Factors affecting high infant mortality in Lesotho,2009

By

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Contents

ABBREVIATIONS

GDP-Gross Domestic Product

IMCI- Implementation of the Integrated Management of Childhood Illnesses

LDS- Lesotho Demographic Survey

LDHS – Lesotho Demographic and health Survey

SSA- Sub Saharan Africa

MDG- Millennium Development Goals

PMTCT- Prevention of Mother to Child Transmission

UNICEF- United Nations International Children's Emergency Fund

1 Introduction

This chapter begins with the background of the study which highlights the problem of infant mortality and its magnitude. The country background, importance of study, objective of study, justification, limitation, data sources and definition of key.

1.1 Introduction of the study

Infant mortality has been declining worldwide as a result of several factors, yet, about 10 million infants die each year. More than 90% of these infant deaths occur in the developing world (Hawkins, 2006). Infant mortality has been a major issue across the world for many years, particularly in the sub Saharan African region. Sub Saharan African countries have the highest infant mortality rates in the world, with infant mortality of 104 deaths per 1000 live births in 1990's, while the infant mortality rate for other less developed nations was 71 deaths per 1000 live births (Kalipeni, 2000). Sub Saharan countries are acknowledged as countries that form south of the Saharan Desert (Newworldencyclopedia.org, 2014).

Diarrhoea is amongst the leading causes of mortality of under 5 children, this is based on findings by the World Health Organization. Diarrhea is defined as a passage of loose or watery stools occurring three or more times in a 24-hour period (Rehydrate.org, 2014). One of the risk factors linked to diarrhoea is unsafe drinking water and toilet facilities. This is a concern especially in sub Saharan Africa. This is due to children in the region, been 15 times more likely to die before the age of five than children in other regions.(WHO, 2014).

Social-cultural and socio-economic factors in sub Saharan Africa have been highlighted, amongst others, as having a significant influence on infant mortality. This findings were based on a study by A Omariba, Beaujot, and Rajulton (2008). The study was able to signify that socio cultural and socio economic factors were contributors towards the high number of infant mortality in sub Saharan Africa.

Infant and child mortality has declined dramatically during the 20[th]century in Lesotho as a whole. Yet despite the decline, Lesotho is still experiencing high infant and child mortality as compared to other developing nations like South Africa, Botswana, Egypt etc (Rehydrate.org, 2014). Developing countries are considered as been poor countries.

This study seeks to identify the relationship and the affects of mother's education, place of residence, type of toilet facilities, wealth index, sex of the child and source of drinking water on infant mortality in Lesotho particularly during 2009-2010.

1.2 Country background

Lesotho is a small, mountainous kingdom situated in the southern part of Africa where it is completely surrounded by the republic of South Africa. The country is divided into 10 administrative districts with a total area of about 30,355 square kilometres (LDHS 2009).

1.3 Importance of the study

The study of infant mortality is important for a number of reasons: mortality occurs early in life and its level is relatively high; second its causes are largely different from those that operate at older ages; third, it is a useful indicator of health status and also of the standard of living of a population (Woldemicael 1999).

Another critical concern with regards to infant mortality is meeting the standards set during the Millennium Summit of the United Nations in 2000, the goal was to reduce under 5 mortality rate by two thirds between 1990 and 2015. This is goal number 4 amongst the 8 goals which were set during the Millennium Summit (UNICEF, 2006).

The Kingdom of Lesotho is currently ranked 34th in terms of infant mortality rate, in Africa. This is based on data from 54 African countries in 2012 (Indexmundi.com, 2013). This is disturbing considering Africa has the highest infant mortality rates in the world. Africa account for 46% of the total infant and child mortality globally (Ined.fr, 2014)

It was reported that the infant mortality rate in Lesotho stood at 91 infants dying per 1000 live births. This means for every 1000 live births, 91 will die before their first birthday (LDHS,2009). Based on the high number, it paints a undesirable picture with regards to the health sector. This is truly a concern, especially in a country like Lesotho. This is due to the population residing in Lesotho declining from 2,130,819 (2009) to 1,930,493 (2012) (Indexmundi.com, 2013).

Infant mortality is considered as a serious concern, due to been closely related to life expectancy (M Hawkins, 2006). This is a major concern especially in sub Saharan Africa considering life expectancy in this particular region remains the lowest compared to other regions, globally. The life expectancy in Lesotho fell from 60 to 44 years between 1990 and 2005 (Earth-policy.org, 2015).

1.4 Objectives of the Study

This paper aims at highlighting the association between some selected factors and infant mortality More specifically, the main objectives of this study are:

• To analyze the current situation of infants in Lesotho

• To analyze mother's education, place of residence, type of toilet, source of drinking water, wealth index, sex of child and its affect on infant mortality

1.5 Data Sources

Data for the study were drawn from the Lesotho Demographic Health Survey carried out between Oct 2009 and Jan 2010 as part of the International program of DHS. The data for mortality estimates were collected in the childs history section of the women's questionnaire.

1.6 Justification

Sub Saharan Africa has the highest rates of infant mortality worldwide. Southern Africa in particular, is a region of concern and Lesotho is no different (Dube 2012).There are several factors which are critical in reducing infant and child mortality based on recent and previous studies. These factors includes, but not limited to wealth index, mother's occupation, age of the mother at child birth are some of the variables. For this particular study, we will be focusing specifically on mother's education, place of residence, wealth index, sex of the child and source of drinking water. The reason of interest with regards to these particular variables is due to their importance. Mother's education and place of residence are considered as important variables with regards to the survival of infants. Education is strongly associated with better health and nutrition, improved hygiene, higher child survival rates and lower fertility levels (Browne & Barrett, 1991). For improvement in hygiene to occur there must be certain factors that need to be considered and evaluated to enable the upgrading of hygiene to occur. This consists of but not limited to access to drinking water, type of toilet used etc.

Place of residence is considered as an important factor considering communication with neighbors and also accessibility of assistance in terms of hospitals and doctors are normally based more in urban areas

than rural areas. This results in infant mortality been lower in urban areas than rural areas (Mokoena, 2011).

Access to clean water is essential for mothers who do not breastfeed; the use of dirty containers and unsafe water for formula preparation puts infants' health at risk (Cheng, Watt, Newbold, Mente 2012). The findings were based on observations with the use of country level data. The data is from 193 countries.

Based on literature it has been indicated that childhood mortality is normally observed with an increase in age (McFalls,2007), however males have been males have been found to be biologically more at risk to mortality than females in virtually all the age groups throughout life. Boys typically have higher probabilities of both infants and child mortality (Ssewanyana and Younger, 2007). Both Mustafa and Odimengwu support this by highlighting that that there is a higher risk for infants surviving if they were male H E Mustafa and C Odimengwu (2008).

Lesotho is one of the least developed countries in sub Saharan Africa. It was ranked 160 among 187 countries, globally. This is based on the Human Development Index in 2010. HDI is a composite statistic of life expectancy, education, and income indices. It is used for assessing the development of a country (Hdr.undp.org, 2014) The Lesotho Government has introduced initiatives to help curb infant and child mortality like the 2003 roll-out of the PMTCT initiative, the Implementation of the IMCI and many others (UNDP Lesotho 2008).It is important that the government, policy makers etc due to lack of funds compared to other nations, concentrate on factors which are effective, will help curb infant mortality. The GDP of Lesotho was estimated to be worth 2.45 billion US dollars in 2012. Illustrating the GDP of Lesotho in the global economy, Lesotho's GDP value represented less than 0.01 percent of the world economy (Tradingeconomics.com, 2014)

Time is considered as critical especially with regards to infant and child mortality. Infant and child mortality should be reduced to two thirds by 2015. This is based on the Millennium development goals which were drafted during Millennium summit which took place in 2000. Prioritization must be done, considering there is insufficient budget and time. It is important that extensive research be conducted to evaluate the significance of factors in reducing infant mortality in order to minimize trial and error and to tackle this problem effectively. The outcome of this study will help determine the effects and contribution of the factors towards infant mortality.

1.7 Limitation

This study uses secondary data. The data was collected by the Lesotho Bureau of Statistics. The 2009 Demographic Health Survey data offers a good opportunity for exploring the association between infant mortality and key factors related to infant mortality (LDHS,2009).

1.8 Definition of key terms

1.8.1 Education attainment-refers to the last educational level achieved by the mother

1.8.2 Infant mortality- refers to death which occurred before the age of 1 year

1.8.3 Place of residence-refers to the place where the mother and infant reside

1.8.4 *Sex of the infant*- refers to the gender of the infant

1.8.5 Source of drinking water-refers to the method which is commonly used to gather water for drinking purposes

1.8.6 Source of drinking water- refers to the common method used to gather water for drinking purposes

1.8.7 *Toilet facility*- refers to kind of toilet facility members of the house usually use

1.8.8 *Wealth index*- refers to properties which is owned which enables the mother to be grouped depending on the items which are owned

2 Literature Review, Conceptual Framework and Trend

Introduction

This chapter presents the relevant literature review on infant mortality and its relationship with source of drinking water, toilet, educational attainment, place of residence, sex of child and wealth index. This chapter also comprises of the Conceptual and Theoretical Framework employed in this study and the trend of infant mortality

2.1 Literature Review

Educational attainment

Kabir , Islam , Ahmed, Barbhuiya, (2001) found that for both infants and children, the risk of dying is lower when mothers and fathers have a primary or a secondary education or higher. The study also shows that the risk of mortality is lower for a child than infant. Their findings are based on the Bangladesh Fertility Survey (BFS) 1989, Bangladesh Demographic and Health Survey (BDHS) which were done in 1993-94 and 1996-97.

Place of residence

Ghilagober, Bernhardt, Burstorm (2003) found that in Mozambique whether the mother resided in an urban or rural area. It had an impact on child survival, with infant mortality in rural Mozambique reported to be 145 deaths per 1000 live births and 125 deaths per 1000 live births in urban Mozambique.

Source of drinking water

Cheng, Schustster-Wallance, Watt, Newbold,A Mente (2012) found that improvement in water access was related to IMR, with the IMR decreasing with an increase in quartile of improved water source. The findings are based on country level data collected which was collected from 193 countries. The data was obtained from World Health Statistical Information Systemk, United Nations Children's Fund Child info and World Bank Open Data. The improvement of water access resulted in the improvement of IMR declining to 1.14 deaths per 1000.

Sex of infant

Wells (2000) argued that the sex difference in early stages, vulnerability can be attributed to the natural selection of optimal maternal strategies for maximizing lifetime reproductive success. With the application of Trievers Willard hypothesis of differential PI by sex, the paper supports similar findings that in terms of it is predicted that to remain greater for males than females fir any degree of early environmental stress.

Wealth index

Corsi and Subramanian (2014) found that improvement of coverage proven life saving interventions will likely contribute to reduction towards under 5 mortality. The design was conducted with the use of 81 Demographic and Health Surveys from 35 sub Saharan African countries. The methods used were ecological time series and child level regression models. The study a sample of 393,934 children.

Ezen, Agho, Dibley, Hall and Page (2015) found that poverty contributes towards infant mortality. The study was a cross sectional which applied three Nigerian Demographic and Health Surveys for years 2003,2008 and 2013. The findings were based on a sample collected from women with a total of 66 154 live born infants. The findings were based on the multivariate analyses which found that infants who resided in poor households have a higher chance of experiencing mortality.

2.2 Trend in infant mortality in Lesotho

This sub section present the trend of infant mortality in Lesotho. The rates were estimated with the use of LDS and LDHS. The trend was estimated with the use of LDS 2001, LDHS 2004 and LDHS 2009.
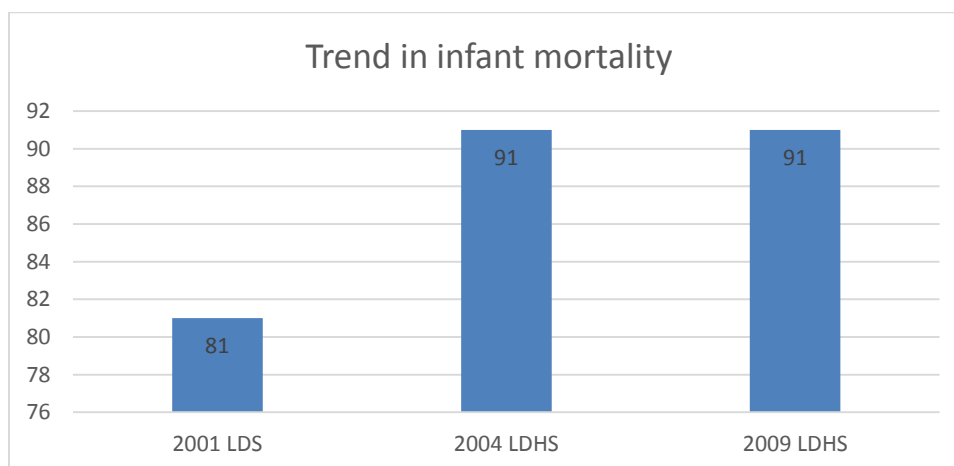

Figure 1 Trend of Infant Mortality Rate, Source LDHS 2009

The infant rate is 81 deaths per 1,000 live births in the first survey and appears to have increased and stabilized in the next two surveys to 91 deaths per 1 000 live births.

2.3 Conceptual framework

There are several framework that explain factors affecting infant mortality. For this particular study, the conceptual framework considered is the Mosley and Chen framework. Considering the Mosley and Chan framework is the most accepted framework for the study of child morbidity and mortality in the developing world, where the levels of infant and under-five mortality are high (Mosley and Chen 1984).
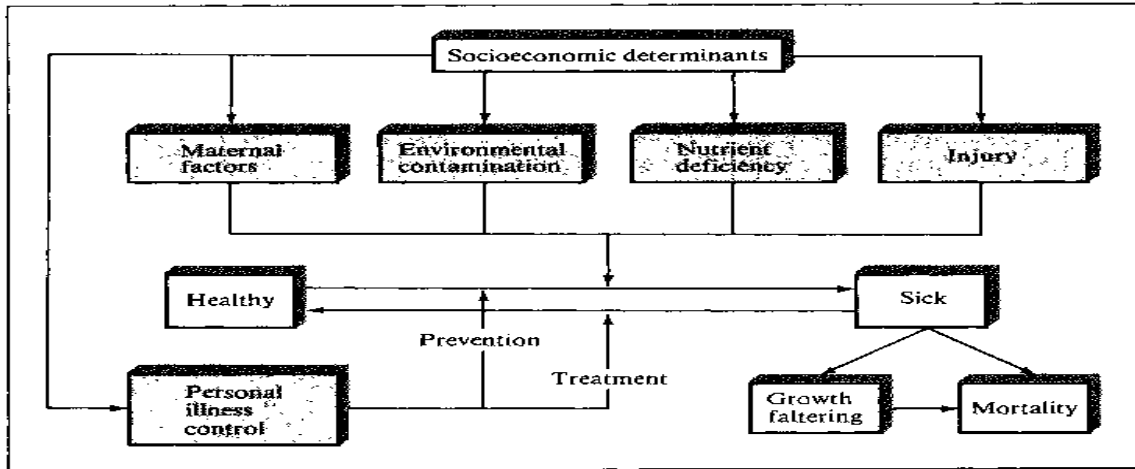
Figure 2, Source Mosley and Chen 1984

Considering this framework includes several factors. A second framework has been drafted specifically for this study since this study does not look at all the factors listed on the Mosley and Chan framework but only a few to cater for this particular study. The framework is based on the factors that will be investigated for this particular study

B) Conceptual framework related to this particular study

Figure 3: Conceptual framework for this particular study

Conceptual framework

Place of residence: Studies have noted significant differences in infant mortality according to place of their residence. The common distinticion widely adopted has been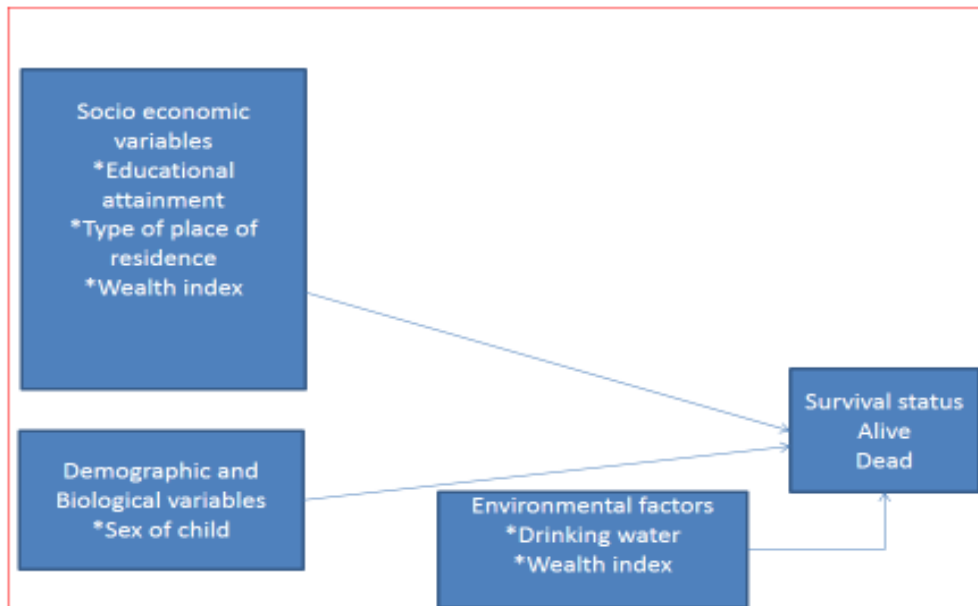 urban and rural. According to Ghilagober, Bernhardt, Burstorm (2003) place of residence is among the factors considered as been important towards the child survival. For this study place of residence will be used as an independent variable

Educational attainment: Education has been considered as an important knowledge towards taking care of children. Kabir, Islam , Ahmed, Barbhuiya, (2001) found that for both infants and children, the risk of dying is lower when mothers and fathers have a primary or a secondary education or higher.

Toilet facility and access to drinking: Studies have identified the 2 factors as been critical and resulting in several deaths in the five years of life. According to Meegama (1980) one of the main causes of death during this period of life is diarrhea diseases, including gastro-enteritis. The incidence of this disease depends mainly on two factors: availability and use of hygienically constructed lavatories and availability of uncontaminated drinking water.

Wealth index has been indicated as a key factor towards infant mortality. According to Adedini, C Odimengu, Imasiku, Ononokponi and Ibisomi (2013) wealth index among several factors is considered critical towards infant mortality. The findings are based on results from the use of 2008 Nigeria Demographic and Health Survey. The study considered both the individual and community level characteristics on infant mortality.

Sex of child has been indicated to be significant with regards to infant mortality, particularly in rural areas. The findings were obtained with the use of data collected from the Kenya DHS which was conducted in 2003. The data was able to indicate the importance and influence of sex of the infant particularly in rural areas (Mustafa and Odemengwu, 2008)

3 Methodology

3.1 Introduction
This chapter will discuss the methodology used in this study. This study uses secondary data driven from Lesotho Demographic and Health Survey of 2009. The datasets utilized were the Children's recodes for LDHS 2009. This study is a descriptive study.

3.2.1 Dependent Variable

The outcome variable in this study is infant mortality.Infant mortality is defined as the deaths of a child between the period of birth and their first birthday. From this sample the variable age at death (imputed in months) was used and child is alive (11 months and less were categorized into infant mortality). The interest on infant mortality in Lesotho was due to infant mortality been high as compared to similar countries.

Dependant variable (outcome variable)	Answer categories	Code
Infant Mortality	No	0
	Yes	1

Table 1, Source: computed using LDHS, 2009 raw data file

3.2.2 Independent Variables

The independent variable in this study, which were highlighted in the original Mosley and Chen (1984) framework. The independent variables are as follows mothers' education, place of residence, wealth index, type of toilet facility and source of drinking water.

3.3 Data Analysis

This study conducted an analysis on the appropriate variables at three levels. The first level is univariate analysis then bivariate analysis followed by multivariate analysis. These 3 levels of analysis are discussed at length in the following paragraphs

3.4.1 Univariate Analysis

The univariate analysis is conducted for the purpose of attaining the background characteristics of the women in Lesotho in relation to the appropriate variables. Tabulation of each independent variable resulted in an output of frequencies and percentages of the characteristics of the women in Lesotho. This is a method of summarising the variables used in the study. This information is then constructed into a frequency table.

3.4.2 Bivariate Analysis

The bivariate analysis is the second level of analysis which is undertaken in this study. This is performed on each independent variable against the dependent variable: infant mortality. This then indicates the

extent to which each of the independent variables is associated with the outcome infant mortality in Lesotho.

3.4.3 Multivariate Analysis
The multivariate analysis is the third level of analysis which is undertaken in this study. This is performed with use of the Cox proportional hazard regression model. The Cox proportional hazard regression model is a statistical technique used to analyse survival data. The model is similar to the multiple regression model as it allows for the investigation of the survival time of particular groups while simultaneously adjusting for other covariates.

4 Results
Introduction

These chapter present the results obtained from the study. First to be presented are results relating to the univariate analysis. This is followed by the bivariate analysis which focuses on the dependent variable against independent variable. The last part of the chapter presents results relating to the Cox's univariate and multivariate analyses aimed at examining the unadjusted and adjusted effect, respectively of infant mortality

4.1 Univariate Analysis
The univariate analysis made use of the women's survey from the Lesotho Demographic and Health Survey 2009. The outcome variable infant mortality was run, as well as each of the independent variables, to produce the following results

Univariate results

Dependant variable	Characteristic	Frequency	Percentage
(outcome variable)	**Infant mortality**		
	No	3, 671	91.80
	Yes	328	8.20
	Total	3,999	100
Independent variables	**Type of place of residence**		
	Urban	672	16.80
	Rural	3,327	83.20
	Total	3,999	100

	Source of drinking water		
	Improved source	2,801	73.84
	Non improved source	992	26.15
		3,793	100
	Flushing type toilet		
	No facility	1898	50.07
	Improved source	979	25.81
	Non improved source	915	24.12
		3.793	100
	Educational attainment		
	No education	90	2.25
	Primary	2,418	60.47
	Secondary	1,365	34.13
	Higher	126	3.15
	Total	3,999	100
	Wealth index		
	Poorest	1,175	29.38
	Poorer	896	22.41
	Middle	745	18.63
	Richer	666	16.65
	Richest	517	12.93
	Total	3,999	100
	Sex of infant		
	Male	2011	50.29
	Female	1988	49.71
	Total	3,999	100

Table2, Source: computed using LDHS, 2009 raw data file

Table 2 is a summary of the univariate analysis, which portrays the characteristics of the women and infant. The table indicates that there was a total number of 3 999 women in Lesotho who had infants. Thus 8.20% of infants experienced infant mortality in Lesotho. This can be further understood as 82 of every 1000 women in Lesotho were unfortunate to experience infant.

Independent variables

Place of residence

Lesotho is a country which has both urban and rural areas. The overwhelming majority of women live in rural Lesotho and this can be seen in table 2 where 83.20% of the women live in rural areas while 16.80% of them reported living in urban areas of Lesotho

Source of drinking water

Source of drinking water has been divided depending on type of source applied. Based on the table 2, it seems most women relied on improved source 73.85% followed by non-improved source, 26.15%.

Educational attainment

As seen in the table, 2.25% of the women have no education at all, but this is small percentage in comparison to the amount of the educated women. A total of 60.47% of women, have completed primary education and a significantly smaller percentage of women have completed secondary education, 34.13%. A small percentage of 3.15% have completed higher education.

Wealth index

Based on the table, it seems most women were grouped in the poorest group 29.38%. The groping is conducted by determining the items which the respondent owns. This is followed by poorer group (22.41%) based on items owned. The least group among the groups in terms of the wealth index is the richest with 517(12.93%) women.

Type of toilet facility

Based on table 2, it seems most women relied on no facility in terms of the toilet facility applied (50.07%) followed by pit improved source with 25.81% relying on it. The least used method is non improved source with 24.12%. The grouping was based on the groups used by LDHS

Sex of infant

Based on table 2, the majority of infants included in the study are male, with a 50.29% and the remaining infants been females with a 49.71% percentage.
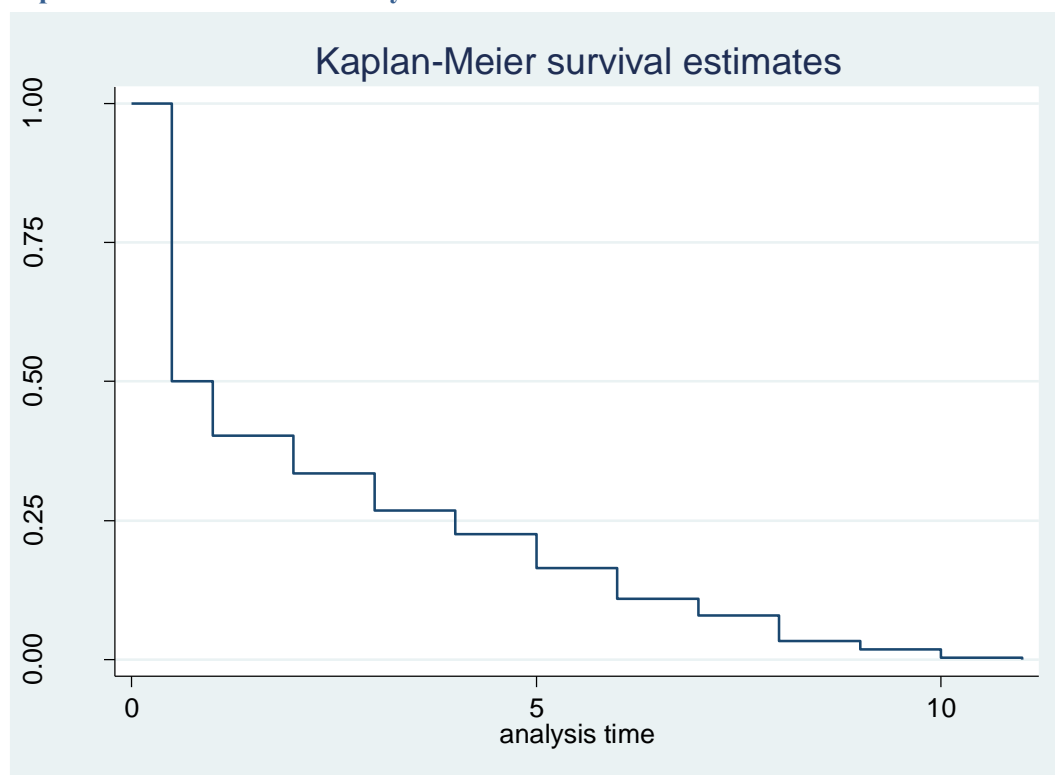
Kaplan Meier's infant mortality curve

Figure 4

Figure 4 presents the Kasplain Meier infant mortality curve. The risk of death in the first month was shown to be certainly high, at 50% for infants in their first month. Thereafter the risk of infant mortality was observed to decrease with an increase in the age of the infant.

4.2 Bivariate Analysis

The bivariate analysis was undertaken in order to investigate the relationship between place of residence, source of drinking, wealth index, sex of the child and educational characteristics of the women in relation to the outcome variable: infant mortality. The independent variables are run against infant mortality independently.

Bivariate results

Dependant variable	Characteristic	Frequency	Percentage
(outcome variable)	Infant mortality		
	No	3,671	91.80
	Yes	328	8.20

	Total	3,999	100
Independent variables	**Type of place of residence**		
	Urban	49	14.94
	Rural	279	85.06
	Total	328	100
	Source of driking water		
	Improved source	220	71.43
	Non improved source	88	28.57
	Total	308	100
	Educational attainment		
	No education	6	1.83
	Primary	210	64.02
	Secondary	103	31.40
	Higher	9	2.74
	Total	328	100
	Flushing type toilet		
	No facility	164	53.25
	Improved source	65	21.10
	Non improved source	79	25.65
	Total	328	100
	Wealth index		
	Poorest	95	28.96
	Poorer	85	25.91
	Middle	54	16.46
	Richer	57	17.37
	Richest	37	11.28
	Total	328	100
	Sex of child		
	Male	191	58.23
	Female	137	41.76
	Total	328	100

Table 3, Source: computed using LDHS, 2009 raw data file

Table 3 specifies the levels of infant mortality as it presents the characteristics of the women who experienced infant mortality.

Type of place of residence

Based on table3, the majority of mothers who experienced infant mortality are from rural Lesotho (85.06%). The rest of the mothers resided in urban areas, they account for 14.94%.

Source of drinking water

Based on table 3, it is evident that most women relied on improved source for drinking water 71.43%, followed by non-improved source with 28.57% percent.

Educational attainment

Based on table 3. It is evident that 64.032% of infant mortalities occurred to women who had completed primary education while only 2.74% of women who completed higher education experienced infant mortality. Only 1.83% of infant mortality were experienced by women with no education.

Wealth index

Based on table 3, it seems most women who experienced infant mortality, were grouped in the poorest group (28.96%). This is followed by poorer group with a percentage of 25.91%. The least group among the groups in terms of women to experience infant mortality is the richest group with a percentage of (11.28%).

Type of toilet facility

Based on table 3, it seems most women relied on no facility in terms of toilet facility with 53.25% relying on it. The least mentioned method with regards to toilet facility was improved source.

Sex of child

Based on table 3, it seems the majority of infants who experienced mortality are male (58.23%). The rest of the infants occurred to females (41.76%).

4.3 Cox Hazard Regression model's Univariate and Multivariate Analyses

The third objective of the study was to determine both the unadjusted and adjusted effect of infant mortality on certain factors in Lesotho. The Cox hazard regression modelling was carried out for both the univariate (unadjusted) and multivariate (adjusted) analyses. The results are presented in Table 4.

Explanatory variable	Panel 1		Panel 2	
	Hazard ratio	[95% CI]	Hazard ratio	[95% CI]
Toilet				
No facility	1.00			
Improved source	0.98	0.73-1.31	0.95	0.65-1.37
Non improved source	0.95	0.72-1.24	0.92	0.66-1.28
Education attainment***				
No education	1.00			
Primary	0.76	0.34-1.71	0.61	0.26-1.42
Secondary	0.76	0.33-1.74	0.57*	0.24-1.37
Higher	0.76	0.27-2.14	0.63*	0.21-1.95
Source of drinking water***				
Improved source	1.00			
Non improved source	1.29*	1.003-1.66	1.34*	1.02-1.76
Place of residence				
Urban	1.00			
Rural	1.006	0.74-1.36	1.10	0.75-1.61
Wealth index				
Poorest	1.00			
Poorer	1.06	0.79-1.42	1.18	0.84-1.66
Middle	0.99	0.71-1.39	1.18	0.79-1.76
Richer	1.24	0.88-1.72	1.48	0.92-2.38
Richest	0.96	0.65-1.41	1.19	0.68-2.09
Sex of child***				
Male	1.00			
Female	0.85*	0.68-1.06	0.87*	0.68-1.09

RC= Reference category, ***p<0.05=Variance significance, *p<0.05=category significance

4.3.1 Unadjusted Model

When unadjusted, the results presented in panel 1 of Table 4 indicated that infant mortality factors including educational attainment, sex of the child and source of drinking water had significant associations with infant mortality. However place of residence, toilet and wealth index did not have significant associations with infant mortality in the region.

The unadjusted results show in Panel 1 of Table 4 indicated that infants who whose mother attained school experience a lower risk of dying compared to no education 24% risk of dying compared to mothers who never attained any academic qualification.

The results further revealed that female infants exhibited a 25% lower risk of dying compared to male infants.

4.3.2 Adjusted model

The multivariate in Panel 2 of Table 4 indicated that infant mortality was associated with some factors which the study focused on. Exclusively secondary education attainment exhibited the lowest risk of mortality. The results also revealed that mothers who attained higher education had a 37% lower risk of dying compared to infants born to mothers with no education. On the other had infants born using non improved source of drinking water had an increased risk of dying, had a 34% increased risk of dying compared to infants relying on improved source for drinking water.

The sex of child maintained its significant association with infant mortality even after adjusting the effect of other factors. The multivariate indicated that female infants had a 13% lower risk of dying before age 1 compared to male infants.

5 Summary
Introduction

The last chapter presents the discussion of results based on the objectives of the study. The purpose of the study was to help investigate the association of the factors with regards to infants.

5.1 Summary
This study was conducted with the main objective to examine the association between mother's education, place of residence, type of toilet, wealth, source of drinking water and infant mortality in Lesotho, 2009.As a result of the nature of this study a sample of the population was used.Descriptive method was used with the use of STATA 12 to gather the following results. This study found that 8.20% of the Lesotho and infants women experienced infant mortality between the period of 2009 and 2010. Thus it can be said that 82 out of every 1000 infant were confronted with infant mortality in Lesotho experienced infant mortality during this period.

Educational attainment

Mothers' educational attainment can be considered as an important variable towards infant mortality. This is due to educational attainment been inversely related to infant mortality. The findings of this paper with

regards to educational level are consistent with other studies, like a study by Ahmed M Diriya (1992), entitled Socio Economic Determinants of infant and child mortality, 1992.

Place of residence

The findings of this study indicate that 83% of infant mortality occurred to women who reside in rural areas. These findings of this study correspond with other studies since have indicated that infant mortality was experienced more in rural than urban areas. This could be due to distance from clinics and transport costs. In the binary logistic regression model, the study found that women who reside in rural areas have increased odds of 1.16 of experiencing infant mortality. To simplify, this means that women who have infant at rural areas have a slightly increased chance of infant mortality (16%) in comparison to women who reside in urban areas.

Source of drinking water

The findings of this study indicate that 71% of infant mortality occurred to women categorized in improved water drinking water.

Wealth index

The findings of this study indicate most women who experience infant mortality are grouped in poorest, 28.96. The least group of women are grouped in 11.28% . The results are similar to the results obtained from Seham. She focused her study on impact of female education on fertility in Egypt and found that wealth index is not significant towards mortality, 2005 (Mabrouk 2009)

Child of sex

The findings of this study indicate that most infants who are male experienced infant mortality compared to the other sex. The findings are similar to the findings determined by Susuman which indicated sex ratio as been important. In her case she applied data from Ethiopia and interpret her findings towards sex ratio been significant towards infant mortality (Susuman 2012)

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