	Delay two	Delay three	Delay four
Delay in recognization of danger signs Knowledge of danger sign Educational Statue Cultural factors	Delay in deciding to Seek Care Economic (concerns on medical, transportation and opportunity costs) Distance and means of transportation (including logistic concerns of taking time off to accompany the patient and need of care of the children remaining behind) Perceived quality/effectiveness of care (including availability of drugs, attitude of health workers, flexibility in accommodating accompanying family members) Cultural concerns (concerns of infibulation procedures, male attendants, overexposure etc..)	Delay in reaching Appropriate Care Distance Lack of transportation Lack of roads Cost of transportation (Resulting slow means of transportation, e.g. carrying on stretcher, animal riding)	Delay in receiving Care at Health Facilities Shortages of staff, essential equipment, supplies, drugs and blood. Inadequate management. Late or wrong diagnosis Incorrect action by the

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friends (27 percent). Such persons are not trained to manage obstetric complications. Only the remaining 26 percent take place in health facilities and are assisted by health professionals.

Women face multiple delays in seeking and receiving life saving care when they need it. Failure or delay 2-4, to use appropriate and timely maternal care services were viewed as resulting from a multiple causes. The following description of the four delays was used as a conceptual model (Figure 1) for investigating failure or delay in seeking and receiving medical care in Eritrea.

Materials and Methods

The study involved conducting maternal death or a survived life threatening condition review through interview with close families of maternal deaths (cases) and families of the near misses from the same community (controls), as well the near misses themselves. The study involved quantitative and in-depth qualitative, investigation of the causes factors and circumstances surrounding the maternal deaths and near misses.

A structured interview with families of the cases, families of the controls and the near misses (controls) themselves as well as health workers for the cases or controls who reached a health facility was made in order to elicit information on: care during pregnancy and delivery, history of decision making to seek care, awareness and perception of the obstetric complication, history of the journey to the health facility (if went to a health facility), referral status, treatment in the referral facility, type of complication, obstetric intervention performed, indication and complication encountered, and outcome (in terms of fetal life, long lasting maternal complication).

58 cases of maternal deaths (cases) and 53 survivors of a life threatening obstetric complication (controls) were studied from 42 selected communities (7 randomly selected communities from each zone). No matched control from the same community could be identified for the five case, hence the difference in the number of cases and controls.

All maternal deaths that were selected occurred within one year prior to the study, May to October 2003. The cases were identified using RAMOS (Reproductive Age Mortality Study), which identify all deaths of women of reproductive age as a source of maternal deaths [5].

The data collection for the study was conducted in the following four steps:

1. Identify all female deaths within reproductive age group (15-49)
2. Identify cases (maternal deaths), among the female deaths.
3. Identify and select near misses (controls) from the same community.
4. Identify source of data (interviewees and written records) for each case and control.

The following data collection techniques were utilized:

- Interview with close relatives (or other knowledgeable persons about the death or the life threatening condition) of maternal deaths (cases) and near misses (Controls).
- Interview with Health Providers who provided care to the cases or controls who reached a health facility.
- Record Review of cards for the cases or controls who reached a health facility.

A checklist was prepared to assist the interviewers, to identify maternal deaths among all female deaths with in the reproductive age group, during the verbal autopsy. The interviewers were trained on use and interpretation of the checklist, which was field-tested and accordingly amended during the training [5].

Once the cases were identified, then the same number of controls was selected from the same community. To do so first, all the TBAs working in the study communities were identified. The TBAs were first asked to identify the women according to their subjective judgment and experience, using local terms 'moyta neyra or kab mot wetsiaa' which mean- 'this woman nearly died or escaped from death' and describe to the professional interviewers what exactly happened. A near miss who survived the most severe life threatening obstetric complication for each maternal death in the same community, among all of the near misses that occurred with in one year prior to the study were then jointly selected by the interviewers and the TBAs. The criterion for selection was severity, the most severe among the near misses identified in the same communities with the cases.

Source of data (interviewees and records) were identified for structured interview, following the identification of the cases (maternal deaths) and their controls (near misses). For those cases or controls who had not reached a health facility, the data were collected only at the community level, while for those cases or controls that were taken to the health facilities, data were collected from both the community and the health facility levels.

The qualitative data analysis involved summarizing qualitative information through tallying the commonly mentioned responses or the qualitative information.

After, the data collection process for each maternal death and near miss had generated detailed information, the next step was to bring the elements together to create as complete and clear a picture as possible of the events surrounding the death/survival. As there is a lot that could be learned from each case of maternal death and survivor of a life threatening obstetric complication, a narrated story was constructed for each maternal death and survivor. One example of the narrated stories was presented at the end of the results section, which was also briefly discussed in the discussion section of this article.

Results

As part of the qualitative information gathered all of the families of the cases and the controls as well as the health providers that took care for those who visited a health facility were asked, to identify avoidable factors in an open ended question. Additionally the families and health providers that took care of the survivors (controls) were asked to identify factors that might

have contributed in saving the mother. Tables 1 and 2 present summaries of the counts and the percentage of the responses after grouping the replies from the open-ended questions to the closest in the list of factors presented.

Table 1: Summary of avoidable factors identified

Avoidable factor	Cases	Controls	Total
Poor Quality of Care (including delay in getting or failure of getting appropriate care)	30 (52%)	13 (25%)	43 (39%)
Delay in decision to seek medical care	23 (40%)	22 (42%)	45 (41%)
Poor access to health care (distance)	22 (38%)	11 (21%)	33 (30%)
Poor knowledge of danger signs	19 (33%)	12 (23%)	31 (28%)
Failure to seek care	12 (21%)	12 (23%)	24 (22%)
Delay in reaching medical care	11 (19%)	13 (25%)	24 (22%)
Transportation problem	14 (24%)	10 (19%)	24 (22%)
Poor prior nutritional and health status	7 (12%)	4 (8%)	11 (10%)
Financial problem	6 (10%)	4 (8%)	10 (9%)
No obvious avoidable factor identified	1 (2%)	1 (2%)	2
Total number sampled	58	53	111

Table 2 depicts the factors that were identified as factors that were believed to have greatly helped in saving the survivors.

Table 2: Summary of factors mentioned as factors that helped survival of the survivors.

Factors that were believed to have saved the controls	Number and % of Controls
Medical care	28 (53%)
Finally seeking medical care	20 (38%)
Getting transportation (vehicle)	16 (30%)
Early seeking medical care	13 (25%)
Easy access to health care (Close)	10 (19%)
Cooperation of military personnel	5 (9%)
Good management/decision by TBA to refer	4 (8%)
Just good luck/Good will of God (No obvious activity/factor identified that have saved her)	6 (11%)
Total number sampled	53

Discussion

Avoidable factors are factors that could have been changed by either the health delivery system or the family/patient. The factors that were identified as avoidable factors in the cases could be summarized as follows:

- Poor quality of care, which include factors like delay in referral, delay in providing care, lack of certain equipment, lack of drug, lack of blood bank, lack of personnel, staff oversight, staff incompetence etc.. put together was identified by the highest number of interviewees (52 percent) as avoidable factor followed by:-
- Delay in decision to seek medical care (40 percent), which usually was either due to failure in recognizing the problem and its consequence or its gravity, or hoping that the problem will be resolved naturally with out seeking care and escape facing the challenges of seeking care (including the direct and opportunity costs), was the second common factor identified.
- Poor access to health care (38 percent), mainly due to long distance, lack of transportation or both was the third common factor identified in the cases.

The factors that were identified as avoidable in the controls were delays in decision to seek medical services, delay in reaching care and poor quality of service.

The most common saving factor identified in the controls was medical care which was identified in more than half of the controls to have saved or contributed in saving the mothers, followed by finally seeking medical care, which was identified in more than a third of the controls and getting transportation (vehicle), which was identified in the remainder of the controls.

In 11 percent of the controls no factor was identified as a factor that might have saved or might have significantly contributed in saving the mother. In some, it was just a miracle how they survived, in others it was just because the problems get resolved on their own, e.g. stopping of bleeding after spontaneous expulsion of a placenta retained for many hours.

Not only the fact of quality as measured by standards but also the perceived quality of the service, i.e. how the mothers and their families expect to be treated by health providers at health facility is an important dimension of the client's assessment of the quality of care. If the health facility has a reputation for unfriendly staff, rude service providers and humiliating treatment, the mothers and their families may delay the decision to seek care until the seriousness of the mother's condition necessitates overwhelming all barriers.

Hence, it was important to study and document the many factors that affect getting timely and quality emergency obstetric care, both quantitatively and qualitatively in order to come up with appropriate recommendations and act up on the findings and recommendations for continuously improving the service with explicit focus of reducing maternal mortality in Eritrea.

People's recognition of illness and their perception of its severity are important influences on the decision to seek care [3].

Life threatening obstetric complications requires urgent life saving action, for example controlling of bleeding and blood transfusion, assisted delivery, caesarian section. However, as most deliveries occur at home, most complication also occur at home in the hands of non-skilled birth attendants and more cases failed to seek care than controls. With timely and good care most maternal deaths could be averted; without it, many women may end up in a tragedy of maternal death. According to UNICE, WHO, and UNFPA [6], the average interval from the onset to death for some obstetric complications such as hemorrhage (antepartum and/or postpartum) in the absence of medical interventions is estimated at two hours.

Over all 44 percent of the cases and 26 percent of the controls did not seek medical care at all despite a life threatening complication, which took the life of the cases but was survived by the controls. In this study failure or delay in seeking and receiving appropriate emergency obstetric care, emerged as the most pertinent factors contributing to maternal deaths, in the qualitative information. The four well known delays that were used as for the conceptual model in this study and that were found to be pertinent in this study are the following:

Delay one:

occurs when women don't recognize the signs of life threatening conditions and miss the opportunity to receive life saving care. Over all less than 10 percent of the families of the cases and controls as well as the near misses themselves could be considered as having adequate knowledge on signs of complications of pregnancy and childbirth.

Knowledge of families (communities) of warning or signs of life threatening complications can be improved through health promotion activities targeted at the community and health promotion activities targeted at antenatal and other maternal health service clients. Improved knowledge of the warning signs of complications of pregnancy and childbirth by families and mothers could decrease pregnancy-related morbidity and mortality by increasing rates of early recognition of complications and increasing the likelihood of prompt deciding to seek medical care. At this critical juncture, the ability of family influentials and the birth attendant to make timely, informed emergency care decisions could be lifesaving [7].

Delay two:

AAlthough it is very important that mothers and families recognize the danger signs, so that they seek care, but even when women and/or their families recognize the danger signs, they may fail to seek care or to seek care quickly enough. Delay two occur when they postpone deciding to seek care due to, distance, social, economic, lack of trust in the health system and other reasons.) [4,8,9].

Among those who did not seek care, despite a life threatening complication, 32 percent of the cases and 31 percent of the controls said they did not seek care because the health facility was very far, 42 percent of the cases and 38 percent of the controls mentioned lack of transport as an impediment to seek medical care while 11 percent of the cases and 8 percent of the controls mentioned lack of money as an impediment.

The distance separating potential patients from the nearest health facility and/or lack of transport has been shown to be important barrier in to seeking health care, in both the cases and the controls. The magnitude of the importance of distance and/or lack of transport on the decision to seek care is however shaped by other factors as well, such as the perceived severity of the condition and the perceived effectiveness of treatment. In some cases the nature of the illness and quality of care appears to be more important than distance and people did travel far to obtain care, in fact carrying women on stretchers. Hence, if families and communities recognize danger signs and see them as treatable life threatening conditions, they will be able to find ways of overcoming distance and lack of transportation [8].

Potential patients that will have to walk or ride a mule over rugged terrain will take longer to reach a facility. Distance will therefore be a greater obstacle for them to reach a facility, and act as greater disincentive to efforts to seek care than for those who can travel by vehicles on relatively goad roads [3]. But this does not mean that physical proximity necessarily increase utilization [10], financial, and socio-cultural barriers often prevent women and their families from getting care in time.

Delay three: occurs when it takes too long to reach appropriate care, due to long distance, poor road or slow transportation system (e.g. walking (carrying the woman on stretcher), riding (an animal-horse, donkey, camel etc.; cart, tricycle, bicycle etc.). Delay in reaching a health facility due to poor access to health care, lack of transportation or both was identified as an avoidable factor in 38 percent of the cases, and 25 percent of the controls. Thirty two percent of the cases and 16 percent of the controls were carried on stretchers (or traditional big chairs), 14 percent of the cases and 8 percent of the controls were carried on the back of an animal (ride an animal), 50 percent of the cases and 49 percent of the controls used a vehicle (private car, ambulance, taxi or bus) to go to health facility from their home.

Eighty two percent of the cases and 65 percent of the controls reached the facility with in 1-3 hours, for the remaining 18 percent of the cases and 35 percent of the controls among those who went to a health facility it took more than 3 hours to reach to a health facility.

The study revealed that long distance and lack of transportation exert a dual influence through influencing families to postpone decisions to seek care and by taking longer time to travel once decision to seek care is made. Many cases and controls in this study were encountering substantial further delay in reaching the appropriate health facility where they could get care, after decision is made to seek care or even after they depart home.

This study revealed that the role of the military personnel in remote villages both in terms of providing

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first aid/resuscitation, making a radio communication to call for an ambulance from health facilities and provision of transportation when possible was encouraging and perhaps steps may need to be taken to make it more formal.

Delay four: occurs when women receive substandard or slow care at health facilities, which is usually due to poor quality of care, such that obstetric care facilities are of poor quality that they are ineffective in preventing obstetric complications and death, even when pregnant women come to such facilities. Medical care was identified as a life saving factor in 53 percent of the controls (survivors), and poor quality of care (including delay in getting or failure of getting appropriate care) was identified as an avoidable factor in 52 percent of the cases and in 25 percent of the controls.

Mothers with life threatening obstetrical complications need to be stabilized at health facilities before referral, provided that appropriately trained staff; adequate equipment and parenteral drugs are available. Although many health providers were stabilizing the mothers before referring and even accompanying mothers to the referral centers, some health facilities, particularly health stations were referring mothers without resuscitation.

One third of the cases and 40 percent of the controls, who were referred from the health facility they first went, were referred with in 3 hours. One third of the cases and 27 percent of the controls were referred with in 4 to 12 hours, while 22 percent of the cases and 27 percent of the controls were referred after 12 hours stay in the referring facility. In 44 percent of the cases and 40 of the controls intravenous infusion was given to resuscitate the mother. In 44 percent of the cases and 53 of the controls nothing was done in the referring facility (other than referral).

Even when women with complications arrive at heath facilities, they may not receive the care they need quickly enough to save their lives. Delay four occurs at health facilities. Delays in the delivery of care are symptomatic of the inadequate care that result from shortages of staff, essential equipment, supplies, drugs and blood as well as inadequate management. Late or wrong diagnosis and incorrect action by the staff are other factors that contribute to delays in the timely provision of needed care. Shortages or absence of skilled attendants and essential equipments, drugs or blood at health care facilities mean that women receive substandard care at the moment when they most need high quality care [11,12].

Not only the fact of quality as measured by standards but also the perceived quality of the service, i.e. how the mothers and their families expect to be treated by health providers at health facility is an important dimension of the client's assessment of the quality of care. If the health facility has a reputation for unfriendly staff, rude service providers and humiliating treatment, the mothers and their families may delay the decision to seek care until the seriousness of the mother's condition necessitates overwhelming all barriers.

Hence, it was important to study and document the many factors that affect getting timely and quality emergency obstetric care, both quantitatively and qualitatively in order to come up with appropriate recommendations and act up on the findings and recommendations for continuously improving the service with explicit focus of reducing maternal mortality in Eritrea.

It would have been easier for us to accept it, if there was nothing we could have done, but there were many. For how long shall we let such tragedies continue to happen, when we have the knowledge, the will and the means to stop them?

Conclusion

- Failure to seek medical care and the four delays in seeking and receiving medical care came out as the most pertinent avoidable factors for maternal death.

- As close to half of the maternal deaths occur during childbirth, care during childbirth is most critical in Eritrea, this could also make reducing maternal mortality in Eritrea very responsive to improvements in care around childbirth (including attendance by skilled birth attendants as well as availability, utilization and quality of basic and comprehensive EmOC services).

- The majority of deliveries occurred at home and was attended by non-skilled birth attendants (TBAs and/ or family members). Hence, the majority of obstetric complications occur in the hands of these non-skilled personnel and the majority of deaths occur at home, before seeking medical care.

- The knowledge of signs maternal complications of both the families of the cases and the controls as well as the near misses in the descriptive study was poor.

- Poor quality of medical care, poor access to health service, poor transportation and poor knowledge were identified as the most common avoidable factors, i.e. factors if they were avoided by the health providers and/or families, they would have helped in averting the maternal deaths.

Recommendations

1. Improve timely medical care seeking through educating, informing and mobilizing pregnant women, families and communities to recognize danger signs during pregnancy and childbirth, so that they seek timely medical care and to recognize and overcome impediments to seeking medical care- for example through establishing transportation schemes and/or maternity waiting homes. To do so, it is important to encourage/train health workers to actively interact with communities and to be responsive and respectful to clients.

2. Ameliorate the impediments for seeking care, mainly transport and distance.

3. Strengthening the referral system through training of TBAs and peripheral health workers to improve the quality of monitoring of normal deliveries they attend, recognize danger signs and refer timely when they encounter complications. Strengthen the transport system for referring mothers from peripheral to referral facilities. The health providers from the referral facilities and zonal health offices should also provide supportive supervision and initiate/facilitate communication including feedback between communities and health facilities as well between referring and referral facilities.

4. Improve quality of emergency obstetric care: through training of health workers at different levels in life saving skills for their level and equipping health facilities with the necessary equipments, medical supplies and drugs for the services they provide.

5. Delegation of obstetric life saving skills to the lowest possible level, where they could be performed safely through preparing/training medical doctors, nurse midwives and nurses to take more responsibility in emergency obstetric care, so that life saving services are available as close to people's homes as possible. Such activity would decrease distance and the resulting delay in transportation.

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