Communication: Key to Improving Maternal Health in Sub Saharan Africa

Lydia Kusina[1] and Dr. Gladys Muasya[2]

St. Paul's University

Abstract

In sub Saharan Africa, approximately one woman dies every hour from pregnancy and childbirth related causes. These maternal deaths represent about 15% of all deaths of women aged between 15-49 years with some regions being more vulnerable than others (WHO, 2010). In Kenya, several measures have been put in place to tackle maternal health issues, however, the ratio of deaths still remain high. With all those interventions, it is important to note that access to maternal and childbirth care in healthcare facilities may not necessarily guarantee a solution to this problem. There is need to influence behavior change. This can be achieved through health communication which may be used to promote health and disease prevention strategies, create long term solutions and understanding among players in the health sector and the public. This systematic review paper explores the role of communication in maternal and child care among women of reproductive age from 15-49 years of age using journals published between 2001 and 2018 . Findings show that communication is largely intertwined with maternal and child care and policy makers should incorporate it as a core component to modify behavior and social change. The choice of media used is key, though many people may choose a medium without knowing its effectiveness. It is also important for health practitioners to embrace interpersonal communication with women seeking health care services from them in order to enhance behavior change on matters of maternal health. In addition, the crafting of health messages varies with the audience level of education and their pervious knowledge on maternal and child care.

Keywords: Antenatal Care, Health Service Utilization, Maternal Health, Beyond Zero Campaign, Skilled Birth Attendants and Health Communication

Introduction

Maternal death is defined by the World Health Organization (WHO) as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes" (WHO, 2020).

About 295, 000 women died during and following pregnancy and childbirth in 2017 globally. The vast majority of these deaths (94%) occurred in low-resource settings, and most could have been prevented(WHO, 2019). Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254 000) of the estimated global maternal deaths in 2017. Sub-Saharan Africa alone accounted for roughly two-thirds (196, 000) of maternal deaths (WHO, 2019).

The infant maternal mortality ratio and the neonatal mortality rate in Kenya is 34.056 deaths per 1000 live births a 3.24% decline from 2019. In 2019, the mortality rate for Kenya was 35.198 deaths per 1000 live births (Kenya Infant Mortality rate, 2020). Given that only 61.2% of deliveries in the country are conducted in health facilities, pregnancy-related deaths have been attributed to delivery without skilled birth attendance (Ministry of Health, 2015).

Over 500 000 women globally die every year due to maternal causes, and half of all global maternal deaths occur in sub-Saharan Africa. Maternal mortality ratio in Kenya remains at an unacceptably high level of 488 deaths per 100,000 live births. This ratio has almost remained constant since 1990 (Kenya infant Motality rate, 2020).

There are wide regional disparities in maternal mortality within the country, with maternal deaths representing about 15% of all deaths of women aged between 15- 49 years, which translates to an estimated 6000 to 8000 pregnant women dying every year (Kenya National Bureau of

Statistics and ICF Macro, 2010). These women die due to causes related to pregnancy and childbirth which is a leading cause of death among women in that age group (World Health Organization, 2019). The disparities in maternal mortality between counties are considerable, where the county with highest mortality has 20 times the deaths of that with the lowest. High rates of maternal deaths are attributed to known and preventable causes.

These causes include obstructed labour, complications of unsafe abortion, infections, hemorrhage and high blood pressure (Khan, Wojdyla, Say, Gulmezoglu & Van, 2006). Most of these deaths could be avoided if the mother is managed at a health facility by a qualified professional.

During antenatal care visits, pregnant women are screened for complications and given advice on a range of issues including place of delivery and referral. However, according to Kenya National Bureau of Statistics data for 2015/2016, three out of every ten children were delivered at home, and this is an estimated 31.3 per cent improvement from 53.9 per cent recorded in 2005/06. The survey showed that in rural areas the proportion of children born at home was 40.7 per cent compared to 13.3% in the urban areas (KNBS, 2019). The improvement came as a result of the introduction of free maternity services in public hospitals by the government in 2013.After the introduction of these free services ,most government facilities became overwhelmed with National Referrals - Pumwani maternity hospital in Nairobi getting over 100 percent increase in child deliveries as a result of the directive (Bourbonnais, 2013).

President Uhuru Kenyatta announced that the government had abolished maternity charges in public health facilities. This directive was aimed at helping all expectant mothers access maternal care and reduce maternal deaths.

Another initiative that was taken to reduce maternal deaths was the launch of the the "Beyond Zero" campaign in February 2014 by the First Lady Margaret Kenyatta . The strategic framework for the campaign focuses on five key areas: (i) Accelerating HIV programmes, (ii) Influencing investment in high impact activities to promote maternal and child health and HIV control, (iii) Mobilizing men as clients, partners and agents of change, (iv) Involving communities to address barriers to accessing HIV, maternal and child health services and (v) Providing leadership, accountability and recognition to accelerate the attainment of HIV, maternal and child health targets.

Many women choose to deliver at home instead of going to health facilities due to a number of reasons including lack of transport, fears about negative attitudes of health workers, long distances to health facilities, cultural preferences and charges for services which are beyond what most women can afford (Bourbonnais, 2013). Home deliveries are still high and have contributed largely to high maternal death rates. Research has shown that more than 50 percent of the women who attend ante natal clinics do not deliver in health facilities (Cotter, Hawken & Temmerman, 2006).

With all these interventions, pregnancy related complications continue to contribute mainly to deaths among women in the child bearing age. Communication between caregivers and women has been observed as the missing link in ensuring proper provision of health care. Communication provides a long-term solution through creating understanding between players in the health sector and the public. Communication, therefore, is largely integrated into maternal and child health to provide a multifaceted and multidisciplinary approach to reach different audiences and share maternal and child health related information.

Through communication, the goal of influencing community health professionals and policy makers to achieve the desired child health care outcome can be accomplished (Schiavo, 2007; Parker 2009). Prior studies examining the beneficial effects of media use and interpersonal communication on health behaviors have focused on informational gains or normative pressures(Fishbein & Yzier, 2003). The interpersonal sources of health information include doctors, nurses, family and friends, health groups, voluntary organisations, and other professions allied to medicine. These face-to-face information channels are preferred for information dissemination and the teaching of complex skills that need two-way communications between individuals (Parrott, 2004).

Developing the right communication strategy is about choices of message, content and the media channel. Engaging the pregnant women and families as the center of communication has become vital as it holds the key to the success of the community. Hence, communication strategies provides a link between women of reproductive age and communications planning and delivery of the health care provider. The messages that are to be developed should be specific, persuasive, reflect audience values and include a solution or course of action.

Shaw (2011)urgues that the greatest problem with communication is the illusion that it has been accomplished. Studies carried out in Nepal on exposure to messages in mass media showed an indirect effect on contraceptives use by increasing interpersonal communication and advocating positive attitudes change on social norms regarding family planning (Storey, Boulay, Karki, Heckert, & Karmacharya, 1999). After individuals are exposed to health information from media, they can better understand and respond more fully to such media information by making use of their interpersonal communication networks(Shah et al, 2007). Pregnant women prefer to receive information from healthcare providers on a one-on-one basis.

These meetings also bring experts to immediately answer questions. A study done by Cutilli (2010), for example, showed that people with high literacy level access health information from written sources such as newspapers, magazines, books, and brochures whereas those with low literacy level access health information from televisionand radio and other interpersonal sources. Communication between patients and service provider is said to have an impact on future application of maternal services (Lawson et al, 2003). Patient satisfaction on quality of the services is changed by issues like privacy, confidentiality as well as sensitivity of the staff. It is said to be reflected on the willingness to return for the same services in the forthcoming pregnancy. In Tanzania, a study associated poor communication by the health providers during antenatal attendance to the prevailing low hospital delivery (Magoma et al., 2010).

The gap

Communication strategies are used in promoting maternal health not just in Kenya but globally. this However, even though the Ministry of Health has established sufficient infrastructure like health campaigns, Gilroy and Winch (2006) observed that most health workers seem to lack skills to effectively communicate with the target community. This study therefore intends to delve into the missing link of communication between health workers and women seeking maternal health services.

Methodology

Using a comprehensive, mapping of maternal health intervention studies (electronic data) conducted in low- and middle-income countries between 2001 and 2018, communication interventions that have been used to help women in need of maternal health care services within the child bearing age were identified. Data was synthesized according to themes.

Primary outcomes were communication between care givers and women seeking maternal care, mortality and morbidity related to maternal health.

Search Methods

Studies done in Kenya on maternal health journals published between 2001 and 2018 in English and PDF form were searched using the Google Scholar. Hand-searching of reference lists was used to increase comprehensiveness. From the 42 journals identified, 20 were selected for analysis because they were in PDF form, meaning, they were easy to access and met the criteria for good journals including abstract, methodology, data collection methods and conclusion .Out of 42 journals, 22 were eliminated because they did not meet the criteria of a proper journal.

Out of the 22 excluded journals, 6 could not be accessed in detail and could not be converted into PDF. 10 were policy papers on maternal health, 6 journals did not have methodology to show how their results were arrived at. Searches were limited by publication date, language or publication status at the time of search.

The references within all included studies or narrative reviews were hand searched to identify any further studies that may have satisfied the inclusion criteria. Titles and abstracts from the final search were recorded in the literature review matrix and later an annotated bibliography of the selected journals was created to guide in synthesizing the journals . Following this, the full texts of articles were obtained and assessed rigorously to ensure they satisfied the inclusion criteria. Studies were included if they met the following criteria: (1) primary research; (2) evaluated a communication intervention aimed at improving maternal health. Studies were excluded if they implemented an intervention without a specific focus oncommunication outcomes.

	USED JOURNALS
JOURNAL NO.	**AUTHOR**
1	Adam et al (2014)
2	Esamai et al (2017)
3	Ikamari (2004)
4	Koini (2017)
5	Mathai, Dulip, Jawad, & Toshuda (2015)
6	Nalianya & Luketero (2017)
7	Njuguna, Kamau & Muruka (2017)
8	Prabha et al. (2015)
9	Smith et al. (2017)
10	Ziraba (2009)
11	Hynes, Spiegel & Cornier (2012)
12	Rowe, Garcia, MacFarlane & Davidson (2001)
13	Izugbara & Ngilangwa (2010)
14	Cheptum et al. (2014)
15	Chersich et al. (2009)
16	Kululanga et al. (2011)
17	Dougherty et al. (2018)
18	Madula et al. (2018)
19	Tama et al. **(**2018)

20	Gitobu et al. (2018)

SOME OF THE EXCLUDED JOURNALS		
JOURNAL NO.	**AUTHOR**	**REASON FOR EXCLUSION**
1	Buttenheim et al.(2013)	Could not be accessed
2	GacheriAnneceta (2016)	Was a Policy paper
3	Berhan et al(2014)	Not a Kenyan study
4	OwinoBenter	Did not have methodology
5	USAID	Was a Policy paper
6	Herrera Clara(2017)	Could not be accessed
7	Campbell et al.(2001)	Did not have methodology
8	UNICEF	Was a Press release
9	Smith et al.(2017)	Did not have methodology
10	Herrera Clara (2015)	Was a periodical
11	Mathai et al.(2015)	Not detailed
12	Muriuki (2015)	Was a research proposal
13	Population action	Was a policy paper
14	Save the children (2013)	Was a policy paper
15	Tamrat et al.(2011)	Could not be accessed
16	Ministry of health	Was a policy paper
17	Mathews et al(2010)	Did not have methodology

Data extraction

All 20 papers were independently assessed. The data extraction form was developed by the author using literature review matrix where a record of each literature review article was put i.e. (date, title, authors, publication details), specific information (study design, aims of the paper, study location, study population, sample size, relevant findings, quality assessment) and reviewers' comments. Most of the studies reviewed focused on maternal health communication on women aged between 14 and 49 years. Journals were identified from the internet using the key words of the study- maternal health and communication .

Limitations of study

There were issues of information sources used in conducting systematic reviews, including not having proper access to key databases. Many journals that were picked at the first instance could not be accessed while others were very complex hence forcing one to spend more time looking for other literature materials. To mitigate this, only peer reviewed journals with required data like methodology, results, sample data were used. Those without these relevant information were left out. At the same time, only journals with easy access and those that could be easily understood were included in the study.

Awareness and male involvement on maternal health

One study examined the quality of health services provided in two slum areas of Korogocho and Viwandani in Nairobi county. Given the pervasive poverty and lack of quality health services in slum areas, the maternal mortality situation in this setting can only be expected to be worse. With a functioning health care system, most maternal deaths are avoidable if complications could be identified early (Ziraba,Madise, Mills, Kyobutungi&Ezeh,2009).

Ziraba et al. (2009) notes that there are very few public health facilities serving the two slum communities, and these are mainly located on the outskirts of the slums and are therefore inaccessible at night due to security concerns. The major causes of maternal deaths were found to be abortion complications, hemorrhage, sepsis, eclampsia and ruptured uterus. The study showed, that men either demanded that the women abort or refused to take responsibility for the pregnancy. According to the study, the principal decision maker was often the male partner who pressed for the termination of the pregnancy indirectly by declining financial or social responsibilities or directly by demanding termination.

It is therefore prudent for a research to be done in future to establish if and how these men can also play part in reducing maternal deaths. Whereas this study found men to be responsible for most abortions, another study done in 2008 and 2009 by (Mangeni, Mwangi, Mbugua, and Muthar, 2012) indicated that men were taking part in promotion of maternal health, whereby it was established that women whose husbands attended at least one antenatal visit were more likely to have skilled birth attendance than those whose husbands did not attend any ANC visits. The majority (68 percent) of women whose husbands accompanied them for at least one ANC visit utilised a skilled birth attendant during delivery.

A similar study conducted in Malawi by (Kululanga, Sundby, Malata and Chirwa, 2011) on male involvement on maternal health, found that strategies to invite men to participate in maternal health care were at health facility, family and Community levels. It also established that, there is need for creation of awareness among men so that they sustain their participation in maternal health care activities of their female partners even in the absence of incentives, coercion or invitation.

Community based health communication approach

Esamai, Nangami, Tabu, Mwangi, Ayuku and Were, (2017) and Adam, Dillmann, Chen, (Mbugua, Ndung'u, Mumbi, Waweru and Meissner, 2014) focused on the community based approach and exposure to health messages in improving maternal health. Esamai et al,(2017), contend that community based organizations are key in helping to improve access to maternal health care because most of them are closer to the locals especially in rural areas. Additionally,Adam et al (2014) examined the effectiveness of a community health worker in rural Kenya that sought to promote improved knowledge of maternal newborn health and to increase deliveries under skilled attendance.The finding supports the Kenya policy to promote health through a direct person-to-person trust based spread of health messages. This finding may infer that trusted personal relationships form a part of the mechanism for knowledge to translate into behavior change.

Neonatal mortality and level of awareness

Moreover, three similar studies done by (Koini, 2017 and Ikamari 2004) in Narok county in 2015 ,Teso district respectively in Kenya and (Madula, Kalembo, Yu and Kaminga, 2018) in Malawi focusing on women between 14-49 years between 2000-2001 to establish the level of awareness on women about maternal health camapigns initiated by the governrment.

Koini (2017) established that there were some improvement in reduction of maternal and child mortality following the launch of the beyond zero initiative which started in the year 2014 with the aim of reducing mortality as well as contributing towards promotion of maternal health for new born and children.

A study conducted by (Ikamari, 2004) indicated that the level of awareness of antenatal care among the study population was fairly high, and also the level of awareness of antenatal care did not vary according to education, marital status age and location among the respondents. The respondents gave 5 reasons which made them attend antenatal clinics which are; to detect risk factors in the expectant mother, treating any diseases/infections, enabling mothers to get advice on diet /nutrition, enabling mothers to get tetanus injection and to monitor the progress of the pregnancy.

Madula et al. (2018) in Malawi established that, there are some communication barriers such as disrespecting and verbally abusing pregnant women, language limitations by some healthcare providers and discrimination due to one's status(economic and social) which are affecting maternal service delivery in some health facilities in Malawi hence affecting the level of maternal health awareness . It also found out that pregnant women who are happy with the way healthcare providers communicate with them have the motivation to deliver at a health facility.

Maternal health care messages and maternal deaths

Prabha, Ogwang, Karuga, Rajan, Kes, Odhiambo, Laserson & Schaffer (2015) analyzed the consequences of maternal death to households in Western Kenya, specifically on neonatal and infant survival, childcare and schooling, disruption of daily household activities, the emotional burden on household members, and coping mechanisms. The study noted that the death of an adult family member can have significant negative impacts on children's survival, health and schooling. The death of a mother is particularly harmful, perhaps even more so when a mother dies during the process of childbirth or postpartum.

A study conducted between 2011 and 2013 in Rarieda, Gem and Siaya sub-counties of Siaya County, found that due to lack of adherence to maternal health communication messages by women in the reproductive age, maternal deaths occur leading to profound consequences of maternal death for children, in that it created a "disruption chain" in the family.

As a result of the ignorance of these awareness messages, mothers-in-law are disproportionately affected, shouldering the major share of the burden of feeding additional family members, as well as a large part of the responsibility of household, childcare and farming tasks after a maternal death.

Free delivery and post natal care policies

Four studies focused on policies that were issued by the government of Kenya in order to improve the maternal health care services uptake. A study by (Njuguna, Kamau and Muruka, 2017) sought to examine the effectiveness of the free delivery policy requiring public hospitals to offer free delivery services in government facilities beginning June 2013. The study done between 2013-2014 found that intervention increased the number of facility based deliveries. It however established that free maternal health services were shunned for fear of poor quality. Another study on policy was conducted by (Warren, Mwangi, Oweya, Kamunya, &Koskei, 2010) to assess changes in the quality of care following the introduction of a new postnatal package. Ministry of Health (MOH) in Kenya had increased both the recommended timing and content of postnatal services a women and their infants should receive at least three assessments within the first 6 weeks after childbirth within 48 h, 1–2 weeks and at 6 weeks. It was established that deliveries and antenatal attendance increased in government health facilities providing free maternity care and that deliveries and antenatal attendance declined in low cost private hospitals not providing free maternity care.

Two other studies both done in 2018 and published by different authors found contradicting results. A study done by (Tama**,** Molyneux, Waweru, Tsofa, Chuma, Barasa, 2018), found out that while the policy was meant to cover antenatal visits, deliveries, and post-natal visits, in practice the policy only covered deliveries. It also discovered that rapid implementation led to inadequate stakeholder engagement and confusion about the policy. While the policy led to a rapid increase in facility deliveries, this was not matched by an increase in health facility capacity and hence compromised quality of care.

A study by (Gitobu, Gichangi and Mwanda, 2018), found that mothers benefiting from the free delivery services were satisfied with the communication by the healthcare workers, staff availability in the delivery rooms, availability of staff in the wards, and drug and supplies availability. It also found that the free maternal healthcare policy was associated with low privacy, poor hygiene, and low consultation time in the health facilities.

Health care workers attitudes and utilization of obstetric care services

A study done by (Fotso, Ezeh & Essendi, 2009) found that, despite various international efforts initiated to improve maternal health, more than half a million women worldwide die each year as a result of complications arising from pregnancy and childbirth.

The study sought to find out how women's autonomy influence the choice of place of delivery in resource-poor urban settings, if the effects vary by household wealth and to what extent does women's autonomy mediate the relationship between women's education and use of health facility for delivery.

The data used is from a maternal health study carried out in Korogocho and Viwandani slums in Nairobi, Kenya on pregnant women between 2004-2005. It found out that among middle to least poor households, measures of women's autonomy were associated with place of delivery, household wealth, education and demographic and health covariates had strong relationships with place of delivery and autonomy may not be a major mediator of the link between education and use of health services for delivery.

The data used is from a maternal health study carried out in Korogocho and Viwandani slums in Nairobi, Kenya on pregnant women between 2004-2005. It found that among middle to least poor households, measures of women's autonomy were associated with place of delivery, household wealth, education and demographic and health covariates had strong relationships with place of delivery and autonomy may not be a major mediator of the link between education and use of health services for delivery. Two other related studies on utilization of maternal health services in Kenya, done by Izugbara and Ngilangwa (2010) and Cheptum, Gitonga, Mutua, Mukui, Ndambuki and Koim (2014) revealed that utilization of maternal health services is affected by social -cultural issues.

According to Izugbara & Ngilangwa (2010), poverty has many diverse effects on the lives of expectant women, including the high levels of morbidity and mortality in their communities. Poverty exposes expectant women to heavy workloads during pregnancy and the period surrounding it. The study also indicated that most providers are very uncharitable toward slum women because they were poor. When poor women present at facilities, providers would reportedly abandon them, not listen to them, not asking them important questions, and not attending to them. Such mistreatments reportedly contributed to fatalities among slum women and discouraged some of them from seeking formal providers.

A study by Cheptum et al. (2014) in Migori county, shows that, access and utilization of maternal health services is hindered by a complex of socioeconomic, Socio-cultural and health facility factors. These factors tend to interrelate thus contributing to inaccessibility and poor utilization of the services. It also found that health facility factors such as inadequate staffing, lack of equipment or negative staff attitude contributed to the clients not accessing health care services. Inadequate staffing may be attributed to inequity in staffing which may result due to lack of infrastructure.

Health communication

Two studies on health communication done in Ghana and the United Kingdom, pointed out strongly on the importance of proper health communication in improving maternal health. In their study on health facilities in the UK, Rowe, Garcia, Macfarlane and Davidson (2001) found that information provided to individual women rather than in groups about antenatal care was more valued by women since it reduced anxiety. This is because they are able to engage on a one on one basis with the care giver. They also discovered that communication skills training for midwives and doctors improved their information giving about antenatal tests. The study by Dougherty, Stammer and Valente (2018) contradicted the UK study and instead indicated that there was little social communication about pregnancy-related issues in these communities at that time, indicating that an intervention to promote such communication could be successful.

It also revealed that women who reported discussing pregnancy-related issues with friends or a health professional were more likely to access a birth facility and have a skilled birth attendant than those who reported discussing the same topics with their partner.

A study done to describe and compare the pregnancy outcomes and maternity service use of a sample of signing Deaf women of child-bearing age in Cape Town to the population of the Western Cape of South Africa established that women with disabilities are at disproportionate risk for adverse pregnancy outcomes andthat their access to health care may be compromised by language barriers related to their disability (Gichane et al, 2017).

Poor maternal health campaigns and Maternal morbidity in the first year of giving birth

Chersich, Kley, Luchters, Njeru, Yard, Othigo and Temmerman (2009), did a study of maternal morbidity in the first year after childbirth in Mombasa, Kenya. This particular study sought to establish why women had high levels of morbidity throughout the first year after childbirth.

500 women attending an immunization and acute care paediatric clinic participated in a cross-sectional survey to describe the levels of maternal morbidity in the year after childbirth. The study population consisted of consecutive women who were older than 16 years, biological mothers of the child, and between four weeks and one year after childbirth. The study found out that, the year after childbirth, an important part of women's lifecycle, is a neglected component of the continuum of care and support for women. Women in this period require interventions such as maternal health communication whereby campaigns on health care are done aggressively to ensure that women know what to do regarding their health situations.Other measures include prevention and treatment of anaemia and reproductive tract infections, but also provision of family planning counselling and services and mental health services .It also found out that ,the potential benefits of extending postpartum services beyond the conventional six-week period after childbirth may necessitate revision of the classic approach to postpartum care.

Maternal health messages in refugee camps

In their study on Refugee Maternal Mortality in 10 countries between 2008-2010, Hynes, Spiegel & Cornier (2012) found that just like other areas, maternal deaths are also caused by abortion complications, hemorrhage, sepsis, eclampsia, and ruptured uterus in refugee camps.

The study was done in Kenya, Uganda, Tanzania, Ethiopia, Bangladesh, Chad, Nepal, Rwanda, Sudan and Zambia.The study also established that maternal mortality ratios were lower among refugees than among the host population for every country. It also revealed that, within refugee camps, antenatal care is widely provided at primary care facilities by midwives or nurse-midwives. This was attributed to continuous maternal health campaigns done by non-governmental organizations in those areas.

Discussion

This review has examined a limited number of studies published in English language in peer-reviewed journals during 2001-2018. The main reason for excluding non-English language studies was because of time constraints, expense and complexity of translating and synthesizing these studies. In this particular systematic review, factors that emerged consistently include maternal health communication between care givers and expectant mothers, education of expectant mothers, that if expectant mothers are more educated and informed, they are likely to be involved in the uptake of proper maternal health care in health facilities. Maternal and child health care is very important for the protection and reduction of maternal and child morbidity and mortality rates in the country. Communication of such information is also supposed to be timely and properly communicated in a language and mode that the recipient understands to ensure that women get the correct information. Communicating effectively entails understanding of the society and knowing how information is disseminated (Haselock, 2010).

There are various tools of communication used. The effectiveness of such tools depends on how the recipient of the information given comprehends and responds to it, whether positively or negatively. These tools include interpersonal communication channels through healthcare workers or friends and relatives, mass media channels through TV and or print media like posters, flyers, brochures or any other printed material. The most effective mode of communication, as the study found was interpersonal communication through healthcare workers' interaction with the women in the clinics, hospital visits when sick and during door-to-door campaigns during specific campaigns. Other interpersonal means through relatives and friends were also popular. Healthcare workers should get frequent training through workshops and seminars on maternal and healthcare issues to ensure that they are up to date with their information.

This ensures uniformity of information disseminated to all women not only in a county but across the country. These training should also encompass communication skills for healthcare workers so that they are better communicators and educators onmaternal and child healthcare.

Due to the limited number of health workers per square kilometer other forms of media to communicate needs to be introduced by the Ministry of Health and the county governments. This will ensure wider coverage and accurate information dissemination to the target audience, who in this case are the women of reproductive age .Most clinics do not have a working health communication department to address the communication challenges and needs for instance linguistic barriers –where some when don't understand the language being used to communicate maternal health messages.There is also a need to improve communication needs for women with hearing impairment through implementing interpretation and providing services and providing sensitivity communication training to service providers.

Communication on matters of maternal health was also found to largely help in providing knowledge where ignorance prevails .Communication empowers people by providing them with knowledge and understanding about specific health problems and interventions. It is also apparent that men need to be involved in maternal health in order to reduce deaths. This study found out that due to lack of maternal health awareness ,most men are the ones involved in urging and pushing their women to do away with unwanted pregnancies hence leading to maternal deaths that result from unsafe abortions. It also established that if men accompanied their expectant women to clinics, the uptake of proper health care is likely to increase.

Recommendations

Based on this systematic review study, the following recommendations are made for policy makers:

From the study, major stakeholders in maternal health and child survival for instance National and County governments in Kenya together with Non Governmental organizatios working in the health sector need to make deliberate efforts to create policies that guide the design and dissemination of maternal health messages inorder to promote women's reproductive health.

The policy should take into consideration the existing situations of women in the reproductive age both in the rural and urban settings to ensure that the health messages suit them and are well executed.The policy should consider language barriers,the hearing impaired,literacy levels among other factors to enable the women own the whole process of maternal health.

This is because in this study, it emerged that language barriers,less considerations for the hearing impaired and literacy levels are some of the gaps affecting the current maternal health

campaigns.Therefore the current policy can be enhanced by adding these missing aspects to ensure maternal health messages given out achieve the desired results.

Maternal health messages based on gender should also be formulated to include both gender because this is likely to help create men's awareness that might help communities find culturally appropriate ways to change existing beliefs,attitudes and social norms that restrict gender equity and equality.There is therefore need for development of a framework for communication that takes into consideration the gender related factors that influence positively the upholding of maternal health messages.The findings of the study show that maternal health has been left to women yet men are decision makers of their respective homes and are economically endowed than women hence the need to have gender inclusive campaigns on maternal health.

For health practitioners,the study recommends that there should be a deliberate effort for continuous creation and dissemination of awareness messages by governemnts together with other organizations working in the health sector on the importance of seeking professional help when it comes to delivery.Emphasis should be put on the need of expecxtant women delivering at health care facilities under the assistance of skilled birth attendants in order to enhance maternal health.The use of relevant and latest statistics should be used to improve adherence of maternal health messages.

The study further recommends that maternal health messages be designed to also target health care workers working in health facilities.The messages should be formulated to urge them to embrace positive reception towards their clients to encourage high turn up to maternal helath services for instance Ante natal Clinic attendance,deliveries at health care facilities among others in order to enhance maternal health.The study demonstrates that health care workers need to be

targeted when creating maternal health messages to enable them double their effoers by improving their attitude and service delivery to their clients.

Midwives and nurses, as the main ANC providers should be aware of potential barriers to utilization of maternal health services in Kenya. Thehealth workers should be trained to be sensitive to women's socio-economic situation and their cultural and traditional beliefs and their communication skills improved.

Future studies therefore need to be done to expound on the communication gaps that exist in reducing maternal and infant deaths.The study used a systematic review method,another study could be done using other research methods to determine the extend to which communication has been used to promote maternal health messages.

Conclusion

More health awareness messages need to be created and disseminated to women especially in the far flung areas where most women are uneducated, lack proper infrastructure to access health facilities and are faced with dangerous cultural practices. The community based health communication approach also needs to be strengthened so that women can be able to get medical assistance as fast as possible. This approach consists of interpersonal communication through healthcare workers on one-on-one or face to face discussions with the women. Various aspects of face-to-face interpersonal communication make it more salient and effective e.g. non-verbal cues allows the communicator to gauge reception of the information in real time and they can therefore respond accordingly, not forgetting that dialogue can emerge, and hence one can easily be convinced of the message being delivered.

Health communication through direct and remote health information dissemination and education is crucial in order to adequately equip women with important information and advice to improve their health. In this present society,new information and communication technology media, particularly video and mobile phones are gradually complementing and sometimes replacing the traditional ways of communicating as the most recognized, preferred or used media for accessing and disseminating such information.

References

Adam, M., Dillmann,M.,Chen, M.,Mbugua, S.,Ndung'u, J.,Mumbi, P., Waweru, E., &Meissner,P. (2014). Improving Maternal and Newborn Health: Effectiveness of a Community Health Worker Program in Rural Kenya.*PLoS ONE 9*(8): e104027. doi:10.1371/*journal.pone.*0104027.

Bourbonnais, N. (2013) *Implementing Free Maternal Health Care in Kenya:Challenges, Strategies and Recommendations.*

Cotter, K., Hawken, M., &Temmerman, M. (2006).Low Use of Skilled Attendants Delivery in Rural Kenya.*Journal of Health and Population Nutrition: (24*), 20-26.

Cutilli, C. C. (2010). Seeking health information: what sources do your patients use?.*Orthopaedic nursing*,29(3), 214-219

Esamai, F., Nangami, M., Tabu, J., Mwangi, A., Ayuku, D., & Were, E. (2017). A system approach to improving maternal and child health care delivery in Kenya: innovations at the community and primary care facilities (a protocol). *Reproductive Health Journal* 14,105 DOI 10.1186/s12978-017-0358-6

Fishbein M, Yzer MC. Using theory to design effective health behavior interventions. Communication Theory. 2003;13:164–183.

Fotso, J., Ezeh, A., &Essendi, H. (2009).Maternal health in resource-poor urban settings: how does women's autonomy influence the utilization of obstetric care services? *Reproductive health journal*,6:9doi: 10.1186/1742-4755-6-9

Gichane,M.W.,Heap,M.,Fontes,M., & London,L.(2017).They must understand we are people:Pregnancy & maternity service use among signing deaf women in Capetown.*Disability & health journal* , https://doi.org/10.1016/j.dhjo.2017.03.016

Gilroy, K., & Winch, P .(2006). *Management of sick children by community health workers. Intervention models and programme examples*. Geneva, WHO/UNICEF.

Haselock, S.(2010).'*Make it Theirs: The Imperative of Local Ownership in Communications and Media Initiatives*', Special Report, no. 253, United States Institute of Peace, Washington DC

Ikamari L. (2004). Maternal Health Care utilization in Teso District. *African Journal on health Sciences* 11, 21-32.

Johnson, J. D.,&Meischke, H. (1991). Women's preferences for cancer information from specific communication channels.*American Behavioral Scientist*,34(6), 742-755

Kenya Infant Mortality rate(2020).Retrieved from https://www.macrotrends.net/countries/KEN/kenya/infant-mortality-rate

Kenya National Bureau of Statistics(2019).Retrieved from https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf

Kenya National Bureau of Statistics and ICF Macro (2010).Retrieved from https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf

Koini.M. (2017).Evaluation of Millennium Development Goals in Reduction of Maternal and Child Mortality in Narok County, Kenya. *Journal of Education and Practice*, 8(9), 31-42

Khan .S., Wojdyla, D., Say, L., Gulmezoglu, A., & Van Look, P. (2006).WHO analysis of cause of maternal death: *a systematic review*. *Lancet.* 367: 1066-1074. 10.1016/S0140-6736(06)68397-9

Lawson.B.,Harrison.A., &Bergstrom.S.(2003). *Maternity care in Developing Countries*.RCOG press.

Magoma, M., Requejo, J. H., Campbell, O. M. R., Cousens, S., &Filippi, V. (2010). High ANC coverage and low skilled attendance in a rural Tanzanian district: A case for implementing a birth plan intervention. *BMC Pregnancy and Childbirth*, *10*, [13].https://doi.org/10.1186/1471-2393-10-13

Mangeni, J., Mwangi, A., Mbugua, S., &Mukthar, V. (2012). Male involvement in maternal health care as a determinant of utilization of skilled birth attendants in Kenya.*East African Medical Journal* (89) no. 11

Ministry of Health, (2015).*Status of implementation of free maternity services (FMS)program in the devolved health system in Kenya*. Nairobi; Retrieved from http://publications.universalhealth2030.org/uploads/free_maternal_health_services_report_feb_2015_final1_doc_.pdf.

Njuguna, J., Kamau, N., &Muruka, C. (2017).Impact of free delivery policy on utilization of maternal health services in county referral hospitals in Kenya.*BMC Health Services Research 17*:429 DOI 10.1186/s12913-017-2376-z

Parker, J. C., & Thorson, E. (Eds.).(2009). *Health communication in the new media landscape*. Springer Publishing Company.

Parrott, R.(2004). Emphasizing communication in health communication. *Journal of Communication*,54(4), 751-787

Prabha, P.R., Ogwang, S., Karuga, R., Rajan, R., Kes, A., Odhiambo, F., Laserson, K.,& Schaffer, K. (2015). Continuing with a heavy heart -consequences of maternal death in rural Kenya.*Reproductive Health, 12*(Suppl 1), S2 http://www.reproductive-health journal.com/content/12/S1/S2.

Schiavo, R (2007). *Health Communication: From Theory to Practice*(1st ed.), John Wiley & sons Inc, Sanfransisco

Shaw, G. B. (2011). *The wit and wisdom of George Bernard Shaw*.Mineola, NY; Dover Publications.

Shah, D.V., Cho, J., Nah, S., Gotlieb, M.R., Hwang ,H., Lee, N., & Scholl,R.M.(2007). Campaign ads, online messaging, and participation: Extending the communication mediation model. *Journal of Communication.*;57 (4):676–703

Storey, D.,Boulay,M.,Karki,Y.,Heckert,K., &Karmacharya, D.M.(1999). Impact of the integrated radio communications project in Nepal, 1994-1997. *Journal of Health Communications* 4(4): 271-294.

Warren, C., Mwangi, A., Oweya, E., Kamunya, R., &Koskei. (2010). Safeguarding maternal and newborn health: improving the quality of postnatal care in Kenya. *International Journal for Quality in Health Care* (22), 1: pp. 24–30 10.1093/intqhc/mzp050

WHO(2019).Maternal Mortality.Retrieved from https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

WHO (2010).Trends in maternal mortality 1990-2015 .Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division .World Heaalth Organization.

WHO(1999).Reduction of Maternal Mortality: A Joint WHO/ UNFPA/UNICEF/World Bank Statement. Geneva: World Health Organization.

WHO(1992).Health Statistics and information systems.Retrieved from https://www.who.int/healthinfo/statistics/indmaternalmortality/en/

Ziraba. A., Madise N., Mills, S., Kyobutungi, C., &Ezeh, A. (2009). Maternal mortality in the informal settlements of Nairobi city: What do we know? *Reproductive Health Journal*, 6:6 doi: 10.1186/1742-4755-6-6