



Health Information Literacy, Information Needs and Information Seeking Behaviors among Mothers with Children under the Age of Five: A Case Study of Chilenje Level One Hospital in Lusaka, Zambia

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ABSTRACT

The main aim of this study was to investigate the health information literacy, information needs and information seeking behavior of mothers with children under the age of five. Chilenje Township of Lusaka, Zambia was used as a case study. The specific objectives of the study were to: ascertain the extent to which mothers with children under the age of five were aware of the health information they needed; identify the sources of health information mothers with children under the age of five consult and the frequency of search; establish the relationship between a child's characteristics and mother's health information needs; and ascertain the challenges mothers with children under the age of five face to access health information. The study included 26 respondents consisting of 20 mothers and 6 health key informants that work at the children's department of Chilenje level 1 Hospital. Findings of the study showed that mothers with children under the age of five were to a greater extent aware of the health information they needed. Health information on children's vaccination/ immunization; weight; nutrition and diet/food preparation; deworming; common illnesses; dental health; umbilical cord care; breastfeeding and formula feeding methods; medicines; development of speech; and clothing were the mother's most needed health information. According to the study results, Healthcare providers e.g. hospital and clinics; the Internet (including WhatsApp, Facebook); mass media (i.e. radio, television, newspapers); community health workers; friends and relatives; mobile phones; and printed books and brochures were the most used sources of health information by mothers. Further, findings on mothers' frequency of search for health information revealed that the source they used, the child condition and the age of the child determined their frequency to look for health information. The study also revealed that age, gender, weight, health fitness and height influenced the type of health information that mothers sought. The study finally showed misinformation, language barrier, cost, poor information literacy skills, and limited time as the main challenges faced by mothers in their search for health information. The study recommends that there is need for health information providers to meet the health information needs of mothers by providing them with information in the right format using appropriate channels.

Keywords: Child health, health literacy, child mortality, under-five clinic, Sustainable development, health information needs, health information seeking behavior, maternal health, Zambia.

1. Introduction

There is a very big role that mothers play to ensure that a child survives in the early stages of life especially below the age of five which has not yet been fully investigated. One of the determinants of good health and well-being of individuals at all ages as per Sustainable Development Goal 3 is health literacy and above all, access to health information. Healthy human beings make a strong economy. Mothers at every stage of the child's development depend a great deal upon the provision of the right kind of information, in the right form and at the right time. Information is an important resource in all stages of growth especially for children's growth and health. Limited access to effective, reliable, efficient and quality health information by mothers with children under the age of five is one of the causes of high child and maternal mortality rates in Zambia. Therefore, meeting the health information needs of mothers with children under the age of five is critical to ensure that a mother as well as the child survives at this stage.

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Although there has been tremendous reduction in the number of children dying under the age of five globally, there are regions where child mortality is still unacceptably high. Sub-Saharan Africa remains the region with the highest under-5 mortality rate in the world, with 1 child in 13 dying before his or her fifth birthday, 14 times higher than in high income countries (World Health Organisation, 2018). More than half of these early child deaths are due to conditions that could be prevented or treated with access to simple, affordable interventions. About 3 million babies in the developing countries die during early childhood and many more are crippled, blinded or otherwise disabled from six major diseases including measles, pertussis (whooping cough), tetanus, polio, tuberculosis, and diphtheria. These diseases are preventable through access to information on immunization. In 2017, the infant mortality rate in Zambia stood at about 41.5 deaths per 1,000 live births from 43 deaths per 1,000 live births in 2016 (Knoema, 2019). Although strides have been made to reduce maternal mortality ratio from 398 deaths per 100,000 live births in 2014 to 224 deaths/100,000 live births in 2015, both reductions are insignificant because lives are still being lost. The Ministry of Health has disclosed that Zambia recorded 797 maternal deaths in the year 2017. There is need for interventions to ensure no woman dies while giving birth and each child should be given a chance to grow and survive into adulthood. According to Lungu (2018), Government has set high but achievable ambitious targets such as reducing maternal mortality ratio to below 100 per 100,000 lives and under-five mortality rate to less than 56 per 1,000 live births.

The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 were developed to promote healthy lives and well-being for all including children. The SDG Goal 3 is to end preventable deaths of newborns and under-5 children by 2030. There are two targets under SDG 3: Reduce newborn mortality to at least as low as 12 per 1000 live births in every country (target 3.2); and reduce under-five mortality to at least as low as 25 per 1000 live births in every country (SDG 3.2). Target 3.2 is closely linked with target 3.1, to reduce the global maternal mortality ratio to less than 70 deaths per 100 000 live births, and target 2.2 on ending all forms of malnutrition, as malnutrition is a frequent cause of death for under-5 children. According to WHO (2018), these have been translated into the new "global strategy for women's, children's and adolescent's health" which calls for ending preventable child deaths while addressing emerging child health priorities. Multifaceted solutions are still needed to reduce child mortality in every country. Zambia's vision 2030 is to become a prosperous middle-income country. For Zambia to attain this vision, the realization of SDG 3 should be prioritized. As affirmed by the United Nations (2018), ensuring healthy lives and promoting the well-being at all ages is not only essential to sustainable development but also important to building prosperous societies. This is because healthy people are better able to contribute to the development of their countries (United Nations Development Programme, 2019).

Children are an important factor in the development of society and so they need to be nurtured in a special way. Hence, they need special care for their emotional, mental, physical, and social including spiritual well-being to survive the later life. The first years of a child's life provide lifelong foundations for health, development and wellbeing (Australian Institute of Health and Welfare, 2015). This is so because the risk of mortality and morbidity is statistically high during childhood period. Prevention is ultimately the most effective defense system in controlling infectious diseases. Managing child's health at this stage underpins and determine a child's responses to his environment, to people and to new experiences. According to Early Years foundation stage (2007), the future of any nation lies in the health of children and as it is commonly said, "children are the future leaders of tomorrow." Reducing child mortality should be a top priority for any society because when there is high child mortality rate in a country, the majority of the population will constitute the aging generation which is unproductive and that would trigger a negative change in the economy of the nation. That's why the health of the child under the age of five is important for it determines their survival in life. According to the Australian Institute of Health and Welfare (2015), sustainable development entails that children grow and learn in supportive and nurturing families and environments. The Australian Institute of Health and Welfare continues to explain that a child's brain and biological development starts before birth and continues well into adolescence. Therefore, children who have a poor start in life are more likely than others to develop problems with health, development, learning and behaviours. These problems according to the Australian Institute of Health and Welfare may have a growing effect over the life course, which can affect capacity to fully participate in society, resulting in increased inequality in social status or social opportunity, reduced labour force participation and entrenched intergenerational disadvantage (Australian Institute of Health and Welfare, 2015). Thus, good health and well-being of children is a long term contribution of country as a whole.

Equally important in the development of any nation are mothers. Mothers play two critical roles in family health: 1) they manage behaviours that prevents illness and promotes health, and 2); they deal with ill health including minor ailments, chronic conditions and general and serious ill health (McGeehan, 2012). In as far as child health is concerned, mothers go a long way to ensure that children are provided with physical needs, have a balanced diet and eat healthy, and are protected from being ill, injured or any other form of suffering (Early Years foundation stage, 2007). One way in which mothers guarantee their own health and the health and well-being of their children is by accessing health information. According to Moran and Khan (2001), 40% of health is information. Information is an important resource in all areas of life especially for children's growth and health. Information is needed to be able to make the right decision and also reduce uncertainty. In the modern society, individuals especially mothers depend a great deal upon the provision of the right kind of information, in the right form and at the right time at every stage of the child's development to guarantee children's health.

Although mothers with children under the age of five years have a major responsibility to ensure good health and well-being of their children, a recent national survey by Aigbokhaode, Isah and Isara (2015) found that this has not been the case. Misplaced information needs and poor health literacy and health information seeking behavior of mothers with children under the age of five years could be one of the cause for this problem (Aigbokhaode, Isah and Isara, 2015). Thus, several misconception, ignorance and inadequacy of information and knowledge in relation to child's health and growth is prevalent among mothers especially under five children. It was against this background that this study investigated the health literacy, health information needs and information seeking behavior of mothers with children under the age of five. The study was conducted at Chilenje level 1 hospital, one of the recently upgraded hospitals in Zambia located in Chilenje Township in Lusaka province.

1.1. Background of the study

With a population of 52 220 (Central Statistical Office, 2010), Chilenje Township is one of the oldest recognized township that Lusaka city started with. The township is located in Lusaka Province of Zambia. The creation of Chilenje Township by the Lusaka Municipal council in the 1950s was in response to the critical shortage of housing that Lusaka city faced for the growing African workers. This was a period when copper production created an economic boom and urban centers began to grow rapidly. The Chilenje Township consists of two sections; New Chilenje and Chilenje South. Chilenje South was the first to be constructed soon after independence. The most amazing feature of Chilenje Township is house number 394 in which the first Zambian president, Dr. Kenneth David Kaunda lived from January 1960 to December, 1962. This house is a national monument in recognition of Dr. Kaunda's contribution to the history of Zambia.

Compared to other townships in Lusaka, Chilenje has a mixture of people, those with slightly higher levels of education and income and vice versa, the skilled, unskilled or semi-skilled and so on. Due to the decline in the availability of formal wage employment, the bulk of the residents work mainly in the informal sector. Those without any practical skills generally engage in piecework and small-scale trading activities. Semi-skilled and skilled men with practical skills such as carpentry and metal fabrication, in contrast, earn a living by making household items such as furniture and other usable things for sale. A small proportion of mostly retired residents engage in retail trade. Majority of residents depend on a variety of livelihood activities other than relying on a single livelihood activity.

1.2. Statement of the problem

Many children in Zambia die and many others are crippled as a result of deadly childhood diseases. There is a very big health role that mothers play to ensure that a child survives in the early stages of life especially below the age of five which has not yet been fully investigated. This role involves mothers heavily accessing and using health information to better understand preventive measures for their child's survival. This can only be accomplished if the health literacy, health information needs and health information seeking behaviours of mothers with children under the age of five are clearly understood. There is thus, need for a deeper understanding of mothers' health information needs and information seeking behavior for their children under the age of five so as to adequately meet these needs. Understanding the health literacy, health information needs and health information seeking behaviours would help health information providers to relevant and complete health information in the right format and at the right time to mothers with children under the age of five. Such information would help mothers to improve on the decision-making skills to reduce unnecessary visits to hospital or reduce anxiety caused by the situation by increasing the knowledge to gain good awareness and self-confidence in children's situation. This research therefore, endeavored to find out the information needs and information seeking behaviors of mothers with children under the age of five years at Chilenje level 1 hospital in Chilenje Township.

1.3. Research objectives

The broad research objective was to investigate the health information literacy, health information needs and information seeking behavior of mothers with children under the age of five in Chilenje Township of Lusaka, Zambia. Four specific research objectives were to:

- (i) Ascertain the extent to which mothers with children under the age of five were aware of the health information they needed
- (ii) Identify the sources of health information mothers with children under the age of five consult
- (iii) Find out the frequency of search for health information of mothers with children under the age of five
- (iv) Establish the relationship between a child's characteristics and mother's health information needs.
- (v) Ascertain the challenges mothers with children under the age of five face to access health information.

1.4. Research questions

- (i) To what extent are mothers with children under the age of five were aware of the health information they need
- (ii) What are the health information needs of mothers with children under the age of five?
- (iii) What sources of health information do mothers with children under the age of five consult?
- (iv) What is the frequency of search for health information of mothers with children under the age of five?
- (v) Is there a relationship between a child's characteristics and mother's health information needs?
- (vi) What challenges do mothers with children under the age of five face to access health information?

1.5. Rationale of the study

With the urgent global health concern of rising child mortality rate, it was important that this study was done because medical personnel have blamed mothers for their children's health. This calls for any possible urgent measures to be put in place. Therefore, the findings of this study may have major implications for families and mothers in particular. Mothers may use the results of this study to ensure that children's development needs are met as a moral imperative. In a way, the findings may be helpful as a screening and surveillance of motherhood health practices for their children under the age of five. The findings of the study may be used to make known the health information needs and information seeking behavior of mothers with children under the age of five so that the necessary stakeholders such as health practitioners and Non-Governmental Organizations(NGOs) that deal with related issues

may use it to help these mothers in meeting their information needs adequately. The findings may also help the Ministry of Health to help sensitize the mothers on better and efficient ways of seeking the right information at every stage of the child’s development and also educate them on their right to access any type of information they might seek. Further, the study aimed at contributing significantly to the body of knowledge that exists on the health information needs and information seeking behavior of mothers with children under the age of five.

1.6. Theoretical Framework

1.6.1. Wilson’s model of Information Seeking Behaviour

Wilson’s model was preferred over the other information behavior models because it centers on information need as a key factor leading to information seeking. According to the model, information-seeking is driven by an individual’s physiological, cognitive, or affective needs, which have their roots in personal factors, the role demands of the person’s work or life, or environmental context (political, economic, technological, etc.) within which that life or work takes place. For a person to satisfy these needs, he makes demands upon a system by acting as an intermediary, or through the use of technology. The information provided by the system is then evaluated to determine if it satisfies the individual’s needs. In the effort to discover information to satisfy a need, the enquirer is likely to meet with barriers (i.e. intervening variables) of different kind that may support or impede the search for information which may arise out of the same set of contexts.

For information processing and use to be seen as a necessary part if information needs are to be fulfilled, he provided a feedback loop. According to Wilson, information-seeking behavior consist of more types (i.e. passive attention, passive search, active search, and ongoing). Activating mechanisms, according to Wilson, identify relevant motivation that prompt a decision to seek information. These include behavioral theories such as stress/coping theory. Marton (2010) opine that taking action to resolve an information need is related to stress/coping theory. The more stress the individual information seeker experiences, the greater the motivation to seek information, but not indefinitely, as a high level of stress may paralyze information seeking. Stress affects several intervening variables, including, psychological, role-related or interpersonal, demographic, environmental, and source characteristics (Marton, 2010). Risk/reward theory helps to explain which sources of information may be used more than others by a given individual. While social learning theory, which embodies the concept of self-efficacy embraces the idea of the conviction that one can successfully execute the behavior required to produce the (desired) outcomes. The risk/reward theory and the theory of self-efficacy, according to Marton (2010), involves the amount and nature of perceived risk and the perception of self-efficacy, the individual’s perception of their ability to successfully execute a task or behavior, in this case, information source selection and use.

The information need was then said to influence a user’s information seeking behavior. Related to Wilson’s model, the current study assumes that information needs drive women to look for information on the Web. Karianne and Wijngaert (2005) maintain that there has to be a need in order for people to act (to look for health information on the Internet). For instance, the health situation of the person, the fear someone has to become ill or the intensity of the proactive need someone feels to be avoid becoming ill may prompt a person to look for health information. Citing Heinström, Knight (2008) supports that information behavior is best understood in the context of the information needs of the searcher; inner – or cognitive – processes of the searcher; and environmental factors relating to the information. These factors have an iterative effect on the searcher’s method of responding to their information need. See below Willson Model:

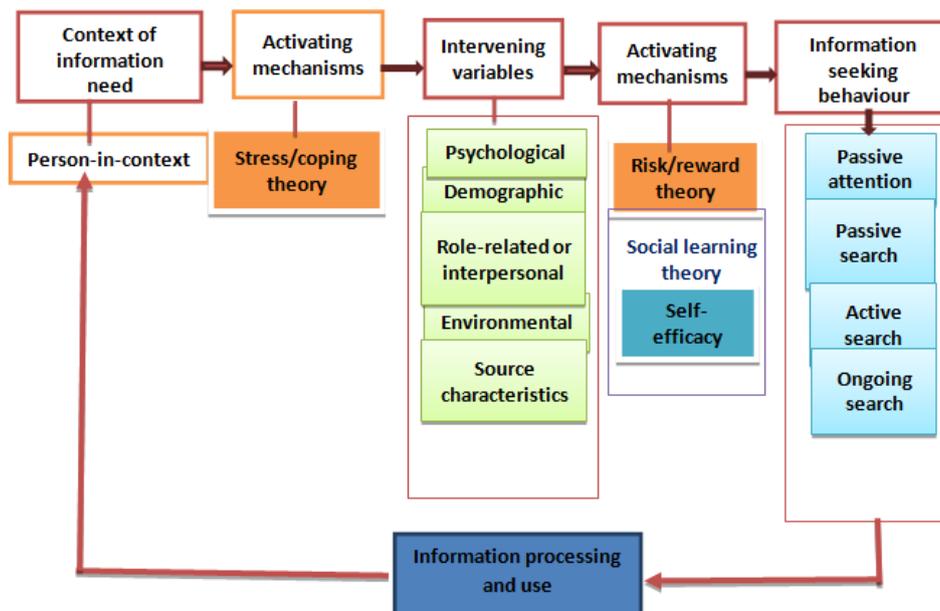


Figure 1: Wilson's Information Seeking Behaviour Model Source: Wilson (1999)

In the same vein, mothers with children under the age of five may not at all seek information if they have no need for it or if the need is not recognized. Peltzer (2014) agrees that a mother's information seeking behavior depends on their information needs. Although Knight and Spink (2008) opposed that Wilson's model lacks a clear description of how people interacted with an information retrieval system in order to find and retrieve required information, the model has been widely employed in many previous studies such as Harland and Bath (2008), Newman (2012), Marton (2010) and Monde, Akakandelwa and Kanyengo (2017). Marton (2010) postulates that this model has particular significance for the domain of consumer health information because of the importance of personal context. Information needs set the context in which users employ information systems and services, and they provide the criteria against which the performance of those information systems and services can be evaluated. For women seeking health information on the Web, an important concern is the nature of health information needs, which are predicted to be reflective of women's health status, in terms of the health conditions experienced by women (Marton, 2010).

1.7 Definitions of key terms

The following concepts have been used in this study:

Child: For the purpose of this study, the word 'child' was taken to mean every human being below the age of five years.

Mother: In this study, a mother was taken to mean a female person who has or looks after a child below the age of five.

Health: This study adopted the definition provided by the World Health Organisation that health is 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.'

Information: This study used the concept of information to refer to facts that have been converted into a more useful or intelligible form and organized for direct utilization by humankind to make decisions.

Health information literacy: According to the Medical Library Association, health information literacy is "the set of abilities needed to: recognize a health information need; identify likely information sources and use them to retrieve relevant information; assess the quality of the information and its applicability to a specific situation; and analyze, understand, and use the information to make good health decisions." In this study, health information literacy was taken to mean the ability of mothers with children under the age of five to identify: (i) their own health information needs and that of their children (ii) sources of their health information, (iii) frequency of search for health information and (iv) their ability to understand the relationship between the child characteristic and the health information needed.

Health information needs: This concept was taken to mean information that mothers require in relation to the health of the child under the age of five. It also implies the actions that a mother takes in response to a stimulus (such as the perception of a child having a symptom) that indicates a condition needing immediate attention which comes in form of the right type of information.

Information seeking behavior: This was taken to mean activities people engage in in trying to meet their own needs for information. Such activities may include searching for information in any way and using or transferring that information.

2. Research Methodology

This study was conducted using qualitative methodology. The target group in this research consisted of mothers with children under the age of five and the health personnel at Chilenje level 1 hospital as informants. The sample size that was used in this research consists of 26 respondents. 20 respondents were mothers with children under the age of five while the other 6 respondents were health personnel that attended to mothers with children under the age of five at Chilenje level 1 hospital and these included 3 clinical officers and 3 nurses. As argued by Bestand Kahn (2009), there is no fixed number or percentage of subjects that determine the size of an adequate sample in a qualitative research. It depends on the nature of the population of interest and the data to be collected. The research used purposive sampling to select mothers with children under the age of five and the nurses. This technique was used because the researchers knew the characteristics of the target group, in this case, the mothers with children under the age of five only and health personnel. The instrument of data collection used in this study were semi structured interview guides. Patton (1990; 283) asserts that interview guides provide topics or subjects areas within which the interviewer is free to explore, probe and ask questions that will elucidate and illuminate that particular subject thus, the interviewer remains free to build a conversation within a particular area, to word questions spontaneously and to establish a conversation style but with focus on a particular subject that has been predetermined. Content analysis technique was employed to analyze data. Content analysis involves manually reviewing the detailed explanations that were provided by respondents and grouping them into themes. Hammersley and Atkinson (1995: 156) is in support of this kind of data analysis by stating that in analyzing qualitative data, the initial task is to find themes that help "make sense of what is going on."

3. Presentation of the Research Findings

3.1. Demographic Characteristics of Respondents

Findings of the present study revealed that a total of 26 participants that included 20 mothers and 6 key informants between age group of 20 to beyond 40 years were assessed. Among these assessed, 2 respondents were male while 24 were female. On the age range of the respondents, the study revealed that 2 respondents were aged below 20 years, 12 were aged between 21 and 30 years old, 5 were aged between 31 and 40 years and 7 were aged above 40 years.

In terms of education level, the findings revealed that all the participants in the study had been to school. 4 attended education only up to primary level, 8 had attained secondary level education, while 14 of the respondents had attained tertiary level of education.

3.2. The extent to which mothers with children under the age of five were aware of the health information they needed and their health information needs

The first objective of the research was to determine the extent to which mothers with children under the age of five were aware of the health information they needed. Findings showed that mothers were to a greater extent aware of the health information they required for their children and for themselves. The study further solicited information on participants' health information they needed for themselves and for their children. Twelve (12) themes related to the health information needs of mothers with children under the age of five emerged from the analysis namely: vaccination/ immunization; child weight; nutrition and diet/food preparation; deworming; common illnesses in children under the age of five; child dental health; umbilical cord care; breastfeeding and formula feeding methods; child medicines; development of child's speech; clothing; and family planning. Results on these themes are presented below.

3.2.1 Vaccination / Immunization

One form of information need that mothers expressed in the study was vaccination/immunisation. This was the most common information that mothers with children under the age of five sought. Mothers acknowledged that they sought information on vaccines and immunization programs so as to ensure that their children were protected from deadly diseases like measles and to ensure that their children received the required vaccine on time. This was clear from one mother's line of thought, who said:

"Children under the age of five, especially those that are 1 month to 3 months old, receive a number of vaccines. It is important for us mothers to have information on how many vaccines our children are supposed to receive as well as what kind of vaccination our children are receiving and when to take our child to the hospital to receive those particular vaccinations."

A similar view was held by one key informant who explained the importance of immunization:

"The mothers mostly seek information on vaccination and immunization as this kind of information is vital especially to mothers with children less than 12 months. Children between 6 weeks to 3 months receive a number of vaccinations to keep them healthy."

3.2.2 Child Weight

Respondents as per findings from the field revealed that they were aware of the fact that regular check of child's weight is a healthy surveillance so that the child's growth is monitored to prevent stunting. Thus, some mothers were quoted saying:

"The main information need for me as a mother with a child under the age of five is my child's weight. Keeping track of my child's weight helps me know if my child is at a healthy weight."

Another respondent stated:

"Checking my child's weight as she grows is very important to me because it enables me to know my child's normal growth processes and also assists me in making sure I feed my child the right diet of food"

During an interview, some key informants amplified on the responses from respondents on the importance of weight surveillance in children:

"When mothers come for under-five clinic, checking body weight of the child is one of the first things we do as part of child health surveillance. It helps us to detect overweight or underweight, short stature or faltering growth possibly owing to underlying medical problems. It can also provide reassurance about normality."

"...in fact, we use the weight and height to measure whether a child's growth can be termed unhealthy or healthy," added another key informant.

"Immediately a child is delivered, he/she is weighed. This is done to determine whether the child has been born healthy or needs some attention. Should a child weigh below the recommended weight of 2.5kg and above, we do not discharge the mother until such a time that a child will gain acceptable weight," said one other key informant.

4.2.3 Nutrition and diet

The findings from the field revealed that mothers with children under the age of five require varied information on nutrition and diet. Some of the respondents started by pointing out the importance of information on nutrition and diet:

"As mothers, we often feed our children with whatever food is available regardless of its nutrition content. We do not choose or balance the diet. Information on nutrition and diet helps us to ensure that we give our children balanced diets."

Another respondent explained:

"My child's health and nutrition information provides me with the necessary information on how to feed my child in terms of diet and also helps me care for my child in a way that ensures her fitness."

It was further reported by another respondent as follows:

"I seek nutrition and diet information because knowing my child's health information helps me know whether or not my child has a disability and if she does it helps me know how to treat my child at home and when to take her to the hospital for checkups."

Findings from the field also revealed that respondents needed different kinds of information concerning nutrition and diet. This information included information on food choices, food preparation, healthy diet, food groups and food combination to make healthy children's means from locally produced foods. This is what different respondents had to say:

"I also need information on food choices and preparation for my child. Where possible, it would help to have cooking demonstrations for certain kinds of food when we go for under-five clinic."

"There are a lot of taboos regarding what children under this age should or should not eat in our township that make it challenging for us to know what is best for our children's health. So, we lack clear, factual information on what makes a healthy diet."

"We need knowledge of how we can combine a variety of local, affordable foods to make a balanced diet."

"We need information on food groups for instance, vitamin-rich foods and so on."

One of the key information explained in general on the importance of nutritional information:

"Children have special nutritional needs. They need a balanced diet. We have sessions where we explain how they can blend the locally accessible foods to make a healthy diet for their children including the food groups. Our job is to educate mothers on the importance of good nutrition in preventing children from diseases and be able to reach and stay at a healthy body weight. We explain to mothers that a child's healthy eating habits can help to boost his or her immune system to fight against diseases."

4.2.4 Deworming

The findings of the research were that mothers with children under the age of five at Chilenje level one hospital sought information on deworming as well. One of the mothers shared her experience on the importance of deworming:

"Information on deworming is very important to me; I always make sure to seek advice from the clinic on the proper methods of deworming. I make sure my child is dewormed at least twice a year to avoid serious situations and also to ensure my child's health".

The need for information on medicines was expressed by one mother:

"Mostly, I need information on medicine that can be used to deworm my child and how often I should deworm a child."

Another mother also indicated the following need:

"I would like to learn more on what happens if my child is not dewormed and also how these worms come about."

4.2.5 Common illnesses in children under the age of five

Mothers further expressed need for information on common diseases that may affect children under the age of five. This is evident from what some mothers said:

"As mothers, information on diseases that mostly affect children under the age of five is important. We need to know even how they are caused and how we can prevent these illness to avoid death."

“At times, we mothers are ignorant of certain symptoms of illnesses. As such, some mothers have lost their babies due to delay to seek medical care. We need information on symptoms of certain diseases that affect children or danger signs in a child’s health,” Reported another mother.

It was further pointed out by another respondent:

“We need information on many disorders that may affect the child and how we can detect them or how they can be prevented.”

“My child has skin problems. I’ve always wondered how best I can take care of her skin.” Said one other respondent.

4.2.6 Child dental health

The need for this kind of information was evident from one of the respondents who explained as follows:

“There are a lot of myths surrounding a child’s dental formula development. It is believed, for instance that when a child grows teeth in the upper gums first, it is a sign of bad like. The teeth should always start from the gums below.”

Another respondents had this to say:

“We also need more knowledge on prevention of tooth decay or extraction in children, the normal age to grow or lose the baby teeth. This information is not emphasized during under-five clinic until your baby starts having problems with teeth...”

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4.2.7 Umbilical cord care

Umbilical cord care information need was evident from what one of the respondents explained:

“Many cultural and traditional practices confuse us mothers when it comes to child’s cord care. There is need for clarity from trained personnel on cord care because some children die once infection gets into the cord and is not handled properly.”

One key informant stated:

“This is one key area where we spend much time explaining to mothers the various ways of caring for the child’s umbilical cord until it drops. Of course, we do this because we are aware of the many traditional practices some mothers practice which expose the child to infection.”

4.2.8 Breastfeeding and Formula feeding methods

Furthermore, it was evident from the findings that respondents require information on breastfeeding because of the health implications involved in the health of the child. This was evident from the concern expressed by one of the respondent who said:

“There is a growing trend amongst mothers, even when they are not working, to give formula milk to their children instead of breastfeeding them. To me, this shows that as mothers, we do not understand the importance of breastfeeding our children.”

Another respondent added”

“I think we need more knowledge on the advantages and the side effects of both breastfeeding and formula milk and bottle feeding.”

“I need to know more about the feeding schedules in a day for my baby. Also, the child’s needs changes as he/she grows and so we need information on how we can continually respond to the child’s changing needs especially as we try to wean the child,” Indicated another respondent.

One of the key informant cited breastfeeding as another type of information that mothers with children under the age of five seek, especially those with children below 1 year.

“Some of the mothers with children below 1 year come to seek information on when and how they can stop breastfeeding their child and administer solid foods instead. Most of the mothers who seek this kind of information are working mothers who want to stop breastfeeding their child in order for them to be comfortable leaving their child home with someone else while they go for work. Others mothers also come to ask if bottle feeding is safe for babies less than 4 months.”

4.2.9 Child medicines

Mothers expressed the need for information on medicines for children. Major concerns for mothers were on dosage, being provided with a list of common prescribed medicine for children and importance of obtaining prescription and side effects for prolonged use of some of the medicines. During the interview, one mother stated that:

"Treating an illness for children below the age of five requires adequate and reliable information. As mothers, we act as nurses at home since we have to provide first aid in times of emergence. So we need to be adequately equipped with knowledge of medicines for us to provide correct medicines to children."

"A list of common medicines like Calpol, Piriton, Cough syrups and the like to treat common or simple illness in children can help mothers a lot," Said another respondent.

Further, the importance of having information and knowledge on child medicines was amplified by another responded:

"We normally treat some illnesses in children at our homes using over the counter medicines. Information on medicines is important for us to buy the right medicines over the counter and also administer the right dosage."

"Many of us mothers do buy over the counter medicines for children using self-prescription. I feel information on the importance of obtaining medical advice about medications from doctors or pharmacists cannot be underestimated to mothers," Complemented another respondent.

4.2.10 Development of child's speech

Respondents in the study were aware that a mother plays a key in helping the child develop speech. As such one of the respondents stated:

"We need tips on how we can help the child develop language or speech... on the kind of words, games, reactions or feedback to children initial speech, directing communication to children's activities and interests...I feel all this is important knowledge to a mother."

4.2.11 Clothing

The study findings further revealed that mothers required information on clothing having observed that clothing allergies are common in children below the age of five. This is what one of the respondents said:

"My child normally has clothing allergy. I think information on reasons behind clothing allergy and how we can control clothing allergy is key especially to mothers with children below five years..."

4.2.12 Family planning

The last type of health information that mothers required was family planning. Mothers believed that to ensure that a child grows healthy, they needed to space their children appropriately. One of the key informant explained:

"Mothers have to be provided with information on child spacing so that their children can grow up as healthy children. A mother with closely spaced children may not have sufficient time to provide the attention needed to each child. Family planning is one of the information we normally provide to mothers with children especially under the age of 2 years."

4.3 Sources of Information Mothers with Children under the Age of Five Consult

The study further investigates the sources that mothers with children under the age of five consult to meet their health information needs. The following seven (7) themes emerged during data analysis: health providers e.g. hospital and clinics; the Internet (including WhatsApp, Facebook); media (i.e. radio, television, newspapers); community health workers; friends and relatives; mobile phones; and printed books and brochures.

4.3.1 Health providers

Results from the research showed that mothers with children under the age of five found the hospitals and clinics to be the most trusted source to obtain health information for their children. This is obvious from the view of one mother who revealed as follows:

"I prefer seeking information from the hospital than consulting other sources because I believe that the information I get from the hospital is reliable as it is a product of researches done by well-informed people and it is administered by professionals like nurses and doctors."

Another mother went on to say:

“I would rather seek information from the hospital because there was a time I tried to seek information from friends and family but the information I got at that time did not work, instead my child got worse that I had to rush him to the hospital and he got healed. Since then I always trust the hospital as a good source of health information.”

4.3.2 The Internet

Following the findings of the study, the Internet was found to be another source of information that mothers with children under the age of five use to obtain health information. A mother confirmed that as follows:

“I find the internet to be most efficient when obtaining health information unlike the hospital where I have to stand in queues for more than necessary which tends to be inconveniencing to my personal programs especially for a working mother like me.”

4.3.3 Media (radio, television, newspapers, etc.)

Findings from the research indicated that one of the main sources of health information for mothers as highlighted by most health personnel from the interviews included media such as radio, television, newspapers and magazines. One of the health personnel illustrated as follows:

“Using the media such as radio and television, the hospital hosts programs on children’s health and provides information to mothers with children under the age of five on the reliable sources from which health information for their children can be obtained like the hospital.”

The other health personnel further said:

“The radio and television are some of the medium through which the hospital uses to inform mothers with children under the age of five about child health programs conducted at the hospital such as child health week.”

Affirming what the key informant said, one mother said:

“That song on child health week has reminded me so many times that child health week has begun. Sometimes, even the newspaper and magazines do feature important health information from which we benefit.”

4.3.4 Community Health Workers

Results obtained from the research confirmed that community health workers were also used as a source of information for mothers with children under the age of five. The health personnel at the hospital stated that:

“The hospital has trained and appointed community health workers that are charged with the responsibility to provide health information to mothers with children under the age of five. These community workers inform and advicemothers on how to better care for their children.”

4.3.5 Relatives and friends

Another source of health information that came to light during this study was relatives and friends. The following was the view of one of the mothers:

“Friends and relatives also provide valuable advice in as far as health of children is concerned. Friends and relatives with experience assist a lot in ensuring a child grows in good health. When there is a health programme or information concerning children, it is friends or relatives who sometimes can remind or encourage you to attend.”

4.3.6 Mobile phones

The findings from the respondents also revealed the importance of mobile phones to mothers as a source of health information. This was evident from what one of the participants stated:

“We also use mobile phones to access health information. For example, the Ministry of Health sends health information like health alerts on mobile phones. It proves efficient and effective as a source of information.”

4.3.7 Printed books and brochures

Some respondents also recognized that printed books and brochures are sources for health information. A mother had this to say:

"I normally consult a number of books and brochures on specific children's health topics. They have proved to be of help to me especially when I need clarity on a particular health condition."

4.4 Frequency of search for health information

Another objective of this research was to find out the frequency of search for health information of mothers with children under the age of five. Interestingly, the findings of the research indicated that mothers' frequency of search for health information depends on three major factors: the source they use; the condition of the child; and the age of the child. This is what was revealed by the respondents in the study:

"I usually seek information from the hospital only when scheduled for under five health checks."

"The hospital is far for me so usually I use the Internet to seek information mostly every after one week and whenever my child has developed a health condition." Explained another respondent.

"My child is 4 years old so I only use the clinic as a source of information once a year unless otherwise sick," Reported another respondent.

4.5 The Relationship between a Child's Characteristics and Mother's Health Information Needs

Moreover, the study sought to solicit information on the relationship between a child's characteristics and mother's health information needs. The themes that surfaced on this topic are five (5) listed as follows: age, gender, weight, health fitness, and height.

4.5.1 Age

The findings of the research were that as the child grows the information needs of mothers also changes. The respondents with children above the age of 3 years highlighted that when the child was younger they constantly sought information from their preferred sources especially the hospital because at the time the baby was still fragile and needed close monitoring by the qualified health staff, they also sought information on the vaccination programs and when exactly the child needed to be vaccinated. But as the child grows to 3 years and above the information needs changes because at that time they just start monitoring the child's growth unlike when the child is younger. This is evident from one mother who said:

"When my child was less than 4 months I had to bring him to the hospital almost every month for vaccinations."

Another respondent added:

"My child used to get sick a lot when he was less than a year old so I constantly came to the hospital to seek information but now that his 3 years old he does not get sick as he used to."

The health personnel at the hospital also stated that:

"Children receive 3 types of vaccines from birth to 3 months. As such mothers with children who have not reached 3 months yet usually seek information on vaccination to ensure that their child does not miss any one of the vaccinations as this may lead to serious health consequences for the child and sometimes may lead to death if the worst comes to worst."

4.5.2 Gender

The research found that mother with under five children who were male sought information on infant male circumcision while for mothers with female children sought information on child defilement. Mothers with male children under the age of five who sought information on circumcision felt that this kind of information helped them decide whether or not to circumcise the child by weighing the benefits and risks the child could be exposed to if circumcised. One of the respondent had this to say:

"I usually come to the hospital to seek information on circumcision before my child finally got circumcised. I believed that the hospital was the only source I could rely on in deciding whether or not to circumcise my baby who was only 2 months at that time. My child is 4 years now."

Additionally, results from the research revealed that mothers with female children under the age of five only in special occasions do seek information on child defilement and how to go about addressing the problem in an instant that the child is defiled. However, the health personnel that were interviewed had this to say:

"Gender does not affect the information needs of mothers with children under the age of five in any way so long as the child is under-five the information sought is the same except for those mothers seek to circumcise their male children earlier when they are still babies or mothers whose female children get defiled but this is rare."

5.5.3 Weight

The study found that poor or low child weight affected the information needs of mothers with children under the age of five. Health personnel at Chilenje Level 1 hospital as well as many other hospitals use weight as an indicator for growth development of a child. According to the nurses interviewed, a drop or drastic gain in a child's weight is an indicator of poor feeding and poor nutrition. Nurse number 5 said:

"Weight indicates the nutritional status of the child. A child with low weight will need particular food in a specified amount; therefore, mothers will need information on nutrition as well as often having their child's weight checked."

4.5.4 Health Fitness

According to the findings of the research the fitness of the child affects the kind of information mothers sought. The Nurse 1 narrated that:

"When the child is unwell the mothers frequent the hospital to get the right medication and right information on how they could take good care of the child so as to prevent the condition from worsening." (Nurse 3)

4.6 Challenges Mothers with children under the age of five face to access health information

The fifth and final objective of the research was to ascertain the challenges mothers with children under the age of five face to access health information. The themes that came out from this objective include: obtaining wrong health information; language barrier; cost; poor information literacy skills; and limited time.

4.5.1 Obtaining Wrong Health Information

The research found that obtaining wrong health information was one of the challenges that mothers with children under the age of five faced in accessing the information. The health personnel said:

"Mothers with children under the age of five usually obtain the wrong health information when they seek information from different sources such that it becomes difficult to tell which among the collected information is correct and which is wrong this therefore, creates a discrepancy in the information the mothers obtain and what the health professionals provided."

4.5.2 Language Barrier

Language barrier between the providers of the information and mothers with children under the age of five was another challenge faced to access health information. This problem was cited by the health personnel at Chilenje level 1 hospital as follows:

"Most of the mothers that come here have difficulties with clearly understanding English. But even if vernacular is used, not everyone understands the same vernacular language during the facilitations as there is always one of two may still not understand that language. As you are aware, we have so many local languages in Zambia."

4.5.3 Cost

The findings on this particular challenge revealed that mothers were required to pay for them to access some of the services either at the hospital or when using the Internet. Some respondents indicated as follows:

"We have to pay for some services like consultation...more so when the child is sick and you happen to take him to the clinic."

"Internet bundles are required to access information online...only those who work may find it cheaper to access Internet at their work places."

4.5.4 Poor information literacy skills

Mothers also lamented of poor information literacy skills especially with information on the Internet.

"It is difficult for me to tell whether the information is wrong or correct which I normally access on the Internet," said one of the respondents.

4.5.5 Limited time

Mothers explained that sometimes they get discouraged by long hours of queuing to access the services at the clinic or hospital.

5. Discussion Of Findings

In terms of the demographic characteristics of the respondents, more females than males participated in the study. This confirms that more mothers than fathers perform most caregiving roles for their families especially as it concerns health. Most of the participants in the study were aged between 21 and 30 years old. This could be due to the fact that more women between the ages of 21 and 30 tend to have children in Zambia. All the participants in the study had been to school with more having attained tertiary level of education. According to Mulauzi and Albright (2009), literacy plays an indispensable role in enabling access and use of technology and information. Literacy is a basic tool for communication and learning, for acquiring, sharing and exchanging information and knowledge. It creates quest for information, self-learning and understanding, thereby generating the demand for information and communication services.

5.1 The information needs of mothers with children below five years

The first objective of the study was to ascertain the extent to which mothers with children under the age of five were aware of the information they needed for themselves and for their children. The study established that to a large extent, mothers were aware of the health information they required for their children and for themselves. In fact, their information needs were varied, ranging from child to their own. Information on vaccination/ immunization; child weight; nutrition and diet/food preparation; deworming; common illnesses; child dental health; umbilical cord care; breastfeeding and formula feeding methods; child medicines; development of child's speech; and clothing were identified as the most needed information for mothers. The study also discovered that information on family planning was important for mothers at this stage. The findings of the current study agree with those of Mulauzi and Lamba-Daka (2018) who found that mothers at postpartum stage needed information not only for self-care (e.g. family planning) but also for daily care of infant. Many studies concur with the findings of the current study on the information needs of mothers for vaccination (Lee, 2015; Baker et al, 2007); child weight; nutrition and diets (Lee, 2015; Baker et al, 2007); deworming (Stanford Children's Health, 2018) common illnesses diseases e.g. food allergies (Lee, 2018; Pelentsov, 2015; MacKenzie et al, 2014; Jones et al., 2013); child dental health (Forster, 2017; Lee, 2015; Baker et al, 2007); umbilical cord care (Trotter, 2003; Paulsen, 1994); breastfeeding and formula feeding methods (Paulsen, 1994); child medicines; development of child's speech; and clothing.

The importance of accessing such information by mothers has been highlighted by a number of scholars. For instance, Queensland government (2014) highlights that vaccination or immunization is an effective way of protecting children from outbreaks of deadly childhood vaccine preventable diseases such as polio, tetanus, measles, small pox, pertussis, pneumonia and diphtheria. It is therefore important for mothers to ensure that their children received the required vaccine on time. Additionally, Stanford Children's Health (2018) adds that, the immunization or vaccination also keep children safe by eliminating or greatly decreasing dangerous diseases that spread from child to child. In fact, mothers should always take a keen interest to know the name and purpose of the vaccine their child was receiving unlike a situation found by Baker et al (2007) where most mothers lacked knowledge of the name and purpose of the vaccine their child was receiving. Mothers with low health literacy skills are at an increased risk of not knowing how to cope with serious medical conditions that may affect their children.

Information on breastfeeding was also a significant finding the study revealed as a health information need for mothers with under-five children. Mothers in the current study cited breastfeeding as another type of information that they sought, especially those with children below 1 year. The need to educate mothers worldwide particularly in low-income countries about good breastfeeding practices cannot be overemphasized. For example, UNICEF (2014) reported that mothers who use formula need adequate information on how to make up a feed. These mothers also require information on the types of formula milk available, with the objective of encouraging them to use a first milk until the baby is one year old. Checking the weight of children under the age of five is critical to ensure that the child grows normally. Infant and Toddler Forum (2018) adds that measuring the weight of children under the age of five as they grow is an important part of child health surveillance as it can help detect overweight and underweight, short stature and faltering growth potentially due to underlying medical problems.

Good nutrition helps to lower risks of some chronic diseases among under five year old children and keeps their body weight healthy. Children have special nutritional needs. They need a balanced diet. According to WHO (2018), malnourished children, particularly those with severe acute malnutrition, have a higher risk of death from common childhood illness such as diarrhea, pneumonia, and malaria. Nutrition-related factors contribute to about 45% of deaths in children under-5 years of age. In this regard, mothers should know which nutrients are necessary and in what amounts such as vitamins, minerals, carbohydrates, protein and fat as children need different amounts of specific nutrients at different ages. The study also found that a significant number of mothers were also interested in information on deworming. WHO (2018) further estimates that in developing countries like Zambia children under the age of five are at risk of worm infection and would benefit from deworming. Worm infection, which according to Hema (2018), can cause anemia, malnourishment, impaired mental and physical development, and may cause a serious threat to child's growth.

Information on the weight of the child is key to mothers. Checking the weight of children is an important part of child health surveillance. It can assist to detect overweight and underweight, short stature and faltering growth possibly due to underlying medical problems. It can also provide reassurance about normality and track a child's growth. Mothers also need to know the teething age, symptoms and so on in children. In fact, Forster (2017) states that mothers need better information on dental hygiene to try and avoid 'almost brutal' treatments that often involve the removal of many teeth at once. Various local perceptions, cultural beliefs and practices surround umbilical cord care in Zambia. Trotter (2003) admits that information and practice on umbilical cord care is, at best, confusing. Therefore, mothers need correct information from healthcare information providers on umbilical cord care. Mother's knowledge on care for their infants cord tends to be the safest possible way to avoid confusion and lead to continuity of care and reduced infection rates.

Mothers need basic knowledge about the common diseases in children under five year olds such as infections. According to Nurmio and Noterman (2016), infections are the leading diseases in children and may be in different types. For instance respiratory infections may result in common cold, influenza, sinusitis, pneumonia, bronchitis, otitis media and conjunctivitis. Additionally children may also have infections of the mouth e.g. stomatitis and also

gastroenterology which may cause acute abdominal pain and acute gastroenteritis. These infections may cause pathogens such as bacteria, viruses and fungi (Nurmi and Noterman, 2016). Other common disease that occur in children include diarrheal diseases, skin infections, and poxes.

Mothers' knowledge of medicines, administration, sources and illness management skills are important to minimize the effects of morbidity and mortality associated with common illnesses in children under the age of five. According to KidsHealth from Nemours (2018), giving kids medicine safely can be complicated and many mothers experience pressure when a child requires medicine, knowing that giving too much or too little could cause serious side effects. Using medicines safely means knowing when the medicine is needed, and when it is not needed. It is important for mothers to always consult the health practitioners if not sure to get the right information. According to KidsHealth from Nemours (2018), the most important information on medicines for children that mothers should be provided with include: the name and purpose of the medicine; how often and for how long the medicine should be taken, how the medicine should be given, (e.g. taken by mouth; breathed into the lungs; inserted into the ears, eyes, or rectum; or applied to the skin); any special instructions, (e.g. whether the medicine should be taken with or without food); how the medicine should be stored; how long the medicine can be stored safely before it can be discarded; common side effects or reactions; interactions with other medicines your child takes; and what may happen if the child has missed a dose.

5.2 Sources of Information Mothers with Children under the Age of Five Consult

The second objective was to identify the sources of health information consulted by mothers and their frequency of use among mothers. During the analysis, seven main themes emerged on sources of consultation. These included healthcare providers e.g. hospital and clinics; the Internet (including WhatsApp, Facebook); mass media (i.e. radio, television, newspapers); community health workers; friends and relatives; mobile phones; and printed books and brochures. To start with, the use of healthcare personnel and community health workers as one of the sources of health information for mothers pertaining to their under-five children could be due to the fact that hospitals and clinics have trained community workers who are capable to provide health information to mothers with children under the age of five. This agrees with a similar research carried out by Peltzer (2014) in South Africa that labelled health centres as most visited sources of health information by mothers. The study also found that airing health information on television and radio was an effective way of disseminating health information by health centres and receipt by mothers. Most mothers for example acknowledged being reminded of the child health week programme through Television and radio adverts. Findings on the use of the radio and television as sources of health information concur with those of Ngwenya (2014) and Mumba (2015).

The Internet was also found in this study to be a commonly used source of health information by mothers of under-five children. In a similar study on child health information source preference, Kostagiolas et al. (2013) found that parents of paediatricians that used the internet used it mostly because it reduced anxiety and helped to better cope with the children's medical condition. Mothers in the current study indicated that they found Internet most efficient unlike the hospital where they used to stand on queues for more than necessary which tended to inconvenience their personal programs especially working mothers. Today, the Internet has become one of the most important sources of information. Too often mothers with children under the age of five turn to the quickest source of health information such as the Internet for many reasons mainly, because it is fast and easy and it provides a great deal of information. Some mothers find it hard to access health information from the hospital due to queues but with the internet they are able to access health information easily, faster and at any time. What Kostagiolas et al. (2013) and the study observed are that the internet was all in all a more convenient source of information for the mothers.

5.3 The frequency of search for health information of mothers with children under the age of five

The study's third objective was to establish the frequency of use of these information sources. The findings of the research revealed that mothers' frequency of search for health information depended on three major factors: the source they used, the child condition and the age of the child. It is clear in this study that as regards the source of health information they used, Internet was most often used as it was more available and did not require travelling or appointment. The use of healthcare providers was found to be not occasionally used unless the child is sick or scheduled for under five health programs where they conduct health checks on the children. It was also revealed in this study that the older the child was (i.e. above the age of 3), the lesser the urge to seek health information except during the health program called Child Health Week when they gave children polio vaccines and other important health supplements like vitamin A.

5.4 The relationship between a child's characteristics and mother's health information needs

The study's fourth objective was to establish the relationship between a child's characteristics and mother's health information needs. Five themes that surfaced on this topic include age, gender, weight, health fitness and height. Regarding age, the study found that as the child grows the information needs of mothers change. When the child was younger mothers reported constantly seeking health information from their preferred sources especially the hospital because at the time the baby was still delicate and needed close monitoring by the qualified health staff. Mothers also reported that 0-1 year is crucial due to frequent infectious diseases that children had to contract. Vaccination programs was the most common information sought at this stage. But as the child grows to 3 years and above, the information needs changed to only focus on growth monitoring as the child would become less susceptible to diseases. Concerning gender, the research found that mothers with under five children who were male sought information on infant male circumcision while for mothers with female children were more concerned with information on child defilement (although very rarely and on special circumstances). Mothers with male children under the age of five who sought information on circumcision felt that this kind of information helped them decide whether or not to circumcise the child by weighing the benefits and risks the child could be exposed to if circumcised. These findings are comparable to Lee's (2015) study which established that whether or not to circumcise a boy child is a decision that a mother has to make and to make such a decision, it is important

for a mother to know the advantages and disadvantages of child circumcision. This kind of information is helpful for a mother when making such a decision.

Further, the study found that poor or low child weight/height affected the information needs of mothers with children under the age of five. Weight was used as an indicator for growth development of a child. Rhadhakrishnan (2017) attributes to the fact that poor or low weight gain is typically noticed by, usually the mother or primary physicians who notice that the child is not growing well, or the child's weight gain deviates from a normal growth pattern. A drop or drastic gain in a child's weight can be an indicator of poor feeding and poor nutrition in a child. Mothers whose children's weight would drop tended to seek this type of information more as compared to a mother whose child weight kept increasing or was constant. According to the findings of the research the fitness of the child affected the kind of information mothers sought in that when the child is unwell, mothers would frequent the hospital to get the right medication and right information on how they could take good care of the child so as to prevent the condition from worsening or death.

5.6 Challenges Mothers with children under the age of five face to access health information

The fifth and final objective of the research was to ascertain the challenges mothers with children under the age of five face to access health information. The analysis of the findings revealed five major themes on this objective including: obtaining wrong health information, language barrier, cost, poor information literacy skills, and limited time. Obtaining the wrong health information was seen to be one of the greatest challenges that mothers faced especially when this information is obtained from the Internet. They alluded to the fact that it becomes difficult to tell which among the collected information is correct and which is wrong. According to the results, obtaining wrong information led mothers to receive inconsistent and inaccurate information which in turn led to harmful practices such as the use of untested and unauthorized herbs on children under the age of five. Language barrier has long been a major challenge of obtaining not only health information but also other types of information. This problem arises due to the fact that the languages that dominate particularly on the web are international languages such as English, French, Chinese, German and Japanese, many women are not familiar with them (Mulauzi and Albright, 2009). Researches by Health Direct Australia (2017) and Cline and Haynes (2001) agree with the findings of this study in ascertaining language barrier to be a major challenge in the dissemination and receipt of health information.

The findings on cost, poor information literacy skills and limited time are similar to those of Mulauzi and Albright (2009). According to Mulauzi and Albright (2009), many women lack disposable income to pay for ICT access. Additionally, Mulauzi and Albright (2009) point out that effective and innovative use of ICTs to access information requires information literacy skills, ICT skills, and literacy. Information literacy is the ability to recognize the need for information, locate, evaluate, access, communicate and use information in varied contexts. Women often lack this skill including the skill to use ICTs. A similar study done by Cline and Haynes (2001) confirmed that access to health information on the Internet is hindered by navigational challenges due to numerous design features which include disorganization, technical language and lack of permanence.

6. Conclusion

The research was aimed to investigate the health information literacy, health information needs and information seeking behavior of mothers with children under the age of five in Chilenje Township of Lusaka, Zambia. The study revealed that the major types of health information that mothers with children under the age of five usually sought at Chilenje level 1 hospital included information on vaccination/ immunization; child weight; nutrition and diet/food preparation; deworming; common illnesses; child dental health; umbilical cord care; breastfeeding and formula feeding methods; child medicines; development of child's speech; and clothing. Healthcare providers e.g. hospital and clinics; the Internet (including WhatsApp, Facebook); mass media (i.e. radio, television, newspapers); community health workers; friends and relatives; mobile phones; and printed books and brochures were the main sources of health information for mothers with children under the age of five. The findings of the research revealed that mothers' frequency of search for health information depended on three major factors: the source they used, the child condition and the age of the child. In terms of the relationship between a child's characteristics and mother's health information needs, the study revealed that age, gender, weight, health fitness and height influenced the type of health information that mothers sought. Obtaining wrong health information, language barrier, cost, poor information literacy skills, and limited time were the main challenges mothers experienced to access health information.

7. Recommendations

In line with the findings of the study, the following recommendations were made:

1. Hospitals and clinics should ensure that mothers with children under the age of five are sensitized on trusted sources of information to consult to avoid misinformation which might later affect the health of the child.
2. The Ministry of Health should develop and effectively manage accessible web pages for mothers to access accurate, timely, specific and reliable health information.
3. The Ministry of Health and other information providers should use the radio and television to easily disseminate reliable health information to mothers of different levels of education more effectively.
4. Health information providers should provide mothers with health information in the most commonly used languages
5. Health information provider should use the most common spaces where most mothers are found to disseminate health information.

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