

Antecedent factors influencing maternal health information seeking behaviour of women of childbearing age in rural Tanzania

Mohamed Kassim

Information Studies Programme, University of Dar es Salaam, Dar es Salaam, Tanzania

Email: kassim.mohamed@udsm.ac.tz

Kokuberwa Katunzi-Mollel

Tanzania Commission for Universities (TCU), Dar es Salaam, Tanzania

Email: kaymollel@yahoo.com

Abstract

Seeking maternal health information from relevant and reliable sources is essential in reducing pregnancy-related complications that may result in both maternal morbidity and mortality. This study has investigated factors that influence maternal health information seeking behaviour of women of childbearing age in rural Tanzania. The study utilized a descriptive research design combining quantitative and qualitative research approaches. The study has used questionnaires, administered to 380 respondents, and focus group discussions involving 29 participants to collect data. Findings indicate that several factors are responsible for the women's information seeking behaviour. These factors are: proximity to information sources; economic factors; previous pregnancy experiences; direct experience with information sources; information sources' ability to provide relevant and adequate health information and women's belief that the sought information will help to address their health problems. This study concludes that health practitioners and maternal health information providers should be mindful of these factors when providing maternal health information to women in rural areas. Furthermore, while it is important to encourage women to seek health information from reliable sources, it is also essential to equip them with information literacy skills to enable them to evaluate the health information they receive from their social networks and other informal sources.

Keywords: Health information, information seeking behaviour, sources of information, women of childbearing age, rural Tanzania.

Introduction

Health information seeking has, for quite a long time, been considered as a significant factor influencing the extent to which individuals engage in both healthy lifestyles and preventive behaviours (Worsley, 1989). Although having information alone does not guarantee changes in health behaviour (Lalazaryan & Zare-Farashbandi, 2014), it is an undeniable fact that having adequate health information increases people's likeliness to make positive changes in their health practices (Lambert & Loiselle, 2007).



Scholars have identified three ways active engagement in seeking health-related information improves one's health (Lalazaryan & Zare-Farashbandi, 2014; Lambert & Loiselle, 2007). These are: improving ability to cope with situations that put an individual at risk; increasing participation in medical decision making; and enhancing active engagement in healthy lifestyles and preventive behaviours. Evidence from existing literature further shows that health information is significant in people's involvement in their healthcare, decisions on treatment choices, management of chronic conditions, maintenance and management of their own health and that of those in their care (Bussey & Sillence, 2019; Ruppel & Rains, 2012; Zhang et al., 2012).

Various studies have reported that active engagement in seeking health information can and do promote positive health behaviour among women (Das, 2013; Hall, Fottrel, Wilkinson, & Byass, 2014; Shieh, Broome, & Stump, 2010). Studies have also reported a positive relationship between changes in health behaviour among women and their improved health; for instance, increasing antenatal care uptake which has been found to contribute to the reduction of maternal morbidity and mortality (Hall et al., 2014). Access to relevant health information among women of childbearing age not only helps to prevent complications and detect abnormalities during pregnancy, but also encourages them to seek and utilize maternal health care services in a timely manner (Kassim & Katunzi-Mollel, 2017).

On the contrary, evidence from research shows that there is an association between less engagement in health information seeking and low awareness of danger signs of obstetric complications (Nikiema, Benignisse, & Haggerty, 2009; Shieh et al., 2010; Shija, Msovela, & Mboera, 2011). Unfortunately, low awareness of danger signs of obstetric complications has been reported to contribute to poor utilization of skilled maternal health care. For instance, it has been noted that there are delays to seek care or entirely not doing so when complications occur, thus increasing chances of both maternal morbidity and mortality during pregnancy and delivery (Nikiema et al., 2009; Shieh et al., 2010). In all, findings from existing research stress the importance of health information seeking in promoting utilization of health care services to reduce both maternal morbidity and mortality among women (*ibid*). In fact, studies (Boyd, 2004; Ramanadhan & Viswanath, 2006) have long concluded that women's decisions to utilize health care services is influenced by, among other factors, the information they have access to, sources they use to obtain such information and their comprehension of the received information.

However, while it is clear that there is a significant association between health information seeking behaviour and improved health outcomes, research on maternal health information behaviour in developing countries, Tanzania in particular, is scanty compared to the developed world. Evidence from the existing literature indicates that while majority of the studies in developing countries were conducted to investigate the general health information seeking behaviour of women in rural areas (Hossain & Islam, 2012; Nwagwu & Ajama, 2011; Ukachi, 2007), only a few focused on maternal health information (Das & Sarkar, 2014; Ogunmodede et al., 2013; Owino et al., 2014). In Tanzanian context, most studies on information behaviour have focused precisely on professionals living in urban areas (Luambano, 2013; Luanda, 2007; Mwenda, 2012; Norbert & Lwoga, 2012).

The gap left by the focus on professionals in urban areas has also been noted by other studies (Dutta, 2009) on information behaviour done outside Tanzania. In her review of literature, for instance, Dutta (2009) observed a dearth of studies on information seeking behaviour of ordinary citizens living in rural areas. This, however, has been attributed to, among other factors, researchers' fondness for conducting research in areas where they live or work (*ibid*). As such, research is needed to identify the health information seeking behaviour of the ordinary citizens, particularly women, in rural Tanzania. It is in view of this,

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therefore, that the present study investigated factors influencing maternal health information seeking behaviour of women of childbearing age in a rural Tanzania with specific reference to Mpwapwa district.

Theoretical perspectives

Comprehensive Model of Information Seeking (CMIS)

The Comprehensive Model of Information Seeking (CMIS) (Johnson, 1997) was adopted to provide a theoretical framework for this study. The CMIS causally illustrates health information needs and seeking behaviour using three major components, namely; antecedents, information carrier factors, and information seeking actions. Antecedent factors are those that motivate a person to seek health information, while information carrier factors are those that describe the media that contain information expected to meet people's information needs. The last component, information seeking actions, denotes people's information seeking behaviour as influenced by both the antecedents and information carrier factors.

This study employed CMIS' antecedent factors to investigate the information seeking behaviour of women in the studied communities. These factors are broadly categorized into four groups namely; demographic factors, direct experience, salience, and belief factors. From the demographic factors, only the socio-economic variables (such as proximity to source of information, affordability of the source, and whether the source of information is available for free) were used to investigate the women's information seeking behaviour. In the model, direct experience refers to knowledge that a person has acquired either through personal experience or social networks. Salience factors on the other hand denote the relevance and applicability of the information sought whilst belief factors represent information seekers' belief that the information sought will help them to solve their health problems (Johnson, 1997).

Drawing from the CMIS, the study assumed that being pregnant motivates women to seek maternal health-related information so as to meet their maternal health information needs. To do so, the women are expected to consult various sources of information. However, decisions regarding which sources to consult are influenced by a multitude of factors. Understanding these factors is imperative if information sources appropriate to meet women's maternal health information needs are to be developed.

Materials and methods

This study was carried out in Mpwapwa district, Dodoma region, central Tanzania. The district lies between 06°00 and 7°30'south of the Equator and between 35°45' and 37°00 east of the Greenwich. It is one of the seven districts of Dodoma Region, located at the southwest end of the region, about 120 kilometres from the regional headquarters. The district had a total population of 305,056 people according to the National Census Survey 2012 (National Bureau of Statistics, 2013). It has a total surface area of 7,373 square kilometres predominated mostly by spontaneous mountain chains. Most people in this district depend on agriculture and livestock as their main economic activities. This district was selected because it had a relatively high maternal mortality compared to other districts in the region (Dodoma Regional Commission, 2014). Most of these deaths were associated with low awareness of



pregnancy complications, delay in seeking care, and high rates of home delivery (Laddunuri, 2013).

The study employed a descriptive research design with both qualitative and quantitative research approaches to investigate factors influencing maternal health information seeking behaviour of women of childbearing age. Women between 15 to 49 years old were involved in the study. Simple random sampling was used to select 380 respondents for inclusion in the study. These were drawn from four wards namely Mpwapwa town, Ving'hawe, Lupeta and Mazae which were purposively selected to represent other wards in the district. The inclusion criteria were being pregnant or having a child who is less than one year old. Out of all respondents, 29 were then selected to participate in focus group discussions to provide qualitative data for the study. These were selected based on the belief that they were more informed than others regarding the study in question.

Data for this study was collected using questionnaires and focus group discussions. A total of 380 questionnaires were administered to collect quantitative data. These were administered at health facilities to women who attended either antenatal or postnatal clinic and at home for women who due to a number of reasons were unable to attend to these facilities. Four focus group discussions (FGDs) were conducted to collect qualitative data from the respondents. One FGD was conducted in each selected ward. To ensure accuracy of information collected from the respondents, research instruments were pretested to a small number of respondents before actual collection of data begun. The study also used both methodological (qualitative and quantitative approaches) and data triangulation (employing more than one data collection technique) approaches to investigate the same research problem.

Quantitative data obtained from questionnaires were organized, coded, and analysed using IBM SPSS Statistics (Version 21) to provide descriptive results in terms of frequencies and percentages. On the other hand, qualitative data from the study were subjected to content analysis during which audio recordings from focus group discussions were transcribed. This process involved developing main themes from written transcripts which were used to group similar responses.

The study obtained research clearance from the University of Dar es Salaam. Research permits were also provided by the Dodoma Regional Government and Mpwapwa District Government. All respondents provided their consent to participate in the study.

Study results

Socio-demographic information of the respondents

Three hundred and eighty women of childbearing age participated in this study. A majority of them were aged below 34 years, one-third (29.2%) of them being between 20 to 24 years (*Table 1*). Of all women interviewed, more than two-third were married. A substantial number of all respondents (57%) had attained at least a primary level of education and had an income that was less than 50,000 TZS per month (an equivalent of 22 USD). *Table 1* summarises respondents' socio-demographic information:

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Table 1: Respondents' socio-demographic information

Variables (n=380)	Response	Frequency	Percentage
Age (years)	15 -19 years	74	19.5
	20 – 24 years	111	29.2
	25 – 29 years	76	20.0
	30 – 34years	63	16.6
	35 – 39 years	33	8.7
	40 – 44 years	20	5.3
	45 – 49 years	3	0.8
Marital status	Single	88	23
	Married	292	77
Level of education	Non-formal	102	27
	Primary	217	57
	Secondary	52	14
	Post-Secondary	9	2
Levels of income	>100,000 TZS	85	22
	50,000 – 100,000 TZS	73	19
	<50,000 TZS	222	59

Factors influencing information seeking behaviour

As explained earlier, factors that influence the information seeking behaviour of women in the studied communities were grouped into four broad categories drawn from the antecedent factors of the CMIS. These are: respondents' socio-economic factors; direct experience; salient factors; and belief factors (*see Table 2*).

Table 2: Factors influencing information seeking behaviour of women

Variable (n = 380)	Response	Frequency	%
Socio-economic factors	Proximity to place of residence of an information source	224	59
	Affordability of an information source	222	62
	Information source's availability for free	180	47
Direct experience	Previous pregnancy experience	194	51
	Ability of source of information to respond timely	298	78
	Ease of use of an information source	287	76
	Familiarity with the source	224	59
Salient factors	Having knowledge of someone who has used the information source in question	193	51
	A source's ability to provide relevant information	261	67
	A source's ability to provide adequate information	247	65
Belief factors	Belief that information provided will solve a health problem	297	78

Socio-economic factors

Findings from Table 2 indicate that over half (59%) of all women interviewed sought maternal health information from sources that were close to their places of residence. This finding corroborates what has been found from FGDs where almost all the participants mentioned that long distances to health facilities limits their access to skilled professional service providers hence their reliance on the informal sources of health information such as the community health workers, traditional birth attendants, and their immediate family members for maternal health information. Commenting on this, one participant in a FGD stated that:

Our village does not have a health facility and that there is somehow a long distance from where we live to where the facility is found. Again, looking at the nature of the road, it sometimes becomes difficult to go there, especially during rainy seasons as most of the roads become slippery due to mud. This is a challenge to many of us here (Woman 2, FGD 1).

This suggests that all sources of maternal health information that are close to where respondents live are more likely to be used than those far from them.

With regards to financial implications, a significant number (62%) of respondents have stated that they are more likely to use information sources that they can afford while nearly half (47%) of them indicated likeliness to use ones that are available for free. Similarly, findings from FGDs indicate that the respondents rely on their immediate family members, namely, their mothers and male partners for maternal health information because they present no financial implications to them.

Direct experience

Direct experience is one of the key determinants of people's decision-making behaviour. With regards to this, about half (51%) of respondents said that their decisions to choose a particular source of maternal health information are influenced by their previous pregnancy experience. More than three quarters (78%) of them said they choose information sources based on the sources' ability to timely respond to maternal health information needs at hand. Further, the results show that more than three quarters (76%) of all respondents said they are likely to choose an information source because of its ease of use. Similarly, during FGDs, participants revealed that they prefer consulting sources of information that offer them the freedom to express themselves. On this, the participants said they prefer seeking information from female health providers as compared to males. Additionally, the women believed that it is easy for their fellow women to understand them on all matters related to their health as opposed to the male health providers.

Further, over half (59%) of respondents said that they prefer information sources that they are familiar with whereas just over half (51%) said they are likely to choose a source if they know someone who has used it before. In relation to this, some participants in FGDs admitted receiving advice to use particular sources or referrals to certain sources from their families and friends who had used them. In one FGD, one participant stated that:

...sometimes I receive advice from my mother or sisters about a particular source of information I have to use. You see, because of a lack of a health facility in our

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village, they will tell you to go to a traditional birth attendant for help. Usually, they will refer you to a person who has helped them before (Woman 4, FGD 2).

In addition, findings from FGDs reveal that women are likely to choose certain sources of maternal health information based on the sources' ability to ensure their privacy. The women pointed out that they seek information from sources that will never disclose to other people the information they have sought. For this reason, the women said they prefer seeking information from their close relatives and friends than from other sources.

Salient factors

Salience refers to a situation in which the information sought is perceived relevant and applicable to one's information need (Case, 2007). On this, findings from this study reveal that a substantial number of respondents indicated that their choice of a source of maternal health information is influenced by its ability to provide relevant (67%) and adequate (65%) information that would help them to solve their maternal health problems. Similar influences were reported during FGDs where participants stated that they prefer using sources of information that offer them relevant and adequate information that will help them to meet their maternal health information needs.

Belief factors

The component of beliefs in the CMIS model represents perceptions and confidence of information seekers that the sought health information will help them to solve their health problems. In this study, a majority of respondents (78%) have agreed that their choices of information sources are influenced by the belief that what a source provides will help them solve their health problems and consequently improve their maternal health.

Discussion

This study has used the CMIS to investigate factors influencing the information-seeking behaviour of women of childbearing age in rural Tanzania. This model has proved to be significant in this study because it has helped to reveal factors that affect the information-seeking behaviour of women of childbearing age in the studied communities. There is clear evidence from the findings of this study that the antecedent factors from the CMIS have an influence on the women respondents' choice of various sources of maternal health information. Findings from the study, for instance, revealed that a majority of women rely on information sources that are close to where they reside more than those that are far from them. It has further been revealed that due to long distances to healthcare services; community health workers, traditional birth attendants, and family members are mostly relied on because of their easy accessibility. As reported in a past study (Mremi et al., 2018), there is a limit to the distance people are ready to travel to access health services. It is, therefore, understandable that the women involved in this study are compelled to seek health information from sources that are easily accessible (within reach), regardless of their qualities. This makes the need to lessen distances people have to cover to get to their nearest healthcare services more apparent. Bringing healthcare services close to where women live will help to ensure that they get relevant and reliable maternal health information from professionals hence increasing their chances of making informed health decisions.



The study has also found that socioeconomic status, such as the ability to afford sources of maternal health information, also influences the information seeking behaviour of women in the area of study. The finding that women in the area rely on information sources that are either free of charge or affordable suggests that women with higher incomes are in a better position to use quality information sources than those with lower incomes. Although pregnant women in Tanzania are entitled to free maternal health services, the fact that they are usually compelled to travel long distances to where health facilities are, means that spending money (to cover transport costs) is inevitable. This, as pointed in past studies (e.g. Kahabuka et al., 2011), is an equity issue which reveals that quality health care is still less accessible to the economically disadvantaged who cannot afford travelling costs. Unless this is addressed, women in remote areas will continue to rely on their family members and other informal sources to meet their maternal health information needs even when aware of their unreliability as reported in previous studies (Kassim & Katunzi-Mollel, 2017; Mwangakala, 2016).

This study's results have also shown that women's direct experience also influences their information seeking behaviour. On this, the results have shown that, just above half of the respondents use their previous pregnancy experiences to make decisions regarding information sources to consult when in need of maternal health information. These results, correspond with ones from a previous study (Pembe et al., 2009), in which women reported using their previous pregnancy experiences to choose sources of maternal health information. Unfortunately, with this trend, only mothers with a good access to maternal health information during their previous pregnancies are likely to make good decisions with regards to information sources to use. This is unlikely for those that had poor previous experiences. In other words, although there are chances that previous personal experience may lead to positive health information seeking behaviours among pregnant women, those with poor experiences are unlikely to exhibit such results. This is especially true if women perceive that they have enough experience on various maternal health issues such that they do not need more information from professional health providers. Evidence from previous studies (Malata & Chirwa, 2011) has shown, for instance, that women who considered themselves more experienced in various maternal health issues, particularly those that have carried more than one pregnancy, tend to seek less maternal health information than first time mothers. Therefore, it is of prime importance to encourage pregnant women to seek maternal health information and healthcare services from professionals irrespective of their previous pregnancy experiences since each pregnancy can be different.

Timely and relevant maternal health information is important in helping women make informed decisions regarding their maternal health. Studies on maternal health have established that provision of timely and reliable maternal health information to women is the foundation for improved maternal health (Jody, 2011; Strachan et al., 2013). Similarly, respondents in this study have been found to be aware of the importance of receiving maternal health information in a timely manner. Therefore, healthcare practitioners and other maternal health information providers should make sure that they provide timely and relevant information to pregnant women so as to assist them in making prompt informed decisions about their maternal health.

Majority of women in this study have indicated that they prefer sources of information that are easy to interact with. In other words, one's decision to use a particular source of information depends on its perceived ease of use. As a result, women are freer and more comfortable seeking maternal health information from female health providers than their male counterparts. These findings suggest a lack of confidence among women in the area of study; a state that is likely to affect women's information seeking behaviour, especially in

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cases where there are no skilled female healthcare providers. With confidence, women will be in a position to remove any barriers that may deter their access to information (Shieh et al., 2010).

Consistent with findings from a previous study (Dutamo et al., 2015), this study has also found that women are very concerned with the ability of information sources to ensure their privacy when seeking maternal health information. It has been noted that as a result of this, majority of the women tend to seek information from their close relatives and friends; trusting that they will never disclose details of their encounters to other people. These findings indicate the importance of trust and privacy in the whole process of information seeking. Trust between an information seeker and a source is important in ensuring that information is sought and effectively utilized. As such, any element of mistrust between the two may deter women's seeking of maternal health information or lead to underutilization of the same; thus, affecting their chances of making informed health decisions.

In this study, women's social networks have been found to have a strong influence on their information seeking behaviour. The findings show that women are influenced to use certain sources of information by people, in their networks, who have used them. This suggests that women are receptive to advice and suggestions given by their social networks about information sources they have to use to meet their different maternal health information needs. Likewise, previous studies (Khan, 2018; Shah, 2012) have acknowledged the role of social networks in health information seeking and sharing. However, although social networks are considered important in health information seeking as revealed by both the afore-mentioned studies and this one, women are faced with the task of appraising the information they obtain from the sources they are advised to use. This is so because majority of the sources women are referred to are informal, and thus, having questionable credibility as reported in a previous study (Kassim, 2018). Appraising the information obtained from these sources will ensure that women use only valid maternal health information in their decision-making processes.

Provision of relevant and adequate maternal health information to pregnant women is a key in helping them to make informed decisions regarding their own health and that of their unborn babies. The relevancy and adequacy of maternal health information provided by a source have been reported to influence the information seeking behaviour of women in the studied communities. The significant number of respondents that said their choices of maternal health information sources were influenced by the sources' ability to provide relevant and adequate information indicates that women are aware of the importance of these qualities of information in informed decisions-making. Unfortunately, how women in the communities in question evaluate the quality of maternal health information they obtain from various sources was not part of this study's focus. However, other studies, particularly one by Davies and Bath (2002) noted that respondents evaluated the relevance of maternal health information by looking at the level of education of the source of that information.

Also, from this study, it has been found that just over a third quarter of all the women interviewed seek maternal health information because they believe it will help them solve their maternal health problems. The belief that the provided information will help to address a health problem is essential in motivating information seekers to look for relevant health information. Stressing this fact, in his book on information needs and seeking behaviour, Case (2007; p.134) pointed out that "...if we do not believe knowing more about a topic will allow us to affect a change, then we are not likely to seek information". Therefore, if women believe that the information that they will be provided with will help them to improve their maternal health; they are likely to be motivated to seek it. As such, it is very important that

when sensitizing women of the need to seek maternal health information from reliable sources, the benefits inherent in doing so, are also emphasized.

Conclusion

The findings of this study indicate that the maternal health information seeking behaviour of women of childbearing age in the studied communities is a result of a multitude of factors. As demonstrated by the findings of this study, most women in the studied communities are, as a result, compelled to rely on the informal sources of information for their maternal health information. Based on these findings, establishment of health facilities with adequate qualified healthcare providers to lessen the distance the women have to cover to get access to them is of prime importance. Doing so will increase the women's likeliness to have access to relevant, reliable, and adequate maternal health information from qualified healthcare providers. Additionally, equipping women with requisite health information literacy is imperative in helping them to appraise health information they receive from their social networks and other informal sources. In all, access to relevant and reliable maternal health information is critical in empowering women of childbearing age to make informed decisions so as to prevent various maternal health issues they might face during pregnancy. The findings of this study, therefore, have practical implications for the healthcare practitioners and health information providers to be mindful of the factors identified in this study when providing women in rural areas with maternal health information.

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Mohamed Kassim & Kokuberwa Katunzi-Mollel