HEALTH SEEKING BEHAVIOUR AND INCIDENCE OF UNDER-FIVE MORTALITY IN AGRO-PASTORALIST COMMUNITIES IN HANDENI DISTRICT, TANZANIA

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ABSTRACT

This paper explores health seeking behaviour and its influence on households' incidences of under-five mortality among agro-pastoralists. The study used a cross-sectional research design whereby a structured questionnaire was used to collect data from 160 agro-pastoralist households. Correlation analysis results showed existence of an association between cultural values, traditional practices, socio-economic factors and health seeking behaviour. Logistic regression results showed mother's age, number of children in household and masculinity had significant influences on a household's health seeking behaviour. Further, the logistic results showed that mother's age and traditional treatment attendance had significant influences on household's experience of under-five mortality. The findings showed that the variables influenced individual households to seek treatment from traditional rather than modern health facilities. It is therefore recommended that Health Officials and Community Development Officers should create awareness and promote health services among agro-pastoralists. In addition, the Government and other stakeholders are argued to further educate agro-pastoralists and other rural dwellers to abandon cultural practices and values which contribute to poor health seeking behaviour and lead to higher households' incidence of under-five mortality.

Key words: Health seeking behaviour, agro-pastoralists, under-five children, mortality, and incidence
Paper type: *Research paper*
Type of Review: *Peer Review*

1. INTRODUCTION

Health seeking behaviour (HSB) is a sequence of actions undertaken by individuals who perceive themselves as having a health problem or are ill for the purpose of finding the right medication (Ketis, 2014). It is argued that inappropriate HSB provides a base for continuous health problems in a particular household and community (Sutan *et al.,* 2016). Health problems related to poor HSB include prevalence of diseases and incidence of mortality, specifically for under-five children in rural areas (UNICEF, 2014). Incidences of under-five mortality (U5M)[1] are high in developing countries, Tanzania included. This may be due to households' poor health seeking behaviour (Arunda *et al.,* 2016). Generally, people living in rural areas are reluctant and prefer the use informal health services to formal health services. This is caused by prevalence of common knowledge on local and cultural treatment, leading to high incidences of under-five mortality, a situation that requires interventions.

Rahman (2001) maintains that the well-being of under-five children depends on their parents and guardians' HSB. Therefore, households characterized by undesirable health care seeking behaviour could subject their members to negative health consequences. Nonetheless, under-five children are more vulnerable than adults since the course

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[1] Under five mortality (U5M) refers to deaths occurring to children aged below five years while under five mortality rate is the number of deaths of children below five years of age per 1000 live births

of action to intervene childeren's health problems depends on someone else who may subject them to poor treatment (Ngimbudzi *et al.*, 2016). Due to traditional, cultural values and poverty, parents and guardians sometimes face trade-offs between investing in a child's health and other household responsibilities. In this case, under-five morbidity situations are likely to persist and ultimately lead to mortality which can otherwise be avoided.

In most African rural areas, Tanzania included, response to ill health may include household's consultation with modern health facilities or any form of traditional illness management system. These systems include self treatment by taking or applying local remedies, visit to traditional healers and buying medication from drug stores without prescription (Fomundam, 2011; Afolabi, 2013; Engenda *et al.*, 2016). Moreover, delayed and inappropriate HSB and treatment can be linked to adverse consequences on patients' condition and medical costs. They are, at the same time, associated with hindrance to the potential benefits of early intervention including reduced under-five mortality (Ghazawy, 2015). Generally, in Sub-Saharan African countries, Tanzania included, under-five mortality remains a significant health challenge which needs special attention for averting deaths which may occur due to preventable causes (Arunda *et al.*, 2016). For example, while around the world vaccination against measles helped prevent nearly 15.6 million deaths between 2000 and 2013, it is reported that 16,000 under-five children die every day worldwide, mostly from preventable causes (UNDP, 2015). This postulates that child survival needs special attention, specifically by accessing the right kind of health interventions given to sick persons, particularly under-five children.

Studies in Sub-Saharan Africa (SSA) report that within African countries, there has been emphasis on the use of treatment from formal health services (Levers, 2006; Pierre, 2011; Maroyi, 2017). Despite availability of initiatives such as strategies to ensure availability of health professionals and establishment of primary health care aiming at provision of formal health services, about 80% of people in rural SSA seek treatment from informal health services (URT, 2003, WHO, 2008; Oyebode *et al.*, 2016). Although there are few studies explaining health seeking behaviour in agro-pastoralist communities, there is no particular study which has assessed the impact of HSB on the health of under-five children. Therefore, the study on which this paper is based aimed at assessing health seeking behaviour among agro-pastoralist communities in Tanzania and its influence on the health of under-five children so as to fill the gap. This paper addresses the following key questions: is there any association among cultural values, traditional practices, socio-economic factors and HSB among agro-pastoralists? What are the determinants of household health seeking behaviour among agro-pastoralist communities? And does health seeking behaviour bear any influence on under-five mortality?

2. LITERATURE REVIEW
2.1 Health Care Seeking Behaviour
There are two models of health care seeking behaviour (HSB): the pathway and determinant models (Mackian, 2007). The pathway model of HSB narrates the steps of the process from identification of symptoms to the use of a particular health care providing facility. The model focuses on identification of a logical sequence of steps of HSB as well as how the social and cultural factors affect the sequence. The model concentrates on the information that an individual might be expected to process during occurrence of an illness. This involves the principle of cost benefit analysis used to evaluate the action taken towards health seeking behaviour involving individual's interaction with social networks in that perspective (Ketis, 2014).

On the other hand, the determinant model focuses on the steps one would take to preserve or improve health. The model focuses on highlighting a set of determinants related to the choice of different kinds of health services (Graham, 2004: MacKian, 2007). Andersen (1995) grouped determinants of HSB into three major categories, which are population characteristics, health care systems and external environment. He recommends that because of population characteristics, for example, traditional populations seek more of traditional services due to traditional values attached to such services. For the case of health care systems, availability of services, guidelines and directives governing services delivery influences HSB while environmental factors include location of services, within or outside. Models dealing with factors influencing health seeking behaviour are crucial in enabling one to understand how and why some individuals seek health care earlier than others.

Musoke (2014) who assessed factors which affect HSB including physical, socio-economic, cultural and political ones in Uganda found that education level, economic status, cultural beliefs and practices influence HSB. He further added that environmental conditions, socio-demographic characteristics, gender issues, knowledge about the facilities and health care systems are amongst things which influence HSB. Because of being marginalized groups worldwide, agro-pastoralists are facing challenges with HSB (UNEP, 2015). According to Cordaid (2014), agro-pastoralist communities cultivate small areas of land sufficient to feed their families from their own crop production. At the same time they keep herds of livestock. The group faces many challenges in obtaining health care services compared to other populations (Shiekh, 2015). This is because agro-pastoralists emerge from different ethnic groups with different cultures and local knowledge which makes them prefer traditional medications to modern health facilities and services (Maro *et al.*, 2012). Also, in the course of seasonal movement as they look for grazing land, agro-pastoralists move to more remote areas where they easily access traditional sources of treatment compared to modern ones. These progressively cause agro-pastoralists to seek treatment from traditional rather than from modern sources of treatment, a behaviour which denies them the possibility of receiving correct treatment in a timely manner. This situation results into persistence of morbidity and mortality, particularly for children under-five years.

Most previous studies focused on HSB in general and little on agro-pastoralists. For example, a study by Nonyane *et al.* (2016), conducted in Bangladesh, identified that most under-five deaths in developing countries are due to preventable causes for which care could be available by focused intervention. However, the study did not consider communities such as the agro-pastoralists whose HSB can be influenced by a combination of variables such as cultural values, traditional practices and socio-economic factors. This raises the question:

Is there an association between cultural values, traditional practices, socio-economic

factors and health seeking behaviour among agro pastoralists?... 1

The association determinant between socio-economic factors and HSB of the agro-pastoralists provides policy options for intervention on issues related to key socio-cultural, traditional, and economic attributes that determine HSB. Generally, improved HSB may have a positive effect on other health variables such as under-five mortality.

2.2 Determinants of Households' Health care Seeking Behaviour (HSB)

HSB among agro-pastoralists can be determined by different factors (Maro *et al.*, 2012; Shaikh and Hatcher, 2017). Age is one out of the several socio-economic variables which can influence one's decision to engage with a particular medical channel. Under-five children normally depend on other persons' (parents or guardians) for HSB. When parents and guardians predominantly seek health services from reliable sources, then communities and households enjoy good health (Uzochukwu and Onwujekwe, 2004). On the other side, those who seek treatment from unreliable sources can experience health problems. These problems most of the times affect under-five children compared to older persons (McKay and Timmermans, 2017). According to Patil *et al.* (2016), there is relationship between age and HSB. However, the study did not show the vulnerability facing under-five children when a household depends on unreliable treatment sources which is addressed in this paper.

Other variables which are likely to influence health seeking behaviour are education and income. For instance, according to Ahmed *et al.* (2005), Ngarivhume *et al.*(2015) and Satt *et al.* (2016), education weakens the bonds to traditional treatment since educated household heads seek treatment from reliable sources compared to uneducated ones. Ahmed *et al.* (2005) uphold that well educated household heads had higher incomes compared to those households whose heads were not educated. Nonetheless, the study did not consider health effects of seeking treatment from unreliable sources, to under-five children whose parents were influenced by their lower level of education and poor income. The paper examines issues related to health of under-five children based on a household's HSB. Also, the same variables (education and income) are reported (see United Nations, 2009; Atta, 2015) to influence household size as well as cultural practices which together have implication on access or no access to reliable health services. Household sizes of educated household heads were small ranging from 2 to 4 household members. This is different from uneducated household sizes which were larger. For large household heads implies high household expenditure which when income is inadequate leads to adoption of marginal services

including traditional health services. This indicates a danger of health for under-five children who are vulnerable to be treated from unreliable sources.

The study on which this paper is based, therefore, focused in filling the gap observed in the previous studies. It aimed to address challenges facing under-five children from use of unreliable treatment sources as well as contribution of education in changing from poor sources of treatment to the promising ones. To explore this, the study attempted to answer the question:

What are the determinants of household HSB among agro- pastoralist communities? 2

Generally, exploring factors influencing HSB enables a better understanding of the forces behind treatment choices in the study area and the related health consequences, particularly for under-five children. In addition, the findings provide a basis for different stakeholders as they aim to improve the health and well-being of under-fives in Handeni district and may be other areas with similar characteristics.

2.3 Under-Five Mortality

Globally, under-five mortality has declined by 53% from 91 deaths per 1000 live births in 1990 to 43 deaths per 1000 live births in 2015 (UNICEF, 2015). However, for SSA, the decrease of under-five mortality has been from 178 deaths per 1000 live births in 1990 to 109 deaths per 1000 live births in 2011. Records show a further decline of under-five mortality in the same region from 4.1% in 1990 to 1.6% in 2015. Although SSA countries have experienced a decline in under-five mortality, the degree of reduction varies from one country to another and within districts (UNICEF, 2014).

Tanzania is among the 27 countries in SSA with at least 40 deaths per thousand live births, and there has been a decrease of under-five mortality by at least a half since 1990 (UNICEF, 2014; URT, 2015). Nonetheless, there has been a substantial variation of under-five mortality decline within districts in Tanzania. For example, Handeni remains a district with a low pace in decreasing of under-five mortality. In 1998, the district recorded a under-five mortality rate of 173 deaths per 1000 live births which shows an insignificant decline in 2002 as it was observed to be 172 deaths per 1000 live births. Based on the 2002 Tanzania Population and Housing Census, it was observed that ten (10) districts in Tanzania had already reached the set target of reducing under-five mortality rates to 79 deaths per 1000 live birth by 2010. These districts were Ngorongoro, Monduli, Arusha, Moshi, Simanjiro, Arumeru, Moshi Municipality, Hai, Mwanga and Rombo. Other districts such as Ruangwa and Mtwara had the highest under-five mortality rates of 250 and 231 in 2002 from 257 and 255 in 1988, respectively. The trend of children under-five years mortality decline for Ruangwa and Mtwara is encouraging compared to Handeni where only a minor change was observed between 1988 and 2002 (URT, 2015).

According to Tanzania's Population and Housing Census (2012), Handeni District has 84.8 deaths per 1000 live births, which was observed to be higher than that of many districts in Tanzania such as Ruangwa, Mtwara, Ngorongoro and Rombo which were 65.7, 62.3, 14.3 and 41.5 deaths per 1000 live births respectively among many others districts whose under-five mortality rate declined significantly compared to Handeni. This leads to an assumption that the prevailing HSB among the agro-pastoralists might be among the reasons for the persistence of a high under-fives mortality rate in the study area. Agro-pastoralists are a major group in Handeni District (Mwamfupe, 2015), and their livelihood style could be a possible cause of the slow changes in reducing the mortality rate. In the absence of empirical evidence, this raises a question on:

Does *HSB among agro-pastoralists have an influence on the incidence of under-five mortality? 3*

Generally, knowledge on the influence of health seeking behaviour to the incidence of under-five mortality will contribute towards initiatives to reduce under-five mortality particularly within the agro-pastoralist communities.

3. METHODOLOGY
3.1 Description of the Study Area

The study was conducted in Handeni District, Tanga Region located in the North Eastern part of Tanzania. Handeni District is amongst those in Tanzania with a large number of agro-pastoralists (Mwamfupe, 2015).

Livestock keeping is amongst the major economic activities in the district. Other economic activities include hunting and gathering, forest resource and subsistence farming (URT, 2008). The district has both formal public and private health facilities, concentrated at the district headquarters. Traditional health facilities and services are also available in the district rural areas. Two wards dominated by agro-pastoralists were chosen for the study, and these are Misima and Chanika. Further to the above, two villages with higher number of agro-pastoralists were selected from each ward making a total of four study villages. The villanges were Kibaya, Msomera, Malezi and Kilimilan'ombe. The dominant ethnic groups in Handeni District are Maasai, Zigua, Ndorobo and people originating from Arusha region "Waarusha". They migrated from different areas to Handeni District where they are mainly engage in livestock keeping and farming (URT, 1997; URT, 2008).

3.2 Research design and sampling procedures
This study adopted a cross-sectional research design whereby data were collected at a single point in time (Bailey, 1994; Bryman, 2004; Zhen, 2015). In addition, the design enabled collection of data within a short period of time. Random sampling was used to pick households involved in the study from each village. The sampled villages collectively had a total of 3,137 households. Households involved in the sample from the four study villages were determined using proportionate sampling. Simple random sampling was used to get a sample of 160 agro-pastoralist households. To achieve this, the total households for each village were divided by the total number (3137) of households for all villages and multiplied by 160 to get the villages' representative sample. Thereafter, the proportion obtained for each village was divided by 160 and the answer multiplied by 100% to get the sampling percentage for each village.

The nature and characteristics of agro-pastoralists found across the study villages reflected a homogeneous scenario which helped on deciding the sample size for the study. Basically, a homogeneous population can be represented by a small sample relative to heterogeneous populations which require large samples. As Bailey (1994) and Grey (2014) recommended, a sample of 30 cases or more is adequate for studies whose variables are worked out and examined statistically. This study involved 160 agro-pastoralist households which are considered adequate.

3.3 Variable Measurement
Respondents' HSB was measured as a dummy for questions such as attending to traditional treatment, 1 = Yes, 0 = No; attending to modern treatment, 1 = Yes, 0 = No. For the first model, the dependent variable-HSB was coded (1, 0) where 1= modern health facilities while 0 = traditional health services = 0. Further, respondents were asked to indicate whether they had experienced incidences of under-fives mortality (Dependent variable for the second model) for the previous twelve months prior to the survey. The variable was coded (1, 0), where 1 = household had experienced under-five mortality while 0 = No under-five mortality.

Measurements for other variables were as follows: marital status was measured as a dummy with 1, if an individual is married and 0 otherwise; education was also a dummy with 1 representing the head has formal education and 0 otherwise. A dummy for occupation was 1, for agro-pastoralist and 0 otherwise and traditional practices dominate 1 = Yes, 0 = otherwise, Severity of illness 1 = Severe, 0 = Not severe while for distance it was 1= kilometres (km) to modern health facilities and 0 = kilometres (km) to traditional health facilities. Domination of cultural values 1 = yes, 0 = otherwise Power distance was also measured as a dummy variable where 1 = participatory household decision making, 0 = otherwise while for masculinity, 1 = household wealth/wealth attached to male head, 0 = otherwise. Ratio level measurement was used in measuring age of mother as a continuous variable while household number of children was measured by counting all household members aged below 15 years. Income was computed as total average household income in Tanzanian Shillings (TZS) per annum.

3.4 Data Analysis
Collected data were coded and analysed using SPSS. Correlation coefficient was used to establish association between socio-cultural, traditional, and economic variables and HSB. Shapiro-Wilk and Kolmogorov-Smirnov tests the scores in the sample were compared to a normal distributed set of scores with the same mean and standard deviation to test an assumption of normality prior to further inferential statistics. The null hypothesis was that

sample distribution is normal. If the test is significant the distribution is non normal. This means that a p-value greater than 0.05 indicates a normal distribution of data while p-value less than 0.05 indicates that data are not normally distributed. Correlation analysis and binary logistic regression models were used to help answer research questions one and two, respectively. The assessment of variables involved in the correlation analysis was to see as to whether there was an association between socio-cultural, traditional, and economic factors on HSB and whether HSB among agro-pastoralists has an influence on household incidence of under-five mortality.

Further, a binary logistic regression model was used to address the second research question on determinants of a household's health seeking behaviour in the study area. The dependent variable for the second model was a household's health HSB, which was coded as modern health facilities = 1 and traditional health facilities = 0. The independent variables used were mother's age, marital status, number of children in a household, a household's average annual income, household head's level of education, occupation of household head, masculinity and power distance. The model used is shown in the equation 4:

$$\text{Log} [p / (1-p)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_8 X_8 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

Where:

Log $[P_i / (1-P_i)]$ = Natural logarithm of the odds that household seeks health services from modern health facilities.

$P_i = 1$ = Certain, i.e. 100% that all households seek treatment from modern health facilities.

$1-P_i$ = Uncertain, i.e. none of the households seeks health services from modern health facilities.

β_0 = Constant;

β_1 to β_8 = Logistic Regression coefficients of the predictor variables;

Independent variables in the model and their measurements were as follows:

X_1 = Mother's age in complete years

X_2 = Marital status (1=Married, 0= Single)

X_3 = Household number of children (continuous)

X_4 = Average household's annual income in Tanzanian Shillings (TZS)

X_5 = Household head's level of education (1= Formal, 0 = No formal education)

X_6 = Occupation of respondents as agro-pastoralist

X_7 = Masculinity (1= household wealth/resources attached to male head, 0 = otherwise)

X_8 = Power distance (1= household decision making is participatory, 0 = otherwise)

In addition, binary logistic regression was used to asses whether HSB has any influence on under-five mortality. The independent variables used for research question three were age of mother, marital status, distance from health facilities, a household's annual income, level of education, attending traditional treatment, attending modern treatment and severity of illness. The model used is shown equation 5:

$$\text{Log} [p / (1-p)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_8 X_8 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

where;

Log $[P_i/(1-P_i)]$ = Natural logarithm of the odds of a household experiencing under-five mortality. The dummy for the dependent variable (household experience on incidence of under-five mortality) regular were coded as 1= household experienced incidence of under-five mortality, 0= household have not experienced incidence of under-five mortality.

$P_i = 1$ = Certain, i.e. 100% that all households have experienced incidences of under-five mortality.

$1-P_i$ = Uncertain, i.e. none of the households experienced incidences of under-five mortality.

β_0 = Constant;

β_1 to β_8 = Logistic regression coefficients of the predictor variables;

Independent variables in the model and their measurements were as follows:

X_1 = age of mother in complete years

X_2 = Marital status (1= Married, 0 = Single)

X3 = Distance from health facilities (1= km to modern health facilities, 0 = km to traditional health facilities)

X_4 = Household's average annual income in Tanzanian Shillings (TZS)

X_5 = Level of education (1= Formal, 0= No formal education)

X_6 = Attending traditional treatment (1= Yes, 0= No)

X_7 = Attending modern treatment (1= Yes, 0 = No)

X_8 = Severity of illness (1= Severe, 0 = No severe)

4. FINDINGS AND DISCCUSION

4.1 Association among Cultural Values, Traditional Practices, Socio-Economic Factors and Health Seeking Behaviour

The association among cultural values, traditional practices, soco-economic factors and HSB was determined using the Pearson product-moment correlation. To justify its use, Shapiro-Wilk and Kolmogorov-Smirnov tests were used to test for normality. The findings (Table 1) show that the data were normally distributed as the test failed to reject the null hypothesis of normality of the residuals/data (p = 0.07) and hence use of Pearson product-moment correlation was justified.

Table 1: Test for normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Residuals	0.045	408	0.05	0.993	408	0.070

Health seeking behaviour can be related to a number of factors which in one way or another collectively lead to use of traditional, modern or other treatment sources such as common traditional knowledge about medicine. For example, a combination of factors such as income (economic), cultural values and traditional practices can have an association with the HSB. This indicates that HSB may not be uniform as it is determined by a number of factors (Kalu *et al.*, 2017). In this study, the correlation analysis was used to map association between some socio-cultural and economic factors (cultural values, traditional practices and economic) and health seeking behaviour (i.e. Attending traditional or modern health services).

Correlation analysis of age, education level, cultural values, household annual income, traditional practices (socio-cultural and economics) and attending modern treatment (representing HSB) among respondents were analysed, and the results are as shown in Table 2. The idea behind this analysis was to establish whether there was an association between these variables. Correlation results indicate that there was a negative (r -0.193*) correlation between traditional practices and attending modern health facilities for treatment. Table 2 further indicates a negative (r = -0.477**) correlation between cultural values and attending modern health facilities for treatment. The table also shows a negative (r = -0.251**) correlation between attending modern treatment and education in the study area and a negative (r = -0. 481**) correlation between cultural values and education.

The study's findings suggest that traditional practices are associated with household health care seeking. The negative association between the two (traditional practices and health services seeking behaviour) indicates that traditional practices reduce attendance to the modern health facilities. Most of the time, traditional practices involve addressing health problems customarily amongst other practices like taboos, traditional medicines knowledge and others (UNICEF, 2013). These practices hinder attendance to modern health facilities (see Table 2). It is also reported that some traditional practices such as keeping large numbers of livestock for prestige hinder conversion of this household resource into monetary terms which could be used to cover costs of accessing/seeking treatment from reliable health facilities (Ngoitiko, 2008). Usually, education helps to create awareness and raise consciousness among people to use their household resources to access treatment in modern health facilities. It is unfortunate that, the findings in Table 2 show a negative association between education and the use of modern health facilities. This may be a result of cultural values assigned to traditional treatment and medicine as compared to the use of modern health facilities for treatment (Hill, 2003).

Table 2: Correlation analysis of factors related to health seeking behaviour

Variable	Age of Respondents	Education level of respondents	Cultural values	Attending for modern treatment	Household annual income	Traditional practices
Age of respondent	1					
Education level of respondent	0.045	1				
Cultural values	0.069	-0.418**	1			
Attending for modern treatment	0.141	-0.251**	-0.477**	1		
Household annual income	0.035	0.063	0.088	0.081	1	
Traditional practices	0.028	-0.182*	0.248**	-0.193*	0.021	1

*Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

On the other hand, cultural values embrace different issues, traditional medicines and health problems included. Therefore, for traditional community such as the agro-pastoralists in the study area have health problems being mostly addressed traditionally as a result of cultural values (Ogbuehi & Ebong, 2015). This is obvious, as it was presented in the findings; cultural values seem to have a negative association with attendance to modern health facilities for treatment. Normally, cultural values have a very strong influence on different life aspects including treatment patterns. Consequently, even people with higher level of education sometimes do not attend modern health facilities for treatment or do things contrary to reality because of cultural values (IFAD, 2009: African Union, 2010).

4.2 Factors Determining Households' Health Seeking Behaviour

According to Borah (2016), incidences of under-five mortality are results of several factors that regulate HSB thereby contributing to good or poor health. The binary logistic regression results (Table 3) show that among variables entered into the model, only age of the mother, number of children in the household and masculinity had a significant influence on the health seeking behaviour (use of modern or traditional health facilities).

Table 3: Binary logistic Regression results of factors influencing health seeking behaviour (n=160)

Variables entered in the model	ß	S.E	Wald	p-value	Odds Ratio
Age of mother	-0.430	0.150	5.31	0.012	0.66
Marital status	1.560	1.212	1.670	0.196	4.759
Household number of children	-0.082	0.017	14.387	0.000	0.922
Household Annual income	0.005	0.000	2.721	0.077	1.005
Level of education	0.560	0.418	1.796	0.180	1.751
Occupation of respondent	0.482	0.440	1.200	0.273	1.619
Masculinity	-1.014	0.445	4.840	0.028	0.367
Power distance	0.018	0.024	0.558	0.455	1.018
Constant	-4.417	1.901	5.398	0.020	82.847

Mother's age generally determines a household's HSB (Ogbuehi, 2015). The results in Table 3 show that a mother's age had a significant negative influence on the surveyed households' health seeking behaviour from modern sources (β = -0.430 at p $\leq$ 0.012). The Wald statistic of 5.310 and the 0.66 associated odds ratio indicate that aged mothers were less likely to seek health services from modern health facilities. Generally, a unit increase in a mother's age decreased the possibility of using modern health services by 0.7 times. A study by Hughes (2013) in South Africa found that older mothers used traditional treatment more than younger ones. Further, the same study explains that females used traditional medicines more than males. Older women in agro-pastoralist communities rely on traditional treatment. This is due to the fact that most of the times they do not have money at hand and lack power to correctly decide on using other household resources. And this is despite the fact that women are responsible in taking care of sick household members, particularly children under-five years. Generally, children

need special attention, especially when they fall sick. It is obvious if their parents particularly mothers use more of traditional treatment, the children will also be treated using the same. Therefore, the Government and other stakeholders need to intervene because treatment at traditional facilities is often challenged with lack the quality needed, particularly for treatment of under-fives. This study contributes to the body of knowledge that the households desire to have a high number of children among agro-pastoralists can lead to high household number of under-five mortality.

Household number of children had a negative and significant influence on the surveyed households HSB (β = -0.082) at P ≤ 0.000. The Wald statistic of 14.387 indicates that the variable was the most influential with a likelihood of contributing 0.922 times in reducing a household's chances of using modern health facilities. Cultural prestige linked to high number of children and livestock within the study villages can be the reason which drives agro-pastoralists household to bear many children thus increased costs for the competing needs such as food, education and cost of accessing reliable health services. The desire to maintain large livestock numbers affects use of the same to solve household needs even some of the emergency ones such as treatment of diseases. As a consequence, delayed treatment can cause mortality. This is similar to a conclusion by Odhiambo *et al*. (2016) in their study conducted in Kenya that households with many children failed to respond to important household issues such as accessing reliable health services.

Masculinity as a cultural behaviour is related to aspiration to accumulate and control resources (Taylor, 2015). The results in Table 3 show masculinity had a negative and significant (p ≤ 0.028) influence on the surveyed households health seeking behaviour (β = -1.014). The Wald statistic value of 4.840 and 0.4 odd ratio show that masculinity as a variable was variable amongst others which contributed to the decreased the likelihood of a household to seek treatment from modern sources by about 0.4. This conforms to a study by Syafiuddin and Mahsyar (2016) which reports that when household resources are not under common control by all household members the result is failure to support important household development, including securing correct health treatment. This suggests the need for clear training programmes aimed at changing agro-pastoralists' attitudes from imbalanced control of household resources needs to a more participatory one that will ensure even the households' health needs are adequately addressed.

4.3 Surveyed Households Experience of Under-Fives Mortality
Several factors can contribute to poor health which gradually lead to mortality, particularly that of under-fives (Borah, 2016). The binary logistic regression findings (Table 4) show that among the variables entered in the model, age of mother and attending to traditional treatment had significant influence on agro-pastoralist households' experience of under-fives mortality.

Table 4: Binary logistic regression results on health seeking behaviour among agro-pastoralists and Households Under-Fives Mortality (n=160)

Variables entered in the model	β	SE	Wald	P-Value	Odd Ratio
Age of mother	1.053	0.079	17.000	0.000	0.349
Marital status	0.008	0.054	0.020	0.886	0.992
Attending to traditional treatment	0.340	0.020	22.000	0.020	1.035
HH Annual income	0.579	0.262	4.868	0.270	1.784
Level of education	0.149	0.178	0.699	0.403	0.862
Contact health care on the onset of disease	0.155	0.178	0.757	0.384	0.857
Severity of illness	0.173	0.179	0.930	0.335	0.841
Attending to modern treatment	0.379	0.293	1.675	0.196	1.460
Constant	2.929	0.387	57.164	0.000	18.704

Table 4 further shows that age of mother had a positive and significant influence on the surveyed households' experience of under-five mortality (β = 1.053) at P ≤ 0.01. The Wald statistic value of 17.000 shows that age of mother was the second most important variable in relation to HSB 0.3 times contributing to household experience of under-five mortality. Aged agro-pastoralists women had many children thus increased needs for households in

particular food and health services. A study by Agwanda (2014) asserts that having many children implies increased needs for food, clothing, education, health services and many others. Therefore, when all these expenses are not manageable, a particular household uses low quality services. When it comes to the case of health services, agro-pastoralists normally opt for traditional treatment which the study on which this paper is based consider unreliable. Based on the above, agro-pastoralist households with many children are likely to experience higher under-five mortality incidences as under-five children are vulnerable than older persons. The paper generally sees having many children and lack of ability to provide the necessary health needs as a cause of higher incidences of under-five mortality in the study area. Awareness creation campaign is important in the area so that all households can bear the number of children whom they can support on health care, among other needs.

The binary logistic regression (Table 4) shows that attending traditional treatment had a positive and significant relationship with under-fives mortality ($\beta = 0.340$) at $P \leq 0.05$. The Wald statistic of 22.0 (highest) indicates that the variable has a strong relationship with under-five mortality. This implies that attending traditional treatment denied under-five children receiving correct treatment. The outcome of treatment at unreliable sources was high prevalence of mortality, specifically that of under-five children. Agro-pastoralist reside in rural areas where there is easy access to traditional treatment services. Normally, sick persons within agro-pastoralist households which rely more on the traditional treatment just like others are vulnerable to the associated adverse impacts of using unreliable treatment sources. Intervention is considered useful in order to reduce impact which otherwise leads to mortality. Moreover, the nature of agro-pastoralists' lives, characterised by seasonal movements makes them more vulnerable than other rural dwellers (Sarah *et al.*, 2016). A study by Manongi *et al.* (2014) in Tanzania conforms to the current study's observation that under-fives' mortality is pronounced more in rural areas mostly within agro-pastoralist communities.

5. CONCLUSIONS AND RECOMMENDATIONS

This study contributes to the body of knowledge that the households' desire to have a high number of children among agro-pastoralists leads to higher under-five mortality. It is concluded that traditional practices, cultural values and households HSB are correlated and that this correlation leads to more use of traditional treatment. It is further concluded that a mother's age, number of children in a household and masculinity do influence a household's HSB. The drivers of the above factors influence on the HSB are values and cultural practices which are dominant in the study area. Therefore, it is recommended that there is need to urgently create awareness so that agro-pastoralists can understand the importance of seeking health services from modern facilities. Thus it is suggested that the Government and other stakeholders should invest in establishment of formal health services within the study villages. In addition, community development officers and health personnel should continuously sensitize the residents in the study area on harmful traditional practices. They should also invest in training of trainers from study villages in order to facilitate understanding and changes within the agro-pastoralists community thus enabling them to seek treatment from reliable sources and consequently reduction of under-five mortality.

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