

# **ASSESSING THE EFFECT OF MATERNAL LITERACY ON CHILD HEALTH:**

## **A CASE STUDY OF MPONGWE DISTRICT**

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### **ABSTRACT**

*This presentation provides a summary of the study entitled ‘assessing the effect of maternal health literacy on child health: a case study of Mpongwe district. The purpose of the study was to assess the effects of maternal health literacy on child health in Mpongwe district. The study had a main objective which was to assess the effects of maternal literacy on child health. The specific objectives were: to investigate the literacy levels of mothers in the community, to ascertain the obstacles to maternal literacy; and to assess the areas of intervention that can help improve maternal literacy.*

### **Method**

*The study employed a case study design. Structured and Semi-structured questionnaires were used to collect quantitative and qualitative data. The sample size was 60 respondents as follows: 20 health providers and 40 maternal mothers. The 20 health providers approached, 30% were males and 70% were females, of which 10% were clinical officers, 10% were biomedical scientists, 10% were environmental health technologists, and 70% were nurses.*

*Data was collected using questionnaires and guides from 40 maternal mothers and 20 health providers purposively selected. It was then analysed using Statistical Package for Social Sciences (SPSS) and Microsoft word presented in tables percentages.*

### **Results**

*The study established that they were low levels of maternal health literacy and that the effects of maternal health literacy on child health was influenced by high levels of illiteracy by maternal women, high levels of poverty, lack of awareness by both maternal women and health providers on maternal literacy programs, as well as lack of implementation of maternal literacy programs in health centers and communities. Gender stereotype and socio-cultural belief was ruled out as having an influence on low levels of women participation in literacy programs*

### **Conclusion**

*The study recommended the Creation of more awareness on literacy programs in the districts, Introduction of literacy programs that can be attended by everyone, Provision of means to attend literacy programs in distant areas, Provision of more centers for literacy programs in districts, Indirection and implementation of literacy programs, Sensitization of literacy programs to health providers so as to enable them encourage patients on the importance of literacy programs. The study also recommended that Government through Ministries of health and community development should conduct awareness programs on literacy programs to both health providers and the community.*

**Keywords**—maternal health literacy, child health, **Literacy program**

## I. INTRODUCTION (BACKGROUND)

Literacy is the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society (UNESCO, 2014). Literacy of females is an important key to improving health, nutrition, and education in the family. Literacy also empowers females to participate in decision-making at all levels in the society (CSO, 2012).

A mother is the principal provider of the primary care that her child needs during the first years of his/her life. Owing to this, mothers affect the timing and frequency of interactions with health care providers. In one sense, a mother's health seeking behavior at home also affects her child because the mother spends more time with the child. The quality of primary health care a mother provides for the child is dependent on the mother's education. Routine decisions such as feeding, bathing and general care affect the child's health. Maternal education has the greatest impact on child health among children aged 0-2 years (Mumena, 2015).

Education makes a woman conscious about the well-being of herself and her family. It gives the basic ideas about the path to well-being and also equips and increases a mother's knowledge on healthy living and helps her to form the attitude to practice manners of hygiene (Mumena, 2015).

Zarcadoolas, Pleasant and Greer (2005) define health literacy as the wide range of skills and competencies that people developed to seek out, comprehend, evaluate and use health information and concepts to make informed choices, reduce risks and increase quality of life. Safeer and Keenan (2005) state that Health literacy is basic reading and numerical skills that allows a person to

function in the health care environment. Borooah (2000) argues that there is an association between higher years of schooling in mothers and lower incidence of illness, better immunization status, healthier nutritional position and improved scores of cognitive tests.

In Zambia, the government ran some literacy programs in order to improve the literacy levels of men and women which included maternal women. A Functional Literacy, Health and Nutrition Program started in 1978 and introduced topics on health and nutrition into the state-run functional literacy program. But statistics indicate that the interventions have not had much impact. It has been reported in Zambia that while the illiteracy rate dropped from 67 per cent in 1964 to about 41 per cent in 1980, the actual number of illiterates grew from 1.2 million to three million (Mutava, 2000).

According to the 2000 Census of Population and Housing, Zambia's literacy level was estimated at 55 per cent. The results further indicated that the problem of illiteracy continued to be more prevalent among females than males of which this group included maternal women (Musonda, 2016).

Literacy is at 83 percent for men and 68 percent for females. The age group with the highest proportion of literacy is the 15-19 years among women and the 20-24 among men (CSO, 2018).

The problem of illiteracy is more pervasive among the rural than urban population. Furthermore, in terms of regional segregation, Copperbelt and Lusaka Provinces had the highest rate of adult literacy (80%) while Eastern followed by North-Western Province recorded the lowest literacy rates of 47.6% and 53.4%, respectively (MOE, 2008).

In health care settings, literacy is regarded as health literacy, which refers to the ability to read, understand and act on health care information, or capacity to obtain, interpret and understand basic

health information and services to enhance health. Health literacy means more than being able to read pamphlets and successfully make appointment. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment (Nutbeam 2000).

In the area of physical health, examples of health literacy includes knowledge and use of a healthy diet, taking action to prevent skin cancer, performing breast examination, having first aid skills and knowing how to look up health information in a library or on the internet (Jorm, 2000).

According to Renkert and Nutbeam (2001), maternal health literacy can be defined as the cognitive and social skills which determine the motivation and ability of women to gain access to understand, and use information in ways that promote and maintain their health and that of their children. Maternal health literacy and some cognitive skills are required for healthy maternity and pregnancy outcomes. These include ability to detect risk factors and taking actions for healthier life style and better nutrition during pregnancy and after child birth (Kohan et al 2007).

Maternal health literacy is enhanced by antenatal education, which focuses attention on facts surrounding pregnancy, labour and baby care skills (Renkert and Nutbeam, 2001).

Various measurement tools have been developed to measure health literacy in adults. Based on these, some adolescents-appropriate tools have been derived. These include the REALM-Teen, based on the Rapid Estimate of Adult Literacy in Medicine (REALM) and the test of Functional Health Literacy in Adults (TOFHLA) (Davis et al. 2006).

In Zambia, a study was done on assessing health literacy, approximately six of every ten respondents had low HL in the study.

Characteristics that appeared to have been associated with low HL included being female, young age and being married or formerly married. It seemed the predictors of high HL related specifically to literacy, which is known to be disproportionately higher in those who are educated, living in urban areas and are wealthier (Stuebing, 1997; Kickbusch, 2001; Zhang, 2006).

Higher education was associated with high HL. However, low HL was still prevalent in almost half of those with primary education and in about 2 of every 10 respondents who had secondary education or higher (Stuebing, 1997; Kickbusch, 2001; Zhang, 2006).

## A. *Statement of the problem*

Despite efforts been made by the government in fostering maternal health literacy, they are still challenges in maternal health literacy amongst mothers in Zambia. Child mortality rate is still high and children still suffer from health related ailments. Child Mortality rate indicates 64% per 1000 live births (ZDHS, 2019).

Prior research exploring factors that lead to young children having health issues have commonly examined low rates of maternal literacy as a major preceding factor on child Health.(Francesco, 2012; Mallard et al., 2014; Wolde, Berhan, & Chala, 2015).

Most of the women in the rural parts of Zambia are ignorant of the importance of maternal literacy, that's why as early as 12 years of age they would give out their female children's hand in marriage which leads to leaving school and been unable to attain any form of education that can allow them to be literate. This affects them even when they become mothers, as it becomes difficult for them to read and understand clinical/health information and it becomes a disadvantage when it comes to providing good child health care ( Joseph, 2010)

It is against this background, that the study was designed to assess the effects of Maternal Health literacy on child health.

## B. Objectives

### General Objective

To assess the effects of maternal Health literacy on child health.

### Specific objectives

- i. To investigate the literacy levels of mothers in the community
- ii. To ascertain the obstacles to maternal health literacy.
- iii. To assess the areas of intervention that can help improve maternal health literacy.

## C. Research questions

- i. What are the levels of maternal health literacy
- ii. What are the obstacles to maternal health literacy
- iii. What are the areas of intervention that can help improve maternal health literacy?

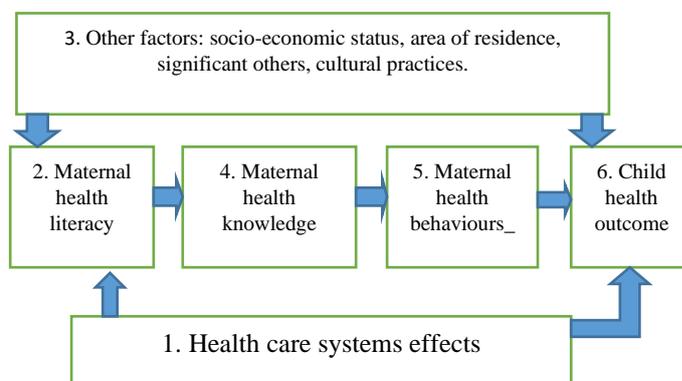
## D. Significance of study

Vikram et al (2010) argue that the acquisition of education leads to better human, social and cultural capitals among mothers, which should be associated with increased child survival. In one sense, this study will be different in that it is designed to investigate the effects of maternal literacy within the context of child health. The study is going to be of help in understanding the effects of maternal Health literacy on child health. For policy makers, it is hoped that the findings of this study will give them a deeper understanding of how maternal health literacy impacts on the overall health of a child.

The findings would be used in designing appropriate and effective programs aimed at

improving maternal literacy. For practitioners, both in the education and health fields, it is hoped that the findings of this study will spur interest and appreciation of the role which maternal health literacy plays in promoting child health.

## C. conceptual framework



There is an enduring link between boxes 1 and 2; health care systems and maternal health literacy. Nutbeam (2001) defines health literacy as the ability to understand instructions on prescription drug bottles, appointment slips, medical education brochures and posters, doctor's directions, consent forms, the ability to negotiate complicated health systems through reading, listening, analyzing and decision making. The health care systems can be extended to include facilities such as hospitals, clinics and other health care providing centers. In one sense, for a post-natal mother to navigate the health care system, they will need their maternal health literacy.

Another link is between boxes 1 and 6; health care system effects and Child health outcomes. The health care system determines the overall child health outcomes. In a country like Zambia the health care system encompasses all the services provided by the various stake-holders and government inclusive. Ultimately, the goal is to have positive Child health outcomes.

There is a very strong link between boxes 2 and 3; maternal health literacy and other factors such as socio-economic status, area of residence,

significant others and cultural practices. Vikram et al (2010) argue that there is a link between maternal literacy and the acquisition of human capital, social capital and cultural capital. Education, as the main human capital, leads to the acquisition of capacities such as accurate knowledge about health and health behaviors. Social capital empowers mothers to interact and gain access to knowledge, advice and contacts which enhance their ability to understand the severity of disease, seek treatment and good care. Cultural capital enables mothers to carry a position of privilege which commands respect from health care providers and enables families to manipulate health systems to their advantage.

There is a link between boxes 2, 4, 5 and 6; maternal health literacy and maternal health knowledge, maternal health behaviors and ultimately, Child health outcomes. Maternal health literacy empowers post-natal mothers with health knowledge. They use this health knowledge to promote child health. Child health promoting behaviors result in child health outcomes.

Therefore, there is a relationship between maternal health literacy and child health.

## II. LITERATURE REVIEW

### A. *Maternal health literacy*

In a study conducted on pregnant women referred to healthcare centers of Tehran, Iran, 30% and 23.6% of women had inadequate and borderline levels of health literacy, respectively. Given the results of a study performed on women referred to healthcare centers of Siberia, Russia, 44% of women had low levels of health literacy (World Health Organization. 1998). Maternal health literacy is defined as special knowledge and social skills for detecting risk factors, healthy lifestyles, and proper nutrition during pregnancy, which affects pregnancy outcome by improving the

quality of antenatal care. Maternal health literacy is important because antenatal care is the first exposure of many women to the healthcare system. Moreover, the first experience with this complex system, even with adequate health literacy level, can be scary (Kharazi. 2016). Additionally, women with low levels of health literacy encounter more trouble with learning new information and following guidance.

In addition, a woman's health status and her level of health knowledge during pre-pregnancy, pregnancy, and postnatal phases directly affect her progeny. Because educating females is essential to promote their family's health status, women have been identified as initial population for increasing emphasis on the health literacy (Ghanbari, 2012). Antenatal education, which focuses on pregnancy, delivery, and postpartum care, can improve the maternal health literacy. This study aimed to assess the maternal health literacy in mothers referred to comprehensive healthcare centers to improve their health literacy level (Mojoyinola. 2011).

Cammu, Martens, Maele and Amy (2010) investigated the effect of maternal education on foetal and infant mortality. They sampled 170, 948 Belgian women and used a Chi square test to conclude that foetal death rate was significantly associated with maternal education. They also found out that the incidence of preterm birth, low birth weight, neonatal morbidity had an education gradient and were least common in mothers with the highest level of education in Belgium. The independent variable in the study was maternal education described as high level, medium level and low level. The dependent variables were pre term birth, birth weight, foetal and infant mortality. The description of education by the word level is so general that it is difficult to isolate particular grades or classes.

This study used no schooling, basic, high school, tertiary diploma and tertiary school to describe education. The study in Belgium did not

measure the literacy levels among the 170, 948 women. This study measured the literacy levels among the 40 post-natal mothers by using the Rapid Estimate of Adult Literacy in Medicine (REALM). The literacy tests were generated from the Children's Clinic Card which is not only a child health monitoring tool but a literacy piece.

It was difficult to reliably conclude that general levels of education such as high level, medium level or low level could have an impact on preterm birth, low birth weight and neonatal morbidity. There ought to have been something in the education level which could have led to pre-term birth, low birth and neonatal morbidity among the infants.

Govindasamy and Ramesh (1997) used a quantitative design which was informed by the data from the National Family Health Survey (NFHS) in India to study maternal education and the utilization of child health services in eight states. The survey ran for two years from 1992 to 1993. Sample sizes were in excess of 40,000 for children. Three questionnaires were used to capture information on maternal education and child health. These were the Household Questionnaire, the Woman's Questionnaire and the Village Questionnaire. This study used only one questionnaire to elicit child health promoting behaviors. The measures for education in the study were illiterate, literate less than middle school, complete and middle school complete and above. In this study, education was described as; no schooling, basic, high school, tertiary diploma and tertiary bachelor's, master's and doctorate. The indicators for child health included percentages of vaccinations, occurrences of diarrhea and Oral Rehydration Salts (ORS) interventions and/or Recommended Home Fluids (RHF) and acute respiratory (ARI) infection and whether the children were taken to a health facility or provider. They used regression analysis and found that a higher level of maternal education resulted in

improved child survival. This is because the utilization of Maternal and Child Health services (MCH) were used to a greater extent by mothers with higher education than those with little or no education (Govindasamy and Ramesh 1997, p.18). This study used correlations to analyze the effect of maternal health literacy on child health promoting behaviors. It was not known whether a higher level of maternal education was equivalent to literate. The study concluded that the benefits of maternal education persisted even when other socioeconomic factors were taken into account.

The sample size and the delimitation were so large that self-reported beliefs or behaviors were used for data. In the study, the mothers reported, for instance, that they had taken their children to a health center for treatment of Acute Respiratory Infection (ARI). Elsewhere, they reported that they had treated their children at home for diarrhea with Oral Rehydration Salts (ORS) or Recommended Home Fluids (RHF). The study did not take into account the role of nutrition which is so crucial in child health. Regan (2011) reports the study done by Stanley and Mei Chung (2007) which looked at breastfeeding and maternal and infant health outcomes in developed countries and suggested that breastfeeding was of considerable importance to the young infant. It was important for nutrition and development, for reducing infections and diseases and positively impacted cognition, vocabulary and intelligence. Lastly, there was no test of maternal literacy skills which could have been garnered during years of schooling/education by the mothers. It was such skills which could have enabled them read prescriptions, know when to administer drugs for an Acute Respiratory Infection (ARI) attack or prepare Recommended Home Fluids (RHF) to arrest diarrhea. The study, in describing maternal education, included words and terms such as literate and illiterate alongside middle school, and middle school and above. Whether illiterate is equal to less than middle

school is anyone's guess. Where there was no clear-cut measure of literacy skills it was therefore difficult to attribute the findings to the input of maternal education.

Vikram et al (2010), argue that the acquisition of education led to better human, social and cultural capitals among mothers, which ought to be associated with increased child survival. They used regression analysis and found that there was a significant association between maternal education and child mortality. They used the Indian Human Development Survey (IHDS) of 2005 in their study; Maternal Education and Child Mortality: Exploring the pathways of influence. They identified human capital, social capital, cultural capital and gender empowerment as pathways of influence.

They pointed out that education, as capital, equipped mothers with health knowledge and health behaviors which helped them to deal with child health. Glewwe (1999) argues that improved health-related knowledge was associated with better child health outcomes. In terms of social capital, they identified interdependencies driven by cohesiveness, presence of networks and civic associations in the community which enabled mothers to deal with child health. Educated parents had social networks which allowed them access to knowledge, advice, and contact which enhanced their ability to recognize the danger posed by a disease, look for treatment and locate better care.

The study stated that language and communication styles were very important components of cultural capital. Communication styles gave individuals a certain position in society especially if they were able to use English. Govindasamy and Ramesh (1997) maintain that the education of a mother was associated with greater uptake of health services for children and cultural capital may have been a pathway through which education influenced interaction with health systems. Greater education of the mother may have

imbued her with greater confidence, greater facility with language and a greater ability to interact with the health system.

The last pathway identified in the study was gender empowerment. Education provided the basis upon which women got autonomy in the household and outside. By taking a sick child to a health care provider, women were using autonomy to exhibit health seeking behavior. This was decision making autonomy at an individual level. It was through autonomy that mothers had the courage to engage with health care providers and get the best treatment for their children.

The IHDS survey data used in the study was nationally representative with 33, 480 ever married women between the ages of 15 to 49 being interviewed about their fertility history and utilization of health care for themselves and their children. The sample size for households was 41,554 spread over 383 districts, 1503 villages and 971 urban blocks of India. The sample size for children aged between 1 and 5 was 11, 908. The dependent variables were neonatal mortality, infant mortality and child mortality. The independent variable was mother's education captured as; illiterate, any primary education, any upper primary education, any secondary education, any senior secondary education and any college education (Vikram et al 2010, p.6).

There were four hypotheses tested in the study; that the higher the education, the greater the acquisition of human capital among mothers as measured through health knowledge which was associated with child survival, that average education of women in the community had a significant association with child mortality, that a measure of the social capital of a mother reflected her ability to navigate the bureaucratic health system and that greater education led to greater decision making and physical autonomy of the mother (measured as autonomy indecision making regarding child health and visiting health centres)

which was associated with improved survival of the child (Vikram et al 2010, p3).

Findings in the study indicated that there was a significant association between maternal education and infant and child mortality. They argue that education and associated human, social and cultural capital improve health-seeking behavior, which was reflected in greater survival rates.

Moreover, the study found out that higher education was negatively correlated with neonatal, infant and child mortality and upper primary education (between 6 to 8 years of education) was negatively correlated with infant and child mortality. This demonstrated that women who had attained higher education experienced less infant and child mortality. Those who had attained upper primary education also experienced less infant and child mortality. While the correlations confirmed the influence of maternal education on child mortality, no maternal health literacy tests were carried out in the study. Higher education was found to be negatively correlated with neonatal, infant and child mortality. It was not known which of the three categories; any secondary education, any senior secondary education and any college education was driving the correlation.

A description of primary education was given; between 6 to 8 years of education. This was the number of years spent in school. It was not known whether the stated number of years, were progressive or repetitive but it was this primary education which was found to be negatively correlated with infant and child mortality. There was a lot of obscurity in terms of relating maternal education (interpreted in seven categories) to child mortality. In terms of Child mortality, the study did not take into account the role which nutrition plays in child health.

All the four hypotheses were accepted; that the higher the education, the greater the acquisition of human capital among mothers as measured through

health knowledge which was associated with child survival, that average education of women in the community has a significant association with child mortality, that a measure of the social capital of a mother reflected her ability to navigate the bureaucratic health system and that greater education led to greater decision making and physical autonomy of the mother (measured as autonomy in decision making regarding child health and visiting health center) which was associated with improved survival of the child. In the study, it was difficult to differentiate between higher education and greater education.

Ali et al (2011) conducted a comparative study in Pakistan in which they investigated the effect of maternal literacy on child health. The objective was to compare the child health of children born to literate and non-literate mothers in terms of their nutritional grade, vaccination status, personal hygiene and social development. The study was conducted at Kuwait Teaching Hospital, Peshawar Medical College in Pakistan from February the first 2008 to June the thirtieth 2008. It was a correlational study design.

A total of 400 mothers constituted the sample size which was selected using the convenient sampling technique. These were mother child pairs. In terms of nationality, there were 41 non literate and 85 literate Pakistanis. The number of non-literate Afghani women was 159 and the literate ones were 115. The sample was further divided into two groups of 200 each. Group A was made up of mothers who were not able to read headings of a local newspaper and Group B consisted of mothers who were able to read headings of local newspapers.

The women were included without considering their ability to read. These were also mother child pairs. Mothers who had just given birth were not included as taking part in the literacy tests and completing the questionnaire would have been stressful. The 12 months lower limit threshold

because it falls within the 12-23 months which is recommended by the World Health Organization (WHO). This group covers children older than 11 months (by which age they should have been fully vaccinated) and because it contains the most recent information (older children may not have been covered by more recent health program).

There were 40 post natal mothers from the three clinics except one which had 41. Since the postnatal mothers were screened, purposeful sampling was used. The post natal mothers sat for two literacy tests; the Rapid Estimate of Adult Literacy in Medicine (REALM) and the Child Health Reading Comprehension Test (CHRCT). They also filled out a questionnaire on Child Health promoting behaviors. The overall health status of the child for the study in Pakistan was assessed through nutrition, vaccination, hygiene and social development. Vaccination status was arrived at after checking the recommended routine immunization. Nutrition was assessed by plotting anthropometric measurements. These were weight, height and head circumference in children more than 5 years old. This study assessed the overall health status of the children aged between 12 months and five years in line with the Ministry of Community Development and Mother and Child Health (MCDMCH) children's clinic card or the under- five cards by capturing the weight for age and complete immunization. The weight for age gave the nutritional status and physical development.

The results from the study conducted in Pakistani showed that 156 (i.e.78%) of the children whose mothers were in group A, were below normal in terms of weight. Mothers in group A were regarded as being illiterate. Group B mothers were literate and 128 (i.e. 64%) of their children were below normal weight. This gave a difference of (i.e. 28=14%) more children of illiterate mothers were below normal weight. Regarding the height percentile for nutrition, 156 (i.e.78%) children in

group A and 122(i.e. 61%) children in group B were below the standard 50th percentile.

The difference for height was (i.e.34=17%) more children of the illiterate mothers were below the normal height. In group A, 50 (i.e.25%) children showed delay in development in terms of motor and speech while only 10 (i.e.5%) children of the literate mothers in group B had delay in fine motor and speech function. The difference was (i.e. 40=20%) more children of the illiterate mothers showing delay in motor and speech function.

The vaccination status indicated that 131(i.e. 65.5%) children of the illiterate mothers in group A completed their vaccinations as compared to 171(i.e. 85.5%) children in group B of the literate mothers. The difference was 40(i.e.20%) more children of the literate mothers completed their vaccinations. 50(i.e. 25%) children in group A of the illiterate mothers did not complete their vaccination as compared to 29(i.e. 14.5%) children from group B of the literate mothers. The difference was 21(i.e.14.5%) more children of the literate mothers completed their vaccination. Then 19(i.e. 9.5%) children from group A were not vaccinated at all whereas there were none in group B (Ali et al 2011, p101).

The study used newspaper reading as a measure for maternal literacy. If a mother read headings of a local newspaper, they were deemed to be literate. This measure was unreliable and problematic because it treated literacy as a simple ability, either present or absent which could easily be estimated as explained in the statement of the problem in chapter one. Headings of local newspapers could not have constituted the correct literacy pieces in as far as maternal health literacy and child health were concerned. In a country like Pakistan which was beset by violence, the probability of having had more local newspaper with headlines on violence than health matters were high. This study used the children's clinic card to generate the literacy tests; the Rapid Estimate of Adult Literacy in Medicine

(REALM) and the Child Health Reading Comprehension Test (CHRCT) which the post-natal mothers sat for. The sample consisted of 400 women and 274 (i.e. 68.5%) of these were Afghani immigrants. These were women who had fled conflict from Afghanistan and gone to live in Pakistan as refugees. As immigrants, they faced exclusionary barriers in accessing services such as health or education. Thus, Afghani women were more of the illiterate, faced challenges in accessing health centers to immunize their children and feeding them very well. This resulted in poor physical and social development of the Afghani women's children. Thus, the sample had inherent challenges and may not have given reliable results. In the study done in Pakistan, the literacy measure used was not adequate and nationality was a huge confounding factor.

Abuya et al (2003) used a quantitative design and investigated the influence of maternal education on child health in Kenya using data from the Kenya Demographic Health Survey (KDHS) of 2003. They identified social economic status (SES), knowledge, attitudes, autonomy and reproductive factors as pathways through which maternal education could influence child health. They argued that social economic status was the most important pathway linking maternal education to health outcomes. Their conceptual model; the human capital and status attainment of schooling hypothesized that schooling enabled people to acquire skills to use to work in the various sectors of the economy. These also shaped their health and well-being. This was extended to mothers. Unlike in this study where skills were captured as maternal health literacy, the study did not specify what sort of skills in schooling enabled the mothers to work in various sectors of the economy.

The dependent variables examined were immunization and nutrition of the child as shown by height for age. Maternal education was the independent variable and was categorized as no

education, primary, and secondary and higher. The sample size of children aged between 12 and 35 months was 2,169 for immunization and for nutritional status 5,949. Access to information was measured by three variables; listening to radio, newspaper reading and watching television. This was an unreliable way of measuring literacy skills.

On the contrary, this study used maternal health literacy as opposed to maternal education in order to unlock the word; education. It also used nutrition and complete immunization to capture child health promoting behaviors.

The pathways (variables) linking maternal education and child health investigated were socioeconomic status, knowledge and reproductive factors. These were weighed against immunization and nutrition. They argued that it was difficult to measure attitudes and autonomy yet these were included.

According to the findings in the study, 80% of the children in Kenya who were 0-60 months were found to be stunted. Among the sample of children who were stunted, their mothers' level of education was termed as low with 58% of women having primary education. Children who were born to mothers with a primary education were found to be 2.17 times more likely to be fully immunized compared with those with no education at all.

Those born to mothers with a secondary education were found to be 2.68 times more likely to be immunized compared to those with no education at all. The study did not indicate what it was in education which made the mothers with particular levels of education exhibit immunization as a child health promoting behavior. The objective of the study was to assess the effect of maternal education on Child health in Kenya, as measured by complete immunization and nutritional status. The objective of this study was to investigate the effects of maternal health literacy on child health promoting behaviors as also measured by complete

immunization and nutritional status (Abuya et al 2003, p.14).

They concluded that formal education was important in imparting health knowledge to women, which in turn led to important improvements in child health although nothing in education is mentioned as imparting health knowledge. The study categorized maternal education (the main predictor independent variable) as no education, primary education, secondary education and higher. This was linked to social economic status, health knowledge, reproductive factors, attitude and autonomy. They maintained that health knowledge could be imparted from primary through to higher education. It also had an influence on reproductive factors. A woman who had health knowledge would know how to space her births. Attitude may have affected the use of health knowledge and the ability of a woman to exercise autonomy. A woman who believed in tradition, may have not sought modern medical help if the child fell sick. Social economic status may have influenced autonomy and reproductive factors. (Abuya et al 2003, p.14).

This study investigated the effect of maternal health literacy on child health promoting behaviors using two dependent variables; complete immunization and weight for age to represent nutrition status. In this case, the practices of a mother having her child immunized and feeding the child with the right quality and quantities of food constituted child health promoting behaviors.

Blunch (2004) conducted a study in Ghana in which he investigated Mothers' Skills and Schooling and Child Health in Ghana and used data from the 1988/89 Ghana Living Standards Survey (GLSS). The mothers' skills covered by the study were Ghanaian reading and writing proficiency. The other one was English reading and writing proficiency. The head of the household or any adult member of the household who was able to give information on the other household members

provided answers on the English and Ghanaian proficiency questions. The questionnaire asked the respondents whether a named member of the household could write a letter in English and whether they could do the same in a given Ghanaian language. The question on written calculation or numeracy just wanted to find out whether one could do a calculation. The responses were; yes or no. These were reported behaviors and not real measures of literacy.

This study administered literacy tests in reading comprehension and vocabulary. These were the Child Health Reading Comprehension Test (CHRCT) and the Rapid Estimate of Adult Literacy (REALM) in medicine respectively. In the study, child health outcomes were described as inputs. These included vaccinations, pre and post natal care and child mortality. All data on these child health outcomes was generated by self-reported responses from the mother. This study used the children's clinic card to capture the child health outcomes which were immunization and weight for age. Complete immunization meant all the vaccinations had been done. Weight for age gave the nutritional status of the child. To have a child vaccinated and well fed meant a post-natal mother exhibited child health seeking behaviors. Blunch (2004)

In the study, a correlation analysis led to the conclusion that there was a positive association between formal education and child health. Formal education imparted literacy, numeracy and health knowledge. It was difficult to attribute the levels of schooling the study brought out which included primary, middle school, junior secondary school and secondary school and above to specific literacy, numeracy and health knowledge. The study included adult literacy but even with this, it was not known whether vocational and other educational levels represented adult literacy program. Nutrition was not considered at all yet this is important for child health in terms of

promoting health and mitigating mortality. Blunch (2004)

Stuebing (1997) carried out a study to examine the relationship between literacy skills and comprehension of health information in Chifubu suburb in Zambia. The study addressed the question; how was a woman's school acquired decontextualized language skills and reading comprehension related to her understanding of broadcast and printed health messages? The goal was to understand the cognitive and psycholinguistic aspects of decontextualized language skills as acquired in schools lacking books where print literacy was inadequately imparted or retained, and to investigate the effects of these skills on a woman's comprehension abilities, both oral and written, as an indication of how her language skills might have led to improved health for her children. The sample consisted of 157 women aged 30 years and below.

In the study, a noun definition task was used to assess women's decontextualized language skill in Bemba or English. The task was designed to measure a woman's ability to give formal definitions of common nouns, definitions which never shared a context with the listener. Each woman was asked to tell someone who did not know what each of the common nouns such as pot, thief and bed meant.

The women were asked to direct their answers to hypothetical listeners. A reading comprehension score was obtained for each of the women based on their decoding aloud of a grade 1 passage and the percentage of ideas she could repeat back after silently reading health passages from readers for grades 3, 5 and 7. Each woman was judged to have passed if she repeated 50% of the ideas from the passage at that level (Stuebing 1997, p. 156).

Each woman's practical language and literacy skills were assessed by listening and a reading comprehension task using general health messages.

In the listening comprehension task, each woman was asked to listen to a tape recording of brief health messages in both Bemba and English that had been broadcast on Zambian radio. After each message, she was asked to repeat back the ideas covered, and her total score was the percentage of ideas she was able to repeat. For the reading comprehension task, brief printed health messages in both Bemba and English were presented to each woman, and she was again asked to repeat back the ideas in the message. All the women were given the printed messages regardless of their scores on other aspects of the literacy assessments, and 51 women were unable to repeat back any ideas in the printed messages. These and similar messages were commonly seen on posters in clinics (Stuebing 1997, p. 156).

Simple correlations were estimated between language and comprehension measures and simple and multiple regression models were fitted predicting the practical oral and written comprehension of health messages. (Stuebing 1997, p. 156).

The general conclusion was that school acquired literacy skills and especially oral decontextualized language skills were indeed a missing link in the relationship between maternal schooling and child health generally, and between maternal schooling and adult comprehension of health information. (Stuebing 1997, p. 156).

The study did not present any information on the children of these women. Nothing was known about their health status. This would have given a balanced judgment of the mothers' literacy skills in promoting child health. The study concentrated on one variable; mothers' schooling and comprehension without extending it to children's health status. Moreover, no mothers' level of schooling was captured. (Stuebing 1997, p. 156).

Lunch (2004) investigated mother's schooling and child health in Ghana and concluded that there

was a positive association between formal education and child health. Their age range was between 15 and 45 years. Education was described as primary, middle school, junior secondary school and secondary school and above. The mothers' skills covered by the study were Ghanaian and English reading and writing proficiency. The Child health outcomes were vaccinations, pre and post natal care and child mortality. Ali et al (2011) found a strong and consistent correlation between maternal education and child health. The mean age group for a sample of 400 mothers was 26 years. These were categorized in groups of 200, as literate or illiterate. Mothers' reading ability was determined by headings of a local newspaper. Their children's health status was captured through children's immunization, height for age and development of motor skills.

This study sought to investigate the effect of maternal health literacy on child health among post natal mothers in Mpongwe District. This study used the Rapid Estimate of Adult Literacy in Medicine (REALM) and the Child Health Reading Comprehension Test (CHRCT) to measure the post natal mothers' literacy skills. Maternal education was captured as no schooling, basic school, high school and tertiary school. The sample size was 40 maternal mothers and 10 health providers. The children's health status was determined by immunization and weight. The effects and areas of intervention to maternal health literacy were assessed through a questionnaire. In this study, for the Rapid Estimate of Adult Literacy in Medicine (REALM), the post natal mothers were asked to read 66 words in 6 minutes. These words came from the children's clinic card. The 66 words were multiplied by 1.52 to bring the total to 100. A score of 75-100, was described as adequate, 60-74 marginal, and 0-59 inadequate.

## ***B. Maternal and child health care***

Maternal and child health (MCH) care is the health service provided to mothers (women in their child bearing age) and children. The targets for MCH are all women in their reproductive age groups, i.e., 15 - 49 years of age, children, school age population and adolescents. Throughout the world, especially in the developing countries, there is an increasing concern and interest in maternal and child health care. This commitment towards MCH care gains further strength after the World Summit for Children, 1991, which gave serious consideration and outlined major areas to be addressed in the provision of Maternal and Child Health Care services (Addisse, 2003).

The consideration of mothers and children health and be part of every program is too important for following reasons:

Mothers and children make up over 2/3 of the whole population. Women in reproductive age (15 – 49) constitute 21%, pregnant women, 4.5%, and children under 15, 47%, children under 5, 18%, under 3: 12% and infants: 4%. This working estimate is very important in developing countries for project planning and implementation (World Health Organisation, 2008). Maternal mortality is an adverse outcome of many pregnancies. Miscarriage, induced abortion, and other factors, are causes for over 40 percent of the pregnancies in developing countries to result in complications, illnesses, or permanent disability for the mother or child. About 80 percent of maternal deaths in are directed obstetric deaths. They result "from obstetric complications of the pregnant state (pregnancy, labour, and puerperium), from intervention, omissions, incorrect treatment, or from a chain of events resulting from any of the above (Sommer, A. et al, 2011).

Most pregnant women in the developing world receive insufficient or no prenatal care and deliver without help from appropriately trained health care

providers. More than 7 million newborn deaths are believed to result from maternal health problems and their mismanagement (Addisse, 2003). Poorly timed unwanted pregnancies carry high risks of morbidity and mortality, as well as social and economic costs, particularly to the adolescent and many unwanted pregnancies end in unsafe abortion. Poor maternal health hurts women's productivity, their families' welfare, and socio-economic development (Sommer, A. et al, 2011). Large number of women suffers severe chronic illnesses that can be exacerbated by pregnancy and the mother's weakened immune system and levels of these illnesses are extremely high. Infectious diseases like malaria are more prevalent in pregnant women than in non-pregnant women (most common in the first pregnancy). In addition, an increasing number of pregnant women are testing positive for the human immunodeficiency virus. In Sub-Saharan Africa, 3 million women are estimated to be infected with the AIDS virus and a woman with HIV has a 25 to 40 percent chance of passing the infection on to her fetus in the womb or at birth. Many women suffer pregnancy-related disabilities like uterine prolapse long after delivery due to early marriage and childbearing and high fertility (World Health Organisation, 2008). Nutritional problems are severe among pregnant mothers and 60 to 70 percent of pregnant women in developing countries are estimated to be anaemic. Women with poor nutritional status are more likely to deliver a low-birth-weight infant. Majority of perinatal deaths are associated with maternal complications, poor management techniques during labour and delivery, and maternal health and nutritional status before and during pregnancy (Hoverd and Brown, 2013).

The large majority of pregnancies that end in a maternal death also result in fetal or perinatal death. Among infants who survive the death of the mother, fewer than 10 percent live beyond their first birthday. Ante partum haemorrhage,

eclampsia, and other complications are associated with large number of perinatal deaths each year in developing countries plus considerable suffering and poor growth and development for those infants who survive (UNICEF, 2014). Development impairments among children due to poor management during labour and delivery. Low birth weight babies. Because many women are fed less, marry early, carry a heavy workload, and spend a considerable portion of their lifespan in pregnancy and lactation, they are exposed to persistent low nutritional status and high-energy expenditure. This predisposes mothers to bear low-birth-weight infants (Humphrey, et.al. 2013).

Women often lack access to relevant information, trained providers and supplies, emergency transport, and other essential services. Cultural attitudes and practices impede women's use of services that are available (Addisse, 2003). Children whose earliest years are faced by hunger or disease or whose minds are not stimulated by appropriate interaction with adults and their environment will experience grave and negative consequence throughout their lives-and so does society as they would be less contributory member (UNICEF, 2014).

Given the magnitude of these problems and the interventions available, much has not been done. Most of these problems are silent. They remain, to a large extent, uncounted and unreported. Maternal and child health programmes should focus on addressing these problems, clarifying policy and program alternatives and identifying cost-effective health-related program interventions that are likely to reduce maternal and child morbidity and mortality (Sommer, A., et al, 2011). These outlined issues do not only show the importance of MCH care to the health of mothers and children or their immediate problems. Rather, they show the role and necessity of MCH care in the welfare of the family, the community and the country as a whole. Thus, MCH care an issue that has to be addressed

in terms of national productivity and futurity of a country. The specific objectives of MCH Care focuses on the reduction of maternal, perinatal, infant and childhood mortality and morbidity and the promotion of reproductive health and the physical and psychosocial development of the child and adolescent within the family (World Health Organisation, 2008).

In both developed and developing countries children should be placed at the centre stage in all development thinking and implementation. Because care for children is related with: Future investments as children are the future of the nation. Strong belief as ours and others culture give high value for having children. Future health because national productivity depends on today's children (Humphrey, et.al. 2013).

One of the most neglected services which is often forgotten is screening. It is a very important activity which has to be carried out every day in all institutions delivering child health services (Addisse, 2003). There is an immense benefit for children, as well as to their mothers, by the brief assessment (history and physical examination) at every visit to the clinic. Screening is an important tool to avoid "missed opportunities. The need for vaccination, growth monitoring as well as mothers' need in terms of antenatal care, family planning etc. can be easily identified (Hoverd and Brown, 2013).

Immunization is the process of protecting a person from a specific disease. It is protection of a susceptible host from a specific disease by administration of, a living modified agent, a suspension of killed organism, an attenuated toxin. Immunization decreases susceptibility by producing antibodies or sensitized cells to fight the agent and its product (Addisse, 2003).

## ***C. Obstacles to maternal health literacy and Areas of Maternal Health literacy interventions***

The major determinants of maternal morbidity and mortality include pregnancy, the development of pregnancy-related complications, including complications from abortion and, the management of pregnancy, delivery, and the postpartum period. However, a lot of factors contribute to the low health status of women in the developing countries including Zambia (UNICEF, 2014). These factors include:

Socio economic development of the country has serious Impact on morbidity and mortality. Poor agricultural development results in inadequate household food and has direct influence on nutritional status of mothers (World Health Organisation, 2008).

Maternal death often has a number of interlined causes, which may start as early as birth or in early childhood. For example, a girl who is not fed properly during her early years will be stunted and therefore more likely to have obstructed labour. Also, a woman's risk of dying from infection and haemorrhage is increased considerably when being malnourished (Humphrey, et.al. 2013).

Poor sanitary environment, poor housing, unsafe and inadequate water, adverse social and physical environment. Access to health services. Lack of access to modern health care services has great impact on increasing maternal death. Most pregnant women do not receive antenatal care; deliver without the assistance of trained health workers etc. Less than 10% of women in many countries of Africa & Asia get Family planning services. In many countries' women have poor access to education and 2/3 of illiterate adults are women (Hoverd and Brown, 2013).

Poor education of women has to be given serious consideration. Because denial of education indicates that women are denied the role they can

play in decision-making and decreases the extent of contribution to their lives, family and community. Education is proved to have significant effect on women's health and reproductive behavior through its influence on age at marriage, contraception and health care use, and awareness of risks and danger signs (Addisse, 2003).

Women's reproductive and health behavior. Reproductive and health behavior involves, for example, the age at which a woman becomes pregnant, whether the pregnancy is wanted, and what kind of health care the woman seeks (World Health Organisation, 2008).

Access to and control of income and resources Women's income, access to household resources, and power to make decisions influence their ability to seek and utilize health services.

Political commitment Political commitment is crucial to allocate the available resources and to provide services which are accessible to those most in need. Low social status of women the health and wellbeing of women is related and highly influenced with their social status (Sommer, A., et. a, 2011). "Poor, Powerless, Pregnant" This is the status of women as labelled by a global survey in 1988. Large number of women (about 50%) and girls in the world live under conditions that threaten their health, deny them a choice about child bearing, limit their educational attainment, restrict their economic participation and fail to guarantee them equal rights as compared to men. Low social status leads to sever burden & over work (Conjugal, maternal, domestic, and professional) exposing to physically demanding activities (UNICEF, 2014).

Although all factors in the framework are likely to influence maternal morbidity and mortality as well as the health all women (and newborns), some have greater impact in the short term, particularly on the incidence of maternal death. It is always important to address the above-mentioned factors,

as women need to be physically, mentally & socially healthy to fulfill their reproductive duty safely and efficiently and to be a contributing member of their community.

#### *D. Summary of the Literature Review*

In this chapter, the researcher looked at literature review. The researcher started by looking at definition of maternal literacy by different authors, measuring maternal literacy, child health care and moved on to studies done outside on a Global level. The studies reviewed Global included the ones done in Belgium, India and Pakistan. Then studies done within the boundaries of Africa were reviewed. These were from Ghana and Kenya. Lastly a study conducted in Zambia was also reviewed. What came out from the review of literature was that the effect of education in equipping mothers with literacy skills needed to promote and sustain their children's health was well known. This came out strongly in the literature which was reviewed. The role of mothers as primary care givers for their children was acknowledged throughout the literature review.

This study sought to investigate the effects of maternal health literacy on child health by measuring maternal health literacy through the Rapid Estimate of Adult Literacy in Medicine (REALM) and a questionnaire which captured the effects of maternal literacy and areas of intervention. Child health was captured through two variables; complete immunization and weight. All the maternal health literacy tests were generated from the children's clinic card which was not only a literacy piece but a child health promoting behavior tool kept by the mother and used as a child health monitoring tool by health care providers. Thus, maternal education categorized as; no schooling, basic, high school, tertiary diploma, tertiary bachelors/ masters/ doctorate was evaluated through maternal health literacy.

### III. METHODOLOGY

Two research methods were used, namely; quantitative and qualitative. The research methods will be explained under subheadings; study design, sampling technique, sample size, data collection instruments and procedure as well as data analysis. Finally, the ethical aspect considered in the study will be stated.

#### A. *Study design*

This study used a mixed approach i.e. quantitative and qualitative method Creswell (2005). According to Trochim (2006) quantitative research often translates into the use of statistical analysis to make the connection between what is known and what can be learned through research, whereas qualitative is defined as a study which is conducted in a natural setting (Creswell, 2005, p39). Qualitative research approach will provide an enquiry for understanding a social or human problem based on building a complex, holistic picture, formed with words, reporting detailed views of information and conducting it in a natural environment

#### B. *Study setting*

This study was conducted at Mpongwe at Mpongwe mission hospital. The institution was chosen because it was convenient, cost – effective and would give a more generalized sample of the population.

#### C. *Sampling technique*

Sampling is the process of selecting units such as people, or organizations from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen (Trochim, 2006). Consequently, this study used probability and non-probability sampling:

#### D. *Purposive sampling*

Purposive sampling is a strategy to choose small groups or individuals likely to be knowledgeable and informative about the phenomenon. The groups selected in this study were assumed to be knowledgeable of the problem (McMillan and Schumacher, 2000: 433). In this case respondents were selected based on the purpose of study which was dependent on the researcher's and population's knowledge on maternal literacy.

#### E. *Sample size*

For the purpose of this study, a sample population of 60 was cast on the maternal mothers and health workers at Mpongwe mission hospital.

#### F. *Data collection instrument*

A mixed research approach of quantitative and qualitative was used in this study. Creswell (2005:43) states that mixed methods approach: is a pragmatic worldview, collection of both quantitative and qualitative data sequentially in the design. Additionally, in quantitative research, data can be collected from many participants at many research sites by administering questionnaires. Researchers rely on gathering information either by sending or administering testing instruments to participants. Data is usually collected through the use of numbers which can be statistically analysed (Kumar 2011:168). Therefore, data collection will be done by administering a semi- structured questionnaire. It will be used to elicit pertinent information from the subjects

Similarly, a qualitative research aims at describing, making sense of, interpreting or reconstructing in terms of the meanings that the subjects express (Thyer 2001:257). This method was most suitable for this study to capture stories of respondent's experiences. The instruments that were used were structured and semi structured questionnaires.

## **G. Data collection procedure**

The study adopted the Statistical Package for the Social Sciences (SPSS) which was used for analysing the empirical data for this paper. It is the most frequently used software for quantitative analysis. With SPSS, the data was entered and stored, and data and output files were generated. The graphs and charts were also generated with SPSS. (Jennings, 2001:303). Therefore, the data that was collected was processed and analysed. The processing stage included editing, coding, classification and tabulation of the collected data to ensure that data was ready for analysis.

As regards, the qualitative, data was based on the notes taken during the interviews.

The researcher asked for permission from the medical superintendent to carry out the research on their staff members and postnatal mothers. The researcher gave information sheets to the participants which explained the purpose of the study to read. The questionnaires were collected immediately after completion.

## **H. Data analysis**

Statistical Package for the Social Sciences (SPSS) was used for analysing the empirical data for this paper. It is the most frequently used software for quantitative analysis. With SPSS, the data could be entered and stored, and data and output files can be generated. The graphs and charts were also generated with SPSS. (Jennings, 2001:303). Therefore, the data that was collected was processed and analysed. The processing included editing, coding, classification and tabulation of the collected data to ensure that data was ready for analysis. Microsoft excel was also utilised.

## **I. Ethical consideration**

In this research, the researcher explained as fully as reasonable and in terms meaningful to the participants: the aims and nature of the research, who was undertaking it, its likely duration, why it was being undertaken, the possible consequences of the research, and how the results were to be disseminated.

The researcher ensured that the latter were not pressurized into participation. Research participants were made aware of their right to refuse participation at any time, including withdrawal from a research project at any stage, and were will not give the impression that they were required to participate.

The researcher explained how far research participants were afforded anonymity and confidentiality and participants will have the option of rejecting the use of data-gathering devices such as tape-recorders, video cameras, and digital recording devices.

The researcher was not offered financial or other inducement to participants in order to obtain participants for the project.

The researcher did not fabricate or falsify data in their publications.

Confidentiality of the study participants was maintained by not identifying them by name. Names of the participants were however known to the researcher only who held this information in the strictest confidence.

## **IV. DATA ANALYSIS AND FINDINGS**

### ***Findings***

#### **A. Data sample**

Sample size of 60 respondents was used which comprised of 20 health providers and 40 maternal mothers. The 20 health providers approached 30% were males and 70% were females, of which 10%

were clinical officers, 10% were biomedical scientists, 10% were environmental health technologists, and 70% were nurses. Of the 40 maternal mothers approached 42.5% aged between 18-22 years, 27.5% aged between 23-27 years, 5% aged between 28-32 years. 22.5% aged 33-37 years, 2.5% aged 38-42 years. Further from the 40 maternal mothers considered 90% were married, 7.5% were singled and 2.5% were widowed. 47.5% had 0-6 months aged infants, 27.5% had 7-12 months aged infants, while 2.5% had 1-2 years aged infants. Considering infants weight, 7.5% had infants weighing below 5 kgs, 45% weighed between 5-7 kgs, 22.5 weighed between 8-10kgs, 12.5% weighed between 10-12 kgs, and 12.5% also weighed above 12.5kgs. of the 40 respondents 90% had their infants immunized and 10% had not had their infants immunized.

### B. What are the levels of maternal health literacy

In an effort to answer the first research question, data was collected using the interview questionnaire administered to 40 maternal mothers and analyzed using SPSS. The results showed that 57.5% of the participants had a score of 0 to 25% on literacy test, 5% of the percipients scored between 25 to 50%, 7.5% scored between 51 to 75% and 30% scored between 76 to 100% as shown below in Table 4.1.

Table 4.1 Rapid Estimate of Adult Literacy in Medicine

		Frequency	Percentage
Valid	0-25%	23	57.5%
	26-50%	2	5.0%
	51-75%	3	7.5%
	76-100%	12	30.0%
	Total	40	100.0%

Further the education background of the participants showed that 17.5% of the participants had no formal education, 30% of the participants had attend primary school, 25% had only attended basic school, 22.5% just attended high school, and only 5% had attained tertiary education, as shown below in table 4.2.

Table 4.2 Education level

		Frequency	Percentage
Valid	None	7	17.5%
	Primary School (G7)	12	30.0%
	Basic School (G9)	10	25.0%
	High School (G12)	9	22.5%
	Tertiary School	2	5.0%
	Total	40	100.0%

### C. What are the obstacles to maternal literacy?

To answer this question two sets of questionnaires were provided to health providers and maternal mothers respectively. A Likert scale of 1 to 5 was used to rate the following statements based on poverty, socio-culture and lack of awareness, to the extent to which participants agree or disagree. A score of 1 representing strongly disagree and a score of 5 representing strongly agree.

### D. Questionnaire administered to maternal mothers

To what extent does poverty influence low level of women participation in literacy program.

The above statement was tackled by participants rating following statements using a Likert scale of 1 (strongly disagree) to 5 (strongly agree).

Low income level is a factor that influences low level of women participation in literacy program, Lack of money to buy materials for knitting and sewing and sometimes to buy primers influences low level of women participation in literacy program, Lack of money to pay fees as at when it is due to discourages women from participating in literacy program, Lack of transport to and from adult literacy centers influences low level of women participation in literacy program and Preoccupation with income earning activities discourages women from participating in literacy education.

The results showed that 7.5% strongly disagreed that low income influence low participation of maternal women in literacy program, 5% of the participants neither agreed nor disagreed, 2.5% agreed to that fact, and 85% of the participants strongly agreed as shown in table 4.3 below.

Table 4.3 low income influence low participation in literacy programs

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	3	7.5%
	Neutral	2	5.0%
	Agree	1	2.5%
	<b>Strongly Agree</b>	34	85.0%
	<b>Total</b>	40	100.0%

Further it was noted 22.5% strongly disagreed that lack of transport to and from adult literacy centers influence low participation of maternal women in literacy programmes, 15% of the

participants neither agreed nor disagreed, 5% agree to that fact, and 57.5% of the participants strongly agreed as shown in table 4.4 below.

Table 4.4 Lack of transport influences low participation in literacy programme.

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	9	22.5%
	Neutral	6	15.0%
	Agree	2	5.0%
	<b>Strongly Agree</b>	23	57.5%
	<b>Total</b>	40	100.0%

In addition it was noted that 42.5% strongly disagreed that Preoccupation with income earning activities influence low participation of maternal women in literacy program, 10% of the participants disagreed, 5% agreed to that fact, 12.5% of the participants neither agreed nor disagreed, 2.5% agreed, and 32.5% strongly agreed as shown in table 4.5 below.

Table 4.5 Income earning activities influence low participating in literacy education.

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	17	42.5%
	<b>Disagree</b>	4	10.0%
	Neutral	5	12.5%
	Agree	1	2.5%
	<b>Strongly Agree</b>	13	32.5%
	<b>Total</b>	40	100.0%

To what extent does gender stereotyped influence low level of women participation in literacy program.

The above statement was tackled by participants rating following statements using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). The duty of a woman is to produce children, women’s place is in the kitchen, the work of a woman should be within the home, women should remain indoors always, and lastly the most important thing for a woman is to take care of her children.

The results showed that 87.5% strongly disagreed that the duty of a woman is to produce children, 2.5% of the participants disagreed, 2.5% of the participants neither agreed nor disagreed, and 7.5% strongly agreed as shown in table 4.6 below.

Table 4.6

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	35	87.5%
	<b>Neutral</b>	1	2.5%
	<b>Agree</b>	1	2.5%
	<b>Strongly Agree</b>	3	7.5%
	<b>Total</b>	40	100.0%

Further the results showed that 92.5% strongly disagreed that the woman’s place is in the kitchen, 2.5% of the participants neither agreed nor disagreed, and 5% strongly agreed as shown in table 4.7.

Table 4.7

		Frequency	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	37	92.5%
	<b>Neutral</b>	1	2.5%
	<b>Strongly Agree</b>	2	5.0%
	<b>Total</b>	40	100.0%

In addition, the results showed that 92.5% strongly disagreed that the work of a woman should be within the home, 2.5% of the participants neither agreed nor disagreed, and 5% strongly agreed as shown in table 4.8.

Table 4.8

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	37	92.5%
	<b>Neutral</b>	1	2.5%
	<b>Strongly Agree</b>	2	5.0%
	<b>Total</b>	40	100.0%

As we go further it was observed that 92.5% strongly disagreed that the woman should remain indoors always, 2.5% of the participants neither agreed nor disagreed, and 5% strongly agreed as shown in table 4.9.

Table 4.9 Women should remain indoors always

		Frequency	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	37	92.5%
	<b>Neutral</b>	1	2.5%
	<b>Strongly Agree</b>	2	5.0%
	<b>Total</b>	40	100.0%

Further it was observed that 92.5% strongly disagreed that the woman should remain indoors always, 2.5% of the participants neither agreed nor disagreed, and 5% strongly agreed as shown in table 4.10.

Table 4.10

		Frequency	Percentage
<b>Valid</b>	Strongly Disagree	37	92.5%
	Neutral	1	2.5%
	Strongly Agree	2	5.0%
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

To what extent does socio-cultural belief influence low level of women participation in literacy programme.

The above statement was tackled by participants rating following statements using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). Mixing women and men in the same class is against our culture, literacy education will make women to be arrogant, literacy education makes women to dislike having many children, literacy education makes women to neglect their house duties, literacy education makes women to go out of the house frequency

The results showed that 97.5% strongly disagreed that the mixing men and women in the same class is against our culture, and only 2.5% of the participants neither agreed nor disagreed as shown in table 4.11 below.

Table 4.11

		Frequency	Percentage
<b>Valid</b>	Strongly Disagree	39	97.5%
	Neutral	1	2.5%
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

Further analysis showed that 97.5% strongly disagreed that the Literacy education will make women to be arrogant, and only 2.5% of the participants neither agreed nor disagreed as shown in table 4.12 below.

Table 4.12

		Frequency	Percentage
<b>Valid</b>	Strongly Disagree	39	97.5%
	Neutral	1	2.5%
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

In addition, the results further showed that 97.5% strongly disagreed that the literacy education makes women to dislike having many children, and only 2.5% of the participants neither agreed nor disagreed as shown in table 4.13 below.

Table 4.13

		Frequency	Percentage
<b>Valid</b>	Strongly Disagree	39	97.5%
	Neutral	1	2.5%
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

Again, the results further showed that 97.5% strongly disagreed that the Literacy education makes women to neglect their house duties, and only 2.5% of the participants neither agreed nor disagreed as shown in table 4.14.

Table 4.14 Literacy education makes women to neglect their house duties

		Frequency	Percentage
Valid	Strongly Disagree	39	97.5%
	Neutral	1	2.5%
	Total	40	100.0%

Furthermore, the results showed that 97.5% strongly disagreed that the Literacy education makes women to go out of the house frequently, and only 2.5% of the participants neither agreed nor disagreed as shown in table 4.15 below.

Table 4.15

		Frequency	Percentage
Valid	Strongly Disagree	39	97.5%
	Neutral	1	2.5%
	Total	40	100.0%

To what extent does lack of awareness influence low level of women participation in literacy program.

The above statement was tackled by participants rating following statements using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). There are no literacy centers in my district, there are no literacy program suitable for women in my area, i do not know any literacy program useful to women in my area, i was told that literacy education is for men only, i do not know how literacy education can improve my condition.

The results to the above statement are as follows. 25% of the participants strongly disagreed that there are no literacy centers in their district, 7.5% disagreed, 25% of the participants neither agreed nor disagreed, 17.5% agree, and 25% strongly agreed as shown in table 4.16 below.

		Freq	Percentage
Valid	Strongly Disagree	10	25.0%
	Disagree	3	7.5%
	Neutral	10	25.0%
	Agree	7	17.5%
	Strongly Agree	10	25.0%
	Total	40	100.0%

The results to the above statement are as follows. 20% of the participants strongly disagreed that there are no literacy programs suitable for women in their area, 2.5% disagreed, 37.5% of the participants neither agreed nor disagreed, 10% agreed, and 30% strongly agreed as shown in table 4.17.

Table 4.17

		Freq	Percentage
Valid	Strongly Disagree	8	20.0%
	Disagree	1	2.5%
	Neutral	15	37.5%
	Agree	4	10.0%
	Strongly Agree	12	30.0%
	Total	40	100.0%

The results to the above statement are as follows. 25% of the participants strongly disagreed that there are no literacy programs suitable for women in their area, 5% disagreed, 27.5% of the

participants neither agreed nor disagreed, 20% agreed, and 22.5% strongly agreed as shown in table 4.18.

Table 4.18

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	<b>10</b>	<b>25.0%</b>
	<b>Disagree</b>	<b>2</b>	<b>5.0%</b>
	<b>Neutral</b>	<b>11</b>	<b>27.5%</b>
	<b>Agree</b>	<b>8</b>	<b>20.0%</b>
	<b>Strongly Agree</b>	<b>9</b>	<b>22.5%</b>
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

The results to were that 42.5% of the participants strongly disagreed that the literacy education is for men only, 10% disagreed, 37.5% of the participants neither agreed nor disagreed, 5% agreed, and 5% strongly agreed as shown in table 4.19.

Table 4.19

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	<b>17</b>	<b>42.5%</b>
	<b>Disagree</b>	<b>4</b>	<b>10.0%</b>
	<b>Neutral</b>	<b>15</b>	<b>37.5%</b>
	<b>Agree</b>	<b>2</b>	<b>5.0%</b>
	<b>Strongly Agree</b>	<b>2</b>	<b>5.0%</b>
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

The results showed that 37.5% of the participants strongly disagreed that they are not aware how literacy education can improve their condition, 17.5% disagreed, 32.5% of the participants neither agreed nor disagreed, 2.5% agreed, and 10% strongly agreed as shown in table 4.20 below

Table 4.20

		Freq	Percentage
<b>Valid</b>	<b>Strongly Disagree</b>	<b>15</b>	<b>37.5%</b>
	<b>Disagree</b>	<b>7</b>	<b>17.5%</b>
	<b>Neutral</b>	<b>13</b>	<b>32.5%</b>
	<b>Agree</b>	<b>1</b>	<b>2.5%</b>
	<b>Strongly Agree</b>	<b>4</b>	<b>10.0%</b>
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

Are you aware of any adult literacy program in your area?

In an effort to answer the question, the following were the results as shown in table 4.21 below. 45% participants agreed that they were aware while 55% disagreed.

Table 4.21 Awareness of any adult literacy program in your area

		Frequency	Percentage
<b>Valid</b>	<b>Yes</b>	<b>18</b>	<b>45.0%</b>
	<b>No</b>	<b>22</b>	<b>55.0%</b>
	<b>Total</b>	<b>40</b>	<b>100.0%</b>

**E. Questionnaire administered to health providers**

Are you aware of literacy programs?

In effort to answer the main question a questionnaire was administered to 20 health providers and the following were the results. Only 30% acknowledged that they were aware and 70% were not aware of any literacy program.as shown in table 4.22

Table 4.22 Are you aware of literacy programs?

		Frequency	Percentage
Valid	Yes	3	30.0%
	No	7	70.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are women aware of these programs?

To take this question health providers provided a yes or no answer. The results were as follows as shown in table 4.23. 20% agreed that maternal mothers were aware and 40% disagreed, while 30% were not sure.

Table 4.23 Are women aware of these programs?

		Frequency	Percentage
Valid	Yes	2	22.2%
	No	4	44.4%
	Not Sure	3	33.3
	<b>Total</b>	<b>9</b>	<b>100.0%</b>

Do these programs have an immediate impact on the livelihood of the participants?

The results were as follows as shown in table 4.24. 60% agreed that the program had an immediate impact on the livelihood of the participants, while 40% disagreed.

Table 4.24 programs have an impact on the livelihood of the participants

		Frequency	Percentage
Valid	Yes	6	60.0%
	Not Sure	4	40.0
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are there any literacy programs been conducted in the community /health facility.

The results were as shown in table 4.25. 10% agreed that literacy programs are been conducted in

the community /health facility, while 70% disagreed, and 20% were not sure.

Table 4.25 literacy programs been conducted in the community /health facility

		Frequency	Percentage
Valid	Yes	1	10.0%
	No	7	70.0%
	Not Sure	2	20.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are literacy programs been conducted often?

The results were as shown in table 4.26. 60% disagreed that literacy programs are been conducted often, and 40% were not sure.

Table 4.26 literacy programs been conducted often

		Frequency	Percentage
Valid	Yes	6	60.0%
	Not Sure	4	40.0
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are maternal mothers assessed on the literacy levels?

The results were as shown in table 4.27. 20% agreed that maternal mothers are assessed on the literacy levels, and 80% disagreed.

Table 4.27 Maternal mothers assessed on the literacy levels

		Frequency	Percentage
Valid	Yes	2	20.0%
	Not Sure	8	80.0
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Is awareness on the literacy programs been conducted by health workers?

The results were as shown in table 4.28. 10% agreed that awareness on the literacy programs are been conducted by health workers, 70% disagreed, while 20% were not sure.

Table.4.28 Awareness on the literacy programs been conducted by health workers

		Frequency	Percentage
Valid	Yes	1	10.0%
	No	7	70.0%
	Not Sure	2	20.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

### What are the areas of intervention that can help improve maternal literacy?

To get the needed data, 60 participants comprising of 40 maternal mothers and 20 health workers were provided with two types of questionnaire respectively. The raw data was loaded in SPSS. To answer the main question, sub questions were provided and the results were as follows

#### F. Questionnaire administered to maternal mothers

Is awareness on the literacy programs been conducted by health workers?

The results were as shown in table 4.29. 2.5% agreed that awareness on the literacy programs are been conducted by health workers, 97.5% disagreed.

Table 4.29 Is awareness on the literacy programs been conducted by health workers

		Frequency	Percentage
Valid	Yes	1	10.0%
	No	7	70.0%
	Not	2	20.0%

		Sure
<b>Total</b>	<b>10</b>	<b>100.0%</b>

What media of communication on literacy programs would be effective?

The respondents were provided with the following options to choose from. Through the Radio, through posters or fliers, door-to-door campaigns, community meetings, any other (specify).

The results were as shown in table 4.30. 37.5% suggested that radio would be the effective media of communication on literacy programs, 2.5% suggested a door-to-door campaign, and 60% suggested all forms of media being radio, door-to-door campaigns, posters etc.

Table 4.30 what media of communication on literacy programs would be effective

		Frequency	Percentage
Valid	Radio	15	37.5%
	Door-to-Door campaigns	1	2.5%
	All (Radio, posters, campaigns,)	24	60.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

General comments on the intervention of improving maternal literacy

The questionnaire provided responds with a freedom to suggest interventions to improve maternal literacy as follows: Create more awareness on literacy program in the districts, introduce literacy programs that can be attended by everyone, provide means to attend literacy programs in distant areas, provide more centers for literacy programs in districts.

## G. Questionnaire administered to health providers

Are you aware of literacy programs?

In effort to answer the main question a questionnaire was administered to 20 health providers and the following were the results. Only 30% acknowledged that they were aware and 70% were not aware of any literacy program.as shown in table 4.22

Table 4.22 Are you aware of literacy programs?

		Frequency	Percentage
Valid	Yes	3	30.0%
	No	7	70.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are women aware of these programs?

To take this question health providers provided a yes or no answer. The results were as follows as shown in table 4.23. 20% agreed that maternal mothers were aware and 40% disagreed, while 30% were not sure.

Table 4.23 Are women aware of these programs?

		Frequency	Percentage
Valid	Yes	2	22.2%
	No	4	44.4%
	Not Sure	3	33.3%
	<b>Total</b>	<b>9</b>	<b>100.0%</b>

Do these programs have an immediate impact on the livelihood of the participants?

The results were as follows as shown in table 4.24. 60% agreed that the programs had an immediate impact on the livelihood of the participants, while 40% disagreed.

Table 4.24 programs have an impact on the livelihood of the Participants

		Frequency	Percentage
Valid	Yes	6	60.0%
	No	4	40.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are there any literacy programs been conducted in the community /health facility?

The results were as shown in table 4.25. 10% agreed that literacy programs are been conducted in the community /health facility, while 70% disagreed, and 20% were not sure.

Table 4.25 literacy programs been conducted in the community /health facility

		Frequency	Percentage
Valid	Yes	1	10.0%
	No	7	70.0%
	Not sure	2	20.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are literacy programs been conducted often?

The results were as shown in table 4.26. 60% disagreed that literacy programs are been conducted often, and 40% were not sure.

Table 4.26 literacy programs been conducted often

		Freq	Percentage
Valid	Yes	6	60.0%
	No	4	40.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Are maternal mothers assessed on the literacy levels?

The results were as shown in table 4.27. 20% agreed that maternal mothers are assessed on the literacy levels, and 80% disagreed.

Table 4.27 maternal mothers assessed on the literacy levels

		Frequency	Percentage
Valid	Yes	2	20.0%
	No	8	80.0%
	<b>Total</b>	<b>10</b>	<b>100.0%</b>

Is awareness on the literacy programs been conducted by health workers?

The results were as shown in table 4.28. 10% agreed that awareness on the literacy programs are been conducted by health workers, 70% disagreed, while 20% were not sure.

Table.4.28 Awareness on the literacy programs been conducted by health workers

		Frequency	Percentage
Valid	Yes	1	10.0%
	No	7	70.0%
		2	20.0%
<b>Total</b>	<b>10</b>	<b>100.0%</b>	

General comments on the intervention of improving maternal literacy

The questionnaire provided responds with a freedom to suggest interventions to improve maternal literacy as follows: Indirection and implementation of literacy program, sensitization of literacy programs to health providers so as to enable them encourage patients on the importance of literacy programs, government through Ministries of health and community development should conduct awareness programs on literacy programs to both health providers and the community.

## IV DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Discussion of the findings of the study was guided by the research objectives which were to:

- i. To investigate the literacy levels of mothers in the community
- ii. To ascertain the obstacles to maternal literacy.
- iii. To assess the areas of intervention that can help improve maternal literacy

### A. *To investigate the literacy levels of mothers in the community*

The research results showed that 57.5% of the participants had a score of 0 to 25% on literacy test, 5% of the percipients scored between 25 to 50%, 7.5% scored between 51 to 75% and 30% scored between 76 to 100% as shown below in Table 5.1. This can be interpreted that the literacy level of maternal mothers is very low as 57.5% scored between 0-25%, and only 30% scored between 76 to 100%.

Further the education background of the participants showed that 17.5% of the participants had no formal education, 30% of the participants had attend primary school, 25% had only attended basic school, 22.5% just attended high school, and only 5% had attained tertiary education, as shown below in table 5.2. From this analysis we can say that education level among the maternal women is very low as 30% of the respondents had only attended primary school, 17.5% had reached basic school and 25% had, been to basic school bringing the total to 72.5% of lower education attained by the participants. This has contributed to the low level of maternal literacy greatly.

With this analysis we can strongly argue that we have achieved our first objective.

Vikram et al (2010), argue that the acquisition of education led to better human, social and

cultural capitals among mothers, which ought to be associated with increased child survival. They used regression analysis and found that there was a significant association between maternal education and child mortality. Govindasamy and Ramesh (1997) maintain that the education of a mother was associated with greater uptake of health services for children and cultural capital may have been a pathway through which education influenced interaction with health systems. Greater education of the mother may have imbued her with greater confidence, greater facility with language and a greater ability to interact with the health system.

## ***B. To ascertain the obstacles to maternal health literacy.***

To what extent does poverty influence low level of women participation in literacy program?

The results showed that 7.5% strongly disagree that low income influence low participation of maternal women in literacy programs, 5% of the participants neither agree nor disagree, 2.5% agree to that fact, and 85% of the participants strongly agree.

Further it was noted 22.5% strongly disagree that lack of transport to and from adult literacy centers influence low participation of maternal women in literacy programs, 15% of the participants neither agree nor disagree, 5% agree to that fact, and 57.5% of the participants strongly agree.

In addition, it was noted that 42.5% strongly disagree that Preoccupation with income earning activities influence low participation of maternal women in literacy programs, 10% of the participants disagree, 5% agree to that fact, 12.5% of the participants neither agree nor disagree, 2.5% agree, and 32.5% strongly agree.

Based on the findings we can safely say that poverty influences low level of women participation in literacy programs. 85% of the

respondents strongly agreed that low income level affects participation, 57.5% strongly agreed that lack of transport also influences low participation in literacy programs, though 42.5% strongly disagreed that preoccupation with income earning activities influences low participation in literacy programs.

To what extent does gender stereotyped influence low level of women participation in literacy program.

The results showed that 87.5% strongly disagree that the duty of a woman is to produce children, 2.5% of the participants disagree, 2.5% of the participants neither agree nor disagree, and 7.5% strongly agree.

Further the results showed that 92.5% strongly disagree that the woman's place is in the kitchen, 2.5% of the participants neither agree nor disagree, and 5% strongly agree.

In addition, the results showed that 92.5% strongly disagree that the work of a woman should be within the home, 2.5% of the participants neither agree nor disagree, and 5% strongly agree.

As we go further it was observed that 92.5% strongly disagree that the woman should remain indoors always, 2.5% of the participants neither agree nor disagree, and 5% strongly. It was also observed that 92.5% strongly disagree that the woman should remain indoors always, 2.5% of the participants neither agree nor disagree, and 5% strongly agree.

According to the analysis findings we can strongly disagree that gender stereotyped influences low level of women participation in literacy program. As 87.5% strongly disagree that the duty of a woman is to produce children, 92.5% strongly disagree that the woman's place is in the kitchen, 92.5% strongly disagree that the work of a woman should be within the home, and 92.5%

strongly disagree that the woman should remain indoors always.

To what extent does socio-cultural belief influence low level of women participation in literacy program?

The results showed that 97.5% strongly disagree that the mixing men and women in the same class is against our culture, and only 2.5% of the participants neither agree nor disagree.

Further analysis showed that 97.5% strongly disagree that the Literacy education will make women to be arrogant, and only 2.5% of the participants neither agree nor disagree.

In addition, the results further showed that 97.5% strongly disagree that the Literacy education makes women to dislike having many children, and only 2.5% of the participants neither agree nor disagree.

Again, the results further showed that 97.5% strongly disagree that the Literacy education makes women to neglect their house duties, and only 2.5% of the participants neither agree nor disagree.

Furthermore, the results showed that 97.5% strongly disagree that the Literacy education makes women to go out of the house frequently, and only 2.5% of the participants neither agree nor disagree.

Based on the findings we can again strongly rule out that that socio-cultural belief influence low level of women participation in literacy program. This is because of 97.5% respondents strongly disagree that the mixing men and women in the same class is against their culture, 97.5% strongly disagree that the Literacy education will make women to be arrogant, 97.5% strongly disagree that the Literacy education makes women to dislike having many children, 97.5% strongly disagree that the Literacy education makes women to neglect their house duties, and finally 97.5% strongly disagree that the Literacy education makes women to go out of the house frequently.

To what extent does lack of awareness influence low level of women participation in literacy program.

The results to the above statement are as follows. 25% of the participants strongly disagreed that there are no literacy centers in their district, 7.5% disagree, 25% of the participants neither agree nor disagree, 17.5% agree, and 25% strongly agree.

Secondly the results showed that 20% of the participants strongly disagreed that there is no literacy program suitable for women in their area, 2.5% disagree, 37.5% of the participants neither agree nor disagree, 10% agree, and 30% strongly agree.

Thirdly the results showed that. 25% of the participants strongly disagreed that there is no literacy program suitable for women in their area, 5% disagree, 27.5% of the participants neither agree nor disagree, 20% agree, and 22.5% strongly agree.

Further findings were that 42.5% of the participants strongly disagreed that the literacy education is for men only, 10% disagree, 37.5% of the participants neither agree nor disagree, 5% agree, and 5% strongly agree.

Lastly it was observed that 37.5% of the participants strongly disagreed that they are not aware how literacy education can improve their condition, 17.5% disagree, 32.5% of the participants neither agree nor disagree, 2.5% agree, and 10% strongly agree.

According to data obtained we can rule out that lack of awareness influences the level of women participation in literacy programs. This is so as 25% of the participants neither agree nor disagree, 17.5% agree, and 25% strongly agree there are no literacy centers in their district. 37.5% of the participants neither agree nor disagree, 10% agree, and 30% strongly agree that there is no literacy

program suitable for women in their area. 27.5% of the participants neither agree nor disagree, 20% agree, and 22.5% strongly agree that there is no literacy program suitable for women in their area. Finally, 55% respondents disagreed that they were aware any literacy program in there are.

In effort to achieve objective a questionnaire was administered to 20 health providers of which 70% stated that they were not aware of any literacy program. It was also noted that 40% disagreed, while 30% were not sure that maternal mothers were aware of the programs. 60% of the health providers agreed that the programs had an immediate impact on the livelihood of the participants. 70% of the health providers disagreed that literacy programs are been conducted in the community /health facility. Further 60% disagreed that literacy programs were often conducted. Again 80% disagreed that maternal mothers are assessed on the literacy levels. 70% disagreed that awareness on the literacy programs are been conducted by health workers.

To conclude on our second objective, we strongly say that obstacles that influence maternal literacy are poverty and lack of awareness by the maternal mothers about the literacy programs. Also, the lack of awareness by health providers about literacy programs to provide maternal literacy programs to the maternal women. Finally, the lack of implementation of maternal literacy programs in health centers and districts for maternal mothers to have access to important lifesaving information. Therefore, we can confirm that we have achieved our second objective.

Addisse, 2003 stated that the factors affecting women's health included access to and control of income and resources, women's income, access to household resources, and power to make decisions influence their ability to seek and utilize health services. Further Political commitment Political commitment is crucial to allocate the available resources and to provide services which are

accessible to those most in need. Low social status of women the health and wellbeing of women is related and highly influenced with their social status (Sommer, A., et. a, 2011). "Poor, Powerless, Pregnant" This is the status of women as labelled by a global survey in 1988. Large number of women (about 50%) and girls in the world live under conditions that threaten their health, deny them a choice about child bearing, limit their educational attainment, restrict their economic participation and fail to guarantee them equal rights as compared to men. Low social status leads to sever burden & over work (Conjugal, maternal, domestic, and professional) exposing to physically demanding activities (UNICEF, 2014). It is always important to address the above-mentioned factors, as women need to be physically, mentally & socially healthy to fulfill their reproductive duty safely and efficiently and to be a contributing member of their community.

Abuya et al (2003) used a quantitative design and investigated the influence of maternal education on child health in Kenya using data from the Kenya Demographic Health Survey (KDHS) of 2003. They identified social economic status (SES), knowledge, attitudes, autonomy and reproductive factors as pathways through which maternal education could influence child health. They argued that social economic status was the most important pathway linking maternal education to health outcomes.

### ***C. To assess the areas of intervention that can help improve maternal literacy***

The results showed that 2.5% agreed that awareness on the literacy programs are been conducted by health workers, 97.5% of maternal mothers disagreed.

Secondly it was noted that 37.5% suggested that radio would be the effective media of communication on literacy programs, 2.5% suggested a door-to-door campaigns, and 60%

suggested all forms of media being radio, door-to-door campaigns, posters etc.

Thirdly, of the 20 health care providers, 70% stated that they were not aware of any literacy program. It was also noted that 30% agreed that they were aware of the programs. 60% of the health providers agreed that the programs had an immediate impact on the livelihood of the participants and 40% disagreed. 70% disagreed that literacy programs are been conducted in the community /health facilities. Further 60% disagreed that literacy programs were conducted often. 80% disagreed that maternal mothers are assessed on the literacy levels. 70% disagreed that awareness on the literacy programs are been conducted by health workers.

From this analysis it is clear that what is needed is the implementation and sensitization of maternal literacy programs in health centers and communities. Awareness programs of maternal literacy programs to both maternal mothers and health providers should be done.

The study in Kenya used a regression analysis of data and concluded that formal education was important in imparting health knowledge to women, which in turn led to improvements in child health. There was no measure of maternal health literacy. Self-reported reading of newspapers, listening to radio and watching television on the part of the mothers were included in the study (Abuya et al 2003). Newspapers, radios and television sets all came at a cost. Newspapers may have had limited circulation and may have been read in the urban areas only. Television and radio reception may have been poor and had restrictive coverage. It was therefore difficult to justify these as measures of literacy. They may not have conveyed the most useful information in terms of child health. It could have been better to dwell on specific health information which could have swayed the mothers' child health promoting behaviors (Abuya et al 2003).

The 60 respondents suggested the following interventions in order to improve maternal literacy.

Create more awareness on literacy programs in the districts, introduce literacy programs that can be attended by everyone, provide means to attend literacy programs in distant areas. Provide more centers for literacy programs in districts. Indirection and implementation of literacy programs, Sensitization of literacy programs to health providers so as to enable them encourage patients on the importance of literacy programs. Government through Ministries of health and community development should conduct awareness programs on literacy programs to both health providers and the community.

#### *D. Conclusion*

The research aimed at assessing the effects of maternal literacy on child health. We therefore conclude that the effects of maternal literacy on child health is influenced by high levels of illiteracy by maternal women, high levels of poverty, lack of awareness by both maternal women and health providers on maternal literacy programs, as was well as lack of implementation of maternal literacy programs in health centers and communities.

#### *E. Recommendations*

The ideas recommended are the researchers own thought out and suggestions that are observed from the literature review and research findings. Based on the research findings the following were the recommendations.

Create more awareness on literacy programs in the districts, introduce literacy programs that can be attended by everyone, provide means to attend literacy programs in distant areas. Provide more centers for literacy programs in districts. Indirection and implementation of literacy programs, Sensitization of literacy programs to health providers so as to enable them encourage

patients on the importance of literacy programs. Government through Ministries of health and community development should conduct awareness programs on literacy programs to both health providers and the community, Government through Ministries of health and community development should conduct awareness programs on literacy programs to both health providers and the community.

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