

Perceived Socio-Cultural and Economic Factors Influencing Maternal and Child Health: Qualitative Insights from Mwingi District, Kenya

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Abstract

Background: Reducing child mortality rates and improving maternal health are Millennium Development Goals (MDGs) that Kenya is striving to realize by next year, 2015. One way of achieving the MDGs is through identifying and addressing the factors influencing Maternal and Child Health (MCH). The aim of this study was to explore expert opinions on social –cultural and economic factors influencing MCH in Mwingi District, Kitui County in Kenya. **Methods:** This was a qualitative study which was conducted as part of a larger mixed method study. Data was conducted using Focus Group Discussions (FGDs) and in-depth interviews. Three FGDs were conducted with each having 8 respondents (N=24) and nine in-depth interviews were conducted with 9 key informants (N=9). Purposive sampling was used to sample participants in the FGDs while maximum variation sampling was used to select key informants for the in-depth interviews. Framework analysis and quasi statistics were used in data analysis. NVivo software was used in data management and analysis. **Results:** Social-cultural and economic factors influencing MCH in the district include; 1. Various cultural and religious factors, 2. Various deficiencies in health care service provision, 3. Unreliable transport infrastructure, 4. Poverty, 5. Illiteracy, and 7. Food insecurity. **Conclusion and recommendations:** Efforts to improve MCH in the district should: address cultural and religious influence on MCH, address deficiencies in health care service delivery, alleviate poverty, improve transport infrastructure, reduce illiteracy, and improve food security.

Key Words: Social-cultural and economic, Factors, Maternal and Child Health

INTRODUCTION

Kenya, like many other developing countries in the world, is in the race to achieve the Millennium Development Goals (MDGs). Reducing child mortality rates and improving Maternal Health are MDGs Kenya is aiming to achieve by next year, 2015(1). The Country has made tremendous efforts directed towards achieving this goals which include: the development of a 2009-2015 national reproductive health strategy, development of the 2009-2017 Kenya National Malaria Strategy, development of the Contraceptive Security Strategy , government commitment to shifting budgetary resources from curative to preventive health services and most recently abolishing user fees in all

public maternity medical facilities(2–5).

Despite these efforts, available data indicate that Kenya may not achieve the MDGs by 2015. Maternal Mortality Rate is still high at 488 maternal deaths per 100,000 live births. The proportion of women making the recommended number of antenatal care visits of 4 and above has declined from 64 per cent in 1993 to 52 per cent in 2003 and to 47% in 2008-2009. Proportion of women receiving skilled care during delivery declined from 45% in 1998 to 42 per cent in 2003 and slightly increased by 2% to 44% in 2008-2009. Though the prevalence rate of contraceptive use for modern family planning methods among married women increased from 32% in 2003 to 39% in 2008-2009, the unmet need for

family planning has remained at 24% since 1998. Infant Mortality Rate improved to 52 per 1000 live births in 2008/2009 from 77 per 1000 live births in 2000 and under-five mortality rate improved to 74 from 115 per 1000 live births over the same period. However neonatal mortality rate reduced marginally from 33 to 31 per 1000 live births contributing to 42% of the under-five mortality in 2008/09 compared to 29% in 2003(1,6).

Studies have shown that women especially in sub-Saharan Africa need to overcome numerous social cultural and economic barriers to access MCH care (7)(8)(9). World Health Organization (WHO) endorses this view by acknowledging that many social cultural and economic factors combine together to affect the health of

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individuals and communities(10). Identifying and addressing these social cultural and economic factors influencing MCH may change this trend and help the country accelerate progress towards achieving MCH related MDGs. Data on social cultural and economic factors influencing MCH is scarce in Kenya. This justifies the significance of this study whose objective was to establish perceived social cultural and economic factors influencing MCH in the rural semi-arid Mwingi District; Kenya.

Qualitative methods have been recommended as most appropriate in scientific inquiries geared towards understanding beliefs, preferences, behaviors, and other sociocultural phenomena which cannot be adequately investigated using quantitative data(11). This being a socio cultural inquiry focusing on exploring people's perceptions on sociocultural and economic factors influencing MCH in the district, a qualitative method was the most suitable. This was the basis in which we adopted a qualitative approach.

MATERIALS AND METHODS

Study Location

Mwingi district is semi-arid and has a total population of 227,878 people (107,186 male and 120,692 female) and 45,445 households and covers an area of 5,217.1 Square Kilometers(12). The district has a population growth rate of 2.4%, crude birth rate of 47.6 per 1000, crude death rate of 11.3 per 1000, infant mortality rate of 82 per 1000, neo-natal mortality rate of 38 per 1000, post neo-natal mortality rate of 30.2 per 1000, under five mortality rate of 120 per 1000, total fertility rate of 5.0 and a life expectancy of 55 years(6).

Study participant's Characteristics, Sampling Procedures and Data Collection Approach

The study participants were drawn from two groups namely; Community Health Workers (CHWs) and key informants working for Ministry of Public Health and Sanitation (MoPHS) (now Ministry of Health). Two sampling procedures were employed. Purposive sampling and maximum variation sampling. Purposive sampling was applied in selecting CHWs. The CHWs were purposefully sampled because they were considered knowledgeable on social cultural and economic issues influencing MCH in the district. Maximum variation sampling was employed in selecting key informants for the in-depth interviews. The aim was to increase representation in all aspects of MCH in the district.

Reference(13) and reference (14) were used in determining the sample size to use in the this research. Using the principle of data saturation as a guide in qualitative sample size determination, a sampling pool of nine (9) key informants was identified as adequate to gather sufficient data to the point of saturation (the point in which participants continually produce the same information). We however were in agreement that in the event of not reaching data saturation by the time of sampling the last (ninth) key informant, data collection with more key informants was to continue until saturation. Key informants were sampled from the MoPHS because they were considered to be the best in providing expert opinion on MCH issues due to their experience in MCH service provision in the district. Nine key informants were interviewed (N=9). The key informants were selected as follows; three public health officers

were sampled to provide the disease prevention perspective of the topic, three Community Health Nurses working in the Mother and Child wellness clinic were sampled to provide the antenatal and post natal care perspective and three clinical officers were sampled to provide the clinical picture of MCH issues.

Guided by the same principle of data saturation, three FGDs each with 8 CHWs were conducted. Total number of respondents in the FGDs was 24 (N=24). Dynamic group interactions in the FGDs were considered the most appropriate for understanding the complex social cultural and economic issues influencing MCH in the district. The in-depth interviews with key informants were conducted for two reasons; to enrich data from FGDs and to facilitate data triangulation for the purpose of validating data from the FGDs.

Data Collection Tools

A Focus Group Discussion (FGD) guide and an in-depth interview question guide developed by the three authors through discussion and mutual agreement were used for data collection. Table 1 and table 2 represent the in-depth interview question guide and the FGD guide respectively. The questions represented were the core questions for the interviews however more questions were introduced in the course of the interviews to probe issues for clarity. In addition note taker booklets and an audiotape were used to record the interview discussion sessions.

Recruitment and Training of Research Assistants

This being part of a larger study which involved both quantitative and qualitative data collection, a group of 12 women were recruited and trained to serve as research assistants. The recruitment criteria was; a minimum qualification of C

Table 1: Table Representing an Overview of Questions in the In-Depth Interview Question Guide

No.	Question
1.	What influences the health of an expectant mother in this district?
2.	What influences the health of a new mother and her infant or child under five years in this district?
3.	In which ways does the culture of the people in this district influence/affect the health of an expectant mother
4.	In which ways does the culture of the people in this district influence/affect the health of a new mother and her infant or child under five years in this district?
5.	How does religion influence the health of expectant mothers in this district?
6.	How does religion influence the health of new mothers and their infants or children under five years in this district?
7.	Other than the things you have mentioned do you know any other social cultural factors that would influence Maternal and Child Health in this district?
8.	What economic factors influence/affect the health of expectant women, new mothers and their children?
9.	What do you think would influence the provision of adequate antenatal and postnatal care services to women and children in this district?

Table 2: Table representing an overview of the Focus Group Discussions (FGDs) Guide

No.	FGD Guide
1.	Do we have any social - cultural practices that influence the health of women and children in this district? If Yes let us identify them.
2.	Let us now identify these social cultural practices that influence the health of an expectant mother and how they affect /influence their health
3.	What are the social cultural practices that influence the health of a new mother and her infant or child under five years?
4.	In which ways do the social economic practices you have identified influence the health of new mothers and their children in this district?
5.	Economic factors do influence the way people live in this district. Which economic factors influence the health of expectant women and new mothers and their children?
6.	In which ways do the economic factors you have identified influence the health of expectant women, new mothers and their children?
7.	Expectant women and new mothers require antenatal and postnatal care. What affects the provision of these services in this district?

Plain in the Kenya Certificate of Secondary Education, ability to speak fluently in Kamba and Swahili languages, and Female gender. Female gender was preferred because it was perceived that women, who were the main respondents in the larger study would be more comfortable to discuss information on their reproduction and child birth with fellow women. In addition to training on all data collection tools, research assistants were also trained on guidelines for conducting FGDs and in-depth interviews. After the

training was done, a pilot study was conducted by the first author to help research assistants refine their skills before embarking on the actual data collection exercise. This enhanced reliability and validity of study tools and the data collected.

Data Collection Process

After meeting all procedures of research ethics, three FGDs were held in three locations in the district namely; Waita, Kyethani and Wikithuki. Subsequently, 9 In-depth interviews were conducted in three hospitals namely; Mwingi

district hospital, Waita health center and Kyethani health center (three in each facility). In each FGD, data was collected by 3 research assistants and author number 1 (JMN) as the facilitator. The role of the three research assistants was as follows; 1 assistant was recording the proceedings digitally (tape recording) while the remaining 2 were filling in the FGD note taker booklets. In-depth interviews were conducted by 2 research assistants and JMN. JMN conducted the interviews as the interviewer and also filled in the in-

depth interview note taker booklets while 1 assistant tape recorded the interview proceedings and the other assisted in filling in the data in the in-depth interview note taker booklets. The FGDs and in-depth interviews took about two hours and one hour and thirty minutes respectively. Respondent validation of data was conducted in both FGDs and in-depth interviews. This was achieved by giving the respondents a chance to review the written scripts before preparing the final transcripts with a view of allowing them to correct any errors and to point out any omissions for inclusion. In both FGDs and in-depth interviews sessions, the interviews went on until data saturation.

Data Management and Analysis

NVivo version 10 software, which is a qualitative data analysis software, was used for data management and analysis. Two analysis techniques namely; framework analysis and use of quasi statistics were employed. Framework method, (one of the qualitative content analysis methods) was considered appropriate because it helps a researcher to; identify commonalities and differences in qualitative data with relative ease especially when two sets of data (from FGDs and from in-depth interviews) are to be analyzed and compared(15). Data generated from the FGDs was analyzed using Framework analysis only while data generated from the in-depth interviews was analyzed by use of both framework analysis and quasi statistics. The two sets of data (FGDs data and in-depth interview data) were analyzed separately through the following six steps; familiarization with data, identifying themes and developing an analytical framework , indexing and coding, charting data

into a frame work matrix, application of quasi statistics (to the in-depth interviews data) and data triangulation.

The first approach in the analysis was to listen to audio data tapes and reading the field notes in each set of data for familiarization. Data from both sets was then classified and summarized into themes to form an analytical framework guided by themes developed. A coding scheme was then developed through a process of indexing with the themes identified becoming the labels for the codes. Data was then rearranged according to thematic content in a chart/matrix in a format that enables participants and their original responses to be viewed against the themes created. In the entire process deliberate effort was made to preserve the integrity of individual accounts/responses.

The next step was interpretation which involved comparisons and exploring the narratives within and between themes. Following this was application of quasi statistics to the data generated by in-depth interviews. This involved creating a summary in each theme of the number and percentage of respondents who indicated agreement, dissent, provided statements or examples suggesting agreement, provided statements or examples suggesting dissent and these who did not respond. Finally in order to enhance validity of the study, triangulation of the two sets of data was done. This allowed the researchers to explore complementarity, convergence and dissention/dissonance of the two approaches in data collection.

Ethical consideration

The National Council of Science and Technology (NCST) of the Government of Kenya (GoK) conducted an ethical review of the

study and approved it. Written informed consent was obtained from all the study participants before the study commenced. In addition the researcher upheld objectivity, honesty, confidentiality and respect for intellectual property rights in the entire process of this study.

RESULTS

Data in this study identified six perceived sociocultural and economic factors influencing MCH in Mwingi District. These are; social-cultural and religious influence, deficiencies in health care service provision, unreliable transport infrastructure, illiteracy, poverty, and food insecurity.

1. Social-cultural and religious influence

Under this theme, FGDs and in-depth interview respondents identified various social-cultural and religious practices that influence MCH in Mwingi district. These are;

A. Female Genital Mutilation

All FGDs participants and in-depth interview respondents revealed that women of reproductive age in various parts of the district undergo circumcision as a rite. The participants however noted that FGM was more common in families whose parents have a low level of education. Participants also pointed out that as supported by previous studies FGM has a negative influence on MCH in the District.

"Most women we observe with severe postpartum hemorrhage in our medical facilities are these who have been circumcised" (key informant, 02).

"Due to the illegal nature of the practice, FGM is conducted secretly and in most cases with crude unsterilized objects, this exposes women to

infectious diseases like HIV and AIDS”

(CHW 02, of FGD 1).

B. Traditional Health Seeking Behaviors

Majority of the respondents in the FGDs and in-depth interviews agreed that traditional treatment practices influence MCH in the district with 88% (8/9) of the key informants providing examples supporting this theme. Traditional treatment practices found to influence MCH include: Application of traditional substances (soot and cow dung) on an infant's umbilical stump which exposed the infants to pathogens that most often would cause illness to the child, Traditional treatment of infants teething problems with the help of a traditional dentist who often used crude and unsterilized tools which exposed the infant to infections, and use of Traditional Birth Attendants (TBAs) to help women deliver at their homes.

“Traditional dentists in the village use nails and knives to remove teeth, they do not sterilize their tools and apart from exposing the child to infections, the child endures a painful process” (CHW, 07 of FGD 2).

“The proportion of women who deliver at home with the help of TBAs in this district is still high. Majority of those women do not seek both antenatal and postnatal care services from medical facilities and therefore they put their health and the health of their children at risk” (Key informant, 01)

C. Religious influence

Religion was pointed out as one of the factors that influence the health of mother and child in the district. All interviewees in both FGDs and in-depth interviews appreciated that religion advocates for a healthy life style which influences MCH positively. However, majority of the respondents in both FGDs and in-depth interviews identified the *Kavonokya* church

which is evenly distributed in the district as a major threat to MCH. The respondents revealed that the church advocates against seeking health care services from medical facilities.

“Expectant women of the Kavonokya church deliver at home with the help of Traditional Birth Attendants (TBAs) and they don't take their children for immunization, many of their infants die due to childhood illnesses that could have been treated and prevented and new mothers lose their lives due to poor postpartum care” (CHW 06, of FGD 2)

2. Deficiencies in Health Care Service Provision

Under this theme 100% of the respondents in FGDs and in-depth interviews agreed that the health care system in the district did not have sufficient resources to provide quality MCH services. The deficiencies identified were understaffing, insufficient emergency obstetric care services and insufficient medical supplies.

“Apart from lack of sufficient number of staff, drugs and equipment, we have only one ambulance operating in the district which is stationed at the district hospital, expectant women seeking emergency obstetric care services would often be delayed as relatives have to look for alternative means of transport to deliver their patient to nearest health care facility” (Key informant, 01).

3. Unreliable Transport infrastructure

All the participants in the FGDs and in-depth interviews agreed that transport system poses a major challenge to MCH in Mwingi district especially during the rainy season. The following response attests to this finding;

“I can confirm to you that one of the things that bar expectant women from accessing skilled birth attendants in this district is the poor transport network. Many parts of the district are

not accessible by road especially during the rainy season and this makes it difficult for expectant women to access medical care” (key informant, 02)

4. Illiteracy

Majority of the respondents in the FGDs and In-depth interviews affirmed that illiteracy has a negative influence in MCH in Mwingi district with 77.7% (7/9) respondents of in-depth interviews providing statements supporting this theme.

“Majority of women who deliver at home...have a low level of education or no formal education at all” (Key informant, 06).

Majority of children we meet in the community with malnutrition are these whose parents have a low level of education” (CHW 04, FGD3).

5. Poverty

It was affirmed by all respondents in the FGDs and in-depth interviews that majority of people in the district were deprived of the basic elements that support life. Participants in both groups pointed out poverty as a major factor influencing MCH in the district. The following statements confirmed this finding;

“Majority of children with severe malnutrition in the community come from very poor family backgrounds” (CHW 06, FGD 2).

“Majority of new mothers we admit with health complications associated with lack of adequate postnatal care appears to come from poor backgrounds” (key informant, 01)

6. Food Insecurity

The respondents in both the three FGDs and in-depth interviews pointed out that Mwingi district is not food secure. They appreciated the fact that the district is located in one of the arid and semi-arid lands in Kenya. As a result the rainfall patterns in the district are erratic and do not support agriculture. This was pointed as one of the

causes of food insecurity. The resident's habit of selling all the farm produce harvested was also identified as a cause of food insecurity at household level. As indicated in the following statements, food insecurity influenced MCH by increasing malnutrition cases among women and children.

"Residents in this district depend more on relief food and unfortunately some families do sell their portion of relief food. This makes women and children vulnerable to malnutrition and other diseases associated with lack of sufficient food" (CHW 06, FGD1)

DISCUSSION

The results point out six factors which have been perceived to be influencing MCH in Mwingi district. These are; social-cultural and religious factors, deficiencies in health care service provision, unreliable transport infrastructure, poverty, illiteracy, and food insecurity. Influence of sociocultural practices on health has been widely reported in Africa and beyond (16–18). Though FGM is one of the cultural practices that have been outlawed in Kenya, the practice was found to be widespread in Mwingi district. The possible reason could be that the district is located in one of the arid and semi-arid regions in Kenya which posts high illiteracy levels as per the most recent (2008/2009) Kenya Demographic and Health Survey (KDHS) report. The percentage of men and women without formal education is 14.2% and 20.8 % respectively (6). This high illiteracy levels could be the reason as to why the residents still embrace FGM regardless of the negative health impacts the practice has been associated with. Another possible reason for this observation could be, this being a remote rural region, law enforcement to stop

the already outlawed cultural practice may not be effective. FGM has been associated with fatal obstetrical complications in many parts of the world(19) and therefore this could be contributing to the high maternal deaths in Kenya.

Influence of traditional health seeking behaviors on MCH was also identified in the district. This is not a unique phenomenon in Kenya and Africa in at large. Previous studies have confirmed that traditional healers play a role in health care service delivery in Kenya with use of TBAs having been reported in many parts of rural Kenya (20)(21). Use of TBAs in Mwingi district could probably be caused by two situations. These are; the high illiteracy levels in the district and two; the rural and semi-arid conditions in the district. Regarding literacy, educated people will be more likely to seek healthcare from an informed point of view and hence seeking maternity services from TBAs will be highly unlikely. In regard to the rural and semi-arid conditions, in Kenya, Arid and Semi-Arid Lands (ASALs) have been marginalized since independence(22). Successive governments have appropriated inadequate resources especially for health care service delivery in ASALs. With few hospitals and few medical staff available, the residents of ASALs in Kenya have adopted survival methods to help them survive against all odds. Over time, these methods have been embedded into the social fabric in such a way that they have become part of the community culture. Use of TBAs and traditional dentists could be part of these survival methods. In the absence of a Skilled Birth Attendant (SBA) or a trained dentist, seeking maternity care and dental care from traditional practitioners may be the

only option available to the residents of rural Mwingi district.

Religion as well has been found to influence MCH in Mwingi district. The doctrines of the *Kavonokya* church prohibit members from utilizing conventional health services. Data revealed that women from families which subscribe to this religion do not deliver in medical facilities and neither do they take their children to hospital for routine child immunization programs or to seek any other medical services. As a result such children remain at risk of death due to preventable childhood illnesses. This is not a new phenomenon in Kenya and Africa. Analysis of the 2008/2009 KDHS identified religion as a factor influencing utilization of ANC services in Kenya(23) and a study conducted in Zimbabwe identifies a number of religious sects whose doctrines fundamentally shape MCH seeking behavior(24). Efforts to improve MCH outcomes in Mwingi district may not succeed without addressing this religious barrier.

Data revealed that lack of sufficient resources to adequately facilitate health care service provision is an economic factor influencing MCH in the district. Deficiencies in health care facilities in resource-poor settings have been identified as an impediment to provision of quality MCH services in sub-Saharan Africa(9). As indicated before the district is in one of the ASALs in Kenya which have been marginalized since independence. Inequity in resource distribution resulting from marginalization together with the fact that Kenya is a developing economy could be the reason successive governments have not appropriated sufficient resources (both financial and human) to facilitate adequate provision of health care services in the

district. However, now that the country Kenya has adopted a new political dispensation which has effectively decentralized health care service provision by transferring provision and management of health care services from the central government to the county governments(22), this trend may change.

Poor transport infrastructure in Mwingi district was also identified as a factor limiting access to MCH services in the district. Again marginalization is most likely the contributing factor to the poor transport infrastructure. The picture this data paints is that of a community in which women of reproductive age and their children can hardly access MCH services because it is not only marginalized but also, its located in a developing country. Accessibility in this case is both financially due to poverty and physically due to lack of transport to take women and children seeking health care services to the health facilities. This phenomena is widespread in Africa and though lack of transport to medical facilities limits access to MCH services in many parts of Africa, it remains a neglected field of study(25). In Mwingi district this problem is compounded by the fact that government funded emergency obstetric care is also inadequate.

Illiteracy was also identified as another factor influencing MCH in the district. Respondents linked malnutrition and delivery without a Skilled Birth Attendant with low literacy levels. This data is supported by the 2008/2009 KDHS which indicates that the percentage of men and women without formal education is 14.2% and 20.8 %respectively(6). Level of maternal education has also been associated with maternal health and

child survival in developing countries(26). As argued before in this paper, educated women would tend to seek health care services guided by their knowledge and information regarding the health issues at hand. This explains why women with no formal education were perceived to be more likely to deliver at home. The respondents also associated low levels of education with child malnutrition by indicating that the children observed with malnutrition were more likely to come from families with low level of education. This could be due to lack of knowledge by parents on how to prepare balanced meals or due to lack of resources to provide a balanced meal to the child.

Poverty was also perceived as a factor which negatively influences MCH in Mwingi district. Previous studies have strongly linked poverty to poor MCH outcomes in resource poor settings(27,28). These findings support the data in this study which has linked poverty to poor MCH outcomes in Mwingi district. The location of the district in a rural semi-arid area could be the main possible explanation as to why the residents are poor. Besides having been marginalized for many years, the climatic conditions do not favor agriculture which is the main economic backbone of the country. Women in the district, who live in abject poverty would therefore lack resources to not only provide balanced meals to their children hence predisposing them to malnutrition, but also they lack resources to access MCH services. It is however important to note that, against a backdrop of studies linking poverty with poor MCH outcomes in resource poor settings, a study in Bangladesh indicates that it is possible to achieve exceptional MCH outcomes despite economic poverty. This study

identifies an integrated health care program implemented by CHWs reaching all households as a possible solution to effective MCH care in resource-poor settings(29). The good news is that the Government of Kenya is piloting a similar programs in different parts of the country and the Government has shown a good political will in the 2013/2014 budget by allocating Kshs. 522 million for 10 CHWs in each constituency(30). Though this may not be adequate enough to provide MCH services in each household in the country, it is a good step forward.

Lastly, analysis of expert opinions identified food insecurity as a perceived economic factor influencing MCH in the district. Based on the fact that the district is located in one of the ASALs in Kenya, climatic conditions do not support agricultural practices in the district. This is the most likely cause of food insecurity. This would influence MCH negatively by predisposing women and children to malnutrition and other adverse health conditions associated with deficiency of macronutrients. Previous studies have associated food insecurity with poor MCH outcomes in developing countries(31). These findings underscore the significance of addressing food insecurity as a strategy for improving MCH outcomes not only in Mwingi district but also in Kenya and other developing countries in general.

CONCLUSION

The purpose of this study was to identify the perceived social cultural and economic factors influencing MCH in Mwingi District. Analysis of expert opinions established that; cultural and religious influence, deficiencies in health care service provision, poor

transport infrastructure, poverty, illiteracy, and food insecurity are the perceived social cultural and economic factors that influence MCH in the district. Therefore any effort to improve MCH in Mwingi district should address the following: cultural practices which include; Female Genital Mutilation (FGM), maternal health seeking behavior, and religious practices especially the *Kavonokya* church doctrines that advocate against seeking conventional health services. Other factors to be addressed include; the deficiencies in the health care service provision which include; understaffing, inadequate medical supplies and inadequate provision of emergency obstetric care services, Poor transport infrastructure which prevents expectant women from accessing skilled birth attendants in good time, illiteracy, and food insecurity. This may improve MCH outcomes not only in Mwingi district but also in the country Kenya.

LIMITATIONS OF THE STUDY

Understanding of the social-cultural and economic factors influencing MCH in a community is a complex phenomenon. To have an in-depth understanding of this phenomenon we adopted a qualitative research design. Though this was the most responsive, a quanti-

tative approach could have increased the validity and generalizability of our results. The sample size used (3 FGDs made up of 8 CHWs in each FGD (N=24) and the Key informants) is small and may seem to limit the generalizability of this study. However it is important to note that the number of participants in this study was limited by the principle of data saturation as applied in qualitative research. We stopped data collection at the third FGD and the 9th key informant due to data saturation. Recruitment of more participants would not have availed any new information. We triangulated our FGDs results with the in-depth interview results and the high levels of agreement between the two attest to the validity of our results and conclusions. Further our results and conclusions were in line with the many studies we reviewed in the discussion of our findings.

AUTHOR'S CONTRIBUTION

JMN conceived the study. ROO and JHO helped in designing the study. JMN collected the data, analyzed and wrote the manuscript. ROO and JHO critically reviewed the manuscript for intellectual input. All authors read and approved the manuscript before submission.

COMPETING INTERESTS

The authors hereby declare that there was no competing interest in this study.

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ABBREVIATIONS

ASALs: Arid and Semi-Arid Lands

CHWs: Community Health Workers

MCH: Maternal and Child Health

FGDs: Focus Group Discussions

MDGs: Millennium Development Goals

KDHS: Kenya Demographic and Health Survey

WHO: World Health Organization

CHS: Community Health Strategy

PHC: Primary Health Care

MoPHS: Ministry of Public Health and Sanitation

FGM: Female Genital Mutilation

IMCI: Integrated Management of Childhood Illnesses

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