FACTORS ASSOCIATED WITH INFANT MORTALITY IN LESOTHO

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Abstract

The aim of this paper is to study the socioeconomic and demographic factors associated with timing of infant mortality utilizing the nationally representative survey data of Lesotho Demographic and Health Survey (LDHS), 2014. Logistic regression analyses have been used to study the factors predicting timing of infant mortality. Multivariate logistic regression analysis show type of place of residence, Makhotlong and Quithing region, and source of drinking water as factors significantly associated with timing of infant mortality. Live birth in Quithing and Makhotlong were more likely to die after a months of months AOR (2.493) and (2.851) respectively compared to Thaba-Tsheka region. Children born in rural area were almost 50 % AOR (0.493) as likely to survive the first months. Live birth from household with piped water were about 2 (1.538) times more likely to survive first month. Findings need to be scientifically utilized in developing suitable programs addressing the case of infant mortality.

Introduction

The direct association between infant mortality and socio-economic variable made it measures that best display health progress of a country as its respond very well to their change. (Reeta, Yun, Susan, & Adewuyi, 2017) (Franco, Augusto Randüz, & Kropiwic, 2017). One of Sustainable Development goal is good health and wellbeing, which aim to end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births particular in sub-Saharan (SDG's, 2017).

Infant mortality has been decreasing worldwide due to different factors, from an projected rate of 65 deaths per 1000 live births in 1990 to 29 deaths per 1000 live births in 2017 yet, about 4.1 million infants die each year (WHO, 2019) (Bank, 2019). More of these infant deaths take place in the developing countries. Infant mortality has been a main concern around the world for many years, particularly in the sub Saharan African region (Unicef, 2016). Sub Saharan African countries account highest infant mortality rates in the world at 54 deaths per 1000 live births in 2017 while the infant mortality rate for other less developed nations was 9 deaths per 1000 live births (WHO, 2019). Most of these children could have survived if they had admission to basic

simple facilities, low-cost and simple applied mediations (Pablo, Torres, José, Valentín, & Ángel, 2011; Nwaokoro, Ibe, & Ihenachor, 2015).

Early life is key period that determine the future status of health. Poor early life lead to adverse health outcomes in childhood and across the life course, negatively affecting physical health, socio-emotional development, and educational achievement. Early care encompasses postnatal care, antenatal care and woman conduct during gestation (Franco, Augusto Randüz, & Kropiwic, 2017). Infant mortality rate is considered as key and sensitive indicator of the health status of a community. It also reveals the living standard of the people and the efficiency of mediations aim at improving maternal and child health (Shan, Khalique, Khan, & Amir, 2011). Lesotho is one of the countries with high infant mortality rate of 77 death per 1000 live birth (WHO, 2019). On average a child born today in Lesotho is expected to live 54 years (WHR, 2018). The high infant mortality in Lesotho is evidence of unmet health care needs and harsh environmental factors. If the government of Lesotho do not act on these matter more lives will be lost and quality of life will degrade. Vision 2020 of Lesotho, states that it shall have a healthy and well-developed human resource base, with a strong, well-managed environment. It health mission to have a healthy nation, living a quality and productive life (NHSP, 2017). This vision can only be archived if factors associate with infant death and timing of infant mortality is known, hence these paper aim at studying factors associated with infant mortality in Lesotho. Finding of paper will help policy maker in Lesotho to come up with policy aim at improving access to emergency obstetric-care services as well as prenatal and postnatal care for further reduction of infant mortality.

Previous studies had identified socioeconomic, maternal, cultural, household, environmental, and biological and health service utilization factors as determinant of infant mortality. Other causes of infant death are malnutrition pneumonia, preterm birth complications, birth asphyxia, diarrhea, and malaria. In sub-Saharan African countries, infectious diseases like meningitis and HIV/AIDS are also responsible for high rates of infant mortality. Information about the distribution, causes, and time trends of infant mortality is of great importance in a country's health policy, hence its very important to study factors associated with infant mortality rate as way of improving survival rate to adult age which give rise to life expectancy in Lesotho.

Background information

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 (Khule, 2009). Lesotho is an enclave country within the border of South Africa. It is just over 30,000 km^2 (11,583 sq. mi) in size and has a population of around 2 million. Its capital and largest city is Maseru. The official languages are English and Sesotho.

The impact of unimproved water and sanitation as a leading cause of childhood diarrhoea has long been recognized and documented in the public health literature (Ezeh, Agho, Dibley, Hall, & Page, 2014). In response to this, in 2009 the government of Lesotho launch project to provide reliable

water supply in Lesotho (World Bank, 2009) then joint venture with UNICEF launching clean water and sanitation project in Lesotho starting with schools (UNICEF, 2019). Despite all these initiatives, a recent report on global progress on sanitation and drinking water indicates that approximately 70% of people in Lesotho still lack access to basic sanitation facilities and improved drinking water. (Index Mundi, 2019). Past studies have shown that access to improved water and sanitation leads to approximately 20% reduction in childhood mortality as well as child diarrhoea. (Ezeh, Agho, Dibley, Hall, & Page, 2014)

The government of Lesotho has had failed projects to bring drinkable and sanitary water and sanitation services to the rural communities of Lesotho. These failed attempts have left the government to focus less on the impending costs of overhauling sanitary water conditions in favor of more lucrative ventures. In turn the people of Lesotho have had increasing numbers of water-borne diseases. These insecurities cause negative thoughts and feelings about the water the citizens of Lesotho consume. This decreases the availability of clean water, which in turns leads to lower access due to droughts and climate change (WHO, 2016).

Justification of study

The aim of study is to determine socio-economic and demographic factors associated with infant mortality in order to reduce infant death in Lesotho. Vision 2020 of Lesotho, states that it shall have a healthy and well-developed human resource base, with a strong, well-managed environment. It health mission to have a healthy nation, living a quality and productive life (NHSP, 2017). This vision can only be archived if factors associate with infant death and timing of infant mortality is known, hence these paper aim at studying factors associated with infant mortality in Lesotho. Finding of paper will help policy maker in Lesotho to come up with policy aim at improving access to emergency obstetric-care services as well as prenatal and postnatal care for further reduction of infant mortality.

Methodology

The following chapter explains the methods used as attempt to explain the dependent variable, the sources of data, the sample design, variables and data analysis as well as the Ethical considerations of the study.

Study Area

The study was conducted in Lesotho. Lesotho is an enclave country within the border of South Africa. It is just over 30,000 km^2 (11,583 sq. mi) in size and has a population of around 2 million. Its capital and largest city is Maseru. The population is estimated to be 28.8 million in 2016. The official languages are English and Sesotho.

Study Setting and Source of Data

The study will use cross sectional data obtained from 2014 Lesotho Demographic and Household Survey (LDHS) Birth records. Data from this survey will be used to conduct a current research, implying that this research is based on secondary data. The data collected 5 years preceding the survey. Accordingly the reference period for the 2015 survey, the data was collected from the individual and household level. This study covers female who had given birth in the last 5 years prior to the survey. This study took in to account that infant mortality is key indicator of health that is poor childhood lead to adverse health outcomes in childhood and across the life course, negatively affecting physical health, socio-emotional development, and educational achievement

Sample Design

The samples for the LDHS were derived by the use of a two stage cluster sampling design. In the first stage enumeration areas were selected. A standard structured DHS questionnaire was used by Lesotho Bureau of Statistics to collect data after obtaining approval from the Bureau's internal Ethical Review Board which was established by the statistics Acts of 2006. Informed consent was obtained from each respondent after obtaining the objective of the study. All interviews were conducted in private, confidentially and anonymously using a questionnaire translated in native languages of study district. Permission to use the data sets was obtained from MDHS. A confirmation letter is attached.

A total of 6621 female were successfully interviewed in Lesotho during 2014 Demographic and Household Survey. Of the 6621 respondents, 779 were women aged between 15 years and 49 years who reported that their live birth died before age one 5 years prior to the survey and this forms the sample for the study. The sample were archived from birth records by first selecting cases. A question from the Demographic and house hold survey questionnaire "have you ever given birth to a boy or a girl who was born then later died" All women whom had responded with a yes will be included in the study but only death within a 12 month will be included.

Statistical Approach / Data Analysis

Data was analyzed by Statistical Package for Social Science. Descriptive analysis of frequency and will be used to study the distribution of responders by variables (age size of child delivery type place of delivery, religion, region, highest education level and marital status). The crosstab

will be used to study association between dependent variable and independent variable (infant death) with chi square with 95% confidence level. A multivariate logistic regression with four models will be used to measure the likelihood of infant death with 95% confidence interval. The analysis of infant death was done according to socio-economic and demographic factors.

Model 1 is univariate whereas model 2 includes socio-economic factors only. Model 3 introduce demographic variables whereas model 4 includes all the explanatory variables. The reference category is post-neonatal death. All the results from analysis will be presented in forms of tables.

Limitations

This study use secondary data thus some important variables could not be included in the analysis. This study is prone to recall biases of outcome variable. Some women might not correctly remember well information about their pregnancy, delivery and post-delivery condition. Design of this study cannot establish causal relationship between outcome variable and independent variables.

Measurement of Variable

Dependent Variable

Infant mortality: Deaths at ages 0 to 11 months, including deaths reported at ages 0 to 99 days. A question from the Demographic and house hold survey questionnaire "is the child alive" is employed to measure infant mortality. Those answered with ''NO'' reflect number of infant death. In regression analysis, the survival status of infants was further recoded as '0.0' for infant who died within the first 12 months of life and '1' for infants who survived beyond 12 months of life.

- Neonatal and post neonatal death

Independent variable

Demographic

- Place of residence
- Region
- Source of drinking water
- Type of toilet

Socio-economic

- Wealth index, Religion
- Highest education level, Maternal age
- Description of variable

Age-a number of completed years as last celebrated birthday. The age of respondent were stated in age groups. The ages were adopt as they are from the DHS. Highest education level- the level which the respondent attain. The respondents were asked the highest level of school they had

attended. We constructed new one by merging primary and none giving none/primary then secondary and tertiary to secondary/higher. Wealth index- The wealth index is a composite measure of a household's cumulative living standard. Generated with a statistical procedure known as principal components analysis, the wealth index places individual households on a continuous scale of relative wealth. The variable separates all interviewed households into five wealth quintiles to compare the influence of wealth on infant mortality. From the data set of Lesotho wealth index was in five categories poor poorest, middle rich, and richest, which was then recorded into three classes leaving middle class as it is and combining rich and richest to rich then poor and poorest to poor. Region is large, usually continuous segment of a surface or space. The 10 regions were adopted from the DHS data Religion is a cultural system of behaviors and practices, world views, ethics, and social organization that relate humanity to an order of existence. Roman Catholic, Christian (Lesotho Evangelist church, Methodist, Anglican church, seventh day Adventist, Pentecostal, other Christian) other religion (Islam, Hindu and other religion) and Place of residence is the civil subdivision of a country (district, county, municipality, province, department, state) in which the individual resides. The variable was used as it was from data set with two categories rural and urban Source of drinking we constructed these variable through recording, Improved (Piped water, piped into dwelling, piped to yard, public taps, neighbor tap) Not improved (Borehole, dug well, surface water, unprotected well rive/dam/lake, rain water and tanker truck) water. For this one toilet facility we recorded ventilated improved pit/flush (flushed toilet, flushed to sewer, toilet facility, flushed somewhere else, pit latrine and ventilated improved pit) and no facility (no facility, composting toilet, bucket toilet and hanging toilet).

Results

Table 1 shows respondents by selected background characteristics. Most of respondents (13.4%) are residents of the capital city of Lesotho, Maseru followed by Leribe (12.2%), Makhotlong (11.7 %,), Mohale-hoek (11 %,), Quthing (9.9 %,), Thaba-Tsheka (8.9%), Qachas-neck Barea (8.7%) and Botha Botlhe (6.5%) respectively. Over two fifth (43.3%) of the respondent are poor while 35.1% and 20.7% fall within rich and middle wealth index. Nearly two fifth (37.7%) of the respondents have none/primary as their highest level of education. Close to a fifth of respondents were aged of age bracket 25-29(18.5%), 30-34(18.2%) and 45-49(18.2%) made 55% of the respondent 40-54(16.6%) remaining portion are of 15-19 and 20-24.Seventy five of the respondents reside in rural areas. A 63% of the respondent have access to piped water.

Table 1: Distribution of respondent by selected background characteristics

BACKGROUD CHARACTERISTICS		frequency	PERCENT
Maternal age	15-19	18	2.3
	20-24	59	7.6

	25-29	144	18.5
	30-34	142	18.2
	35-39	145	18.6
	40-44	129	16.6
	45-49	142	18.2
Religion	Botha-bothe	51	6.5
	Leribe	95	12.2
	Berea	68	8.7
	Maseru	104	13.4
	Mafeteng	62	8.0
	Mohale's hoek	86	11.0
	Quthing	77	9.9
	Qacha's-nek	69	8.9
	Mokhotlong	91	11.7
	Thaba Tseka	76	9.8
Type of place of residence	Urban	193	24.8
	Rural	586	75.2
Wealth index	Poor	337	43.3
	Middle	161	20.7
	Rich	281	36.1
Highest education level	Primary/none	491	63.0
	secondary/higher	288	37.0
Religion	Roman Catholic	289	37.1
	Christian	212	27.2
	Other religion	278	35.7
Source of drinking water	Piped	496	67.0
	Not piped	244	33.0
	Total	740	100.0
Type of toilet	pit	470	63.5
	no facility	268	36.2
	Total	779	100.0

Table 2 shows the distribution of infant death by time of death. About 9% (9.4%) of live birth died before age 1, of which almost 51% (51.3%) didn't survived the first month.

Table 2 : Distribution of infant death by time of death

	Frequency	Percent
Child is alive		
No	1105	9.4
Yes	10605	90.6
Total	11710	100

Age at Death		
Neonatal	400	51.3
Post-neonatal	379	48.7
Total	779	100

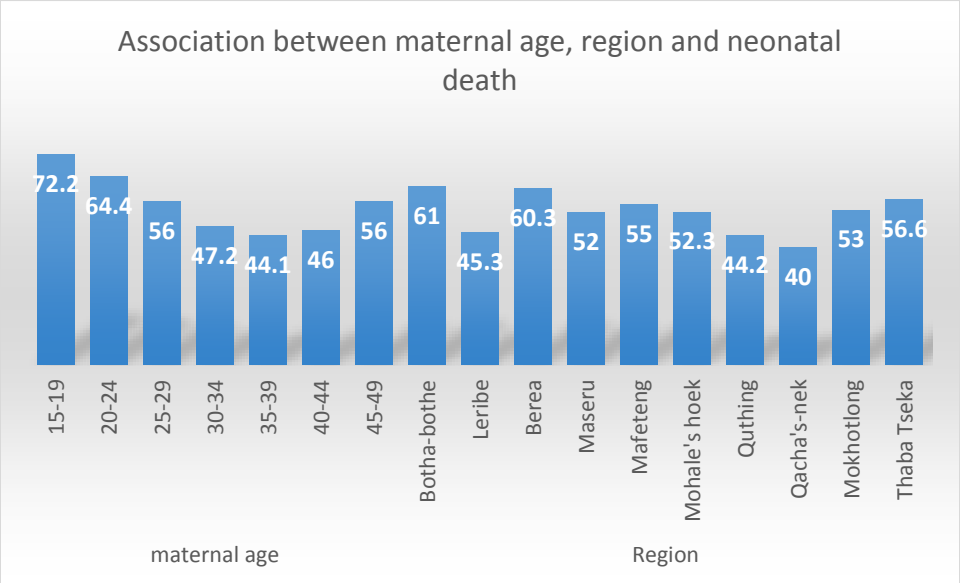

Figure 1: Association dependent variable and maternal and region

Bar char above shows association between maternal age, region and neonatal death. A U shape is observed by looking at neonatal deaths and maternal age. Neonatal mortality decreases as maternal age increases till age 35-39 then peak up to age 45-49. The proportion is high among 15 to 19 72.2% then decrease with increasing in age 20-24, 25-29, 30-35 with 54.4%, 56%, 47.2% and 44.3% respectively then then increase as age increases to 46% and 56% from age 40-50 and 45-50 respectively. The proportion fluctuates when observed within region. Botha-Bothe (61%) had high proportion Compared to Berea (60.3%), Thaba-Tsheka (56.6%), Mafeteng (55%), Makhotlong (53%), and Mohale-hoek (52.3%) Maseru (52%), Leribe (45.3%), Quiting (44.2%) and Qacha-neck (40%).

Table 3 shows association between infant mortality and explanatory variables. Within type of place of residence proportion is high among rural mothers rural (55%) areas compared to urban areas. Neonatal mortality proportion is high among mothers with secondary/higher level of education compared to primary /none. Mothers of poor quartile have high proportion of neonatal death compared to rich mothers (51%) and middle class mothers (45%). Proportion of neonatal mortality is almost equal for women of different region but high for Roman Catholic (52 %,) and 51% for Christian and other religion (51%). Fifty three percent of neonatal death are from house hold with unimproved source of drinking water compare to forty eight of unimproved.

Table 3: Association between independent variable and infant mortality

Explanatory variable		Neonatal	%	Post neonatal	%	Total	CHI SQARE
Maternal age* **	15-19	13	72.2	5	27.8	18	14.861
	20-24	38	64.4	21	35.6	59	
	25-29	80	56	64	44	144	
	30-34	67	47.2	75	52.8	142	
	35-39	64	44.1	81	55.9	145	
	40-44	59	46	70	54	129	
	45-49	79	56	63	44	142	
	p-value	0.021	Chi square	14.861	df	6	
Region	Botha-bothe	31	61	20	39	51	12.374
	Leribe	43	45.3	52	54.7	95	
	Berea	41	60.3	27	39.7	68	
	Maseru	54	52	50	48	104	
	Mafeteng	34	55	28	45	62	
	Mohale's hoek	45	52.3	41	47.7	86	
	Quthing	34	44.2	43	55.8	77	
	Qacha's-nek	27	40	42	60	69	
	Mokhotlong	48	53	43	47	91	
	Thaba Tseka	43	56.6	33	43.4	76	
	p-value	0.193	Chi square	12.374	df	9	
Type of Place of residence* **	Urban	78	40.4	115	59.6	193	0.00
	Rural	322	55	264	45	586	
	P value	0.00	Chi square	0.00	df	1	
Education level	Primary/none	248	51	243	49	491	0.374
	secondary/higher	152	53	136	47	288	
	p-value	0.296	Chi square	0.374	df	1	
Wealth index	Poor	185	55	152	45	337	4.098
	Middle	73	45	88	55	161	
	Rich	142	50.5	139	49.5	281	
	p-value	0.196	Chi square	4.098	df		
Religion	Roman	150	51.9	139	48.1	289	0.102
	Christian	107	50.5	105	49.5	212	

	Other religion	143	51.4	135	48.6	278	
	p-value	0.950	Chi square	0.102	df	2	
		400	51	379	49	779.0	1.685
Source of water	Piped	263	53	233	47	496	
	Unpiped	117	48	127	52	244	
	p-value	0.111	Chi square	1.685	df	1	
Type of toilet							
	pit	233	50	237	50	470	1.925
	no facility	146	54.5	122	45.5	268	
	P-vale	0.382	Chi square	1.925	df	1	
Total		380	51.4	360	48.6	740	

***p-value <0.05 DF; Degree of freedom

MULTIVARIATE

Model 1 displays socio-economic and demographic factors predicting timing of infant mortality that were considered in univariate logistic regression analysis. Type of place of residence was associated with post neonatal death Infant born in rural area were 1.789 more likely to survive first month after birth than infant born in urban area.

Model 2 present's socio-economic factors associated. The shows that region and place of residence were associated with timing of infant's death. Live birth born by mothers of Makhotlong region were 1.684 more likely to survive first month after birth compared to Thaba-Tsheka region

Model 3 shows the odds ratio of socio economic factors emplaning variation in infant mortality. All factor don't explain infant death.

Model 4 displays odds ratio of all explanatory variables' (community, socio demographic factors) used to measure independent variable considered by multivariate logistic regression analysis. Type of place of residence, Makhotlong and Quithing region, and source of drinking water were significantly associated with timing of infant mortality. Live birth in Quithing and Makhotlong were more likely to die after a months of months AOR (2.493) and (2.851) respectively compared to Thaba-Tsheka region. Children born in rural area were almost 50 % AOR (0.493) as likely to survive the first months.

Table 4: Factors associated with infant mortality in Lesotho 5 years preceding the survey (unadjusted and adjusted odds ratio)

VARIABLE	*CATERGORIES*	*MODEL 1*	*MODEL 2*	*MODEL 3*	*MODEL 4*
		ODD RATIO	AOR	AOR	AOR
Religion	Botha-bothe	1	1		1
	Leribe	0.841(0.408-1.731)	0.787(0.360-1.724)		2.033(0.954-4.332)
	Berea	1.576(0.858-2.863)	1.601(0.814-3.147)		1.359(0.606-3.048)
	Maseru	0.858(0.441-1.668)	1.078(0.523-2.225)		1.534(0.719-3.276)
	Mafeteng	1.207(0.66-2.187)	1.209(0.623-2.348)		1.451(0.629-3.343)
	Mohale's hoek	1.073(0.546-2.108)	1.140(0.540-2.406)		1.681(0.774-3.651)
	Quthing	1.187(0.638-2.208)	1.306(0.673-2.534)		2.493(1.128-5.509)
	Qacha's-nek***	1.648(0.870-3.122)	1.941(0.969-3.890)		2.851(1.275-6.373)
	Mokhotlong***	2.027(1.045-3.933)	2.223(1.096-4.510)		1.777(0.825-3.827)
	Thaba Tseka	1.167(0.633-2.145)	1.392(0.729-2.656)		1.283(0.584-2.816)
Mothers age	15-19	1	1		1
	20-24	0.482(0.163-1.425)	0.273(0.704-1.055)		0.273(0.070-1.055)
	25-29	0.693(0.370-1.298)	0.538(0.268-1.078)		0.536(0.267-1.074)
	30-34	1.003(0.629-1.600)	0.944(0.569-1.567)		0.944(0.569-1.567)
	35-39	1.404(0.880-2.239)	1.284(0.779-2.115)		1.282(0.778-2.112)
	40-44	1.587(0.996-2.529)	1.475(0.903-2.409)		1.471(0.900-2.404)
	45-49	1.488(0.921-2.402)	1.256(0.752-2.097)		1.249(0.749-2.081)
*Type of place of residence****	Urban	1	1		1
	Rural	0.564(0.400.774)	2.048(1.345-3.116)		0.493(0.324-0.751)
Source of drinking water)	Piped	1	1		1
	Unpiped	0.816(0.600-1.108)	1.24(0.758-2.037)		1.538(1.075-2.201)*
Type of toilet	VIP	1		1	1
	Pit Latrine	1.197(0.074-19.33)		1.524(0.968-2.398)	1.249(0.759-2.056)
	No facility	1.217(0.901-1.644)		1.167(0.821-1.660)	1.350(0.872-2.089)
Wealth index	Poor	1		1	1
	Middle	0.839(0.611-1.153)		1.079(0.62-18.766)	1.220(0.776-1.919)
	Rich	1.231(0.835-1.816)		1.313(0.875-1.972)	0.800(0.487-1.313)
	None/primary	1		1	
Highest Education	Secondary/Higher	1.095(0.818-1.645)		1.25(0.821-1.685)	0.853(0.600-1.213)
	Roman Catholic	1		1	1
Religion	Christian	0.982(0.706-1.365)		1.170(0.782-1.750)	1.065(0.715-1.587)
	Other religion	1.039(0.727-1.486)		0.647(0.453-0.926)	0.914(0.636-1.314)

Reference category: Post neonatal mortality

*** P-value <0.05

Discussion

The third Sustainable Development goal is good health and wellbeing, which aim to end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births particular in sub-Saharan (SDG's, 2017)The aim of the study was to analyses factors influencing timing of infant mortality in Lesotho. This study findings had identified a number of factors that can aid in compressing level of infant mortality in Lesotho. Post neonatal mortality is associated with place of residence, source of drinking water and region (Makhotlong and Quithing).

Type of place of residence influence infant mortality. Birth in rural area where 50% less likely to survive to survive a month than birth in urban areas (OR=0.493). This finding fit well with other studies done in Brazil and Kenya. Study in Kenya by Gruebner, et al.(2015) revealed that place of delivery weaken the risk factors and thereby varied in the strength of association across rural, urban and slum areas. Compared to rural areas, residing in slum or urban areas increased the risk for infant death, when controlling effects were not accounted for (Gruebner, et al., 2015). It is understood that urban or rural differential in mortality is to some number of socio economic variances that exist within a country. Other cumulating factors such as better education, safe water supply, good sanitation, better system to handle household waste and excretal removal and easy access to health care services that favors urban than rural areas can also describe this association. (Ntenda, Chuang, & Tiruneh, 2015)

Another factor which was associated with infant's mortality is region. Live birth in Quithing and Makhotlong were more likely to die after a month's AOR (2.493) and (2.851) respectively compared to Thaba-Tsheka region. Finding from study by Ntenda, Chuang, & Tiruneh, (2015) oppose this study findings as they did found region explaining variation in infant mortality. This study is consistent with study in rural and urban area in Nigeria (Adewuy, Yun, & Lamichhane, 2017).

Children are more susceptible to the health threats linked with unimproved water source and sanitation; their immune, respiratory, and digestive systems are still emerging and children play in areas where waste product may accrue (Ezeh, Agho, Dibley, Hall, & Page, 2014). This study also revealed source of drinking water as explanatory variable of infant mortality. Live birth from household with unimproved water supply were 1.538 more likely to experience postnatal death compared to their counterparts. This results is supported by studies by, Bompoky, (2013) and Ezeh, Agho, Dibley, John, & Page, (2014) these studies highlighted that the risk of mortality from unimproved water significantly higher by 38% (Adjusted hazard ratios (HR) = 1.38, 95% for post-neonatal mortality (Ezeh, Agho, Dibley, Hall, & Page, 2014) and having water piped into the dwelling or a flush toilet increases the probability of child survival by 2.3 (Catherine, 2013). In Lesotho 80% of rural population still collect water form unprotected sources (International, 2019) (Bank, 2019).

Conclusion and Recommendation

Seventy seven per 1000 live birth in Lesotho die before age one. Type of place of residence, region and source of drinking water were associated with infant mortality in Lesotho proceeding the last 5 years of study. Type of place of residence, region and source of drinking water were important berries factors for live birth to survive 11 months while mother aged 34-39 positively influence post neonatal death in Lesotho. There is a significant relationship among socio-economic and demographic factors. Policy programs in Lesotho should emphasize the need for provision of cleaner drinking water women by improving sanitation and increasing proportion of women living in urban areas as well as to reduce poverty in Lesotho. They must also adapt the reproductive health policy as Zimbabwe had. Policy programmers in Lesotho should emphasize the need for industrialization thus urbanizing more areas.

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