Household Factors Influencing Child Mortality Levels in Kilifi District, Kenya

Maweu Esther Nzilani (H.N.D E.H.S.)
Reg no.157/6027/2003

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in Partial Fulfillment of the Award of Degree of Master of Public Health in the School of Health Sciences of Kenyatta University

April, 2011
DECLARATION

"This thesis is my original work and has not been presented for a degree in any other University for any other award".

Signature: Maweu Esther Nzilani
Date: 15/1/2011
157/60272003

SUPERVISORS' APPROVAL

This thesis has been submitted for review with our approval as University supervisors.

1) Signature: Dr Margaret Keraka PhD
Date: 15/1/2011
Public Health Department.
School of Health Sciences
Kenyatta University

2) Signature: Dr Lucy Kamau PhD
Date: 15/4/2011
Department of Zoological sciences
School of Pure and Applied Sciences
Kenyatta University
DEDICATION

This work is dedicated to my husband Patrick and sons Eddy, Evans, and Emmanuel for their patience and support during the study period.
ACKNOWLEDGEMENT

My sincere appreciation goes to my lecturers at Kenyatta University Department of Public Health, my Supervisors Dr Margaret Karakas and Dr Lucy Kamau of Zoological Sciences. Members of staff at the District Public health office (Kilifi), particularly the DMOH Dr David Mulewa, for their great support and efficiency in providing vital information, encouragement and in assisting me in collection of data. I cannot forget Mr Felix Agoi from Agakhan who organized my data and made it meaningful through analysis, and all who assisted me in one way or the other in making my dream a reality. Last and not least my gratitude to my mother who is the person behind my life and education. The community of the five locations where the data was collected from cant be left silent. The provincial administration and all those who guided me in one way or the other. To all I say “may God shower you with his heavenly blessings”.

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### 4.4 practices influences

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## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficient Syndrome</td>
</tr>
<tr>
<td>AMREF</td>
<td>African Medical Relief Foundation</td>
</tr>
<tr>
<td>ANC</td>
<td>Ante-Natal Clinic</td>
</tr>
<tr>
<td>ARI</td>
<td>Acute Respiratory Infection</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>CIMCI</td>
<td>Community Integrated Management Of Childhood Illnesses</td>
</tr>
<tr>
<td>DCH</td>
<td>Division Of Child Health</td>
</tr>
<tr>
<td>DMON</td>
<td>District Medical Officer Of Health</td>
</tr>
<tr>
<td>FGDS</td>
<td>Focused Group Discussion</td>
</tr>
<tr>
<td>GHS</td>
<td>Ghana Health Surveys</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>H.N.D.E.H.S</td>
<td>Higher National in Environmental Health Sciences</td>
</tr>
<tr>
<td>IACMG</td>
<td>Inter Agency Child Mortality Group</td>
</tr>
<tr>
<td>IGAS</td>
<td>Income Generating Activities</td>
</tr>
<tr>
<td>IMCI</td>
<td>Integrated Management Of Childhood Illness</td>
</tr>
<tr>
<td>IMR</td>
<td>Infant Mortality Rate</td>
</tr>
<tr>
<td>INTS</td>
<td>Insecticide Treated Nets</td>
</tr>
<tr>
<td>KDHS</td>
<td>Kenya Demographic Health Survey</td>
</tr>
<tr>
<td>KNBS</td>
<td>Kenya Bureau Of Statistics</td>
</tr>
<tr>
<td>KEPH</td>
<td>Kenya Essential Package For Health</td>
</tr>
<tr>
<td>KIDCARE</td>
<td>Kilifi District Coastal Area Replication Evolution</td>
</tr>
<tr>
<td>KPC</td>
<td>Knowledge Practice And Attitude</td>
</tr>
<tr>
<td>DOT</td>
<td>Definition of Operational Terms</td>
</tr>
<tr>
<td>KNBS</td>
<td>Kenya National Bureau Of Statistics</td>
</tr>
<tr>
<td>KU</td>
<td>Kenyatta university</td>
</tr>
<tr>
<td>LQS</td>
<td>Lots Quality Survey Development Goals</td>
</tr>
</tbody>
</table>
MOH  Ministry Of Health
NGOS  Non Governmental Organizations
NDHS  National Demographic Health Survey
NCST  National Council For Science And Technology
PHO  Public Health Care
ROK  Republic Of Kenya
SIDA  Swedish International Development Agency
TT  Tenus Toxid
TBAS  Traditional Birth Attendants
UN  United Nations
UF  Under Five
UNECA  United Nations Economic Commission For Africa
UNICEF  United Nations Children’s Fund
UNFPA  United Nations Population Funds
U5MR  Under Five Mortality Rate
WHO  World Health Organization
Definition of Operational Terms

Caretaker - This is anyone bestowed with the responsibility of watching over an Under five children. For this study, a caretaker will be the mother of the under five child or any other person who has a lot of influence in the upbringing of the under five child in the home. In the study context, the caretaker is the respondent. **Child mortality** - The probability of a child dying between the first and fifth Birthday

Community - A group of people living in the same area sharing the same goals, problems and common system of communication, they are socially linked in that they share common leadership, cultural and traditional beliefs. **Dehydration** - The loss of large quantities of water and salt from the body. **Good housing** - A house that meets minimum Public Health Standards of living conditions

Household - People sharing the same pot

Household factors - Factors within the immediate home, such as availability of Clean water, availability of sanitary facility, breastfeeding habits, health seeking behaviors, general maintenance of the home, parity, beliefs and practices by caretakers. **Morbidity** - Trends in disease occurrence

**Taboo** - Cultural practice that if not adhered to has consequences to The person concerned

**Waste** - Discarded material that has no use by the original user. **Neonatal mortality** - The probability of dying within the first month of life. **Post neonatal mortality** - The difference between infant and neonatal mortality
Infant Mortality

The probability of dying before the first birthday Under five child mortality - The probability of dying before the fifth birthday Village - This connotes a group of dwellings (House holds) in a rural area. It usually consists of a household population of between 100-2000. This population however varies with locality, and can go up or down. In this study, a village is the lowest level of provincial administration. Usually headed by a village elder. People in one village could be from the same clan or may have settled there depending on circumstances. Waste - This is discarded material that has no use by the original user.
ABSTRACT

Child mortality is the probability of a child dying before its fifth birthday. Child mortality in developing countries constitutes the largest age category of, and poor environmental conditions. The overall aim of this study was to explore the demographic, environmental and socio-economic economic and health seeking behavioral factors influencing childhood mortality amongst caretakers in Bahari Division, Kilifi District, Coast Province, Kenya. A cross-sectional survey was undertaken between the months of March and June 2009 adopting both quantitative and qualitative approaches. Quantitative data was collected using semi-structured questionnaires administered to caretakers of under five children and aged between 18 years to above 49 years. Qualitative data was collected through focus Group Discussion and key informants interviews data was collected through main outcome measure was identification of the main factors perceived to be influencing child mortality at household level in Bahari division of Kilifi district. Purposive sampling was employed to get study area while cluster sampling was to get study villages and random sampling was used to get study units. The study revealed that the main factors influencing child mortality in Kilifi District were, Parity $x^2 = 48, p = 0.001$ , education level $x^2 = 9.598, p = 0.005$ , immunization uptake $x^2 = 63, p = 0.003$ , locality where child healed from $x^2 = 13, p = 0.004$ and place where mother chose to deliver, $x^2 = 34.550, p = 0.004$. Decision making when child was ill, $x^2 = 25, p = 0.005$. Caretaker's occupation mortality in Kilifi District. The casual work and small business preoccupied the caretakers leaving them with very little time to care for their children's deaths. This calls for focused health education and services targeting the caretakers and the entire community.
1.1 Background information

Despite technological advances in modern sciences, more than 8 million children under the age five die every year in developing countries from preventable diseases (UNICEF, 2009). Of these deaths, 70% can be attributed to just primary causes: Pneumonia, diarrhea, measles and malnutrition (WHO, 2008). In many developing countries, 20 to 25% of children die before reaching their fifth birthday, resulting in an estimated over 8 million deaths annually (IACMG, 2009). In Sub-Saharan Africa, 1 child in 8 die before the age five—nearly 20 times the average of 1 in 167 for developed region (UNICEF, 2009). Infant and child death in developing countries constitute the largest age category of mortality. This is because children under the age of five years are the groups most vulnerable to diseases caused by health risks and poor environmental conditions (UNICEF, UNDP, 2009). Children under age of five make up 14% of the population in Africa, but account for up to 50% of all deaths annually (Kassel, 2003).

In response to the above mentioned concern, in the early 1990s WHO and UNICEF led the development and promotion of the IMCI strategy (UNICEF, 1998). This initiative aimed at significantly reducing mortality and morbidity associated with the five major causes of disease in children below five years, and to contribute to their healthy growth and development. According to the Kenya Demographic and Health Survey of 2008, The infant and under five mortality rates have fallen to 74 deaths per every one thousand live birth (KDHS, 2008) from 115 /1000 live births in 2003 (KDHS, 2003). The observed decrease annually in mortalities, though minimal, was predictive of other possible determinants of infant and child mortality within the child holistic environment. Whether
gauged from a physiological, social or economic perspective, the death of an infant or a child to the family and friends in psychological terms is of course painful (jelile, 1987). This brings out the urgency of improving our understanding of the determinants of child health particularly on household level.

1.2 Problem statement:

Twenty two thousand children under the age of five – 18 each minute – die every day, mainly from preventable causes (IACMG, 2008). More than 70 per cent of almost 8.1 million child deaths every year are attributable to six causes namely: ARI, diarrhea, measles, Malnutrition, malaria and pneumonia (WHO, 2008). The magnitude of the death burden is mainly in the rural population where accessibility and availability of services have been a problem (WHO, 2005). Most deaths occur mainly in the developing world. Among regions recording high deaths in children include South-central Asia with the highest number of neonatal deaths, while sub-Saharan Africa has the highest rates of under-five mortality (UNICEF, 2008). In Kenya for example, Under five child mortality rate is estimated to be at 74 deaths per every one thousand live birth (KDHS, 2008) while in Coast province of Kenya, Under-five child mortality rate is at 87 deaths per every 1000 live births (KDHS, 2008) and in Kilifi the rates are at 140 deaths per every 1000 live births (MOH Kilifi, 2008) far much higher than the national figure of 74/1000. The set targets by world leaders in order to achieve the MDG are at 70/1000 (UNICEF, 2000).

This study sought to investigate factors within the home that could be contributing to child deaths in Kilifi District and try to come up with recommendations which could be
used by stakeholders in healthcare delivery systems and caretakers in reducing children deaths

1.3 Justification

Infant and child mortality are among the best indicators of socio-economic development because where the social and environmental conditions are poor, children are not likely to survive due to their lowered immunity and hence making them susceptible to diseases (Mutunga, 2004). Most activities that affect child survival occur at home, as most deliveries occur at home (70%) while most practices injuring the health of the child occur at home. It is at home where the child spends most of its life. Almost 80% of child deaths occur at home (UNICEF, 2007). It is therefore imperative that the home environment is studied in order to be able to determine the information gap as to why children are still dying. Most programmes on child survival in the past had their focus on curative services and were centered on the health care delivery systems that suffer shortage of staff, and are not easily accessible amidst other challenges.

There is need for more research to investigate reasons why children are still dying despite the joint efforts by different forums to reverse the status quo especially in developing countries (WHO, 2005). These indicators need to be reversed, if the Millennium Development Goals (MDGs) on child health by 2015 are to be achieved. The caretakers who are always with the children have been given less attention on matters of health education and other matters affecting the health of the child (WHO, 2004). This study sought to narrow the gap on information regarding factors in the home that have been
given little attention by providing information relating to caretakers practices and healthy seeking behaviors, and how they affect child mortality. The MOH may utilize these findings in development of relevant interventions. The findings could be useful in the development of policies for the country and regional comparison. It is hoped that the community will benefit from being sensitized by MOH and other stakeholders on the importance of good practices that promote child survival and early seeking of health care enabling them to initiate informed decisions on preventive measures.

1.4 Research questions

i) What socio-economic factors contribute to high child mortality in Kilifi District?

ii) What practices contribute to high child mortality in Kilifi District?

1.5 Null Hypothesis

\[ H_0: \text{There is no relationship between caretakers' socio economic status and child mortality in Kilifi district}. \]

\[ H_0: \text{There is no relationship between caretaker's level of education and child mortality in Kilifi}. \]

\[ H_0: \text{There is no relationship between caretakers' behavioral factors and child mortality in Kilifi}. \]

1.6 Broad Objective

The study aimed at exploring the main household related factors influencing child mortality in Kilifi District, Kenya.
1.7 Specific Objectives

I) To assess the level of knowledge and attitude of caretaker’s towards factors that contribute to infant and child mortality at the household level in Kilifi district.

ii) To establish practices in the family that are detrimental to the child’s health.

iii) To identify the main demographic, socio-economic, socio-cultural factors that contribute to child mortality in Kilifi District.

iv) To determine environmental health factors that contribute to child mortality in Kilifi district.

1.8 Significance and Expected Output

The findings of this study were expected to improve understanding on the association between household factors and the status of child health and subsequent mortality. This will help health planners and policy makers as well as the local community who are key in child rearing in identifying priority areas especially those falling under the immediate household environment that need special focus in reducing child mortality in line with the UN Millennium development goals.

1.9 Scope and limitation of study

There was no comparison group in the study. Time and finance were major constraints as the investigator was self sponsored. However the sample size and the cosmopolitan nature of the population was adequate to give conclusive results that could be applied in any cosmopolitan community.
1.1 Conceptual framework

The conceptual framework of health addresses child mortality as the outcome of a complex sequence of socio-economic, socio cultural and socio-demographic processes. In African countries and especially those in Sub-Saharan region, children die as a result of conditions arising from poverty such as malnutrition, diarrhea due to poor environmental sanitation leading to ingestion of unsafe water. Hunger and starvation has not eluded these developing African nations and those most affected are children (UNICEF, 2006). Beliefs and cultural practices upheld by the society have contributed immensely to children’s deaths. Africans beliefs on diverse causes of diseases lead them to deviate in search for interventions of such diseases, abandoning scientific ways of solving the crisis. This kind of a situation, exposes the sick child to delay in seeking the right treatment, and hence occasional disabilities and death. A major gender disparity between men and
women education is a major cause of child mortality due to the fact that women are the child bearers and need to have the knowledge of how best to care for their children. Long distances to health facilities have lead caretakers to seek for unprofessional medication especially in the rural areas where the distance could go up to 5 kilometers (VoorHorere, 2004). The MOH should target to train caretakers at home on good practices and endeavor to move health care services closer to homes in order to improve child survival.
CHAPTER TWO: LITERATURE REVIEW

2.1 Global overview of child mortality levels and trends

The global under-five mortality rates has declined by a third, from 89 deaths per every one thousand live birth in 1990 to 60 deaths in 2009 (UNICEF, 2009). All regions except Sub-Saharan Africa, Southern Asia, and Oceania have seen reductions of a fifty percent (UNDP, 2009). The number of under-five deaths world wide has declined from 12.4 million in 1990 to 8.1 million in 2009 (IACMG, 2009). According to these estimates, the total number of under-five deaths decreased globally from 1990 to 2009 from 12.4 million per year to 8.1 million. The global under-five mortality rate has dropped by a third over that period, from 89 deaths per 1,000 live births to 60 in 2009.

The good news is that these estimates suggest 12,000 fewer children are dying each day around the world compared to 1990 (UNICEF, 2009). However the tragedy of preventable child deaths continues. Some 22,000 children under five still die each day, with some 70 per cent of these deaths occurring in the first year of the child’s life. Under-five mortality is increasingly concentrated in a few countries. About half of global under-five deaths occurred in just five countries in 2009: India, Nigeria, Democratic Republic of Congo, Pakistan and China. The highest rates of child mortality continue to be found in sub-Saharan Africa, where 1 in 8 children dies before their fifth birthday nearly 20 times the average for developed regions (1 in 167). Southern Asia has the second highest rates, with about 1 in 14 children dying before age five.
While the speed at which under-five mortality rates are declining improved for 2000 to 2009 compared to the previous decade, the under five deaths are still not decreasing fast enough especially in sub-Saharan Africa, Southern Asia and Oceania to achieve Millennium Development Goal target (of a two thirds decline between 1900 and 2015). Oceania is the only other region with an under-five mortality of 40 deaths per every 1000 live births.

Table 2.1 Global distribution of child deaths 2009

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of deaths (thousands)</th>
<th>% global deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Saharan Africa</td>
<td>3976</td>
<td>49</td>
</tr>
<tr>
<td>South Asia</td>
<td>2677</td>
<td>33.1</td>
</tr>
<tr>
<td>South East Asia</td>
<td>405</td>
<td>5.0</td>
</tr>
<tr>
<td>Eastern Asia</td>
<td>361</td>
<td>4.5</td>
</tr>
<tr>
<td>Latin America &amp; Care- bean</td>
<td>239</td>
<td>3.0</td>
</tr>
<tr>
<td>Western Asia</td>
<td>159</td>
<td>2.0</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>96</td>
<td>1.2</td>
</tr>
<tr>
<td>Countries of the common wealth States</td>
<td>87</td>
<td>1.1</td>
</tr>
<tr>
<td>Developed regions</td>
<td>71</td>
<td>0.9</td>
</tr>
<tr>
<td>Oceania</td>
<td>15</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: IACMG, 2010 report

2.2 Causes of Death

Four diseases – pneumonia, diarrhea, malaria and HIV/AIDS – accounted for 43 per cent of all deaths in children under five worldwide in 2008 (WHO, 2009). Pneumonia and diarrhea together account for a third of all under-five deaths. Most of these lives could have been saved through low-cost prevention and treatment measures, including antibiotics for acute respiratory infections, oral rehydration therapy for diarrhea, immunization, and the use of insecticide-treated mosquito nets and appropriate drugs for malaria. The need to refocus attention on pneumonia and diarrhea – two of the three
leading killers of children – is urgent. The use of new tools, such as vaccines against pneumococcal pneumonia and rotaviral diarrhea, could add momentum to the fight against these common diseases and provide an entry point for the revitalization of comprehensive programming. Ensuring proper nutrition is a critical aspect of prevention, since malnutrition increases the risk of death. In tropical Africa, the main causes of infant and child deaths are more or less the same in most countries. These have been identified as infections, protein-calorie malnutrition, and birth trauma (UNICEF, 2007).

Most of the causes, especially of child mortality, are preventable. The infections include neonatal tetanus, diarrhea, respiratory infections, measles, and malaria (WHO, 2008).

In Kenya, it has been found that respiratory infections, especially pneumonia, are the main cause of death among infants and children (MOH, 2008). Protein-calorie malnutrition has been identified as the major secondary or underlying cause of death (WHO, 2007). Neonatal deaths (deaths to children under one month of age) tend to be dominated by factors related to the birth process or congenital phenomena, but as the child grows older, exogenous factors take over and play a bigger role (Gaisie, 2005).

Almost 40 per cent of deaths in children under five occur in the first month of life (UNICEF, 2009). Conditions which exacerbate the above causes of death include low birth weight, poor sanitation and water supply, poverty, inadequate food supplies, lack of education and information and inadequate health care (WHO, 2006). Children in the third world, especially in sub-Saharan Africa, usually suffer from more than one disease at a time. There appears to be a ‘synergism of infection’ whereby children tend to suffer from several diseases at the same time on top of protein-calorie malnutrition, which appears to

Table 2.2 Percent of child mortality and number of deaths 2008

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>%</th>
<th>No of deaths (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal causes</td>
<td>41</td>
<td>3.575</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>14</td>
<td>1.189</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>14</td>
<td>1.257</td>
</tr>
<tr>
<td>Malaria</td>
<td>8</td>
<td>0.723</td>
</tr>
<tr>
<td>Other infections</td>
<td>9</td>
<td>0.753</td>
</tr>
<tr>
<td>Other non-communicable diseases</td>
<td>4</td>
<td>0.228</td>
</tr>
<tr>
<td>Injury</td>
<td>3</td>
<td>0.279</td>
</tr>
<tr>
<td>AIDS</td>
<td>2</td>
<td>0.201</td>
</tr>
<tr>
<td>Pertusis</td>
<td>2</td>
<td>0.195</td>
</tr>
<tr>
<td>Meningitis</td>
<td>2</td>
<td>0.118</td>
</tr>
<tr>
<td>Measles</td>
<td>1</td>
<td>0.118</td>
</tr>
<tr>
<td>Congenital abnormalities</td>
<td>1</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Source: IGME Report 2010

2.3 Reasons for high death rates of UF children

Investigations by the UN Inter Agency Group on Estimation of Child mortality found out that, Poor families were often unable to obtain even the most basic health care for their children, thus leading to poor or delayed care-seeking. This was found to contribute to up to 70% of all deaths among the under-fives (IACMG, 2010).

- Countries with weak and fragile health systems have not been able to provide effective child-survival strategies, which are crucial to reducing under-fives mortality, and particularly neonatal deaths (WHO, 2009).
- Half of pregnant women received no antenatal care and gave birth without the assistance of a professional health-care worker (UNICEF, 2008).
• Strategies to tackle aggressive but treatable diseases were often limited. For example, just 48% of children with suspected pneumonia in the 64 highest-burden countries were taken to appropriate health-care providers (IACMG, 2020)

2.4 Level of knowledge on Childhood Illnesses

Although the total number of UF deaths is fairly known, the proportion related to each cause is much more uncertain because vital registration systems that provide cause of death data in industrialized countries do not exist in most developing countries and children often die from multiple causes and determining the primary cause of death becomes difficult (WHO, 2003). Most of the studies that have been used to estimate causes for the majority of under five deaths have referred to the first half of the 1990's and earlier, and provide no data on changes in the last half of the decade (UNICEF, 2003). Although accurate information on cause of child deaths is lacking, studies have shown that child diseases and mortality is multifactorial (Mohamed, 2005). Amongst the common causes of morbidity include Pneumonia, Neonatal Tetanus, Malaria, Measles, Malnutrition, Diarrhea and increasingly HIV/AIDS (UNICEF, 2008).

Estimates of UF deaths by cause are important for targeting interventions to reduce child mortality and to monitor progress (UNICEF, 2007). Various factors influence the levels of infant and child mortality. For instance, childhood illness and death are much higher in the poorer strata of society. Illiteracy of mothers, culturally determined attitudes with respect to health and medical care, lack of basic knowledge and awareness of health problems, poverty and the inaccessibility of health facilities, all contribute to these high rates.
Education of women, awareness on the importance of hygiene, the use of techniques such as oral rehydration therapy (ORT) in managing diarrhea, and the importance of timely immunization are factors that could save the lives of many children. Status of the family and level of education also affect awareness and recognition of severity of illness and acceptability of health care service. Some religious and cultural misinterpretations of causes of child illnesses have lead to poor seeking of medical interventions, by those caretakers affiliated to these religions and cultures; this has lead to unnecessary disabilities and deaths. Health related behaviors; such as birth spacing has been attributed to neonatal mortality and infant mortality with the risk of dying decreasing with increasing birth interval lengths up to 36 months. (UNICEF, 2005)

2.5 Socio-economic Factors

Child deaths are commonly a result of several risk factors. Unhygienic and unsafe environments place children at risk of death. Ingestion of unsafe water, inadequate availability of safe drinking water for hygiene, lack of access to waste disposal contribute to about 1.5 million child deaths and around 88% of deaths are due to diarrhea. Other child mortality causes are acute lower Respiratory Infections (ARI) which are associated with indoor pollution and kills 2.2 million of children UF annually (Bryce et al., 2004).

Other factors that have been closely associated as being contributory to child survival include mother’s educational status, economic status of household, (Hobcraft et al., 2000) and have been estimated to be responsible for 60% of child deaths in developing countries (WHO, 2003). Individual child’s nutritional and Immunization status affects
greatly the way a child will grow. Studies have shown that the health status of a mother greatly determines the outcome of a child’s life. The chances of children born of a mother with chronic illness dying are quite high as compared to one born of a healthy mother. Children living in the urban are less likely to die as compared to those in the rural set up (UNICEF, 2003). Urbanization has been found to favor child survival for example children living in the urban are less likely to die as compared to those in the rural set up, due to the accessibility of health care services, ability to embrace better feeding practices and easily available foods, good communication network as compared to the rural (UNICEF, 2003). Other factors may include cultural practices of the society and gender roles inequality (UNICEF, 2002).

The infant mortality rate often serves as a key development indicator, reflecting the combined effects of economic development, technological change, including health interventions, and the socio-cultural environment. Often child mortality has been linked to poverty, which has been often at the root of malnutrition which is a major underlying cause of most child hood deaths. Malnutrition leaves children weak and with low immunity which makes their bodies less strong to fight against diseases. (Factor et al., 2004). Micronutrient deficiencies are a major obstacle to socio economic development in many countries. They have an immense impact on the health of the population, learning ability and productivity. Children are often the victims of malnutrition caused by poverty. Poor nutrition leads to low birth weights less than 2.5 kilograms at birth which comprises about 16% of all births globally and about half of all births in poor communities. (Hendricks, 2005). Such infants tend to be underweight later in life and
contribute substantially to prevalence of all malnutrition and deaths. Advances in infant and child survival are slower in the poor communities and to the poorest people in wealthier countries meaning that the poorest communities in all set ups experience high mortality rates (UNICEF, 2006). Economic factors are key in determining the health outcome of individual’s children; For example, a safe home environment that is free from diseases and physical injuries is a product of a combination of factors including the level of education of caretakers and their income status. Variables such as, safe running tap water in the compound, the type of fuels used for cooking and lighting in the house, the type and design of housing are major influences of the outcome of child health. Most children deaths are reportedly caused by indoor pollution, ingestion of unsafe water, unhygienic environments emanating from homes that lack sanitary facilities and people residing in the same dwelling units with domestic animal (WHO, 2006). The underlying reasons for such causes are lack of resources such as experienced amongst the majority poor of the rural (AMREF, 2005). In order to combat child deaths, a lot has to be done on the economic and education status of caretakers especially girls and mothers.

2.5.1 Drinking water facilities

The presence of a piped water supply or electricity is likely to reflect community characteristics as well as household income. Access to safe drinking water is also related to child survival status. Infant and child mortality rates are lower among children whose households use piped water than those who use water from other sources. In our study, infant mortality was 20 per cent lower for children whose mothers use piped water than other sources of water. It is assumed that piped water is safer and more hygienic than water from other sources, especially water from ponds, canals and rivers.
2.5.2 Toilet facilities

There was a substantial difference in mortality differentials by access to a toilet. Children's mortality in households with a flush toilet was considerably lower than those from households with other types of toilet facility. For example, in households without a flush toilet, child mortality was more than double that of children from households with such a facility (probability of dying 16 versus 34). Similar differentials existed with regard to neonatal and infant mortality, but not on so large a scale as with child mortality.

2.5.3 Gender differential and its effects on child mortality

Women contribute to 80% of the agricultural activities in the country and they so form a major labor force yet the proceedings from their sweat are sometimes spent by men even without factoring in the children. Women are the child bearers and rearers yet they are endowed with excessive responsibilities even during pregnancy period which leads to sympathetic nerves activity and subsequent reduced level of placenta blood flow. This contributes to low birth weights and deaths of newborns or miscarriages. Low level of education among women is a contributing factor to mortality. Due to the low education levels, many women do not embrace the intensive ANC and postnatal care services, infant feeding and weaning methods, growth monitoring and appropriate child management (Harrison, et al., 2006). Gender disparity has affected the health of the women in developing countries by putting an un-rewarded reproductive burden on them, resulting in early and excessive child-bearing. This has led to a normal maternity being lumped with diseases and health problems.
Throughout the life cycle, gender discrimination in child rearing, nutrition, health care seeking, and education and general care make a woman highly vulnerable and disadvantaged resulting to poor child care practices and leading to ill health and deaths amongst under five children (UNPD, 2005). Prenatal mortality studies point to the link between the health of the mother and the birth outcomes. This is highly associated with the poor status of women, including poor nutritional status (malnutrition and anemia), low rates of literacy, lack of autonomy and early marriage and childbirth. In addition, low rates of antenatal care, low utilization of obstetric and other health care services and large numbers of deliveries by untrained personnel result in poor maternal health and poor birth outcomes, such as low birth weight and pre-maturity (UNDP, 2004). Further, the effects of maternal characteristics are not limited to the prenatal period. It has been shown that, the under-5 mortality rate also differs significantly by maternal background characteristics thus improving female education and nutrition, and increasing the use of health services during pregnancy and delivery, is important for reducing childhood mortality rates (WHO, 2004).

Many studies have demonstrated increased mortality risks among children born after short birth intervals (Hobcraft et al., 1985). Maternal depletion is often cited as the primary mechanism responsible for the adverse effects of short birth intervals. Women with short intervals between two pregnancies have insufficient time to restore their nutritional reserves, a situation which is thought to adversely affect fetal growth. Competition among siblings is considered a plausible mechanism in the association between birth intervals and child survival: the newborn child has to compete with another young sibling for household resources and mother's care. The situation may have
a bearing on the nutrition of the youngest child (Winikoff, 2005: Boerma and others, 2004). First-born children of very young mothers are at risk of dying while infants because of their mother's physical immaturity (Gubhaju, 2003). Also infants born to mothers who have experienced losing a child are at greater risk of dying while infants (Cleland and van Ginneken, 2006). Similarly, infants born to mothers who are less than 19 years of age, or 35 or more years of age are also at higher risk of dying. Breast-feeding could potentially be a confounding factor, since it affects both child survival and the length of the birth interval. Children with short preceding birth intervals are less likely than others to have ever been breast-fed (Rutherford, 2003).

2.6 Practices influencing child mortality

Effective child-care practices play a vital role in children's growth, brain development, personality enhancement and health promotion. In most nations, child-rearing practices are highly influenced by the traditional norms and values. Infant, child care practices and beliefs have the greatest effect on a child's health status. These practices bear the greatest impact on the health seeking of a nation. The role of child rearing practices and parenting can not be ignored when trying to determine the causes of under five deaths. It has been proven that the child's Microsystems include the child's caregivers and family who hold sound effects over the child's growth, development and overall wellbeing. Traditionally the primary care giver of children is the mother. Women constitute a big proportion of the labor force in the world, therefore in the case where of a working mother; caregivers for young children include the grandmother, aunt, Childs elder sister, or a house old maid. The female being preferred in the care giving role for the child. In traditional African families, the influence of cultural beliefs and values on the child rearing practices is
highly visible. Some of the commonly reported newborn and child-care practices that adversely influence the young babies health and serve as challenge for health care givers are:

2.6.1 Cord cutting

In Sub-Saharan Africa especially in the rural areas, due to lack of accessible, affordable and quality health care services, home deliveries are preferred over hospital deliveries. The home deliveries are most of the times carried out by traditional birth Attendants (TBAS), or mothers in law, who themselves are not trained. As a traditional practice, on baby’s birth the cord is cut for healing purposes. Resultantly, the practice sets many newborns up for neonatal tetanus and serves as contributing factor for child mortality. (UNICEF, 2007)

2.6.2 Feeding Practices for newborns:

Concerning feeding practices, most of the mothers hold the belief that the baby should be fed only when they start to cry and awake from sleep. Even lay people hold the strong belief on giving pre-lacteal feed to the newborn baby regardless of the baby’s health status or any associated health risk. For that purpose, use of honey is quite common in many African families. The family belief about honey is a pre-lacteal feed is that it would enhance the bonding of the baby with the care givers, would instill desired characteristics of the person who offered honey, which in turn, would add sweetness to the life of the child. In addition, some communalities hold on to the belief that the mother’s first milk
i.e. colostrums must be discarded and should not be offered to the baby as it is unhealthy. This practice deprives the newborn from immunological benefits of breast feeding.

2.6.3 Practices concerning Weaning Diet Introduction:
In various areas of Africa, the introduction of weaning diet is either too early or too late, which holds the risk of contributing to the child's malnutrition. A study in the region of Kenya by Plan Int. (2006) revealed that cultural beliefs and taboos affect the weaning in a majority of the cases; various nutritious foods are not given to the infants in the mistaken belief that they would cause illness. Furthermore, some families believe that some Hot or Cold foods are not healthy. Foods like meat, eggs etc are considered as HOT foods that can cause allergy or bald head. On the other hand, foods like citrus fruits are considered to cause pneumonia. Even breast feeding mothers restrict various foods that are considered harmful and are thought to effect negatively on breast milk production and maternal nutrition. Consequently children during early ages are deprived of nutritious foods that are required for growth and development.

2.6.4 Growth Monitoring Practices
In some African communities growth monitoring is not a common practice. This often leads to lack of detection for the presence of malnutrition i.e. Marasmus and Kwashiorkor among children. The common socio-cultural reasons for that common practice are the cultural beliefs the babies would come under the influence of "Evil-Eye" if they would weighed on the scale.
2.5.5 Beliefs on Evil Eye and Witchcraft

Many communities in Africa have diverse health seeking behaviors especially concerning child hood diseases and health problems. Even congenital conditions like cleft palate are viewed to be caused by effects of some witchcraft. Conditions like spinal bifida and Meningomyloceel are considered to be caused by evil deeds by the parents or close family members. Because of those beliefs system, people do not accesses health care setting for proper management and treatment: rather they access folk sector or transpersonal healers for treatment purposes. Consequently, morbidity and mortality rates among young babies increase due to delay in treatment.

2.5.6 Participation of Mothers versus Fathers in care giving

In most African communities, female’s roles are more acceptable as a caregiver for babies: therefore, fathers are not encouraged to take part in direct child care. However, fathers are considered the major decision makers for health care, education, and money spending in a family (Khan H., 2006). Consequently, the major responsibility lies on the mothers shoulders for child care and rearing. The challenge for mothers further increases if the mothers are working or hold many household responsibilities. These factors limit her interaction and play time with her children. Furthermore, the families where women’s health is ignored after childbirth, various women end up in “post partum depression”. In a given situation, the provision of developmental situation to babies gets missed in the care giving. Hence, one way or the other, many children miss the essence of receiving equal opportunity of parenting from each parent, (Sheila et al., 2006).
Another practice commonly observed in African communities is lack of female empowerment and male dominance in the society; therefore, it is felt that unless the father’s role would be understood as one of the vital caregivers by the baby, this challenge will remain unresolved.
CHAPTER THREE: METHODOLOGY

3.1 Study Design

This was a cross-sectional analytical survey that employed both quantitative and qualitative techniques. It was conducted between January 2009 to June 2009.

3.2 Location of Study

Kilifi District is one of the larger seven districts that constitute Coast Province of Kenya. The district boarders, Taita-Taveta to the west, Malindi to the North West, Mombasa and Kwale to the south. It covers an area of 4779.2 km$^2$. It has seven administrative divisions, namely, Bahari, Kaloleni, Kikambala, Chonyi, Ganze, Bamba, and Vitengeni. The District has a population of 544,305 with an urban population of 189,227 and rural population of 411,417 persons (ROK, 2008). The study area which is accessible through tarmac road that stretches about 20 kilometers of the Mombasa-Malindi highway and the rural parts is accessible via network of earth roads. The main economic activities in the division are mixed farming and fishing along the coastal strip. The main cash crop grown is coconut, which the residents utilize for different purposes. In some parts the cashew nuts are also utilized for cash crop. Some dairy farming is also done on small scale. The hotel industry thrives well because of the beaches and provides some form of employment to the population. The district has 73 health facilities, however most of the population (57%) live over 5 kms away to the nearest health facility.

3.3 Target Population

Children under the age of five. The respondents were the children's caretakers.
3.4 Study Population
The primary respondents were the children's caretakers aged between 18-above 49 years with children aged below five years and below. The care takers were required to have lived in the study area for a period not less than six months.

3.5.1 Inclusion Criteria
Respondents aged between 18 years and above, living in the study area and had UF children and gave informed consent.

3.5.2 Exclusion Criteria
Adults less than 18 years and not living in the area had no children under five years and never gave consent.

3.6 Research Design
This was a descriptive, cross-sectional survey. In this survey, information was collected from a sample and the findings were used to make conclusions about the population. It involved systematic collection and presentation of data to give a clear understanding of the problem in review. Both qualitative and quantitative methods of data collection were used.

3.7 Variables Used in the study
The data collected was thematically based on the study objectives that have been listed before, with each having a set of variables. The dependent variable of child mortality was
represented by calculated proportions of dead children in last two years preceding the study a measure of children dead (CD) divided by children ever born (CEB). Summarily the following variables were considered: Age of caretaker the age range was 18 years up to above forty nine, Level of education was categorized as, no education, primary level education, secondary level education and Tertiary level. Caretakers Occupation was put into four categories viz: Farmer, small scale business Casual labor, and permanent employment. The variable residence was categorized according to the five locations comprising the study area. Ownership of residence was in three categories that is: Owner occupied, Rented, Others. Source of drinking water: tap, well, Borehoe, and others. Preferred Place of birth of children by caretakers was categorized as home and hospital. Immunization status of children, two categories were preferred, that is, those who had completed immunization, and those who had not completed immunization. History of illness amongst the under five children in the last two weeks preceding the study, Pattern of decision making at home when child was sick and preferred place where caretakers sought for first aid wherever child became ill.

3.8 Sampling Procedures

Purposive sampling was used to select the study area while cluster sampling was employed to get the study locations. The clusters are had a total of 550 villages that had a population of 940 households (KNBS,2008). Proportionate sampling was employed to select 100 villages and 340 households from where the study units were randomly selected. The data generated was entered in excel spreadsheet and analyzed using SPSS Version 15. This study generated information that will be useful to
service providers in understanding the various factors within the house that affected children’s health in Kilifi. The proportion used to get units to be interviewed per location was 6000:4800: 1500:1200: 1503=2:.1.6.5:.4:.5

3.9 Sample Size Determination

Since Kilifi has a child mortality rate of 144 deaths per every 1000 live births this would translate to fourteen percent. 14% was used as the proportion of children dying before attaining age five in Kilifi.

Fisher et al (1998) formula for determining sample size when the sample size is unknown was used.

\[ n = \frac{Z^2pqn}{d^2} \]

\[ (1.96)^2 (0.14) (0.86) = 185 \]

\[ (0.05)^2 \]

A higher figure of 200 was taken in order to take care of refusals or drop outs.

\( n = \) the desired sample size
\( Z = \) the Standard normal deviate at the required confidence level=1.96
\( P = \) the proportion in the target population estimated to have characteristics being measured=0.14
\( q = 1-p = 0.86 \)
\( d = \) the level of statistical significance set=0.05
Table 3.1 Distribution of Sample per Location (cluster)

<table>
<thead>
<tr>
<th>Name Of Location (Clusters)</th>
<th>Sampled villages</th>
<th>Sampled Households</th>
<th>Desired sample size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilifi Township</td>
<td>35</td>
<td>100</td>
<td>80</td>
<td>40%</td>
</tr>
<tr>
<td>Tezo</td>
<td>25</td>
<td>80</td>
<td>64</td>
<td>32%</td>
</tr>
<tr>
<td>Ngerenya</td>
<td>15</td>
<td>60</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>Roka</td>
<td>10</td>
<td>40</td>
<td>16</td>
<td>8%</td>
</tr>
<tr>
<td>Matsangoni</td>
<td>15</td>
<td>60</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>340</td>
<td>200</td>
<td>100%</td>
</tr>
</tbody>
</table>

3.10 Research instrument Construction

Pre-tested interviewer administered questionnaire were used to collect information from mothers on their knowledge, attitude and practice on household factors influencing child mortality. Interview guide was administered on the FGDs, Observational Checklist was used to get additional information from the households especially that which pertained to water and sanitation infrastructures and design of house and key areas of concern to the study such as general hygienic status of the home. Swahili was used as the language of interview. Those unable to understand Swahili were interviewed using Giriama language.

3.11 Pilot Study

Pilot study was done in Kibarani, Tezo Location to people with similar characteristics but who had not been recruited in the study. This was done to identify potential problems in the study, assess the effectiveness and reliability of the questionnaires. This eventually determined their suitability for use in the study. Data obtained from pilot survey was used to moderate the final questions. The pilot study was completed in three days.
3.12 Validity and reliability

Data collection instruments were pre-tested in the pilot area after which the tools were assessed and necessary alterations made and used for data collection.

The researcher conducted a one day training session for six PHOs in order to familiarize research assistants with research tools and practicing interviews. They were also taught basic techniques of recording responses and probing, identifying informants and note-taking for easy transcription. The fundamentals of organizing and conducting focus groups discussions were also included in the training. Investigators demonstrated in-depth interviewing. The criteria of selection of the research assistant was based on their professional background in Public health and their working station as this implied that they were familiar with the community and the geographic area of the sturdy region.

Pertinent issues were also addressed and questionnaires given out. Since the same interview was done on every study unit this ensured that the same questions were asked in the same manner. Information from the FGDS was recorded for reference. Respondents were observed to ensure that no discussion was held amongst subjects during interviews.

3.13 Data collection methods

Data was collected using pre-tested questionnaires which were administered to caretakers most of whom were women of child-bearing age. Research assistants went to the sampled households, where they introduced themselves and obtained consent from the respondents, this they did by first introducing themselves and giving the purpose of the research and also informed respondents that participation was voluntary. Once the
respondents accepted to be interviewed, those who could write signed the consent forms and those who could not had their thumb print taken as sign of acceptance. After which they administered the semi structured questionnaires to collect information. The information gathered was entered in the questionnaires as given by the respondents A discussion guide was used facilitate discussions from the FGDS for qualitative data collection. Participants in the 5 FGDs came from the five participating locations. Participants and key informants were fathers, younger and older mothers including grandmothers and other influential people at household level. Others who were included were traditional birth attendants. FGDs and interview transcriptions were coded to identify common themes that were related to recognition, classification and naming of common practices, beliefs, common ailments affecting children, decision making at home and care-seeking behavior at community level. Observation checklist was used to collect empherical data required.

3.14 Quantitative data processing

Quantitative data was analyzed with the aid of the SPSS Version 15. As a preliminary, the data was descriptively analyzed using frequencies and proportions. The data was then subjected to b-variety analysis using Pearson product –Moment Correlation (t): a more parametric inferential suitable for continuous categorical variables (Mugenda and Mugenda, 1999). Statistically significant correlations were measured using probability value (P.)Where p>0.05 were considered not statistically significant based on the 95% confidence level set for this study. Variables that showed significant correlation to the independent variable were subjected to further analysis that tested the combined effect of the significant independent variables on child death (dependent factor).
3.15 Qualitative data analysis

Qualitative data was collected through 5 FGDS. each comprising of 8 participants who were diacritically summarized and categorized into themes based on the study objectives. The results were presented as textual summaries within verbatim reporting where necessary.

3.16 Ethical consideration

Ethical and scientific clearance for this study was done by the Kenyatta University, Permission to conduct the study was sought from the National council for science and technology which is the agency responsible for approving studies involving humans subjects, Office of the President (DC Kilifi), and the DMOH Kilifi. Informed written consent was voluntarily sought from all the study participants. The purpose of the study was explained to the respondents and they were assured of confidentiality prior to the consent and administration of tools. The questionnaires were kept blind and information given remained anonymous with participants’ names not appearing anywhere in the questionnaires.

3.17 Assessment of knowledge on childhood illnesses

To test the knowledge on diseases, the respondents were asked to state the common childhood illnesses known to them. The main illnesses considered were malaria, pneumonia, diarrhea, and ARI. The prime ailments named were grouped and likert scale (Likert, 1932) was used to rate them as follows:

3 diseases 75-100 rated as good knowledge,
2 disease 50-74 was rated fair knowledge while
0-1 disease 0 -49 and rated poor knowledge.

3.18 Assessment of knowledge by caretakers on the association of house
environment and child illnesses

To test the caretaker’s ability to associate child illness with the house environment,
prime conditions were grouped and likert scale was used to rate them as follows:
Household conditions considered included, ventilation, availability of toilet in the
compound, availability of running water, where animals resided at night, Waste disposal
and general hygiene of homestead.
The rating was as follows
4-5 condition 75-100 rated as good knowledge
2-3 condition 50-74% rated as fair knowledge
0-1 Condition 0-49% rated as poor knowledge.
CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Demographic characteristics of the study population

Table 4.1 Distribution of respondents by their demographic nature

<table>
<thead>
<tr>
<th>Variable</th>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female</td>
<td>182</td>
<td>91%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>18</td>
<td>9%</td>
</tr>
<tr>
<td>Age</td>
<td>18-27yrs</td>
<td>94</td>
<td>47%</td>
</tr>
<tr>
<td></td>
<td>28-37yrs</td>
<td>49</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>38-47%</td>
<td>47</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>48 and above</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Parity</td>
<td>1-2</td>
<td>80</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>3-4</td>
<td>55</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>5 and above</td>
<td>64</td>
<td>32%</td>
</tr>
</tbody>
</table>

As shown in table 4.1 a total of 200 respondents were interviewed of whom 182 were females and 18 males. The male to female ratio was 1:10 within the age of 18 years to 49 years and above, most respondents (47%) were aged less than 30 years of age. And a mean age of 28.9 years. Slightly more than a quarter (28%) of the respondents had between 3-4 children while those with above five children being the constituted 32%.

4.2 Socio-economic characteristics of study population

Table 4.2 Distribution of respondents by level of education

<table>
<thead>
<tr>
<th>Level of education of respondent</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>46</td>
<td>23%</td>
</tr>
<tr>
<td>Primary education</td>
<td>66</td>
<td>33%</td>
</tr>
<tr>
<td>Secondary School education</td>
<td>29</td>
<td>14.5%</td>
</tr>
<tr>
<td>College</td>
<td>58</td>
<td>29%</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.5%</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>
From the findings shown on Table 4.2, 33% of the respondents had primary education, 14.5% reported to have secondary education, 29% had attained college level while almost a quarter (23%) reported to have no basic education.

**Fig. 4.1 Distribution of respondents by occupation**

N-200

![Occupation of respondent chart](chart.png)

From the figure above, on the type of occupation respondents were engaged in, 35% of the respondents reported to be engaged in casual work, that meant either they worked as househelps, or at the quarries or at shambas where they were apportioned work on a daily basis, 23% were on salaried employment, and 26% reported that they were mainly involved in small scale farming while 16% had no response. On Ownership of residency, the respondents recorded that most of them (68%), lived in their own houses, 22% lived in rented houses and a minority (10%) lived in other form of housing: Meaning that they were either housed by a friend or were staying with relatives.
4.3 Environmental Health Indicators

Fig. 4.2 Distribution of respondents by source of water used by household
N=200

When respondents were interviewed on the source of drinking water for the children, the majority (70%) reported to use tap water, 14.5% reported to use well water, and 15% reported to use boreholes while a minority (1%) had no response. When probed further on the time taken to have the water in their houses, 39% reported that they had their water immediately meaning that it was available in their compounds, 20% took a half an hour to have the water for use in their homes, 15% took about one hour to have it in the homes and only 2% had the water after more than an hour's time.
4.4. Practices by Caretakers

Fig 4.3 Distribution of respondent by place of delivery
n=200

Analysis of the preferred place of delivery of their babies, showed that more than half (55%) of the interviewed respondents preferred delivering their babies at home or at the TBAs homes and only less than half (45%) were being delivered by skilled attendants at a health facility. From the Focus Groups Discussions held, it emerged that it was a common practice for pregnant women to either at home, or at the Traditional birth attendant’s homestead, or at their maternal delivered homes and less often at the health facility. Various reasons came out from the participants as quoted. Participants felt that it was cheaper to deliver at home as no expenses were incurred, and that the home environment was friendly. The mother was able to oversee other co-activities in the home unlike in the hospital where the other children were left around with other people. Further. It was revealed that after delivery, the cord was severed by the attendant using any sharp object which may not necessarily sterile. These kinds of delivery exposed the
newborns to neonatal sepsis a condition that was common and often lead to deaths on newborns. One of the respondents (middle aged woman) from the FGDS had the following to say on deliveries. 'Sisi hujifungua nyumbani kwa saabu ni naifu na hakuna gharama yeyote. Labda wale wamesoma na wana hela zao'. (Meaning that, Most of us do deliver at home with exception of those ladies who are learned and have got money. Even so, some of them do deliver at home. These sentiments were shared by another woman of child bearing age in the group; 'Mimi naunga maoni ya huyo mwenzangu, kwani hapa kwetu sisi hujifungua nyumbani'. (Meaning that I do support what the other lady has said in that, the common practice here is that we do deliver at home.)

Table 4.3 Distribution of respondent's by period of breastfeeding practices

<table>
<thead>
<tr>
<th>Period of breast feeding</th>
<th>Frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one year</td>
<td>90</td>
<td>45%</td>
</tr>
<tr>
<td>1-2 yrs</td>
<td>54</td>
<td>27</td>
</tr>
<tr>
<td>Above 2 yr</td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.5 represents patterns of breastfeeding as practiced by respondents. The results show that, only 45% breastfed their children for less than one year 27% breastfed for over up to two years and 28% breastfed for above two years. The results show that many children (above 55%) were being breastfed for more than twelve months and that slightly more than a quarter were breastfed for above the required 36 months.
4.4 Distribution of respondents by completion of immunization.

N=200

Three categories of immunization status were analyzed namely: complete for age, not complete for age and don't know status. The immunization status was ascertained by seeing the vaccination card and checking for the BCG scars. Those caretakers who reported their children had completed immunization were 58% while those who reported non completion were 33% and a minority. When respondents with children who had not completed immunizations were asked to state reasons for the same, (49%) cited long distance to health facility, 27% cited lack of vaccine at the facility when they took their children, 21% cited mother as having another child, while a minority (3%) mentioned other reasons.
Analysis of where caretakers sought for first aid whenever the baby showed signs of an illness, it was reported that more than half of the respondents (59%) sought for hospital assistance, slightly less than a quarter (23%) sought help from the shop meaning they bought drugs, 16% visited a herbalist, and 2% identified other places. When respondents were interviewed on family planning options, 33% of the respondents reported that they were using a certain method of family planning, 40% reported to not using any method and 28% of the respondents had nothing to say about the same. Amongst those who had said that they used a certain method of family planning, the majority, 60% had the decision to family plan made by themselves (caretakers), while spouses and other people influenced the decisions by 40%. From the focus group discussions, it was very clear from participants that most decisions are made by men or mother-in-laws for the women were taken as men’s properties who could never make decisions independently. It emerged that from the FGD’S, decisions at home were made mainly by men, mothers-in-laws and that women...
who are mainly the caretakers had very little say on making decisions in the home. A male respondent from the FGDs had the following to say: ‘Hapa kwetu mwanamke hana haki yeyote kuhusiana na mtoto. Uamuzi wote wa muhimu hufanywa na mama vyaa ama baba mtoto ama mtu yeyote mwana ume aliye na ukoo na Here a woman can not make any independent decision and only a mother-in-law’s decision can stand or decision from any male relativities. To support how men found their wives decision inferior, a male respondent from the FGDS had this to say, ‘Hakuna uamuzi bibi anaweza kufanya bila Mimi Kwa sababu kita Kila kita Kwa huo mji Ni changu, hata yeye na watototo wote ni wangu. Kwani bwana ndiye hulipa mahari’ (What can my wife decide without me, the children and everything in the home belongs to me. Since iam the one who paid dowry These sediments were supported in all FGDS. One of the female respondents had the following to say to support the male dominance in the community. ; ‘Wanaume hapa hawapatii wanawake nafasi kwa jambo lolote hata ukifanya bihashara ndogondogo lazima uwapatie hela zote, kwa hivyo kama motto motto ni mgonjwa ni lazima ungojee uamuzi wa mzee. Jambo la kusikititisha ni kuwa wakati mwengine wakunywa au kutumia hela zote vibaya pasi na kukumbuka nyumbani’ (Men here are really oppressive, even if you do some small scale business, you must surrender all the cash to them so that they can give you little by little, therefore incase the child is sick and you have to take him to the hospital, then you have to wait, sometimes they drink or misuse all the money.
From Table 4.4 above on key times when respondents washed hands, the survey found out that, 48.5% washed their hands before meals, 35.9% washed after visiting toilet, 14.8% washed theirs before feeding child and 2.7% washed their hand other times. From the FGDs, On hand washing it emerged that most people used the same container for washing their hands beginning with the head of the household and finishing with the smallest child this was echoed by the following respondent as quoted: ‘Hapa huwa tunanawa mikono tukitumia chombo kimoja na maji ni hajo.. Baba mwenye mji ndiye unawa kwanza kisha vijana waaale barobaro na mwisho huwa ni watoto wale wadogo’ (Here, we normally use one container while washing hands., the practice here is that men especially the owners of the homes wash first, followed by the other members of the family the children washes last in the same container same water).
4.5 Knowledge of common illnesses influencing mortality.

Table 4.5 Distribution of respondents by Knowledge of common signs and symptoms of a sick child by respondent

<table>
<thead>
<tr>
<th>Signs</th>
<th>Frequency</th>
<th>Percent age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fevers, difficult breathing, convulsions</td>
<td>104</td>
<td>52%</td>
</tr>
<tr>
<td>Convulsions, vomiting</td>
<td>72</td>
<td>36%</td>
</tr>
<tr>
<td>Difficult breathing</td>
<td>21</td>
<td>11%</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.9 shows the distribution pattern of respondent’s knowledge on common signs of childhood illnesses in the study area. (The diseases under consideration for this study included, malaria, Diarrhea, pneumonia, ARI). From the study findings, 51.8% identified fever, difficult breathing and convulsions as major signs, 36.2% identified convulsions and vomiting, 10.6% mentioned difficult breathing and 1.5% mentioned other signs. Generally from the study it emerged that respondents had good knowledge of signs of diseases afflicting children. From the FGDS it emerged that most participants had knowledge on common diseases but they had different ways of associating causes of diseases. Diseases such measles diarrhea and malaria were associated with some deviation from the norms of the society for example, the belief that if a man or woman who has a small child has sex intercourse with a person of the opposite sex who is not the child’s parent, it is believed that this would adversely affect the child with profuse diarrhea that can even cause death if not taken to the traditional healer. It came out from the groups that in such events many parents prefer starting with the traditional herbalist for assistance if child gets sick but those educated were said to be taking their children to
health facilities when sick.

The following discussion from one of the key informants can support the findings,

‘Hata kuchanganya nguo za wachanga na watu wazima huenda ikaleta ugonjwa kwa motto kama kuharisha’. (Even mixing clothes can cause diarrhea to children. If the child’s clothes are mixed with the ones for an uncle, this can easily affect the child)

Since malaria has been identified as being a leading cause of morbidity and mortality amongst children in Kilifi District (MOH, 2008), the investigator wanted to find out whether the respondents were able to identify its signs correctly. The results from the study found that, 38% of respondents could identify two signs correctly, 52% could identify three signs correctly and 10.0% could not mention any sign. Almost half of the respondents could identify malaria signs correctly. When respondents were interviewed on children who had shown signs of diseases in last two weeks prior to the study, 19.8% of respondents said their children had shown signs of disease, while 75.9% said that their children did not show any sign and 4.3% had no response to the question. On net usage, those children who had slept under treated nets the previous night prior to the study were 75% against 25% of those who had not.
When respondents were asked on who makes decision when to take child to hospital when the child sick, 42% made the decisions by themselves, 36% had their decisions made by their husbands, 21% had the decisions made by their mother’s in-law and 2% had the decisions made by other people. These sentiments were echoed by participants in the focus group discussions when commenting on family planning decisions.
Figure 4.4 above shows the distribution of respondents regarding those who had lost children in last two years prior to the study. The responses were recorded as follows, 10.5% answered yes while 88.4% said no and 1.1% had no answer. Amongst those who had lost children 57% of children had died between the ages of 1 day to 6 months, 24% had died between the age of 7 months - 1 year and 19% had died between the age of 1 year and above.
4.61 Statistical tests on relationship between variables and child mortality

Table 4.6 Relationship between demographic factors and child mortality. N=200

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dead child (Dependent variable)</th>
<th>( \chi^2 ) Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes/proportion</td>
<td>Proportion</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>17</td>
</tr>
<tr>
<td>Age</td>
<td>18-27yrs</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>28-37yrs</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>38-47yrs</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>48and above</td>
<td>2</td>
</tr>
<tr>
<td>Parity</td>
<td>1-2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3-4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5 and above</td>
<td>11</td>
</tr>
</tbody>
</table>

Results from the table above indicate that female respondents had a higher proportion (8.5%) of mortality as compared to those children dead and were cared for by male respondents. On cross tabulation no significant relationship was established between sex of respondent and child mortality, \( p>0.005 \) Respondents in the age category of 38-47 years were found to have a higher proportion (5%) of dead children. On cross tabulation, age of respondent was found to have significant association on child mortality \( p<0.005 \).

The study also shows that a respondent who had 5 births and above recorded more deaths (5.5%) and least mortality was registered amongst caretakers who had 1-2 children. On cross tabulation, parity was found to have significant influence on child mortality, \( p<0.005 \).
4.6.2 Practices influencing child mortality

Table 4.7 Relationship between practices and child mortality

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable (Dead child)</th>
<th>$\chi^2$ Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>9</td>
<td>4.5%</td>
</tr>
<tr>
<td>Home</td>
<td>12</td>
<td>6%</td>
</tr>
<tr>
<td>Period of breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 yr</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>1-2 yrs</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>Above 2 yrs</td>
<td>30.015</td>
<td>1.5%</td>
</tr>
<tr>
<td>Immunization status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Not completed</td>
<td>15</td>
<td>7.5%</td>
</tr>
<tr>
<td>No response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First aid when child is sick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>5(0.025)</td>
<td>2.5%</td>
</tr>
<tr>
<td>Shop</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Herbalist</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Decision making</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent/Caretaker</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>110.055</td>
<td>5.5%</td>
</tr>
<tr>
<td>Key times when hands are washed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before meals</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>After toilet</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Before feeding child</td>
<td>3</td>
<td>1.5%</td>
</tr>
<tr>
<td>Others times</td>
<td>2</td>
<td>1%</td>
</tr>
</tbody>
</table>

Data was analyzed to seek for relationships between various practices observed by respondents in relation to how they influenced children deaths. On analysis, respondents who delivered their children at home were found to have high proportions of mortality (6%). On cross tabulation place where one of delivered was found to have significant influence on child mortality p<0.005. Results from the study reveal that there was higher mortality amongst children who were breast fed for less than one year. On cross
tabulation when relationship between periods of breastfeeding was sought, breastfeeding was found to significantly influence child mortality. P<0.005. On immunization status of the child, the study found out that there was a higher mortality (7.5%) amongst children who had not completed the immunization schedule. When relationship was sought between immunization completion, and child death, a significant association was established. P<0.005. On decision making, the proportion on mortality was slightly higher amongst children belonging to respondents whose decisions were made by other people other than the respondent. On cross tabulation, decision-making when child was sick was found to have significant association with child deaths p=0.005. On hand washing behaviors, results reveal that more children died amongst respondents who washed their hands only before meals (5%). On cross tabulation a significant relationship was found between times when hands are washed and child mortality. P<0.005

Table 4.8 Relationship between socioeconomic factors and child mortality

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dead child (dependent variable)</th>
<th>( \chi^2 ) Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Percentage/proportion (dead)</td>
</tr>
<tr>
<td>Occupation of Respondent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsistence Farming</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Casual labor</td>
<td>10</td>
<td>5.5%</td>
</tr>
<tr>
<td>Small scale business</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Fulltime time employed</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Level of education of Respondent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No ed.</td>
<td>12</td>
<td>6%</td>
</tr>
<tr>
<td>Primary</td>
<td>5</td>
<td>2.5%</td>
</tr>
<tr>
<td>Secondary</td>
<td>3</td>
<td>1.5%</td>
</tr>
<tr>
<td>College</td>
<td>1</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
Socio economic factors influencing child mortality were analyzed as shown on table 4.2.3. Results show that a higher proportion of children deaths (5.5%) was recorded amongst respondents who were engaged in casual labor while the least deaths were recorded amongst children of respondents who were on full time employment (0.5%). When relationship was sought between occupation of respondent and child death, there was no significant relationship observed >0.005. More deaths (6%) of under five children were recorded amongst respondents who had no formal education. The study result reveals that, the least mortality (0.5%) was recorded amongst children of respondents who had attained college level of education. On cross tabulation, education level of respondent was found to have significant influence on children deaths. P=0.005.

The study found out that high mortality was recorded in the rural locations of Tezo, Ngerenya, Roka and Matsangoni with a total mortality of 9% against the one of Kilifi Town location which has a peri-urban setting with a mortality of 1.5%. When residency was analyzed, a relationship was established. P<0.005, meaning that the locality where a child is found could influence child survival. The results indicate that
least mortality (2%) was recorded amongst caretakers who used tap water for drinking for their children unlike (8.5%) mortality recorded for those who used both borehole and well. However, on cross-tabulation source of water was found to have no significant relationship with child deaths, \( p > 0.005 \).

4.7 Discussion

4.7.1 Demographic characteristics of respondents

Child mortality rates in this study were found to be at 105/1000. These results are in contrast with the findings of KDHS 2008 that found out that child mortality was at 74/1000 nationally while the coastal mortality was estimated at 84/1000. The results however are in agreement with the findings of KDHS 2003 results that estimated the national figure at 105/1000 and the coastal figure at that time at 115/1000. In this study, most children, more than half (57) % had died between the ages of 1 day to 6 months, 24% had died between the age of 7 months - 1 year and 19% had died between the age of 1 year and above. These results imply that most children died at the neonatal and infant stages. These findings are in contrast with results from KDHS, 2008 which showed that infant mortality rates are at 52/1000.

Caretaker's sex did not show any significant influence on child mortality. This can be interpreted by the fact that if children received good care regardless of who is caring for them, then their health can be assured. The age of the caretaker was found to have a significant influence on child mortality. This phenomena can be interpreted in two dimensions; First the young caretakers who are mainly women have lower parity, and second this category of caretakers are not keen on revealing or disclosing deaths of their
children especially the single mothers. Caretakers in the age bracket of 38-47 years are prone to losing many children because of high parity and increased responsibilities that may deter their responsible attention to child care. They also tend to give accurate history of their dead children. Similar findings have been documented in several studies (KDHS, 2003; Ouma, 2006, Mbulu et al, 2004, Mutunga, 2004).

4.7.2 Socio-economic characteristics

Illiteracy impacts upon the performance of the PHC system through its contribution to the higher incidence of ill-health among the uneducated and their lower capacity to take advantage of existing health facilities. For example, illiteracy is not only related to poverty; it also has implications for malnutrition, high infant and child mortality. It has been documented, that for example, that the probability of death among children born to illiterate mothers is two times as high as those born to literate mothers (Social Determinants of Health- Nigerian Perspective, 2005).

Mother’s education can exert a positive influence on children’s health and survival. Under-five mortality is noticeably lower in this study for mothers who have completed secondary and to those who have attained college education and mortality is highest amongst mothers who have no formal education. Significant relationship was found between child mortality with the level of education attained by a caretaker, especially where the caretaker was the mother of the child. As education increased, childhood mortality decreased. This is similar with KDHS, 2008 results which found that higher mortalities were observed amongst mothers who had no education while least mortality
was registered among those who had primary or secondary school education. Previous researches done in different countries suggest that there is a strong relationship between maternal education and child mortality (Mbulu et al., 2004, Khabbir, 2005, Omolundo.JT, 2005, Zanet, 2005). This findings could be due to the fact that maternal education enhances a mother's health choice for children, improves cleanliness at home and enhances child quality in terms of fewer children. Furthermore consumption and use of pre-natal care during pregnancy which in turn leads to an improvement of both maternal and child health depends on maternal education. A strong relationship was established between respondent's education and child mortality.

Unemployment affects not only access to health but also the health status of individuals. It has been established, for example, that job security increases health, well-being and job satisfaction. Higher rates of unemployment cause more illness and premature deaths to both adults and children (UNDP, 2005). Women form about 80% of the global labor force. Participation of caretakers in the labor force showed that, those caretakers who were involved in casual work and small scale businesses had higher child mortality levels than those who were on salaried or on full time employment and subsistence farming. This could be due to the reasons that, caretakers on full time employment work for specific number of hours that they work and go back home early enough to care for their children. Caretaker's who participate on casual work and small scale businesses spend very little time on child rearing and domestic work. Reduction on maternal time devoted to child rearing may be directly related to child mortality through lose of specific
elements desired for childcare such as breastfeeding and supervision during feeding (WHO, 2007).

Accessibility, availability, and affordability of adequate health care contribute to child health, growth and survival. The availability of quality services has a major impact on the pattern of utilization of these services (Rustein, 2003). The study found out that most respondents had to walk for long distances (more than 5 kilometers) away to access services like immunization for their children and antenatal services for the pregnant mother.

4.7.3 Practices Influencing Child Mortality

An important element in reducing health risks for mothers and children is to increase the proportion of babies that are delivered under medical supervision in health facilities. Proper medical attention and hygienic conditions during delivery can reduce the risk of infections and facilitate management of complications that can cause death or serious illness for the mother and/or the newborn child (UNFPA, 2008). Therefore, assisted delivery is also an important determinant of child survival. In many African countries many children die owing to the lack of safe delivery facilities. TBAs, relatives and neighbors attend most of the deliveries, a practice which presents risks to both the mother and the newborn baby. (Mutia and others, 2005) The study results indicate that high mortality was registered amongst children born at home than amongst those that were delivered at a health facility. These results compare well with the demographic and health survey information on maternal and child health that indicates that, about 95 per cent of births in Kenya are delivered at home and more than half of these births (57 per cent) are
attended by untrained traditional birth attendants (TBAs) and other relatives and that only 25 percent were attended to by professional doctors at the health facility (ROK, 2008). A survey on maternal and child health indicators carried out in Kilifi, revealed that only 60% of children were fully immunized, and that only about 27% of mothers were delivered by skilled birth attendants while only 37% of the pregnant mothers attended the 4 ante natal visits to clinics (Plan, 2007).

Infant feeding has an impact on both the child and the mother. Feeding practices are important determinants of children’s nutritional status and many studies have shown the beneficial effects of breastfeeding on the nutritional status, morbidity and mortality of infants (Hobcraft and others, 2004; Benefo and Parnell, 2001). Breastfeeding also has an indirect effect on the postpartum fecundity of mothers (Kennedy, 2003). In particular, more frequent breastfeeding is associated with longer periods of postpartum amenorrhea, which in turn are related to longer birth intervals and lower fertility levels (Salway, 2005). The effects of breastfeeding on infant survival seem to be greater during the early months of life (Shah and Khanna, 2004). The information presented here suggests that children who are breastfed are more likely to survive than those who are not breastfed. The study findings indicate that less mortality were registered amongst children that had been breast fed for more than two years and the highest were amongst children that had been breastfed for less than one year. This study compares well with other studies that were done in Ghana and showed that children who were exclusively breastfeed for six months, and continued to breast feed for up to twenty four months had higher chances of surviving (WHO, 20006, GHS, 2006, UNICEF, 2008)
The immunization of children is an important factor that contributes to the child’s chances of survival. The data shows that the immunization status of children is a factor in their survival status. In this study high mortality was registered amongst children who had not completed immunization schedule. The chances of survival of children who have been immunized are higher than those of children who have not been immunized.

The study results indicate that in Kilifi District, women play an inferior role in deciding on matters pertaining to children. This practice is deep rooted in the culture of the Mijikenda. This was so evident in the FGDS where it emerged that the man was perceived to be the sole decision maker together with mother in-laws. In this study, slightly higher mortality was registered amongst caretakers who had decisions made by other people when children were sick, however, the difference in mortality was minimal (0.5%). On cross tabulation, a significant relationship was established between decision making and child mortality. This implies that the way decisions are made when the child is ill is very critical and could determine whether the child would survive or die.

Hand washing is critical in reducing diarrhea diseases (WHO, 2008). It is documented that proper hand washing with soap can reduce disease by at least 75%. From this study, it is clear that the method used by caretakers to wash hands is deficient. People have often adopted the method of using same container, same water to clean hands. The harmful part of it is when the eldest person in the family washes first and the trend continues leaving the child as the last. This implies that the child washes in the dirty water exposing the child to pathogens. The results indicate that least mortalities were registered amongst caretakers who washed hands before feeding child meaning that if this
practice could be adopted by all caretakers with UFC, there would be a substantial reduction in deaths.

4.7.4 Environmental health factors

The urban – rural divide is implicated in the differences in living conditions between urban and rural areas, in the distribution of the population between the two areas and in several other factors. Differences in these factors impact upon the performance of PHC in a number of ways. First, it imposes different challenges on PHC in urban and rural areas. It has been observed for example, that living conditions, especially with respect to the availability of electricity, good roads, water, transportation, communication, poverty and quality of life tend to be much higher in urban than rural areas (Imoludu, 2005). Another implication is the pattern and distribution of the disease burden between urban and rural areas. Given the fact that urban areas have more PHC facilities and that other secondary and tertiary health care facilities tend to be located in these same areas, the health needs of urban populations tend to be better served than those of rural areas. If we take into consideration the additional factor of higher poverty in the rural areas, the lower capacity of rural communities to access health care when they need it will translate into worse health indices in the rural areas than urban areas. This study found out that higher mortality was registered in the four locations that are rural and the least in Kilifi Township location which is peri-urban. These findings are in contrast with the ones of KDHS, 2008 which found child mortalities to be higher in the urban (63 deaths per every 1000 live births) than in the rural (58 deaths per every 1000 live births). However similar studies carried out in Bangladesh found out that place of residency had no significant
effect on child mortality (Jamal Uddin et al, 2009). Less mortality was reported amongst respondents who were in their own houses than those who had rented or were housed in one way or the other. This could imply that those respondents who owned with their own houses enjoyed better living standards than those who had to rent. These results compare well with results from a study carried out in Tanzania on household factors affecting child survival, which found out that, those living conditions, especially water supply and sanitary conditions directly affected contamination of the household environment and thus could facilitate the dissemination and incidence of various infectious diseases, particularly diarrhea (Jobson, 2006). The likelihood of contracting certain diseases and the persistence of those diseases are directly associated with the material conditions of life in which the child is born. Adequate housing, safe drinking water within the dwelling and good sanitary facilities favor the creation of a hygienic environment, which helps to prevent disease and enables the child to survive. These conditions are likely to be enjoyed by those who own their own homes. From the observations made during the study, most houses in the rural were of temporary nature, lacked ventilation mechanisms, and more often people shared living rooms with their domestic animals. The observations also revealed that most of the rural homes lacked latrine facilities and the most common method of excreta disposal was bush defecation.

These conditions combined, attribute to a dangerous practice that could lead to serious disease outbreaks given that most inhabitants in the study area used water from un safe sources. These findings are in agreement with findings of a study carried out by (IRS, 2004) and showed that 94.6% of the homesteads in Kilifi used bush for defecation. Other studies done in eight West African countries showed that little attention had been paid to
the development of national policies on the issue of sanitation in the homesteads (SIDA, 1995).

4.7.5 Knowledge on common signs of illnesses

Death due to pneumonia, fever, asthma, diarrhea and respiratory diseases can be greatly reduced by timely treatment of infant and children. Therefore, treatment place is also an important factor for children survival status. In this study, high mortality were recorded amongst caretakers who sought for care from herbalists and other places while least deaths were recorded by those who sought for hospital care whenever child was ill. This is in agreement with findings from other studies that showed that child mortality was higher in places where caretakers sought treatment from traditional doctors (Nazru Islam et al., 2009)

Malaria and pneumonia were found to be the most prevalent diseases affecting the under five children in Kilifi. This was assessed through the gauging of caretaker's perception of common ailments afflicting children in the study area together with the common signs of illnesses. This is in agreement with other studies which have found pneumonia, malaria and diarrhea to be among the top killer diseases of under five children in the Sub-Saharan region of African Continent (WHO, 2008, UNICEF, 2009, UNDP, 2008). The study results show that caretaker's first choice of care was hospital, while those in the rural bought medicine from the shop as well as going to traditional doctors. This can be cited as major cause of delay in finding proper medical care for the children that leads to misdiagnosis and wrong treatment leading to complications, resulting to disabilities and in some cases death of these children. Knowledge on signs of illnesses was found high
amongst caretakers in this study but the researcher found out that there were many myths associated to causes of sickness in children which forced caretakers to seek for alternative care before resulting to modern health care. This coupled with delays in decision making when child was sick was found to harm the health of the child and hence leading to disabilities and deaths which could prevented if correct measures were taken promptly. There were many believes on causes of diseases, for example, conditions like convulsions popularly known as”mnyama wa dzulu” were viewed as to be due to witchcraft and therefore could only be cured through the traditional medicine man. Diarrhorhea in children was viewed as “vitio” a traditional cause due to extra marital sex affair where it is believed that one of the child’s parents had an affair with a person who is not the child’s parent. These results compare well with findings of a study carried out in Kilifi, which found knowledge on signs that would prompt mothers to seek for treatment at 90.5% (Kathy et at., 2003). Results of a another study carried out in Arusha on c-IMCI revealed that caretakers sought for alternative medications such as from the traditional healer and shops and that most care takers could identify danger signs in children but were seeking for attention from traditional herbalist only to visit a health practitioner when the condition worsened (Mohamed et al., 2009).
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary
This study revealed that most children below the age of five were mostly cared for by in Kilifi district. Knowledge of childhood illnesses was found to be good though caretakers sought for health care from various sources other than the health facility. Immunization coverage for children was found to be below the national set targets. There were several myths associated with causes of diseases; this made people seek health care from diversified sources depending on what was perceived to be the cause of disease. Practices by caretakers were found to influence child mortality such as home deliveries which was most preferred by caretakers. The type of occupation that a caretaker was engaged in, education level and parity was found to significantly influencing the health outcome of a child.

5.2 Conclusion
Caretakers’ occupation, education, place of residency and ownership, parity, place of delivery of child, decision making when child was sick emerged as the key factors influencing child health in communities in Kilifi District. In these communities overindulgence of mothers in small scale business and casual work in urban centers and in the quarries also compromised other seeking practices such as use of antenatal clinics attendance, child immunization and breastfeeding. These can contribute to the high child morbidity and mortality reported in Kilifi district and hence the need for focused health education and other services targeted to those caretakers at home. Distances to health
facilities, diversified myths on causes of child illnesses should be addressed through community outreaches and health education at household level.

5.3 Recommendations

- The GOK and other health stakeholders in the district should put emphasis on health education on safe motherhood and early health seeking behaviors as this would ensure hospital deliveries or deliveries by skilled midwives thus leading to safe deliveries and reducing chances of neonatal infections.

- Policies to expand educational opportunities, particularly for girls, this would increase the access of people to information and improve their ability to make good use of it in order to lead healthier lives. The same goes for policies that work to ensure effective and accessible health services for all. Because people's ability to improve their health depends so much on economic conditions and education, the policy implications are clear that the Government should consider strategies to reduce poverty, expand schooling (particularly for girls), and help to strengthen women's ability to care for their families and make informed decisions when children are sick.

- MOH Kilifi, NGOs who have interest on child health and all other stakeholders should introduce community health education programs to educate communities on the importance of community integrated management of childhood illnesses (C-IMCI) and train care takers on good home practices.
• The GOK through the ministry of Social services in collaboration with MOH and other health stakeholders in the district should encourage male participation in child rearing. This can be done though organized groups.

• The government should pay direct attention to community characteristics, such as access to primary health care facilities, immunization campaigns and the nature of water and sanitation systems, in order to develop health policies that incorporate dimensions of investments in child health and improve child survival reduce mortality.

5.4 Further research

Comparative study to be carried out in different districts to establish whether community strategy has had any impact in the community the reduction of child mortality.
References


Amos Malisawa Nyirenda (2003): A Community-based Study on the Pattern and Determinants of Maternal Services Utilization In Karagwe District, Tanzania 2003 pp89-120


Iain and Laura Reichebach (2004.) "Reproductive and sexual health services: expanding access and enhancing quality", in Gita Senegal


Ministry of Health (2003), the National Health Sector Strategic Plan; 1999-2004 Nairobi Kenya pp 7-56.


Appendix i

MAP OF KILIFI IN RELATION TO MAP OF KENYA
Appendix ii (Questionnaire)

FOR USE WITH MOTHERS OF CHILD BEARING AGE

Title of study _________________
Country ______________________
Year conducted ________________

001 Questionnaire identification No
002 Province
003 District
004 Division
005 Location
006 Site

Introduction: My name is Esther Maweu a post graduate student from Kenyatta University. Am taking a masters degree in Public Health (MPH). I am in my final year of studies and am required to carry out research in partial fulfillment of the award.

Confidentiality and Consent; I am going to ask you some questions of which are very personal that some people find hard to answer. Your answers will be kept completely confidential. Your name will not be written on this form and will never be used in connection with any information you are going to give me. You do not have to answer any question you do not want to answer and you may end this interview at any time you want to. However your honest answers to these questions will help us better understand the community’s perception and practices on household factors influencing child survival and hence be able to find mitigation strategies to combat the same. I will appreciate greatly your help in responding to this survey. The interview will take about 45 minutes. Would you be willing to participate?

YES ------------NO.............

Signature by interviewee ---------------------------------------------------------------

Result code; Completed 1
Respondent not available 2
Refused 3
Partially completed 4
Others 5

007------------------------Interviewers Code
Name
THE CARETAKER QUESTIONNAIRE INCLUDES THE FOLLOWING SECTIONS

Section O - Questionnaire identification data (8 codes)  
Section A - Background characteristics  
Section B - Practices by caretakers affecting child survival  
Section C - Knowledge, Attitudes, opinions and Practices on environmental factors affecting child survival  

Total number of questions
SECTION A

QUESTIONARE TO CARETAKERS

Social Demographic Information of Respondent (Enter the information given by respondent in the dotted lines)
1. Sex: a) Female (b) male
2. Age (years) 18-28, (2) 29-38, (3) 39-48, (4) 49 and above
3. Level of Education of respondent, (a) Primary school, (b) Secondary school, (c) Tertiary (d) No education
4. Occupation (of respondent), (a) Full time, (b) Casual, (c) Farmer, (d) small scale business
5. No of children--------------------------------------a) One, (b) Two-five, (c) More than five
6. Locality of respondent
   A) Kilifi township, (b) Tezo, (c) Roka, (d) Ngerenya, (e) Matsangoni
7. Ownership of residence by respondent, (a) Owner occupied, (b) Rented, (c) Others------
   ----------------------------------------------------------------------------------------

SECTION B; PRACTICES BY CARETAKERS INFLUENCING CHILD SURVIVAL

QUESTIONARE TO CARETAKERS
SHOULD BE ADMINISTERED TO MOTHERS OF UF. THE INTERVIEWER SHOULD ENTER INFORMATION BY TICKING CORRECT ANSWERS GIVEN)
8. Where did you deliver your child?
   a) Health Facility
   b) Home
   c) Others (specify) ---------------------------------------------
   ----------------------------------------------------------------------------------------

9. Have you ever breastfed your child since birth?
   a) Yes
   b) No (SKIP TO 16)
10. For how long have you breastfed your child?
    a) Less than six months
    b) One year
    c) More than one year
    d) Others (specify)-----------------------------------------------
11. If you have never breast fed your child please give reasons for the action
    a) Mother stays away from home
    b) Mother passed on immediately after delivery
    c) Mother is sick
12. Have you heard of family planning services?
   a) Yes
   b) No (go to 20)

13. If yes, do you practice family planning?
   a) Yes
   b) No (go to 20)

14. If Yes, Who decided that you should practice family planning?
   1) respondent/caretaker
   b) Husband
   c) Mother-in-law
   d) Others (specify)

15. If no, give reasons why you don’t practice

16. Has your child attended child welfare clinic?
   a) Yes
   b) No (go to 19)

17. Has child completed immunization schedule?
   a) Yes (check from card) (SKIP TO 24)
   b) No,
   4) Other (specify)

18. Give reasons why child has not completed schedule (tick all given answers)
   - Child not yet nine months
   - Not a priority
   - Health facility very far
   - Mother pregnant with another child
   - Vaccines out of stock
   - Mother has another child
   - Others (specify)

19. When child is sick where do you first seek for help?
   a) Health facility
   b) Shop
   c) Traditional healer
   d) Others (specify)

20. Who decides when to take child to hospital when child is sick?
   a) caretaker/Respondent
b) Husband

c) Mother in-law

d) Others (specify)

21. What signs and symptoms would prompt you to say that your child is sick?
- Fever
- Convulsions
- Difficult in breathing
- Restlessness
- Crying
- Not playful
- Inability to suck
- Inability to feed
- Others (please specify)

22. Which are common diseases affecting children in your area?

23. Has your child shown any signs of diseases in the last two weeks?
   a) Yes
   b) No (SKIP TO 30)

24. Mention signs experienced by child (tick appropriately)
   Fever, difficult breathing, Vomiting, diarrhea, Cough, unable to breastfeed

SECTION C

KNOWLEDGE, ATTITUDE, OPINIONS AND PRACTICES ON ENVIRONMENTAL FACTORS AFFECTING CHILD SURVIVAL
(This section will deal with factors such as water availability and safety, waste handling and diseases that can be caused by poor handling, and opinions on commonly occurring diseases affecting the child. The interviewer should tick in correct answers as given by respondents)

25. What is the source of drinking water in your house?
   a) Tap
   b) Well
   c) Borehole
   d) Others (Specify)

26. How long do you take to have the water in your house?
   (a) Immediately
   (b) Half an hour
   (c) More than one hour
   D) Others (specify)

27. Which are the key times when you wash your hands? Tick correct answers
   a) Before meals
   b) After visiting toilet
   c) Before feeding children
28. Mention signs that can lead you to say that a child has malaria (Tick correct answers appropriately)

- High body temperature (Fever)
- Shivering
- Child does not want to feed (anorexia/lack of appetite)
- Cough
- Vomiting
- Child is convulsing

(N.B If respondent mentions three vital signs correctly, and then can identify malaria in a child.)

29. How do you prevent children from contracting malaria at home?
   a) By ensuring that they sleep under a treated mosquito Net all the time
   b) By giving them clean water for drinking
   c) By protecting them with charms
   d) Others (specify)

30. Does your child sleep under ITN?
   a) Yes (Tell respondent to show you the net)
   b) No
   d) Others (specify)

31. If no, why doesn’t your child sleep under ITN?
   a) No money to purchase
   b) Nets speak at night
   c) Nets are very uncomfortable to sleep under
   d) Others (specify)

32. has any of your children passed away in the last TWO years?
   a) Yes
   b) No (Skip To 35)

33. Can you remember how old was the child?
   a) Less than six months
   b) One year
   c) Above one year
   d) Don’t know

34. Can you remember what caused the death?
   a) Yes
   b) No

35. Please explain briefly what may have caused the death

What do you think can be done to prevent childhood deaths?
Appendix iii

OBSERVATION CHECKLIST

a) Type of houses in the compound. Temporary -1, Permanent -2

b) Is house properly ventilated satisfactory-1, fairly satisfactory-2, poor-3

c) Presence of a water source in the compound. Yes –1, No –2

d) Type of water source present in the compound Tap-1, well-2, river-3

e) Presence of waste disposal method in the compound. Yes –1, No –2

f) Type of waste disposal method present burning-1, compost-2, crude dumping-

g) Physical appearance of homestead clean-1, dirty-2

h) Physical appearance of child healthy-1, sickly(child has signs of diseases

i) Evidence of ITN usage net hanged and in use-1, net not seen-2

j) What type of excreta disposal facility: pit latrine, water closet, aqua privy, Bush
Appendix iv

FOCUSED GROUP DISCUSSION (interview guide)

Guidelines for Focus Group Discussion

Title of study: Household factors influencing child mortality in Kilifi district

Name of main investigator: Esther Nzilani Maweu; MPH, Kenyatta University

Information to be given prior to discussion:

My name is Esther Nzilani Maweu. I am a student from Kenyatta University working with the Ministry of Health. We are conducting a study on household factors influencing child mortality in Kilifi. The information will be passed on to the District Health Management Team to help plan services for the future. I would like to invite you to participate in a group discussion to give your opinions on how people in this area perceive household factors influencing child mortality. If you agree, the discussion will take approximately forty-five minutes. It is important that everyone feels free to participate in the discussion openly, and that we are all prepared to each other opinions. Although we are not able to provide any benefits directly, we hope that the information you will give will lead to better services for the children of Kilifi and the whole country in the future. We will use codes instead of names while recording this discussion and in all later reports, so that you cannot be identified. Any information you give will only be read by people who are closely involved in conducting this study. Apart from the time taken, there are no disadvantages to taking part in this discussion. You have a free choice whether to participate or not to participate, and you are free to leave at any time if you change your mind. Thank you for participating.

Discussion guide

1. Children are the source of joy to many families including our own families back at home. However, it has been observed that many children below five years are dying from various causes. Many diseases and deaths occur at home. Many caretakers seek for different mitigation from different places. Where do the majority of expectant mothers from this area choose to deliver their children? (Probe for all places, what is used to cut the umbilical cord)

2. Where do most people dispose of excreta both for adults and children? (probe for any cultural implications in concerning excreta disposal

ii. Can it cause diseases (mention some of the diseases)

3. How often do you wash your hand and which are the key times you presume as a caretaker are ideal for hand washing? (probe for the way the washing is done) do you use soap while washing hand

4. Is there any improvement done to drinking water before it is given to children? (Probe further for explanation on methods of improvement?)

5. Who gives permission on when a child is to be taken for medical check up for example, for immunizations, for treatment, for general growth monitoring (probe further to know why)

6. What diseases commonly affect small children in this area? (Probe for signs of diseases)

(II) Where do most people seek for help when children get sick?

(III) Whether there are cultural beliefs on causes of child diseases
(IV) Which beliefs, how do they deal with such beliefs?
V) Do children get better afterwards?
7. In order to ensure that children grow to adults what are your opinions (what do you recommend to be done by both the government and individuals at home

Appendix v

Knowledge in N=200
Knowledge index of common signs of childhood diseases known to caretakers

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<th>frequency</th>
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<td>50-74</td>
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<td>15</td>
<td>Poor</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
</table>

Appendix vi

Knowledge index of caretaker’s ability to associate house environment and child disease N=200

<table>
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<td>good</td>
</tr>
<tr>
<td>Total</td>
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</table>
RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on, *A Study on Household-Related Factors Influencing Child Mortality in Kilifi District*'

I am pleased to inform you that you have been authorized to carry out research in Banari Division in Kilifi District for a period ending 31st December 2009.

You are advised to report to the District Commissioner and the District Medical Officer of Health, Kilifi District before embarking on your research.

On completion of your research, you are expected to submit two copies of your research report to this office.

PROF. S. A. ABDULRAZAK Ph.D, MBS
SECRETARY

Copy to:

The District Commissioner
Kilifi District

The District Medical Officer of Health
Kilifi District
Our Ref: 157/6027/03
Your Ref:

The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI.

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION

I write to introduce Ms. Esther Nzilani Maweu who is a Postgraduate Student of this University. She is registered for an M.P.H. degree programme in the Department of Public Health.

Ms. Maweu intends to conduct research for a project entitled, "A Study on Household-Related Factors Influencing Child Mortality in Kilifi District."

Any assistance given to her will be highly appreciated.

Yours faithfully,

PETER K. MUCHEMI
FOR: DEAN, GRADUATE SCHOOL
To: Whom It May Concern

RE: ESTHER NZILANI MAWEU
RESEARCH AUTHORIZATION

The above named who is a student at Kenyatta University (MPH Programme) has been granted permission to carry out a research on, A study on Household-Related Factors Influencing Child Mortality in Bahari Division in Kilifi District.

Please accord her necessary assistance.

Dr. D. Mulewa
District Medical Officer of Health
KILIFI

CC. District Commissioner
KILIFI DISTRICT

Date 7th May 2009