HEALTH SEEKING BEHAVIOUR, KNOWLEDGE, ATTITUDE AND PRACTICES AMONG CAREGIVERS OF CHILDREN UNDER 5 YEARS ADMITTED WITH PNEUMONIA AT MBAGATHI DISTRICT HOSPITAL

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ABSTRACT
The study objective was to establish health seeking behaviour, knowledge level, attitude/ practices among caregivers for children under 5 years with pneumonia. This was a descriptive cross – sectional facility based design. The study area was Mbagathi district hospital, Nairobi county, Kenya. 150 participants took part in the study. There were more caregivers with inappropriate healthcare seeking behaviour 99(66.0%) than those with appropriate healthcare seeking behaviour 51(34.0%). Knowledge level of pneumonia was very low at (96.3%). Severity of pneumonia was significantly associated with health seeking behaviour. Most caregivers had a low social economic status 81(54%). The main source of income was through businesses (50.7%) others were employment 44(29.3%) and casual jobs 30(20%). Most caregivers would first "*wait and see"* and use over the counter medication. Knowledge level of pneumonia was not low. perception towards pneumonia was it was a dangerous disease. Most caregivers had a low social economic status.

Key Words: Behaviour; Caregiver; Pneumonia; Severe; Attitude; Practice; knowledge; Seeking

1. INTRODUCTION

In children, pneumonia is the most important single cause of disease burden and a major cause of child mortality worldwide. It is estimated that approximately 2 million children die each year due to pneumonia in developing countries (Black et al., 2003). Children are a vulnerable group of people dependent on their caregivers in seeking appropriate healthcare. The under 5 mortality stands at 74%, the immunization rate is 68-76% which is way below the recommended 85% by WHO (WHO, 2016). Mortality for U5 is a major public health concern in developing countries (Tadesse et al., 2009; WHO, 2009). This group is vulnerable to illnesses due to the fact that their immunity is low and the economic setup in developing nations is associated with malnutrition which makes them susceptible to infectious diseases such as pneumonia that are treatable and preventable (Dadi et al., 2014; Fekadu et al., 2014)

2. BACKGROUND

Worldwide, Pneumonia is the single largest infectious cause of death in children U5 years. In 2015 it is estimated to have killed 920,136 children below 5 years. This accounts for 16% of all childhood deaths for children under five years. Pneumonia not only affects children but also families as well (WHO, 2016). Sub-Saharan Africa regions has the highest mortality rates for children U5 in the world, with 1 child in every 13 dying before they reach their 5th birthday. This compared to high income countries is 14 times higher (WHO, 2018). Kenya is ranked among the top 15 countries with the highest number of mortalities due to pneumonia. The mortality being rated at 50.3% per 10,000 U5 years per annum (Rudan et al., 2008). Pneumonia in Kenya, is the second leading cause of death after malnutrition for children under 5 years, attributing to 16% of fatalities in this age group. In the year 2008, 111,000 out of 6,185,800 children under 5 years were estimated to have died as a result of pneumonia (Black et al., 2010).

In Nairobi county, pneumonia cases have raised significantly in the recent past. This is a respiratory infection that affects the respiratory system that most caregivers mistake for a flue that will go away in due time. For this reason, most caregivers do not seek medical care immediately but opt for homemade remedy, and over the counter medication as their first line of treatment. Knowledge, attitude and practices of the health care givers, early recognition of danger signs, likelihood of

mothers seeking healthcare are important to manage childhood illnesses in developing countries (Awasthi et al., 2006). Children represent the future, ensuring their healthy growth and development ought to be a prime concern of all societies. Studies have been done to identify the determinants of U5M; however, some of these studies did not consider important covariates such as the knowledge and attitude among the care givers for the children under five (BE Egbewale, 2009)

3. METHODOLOGY

3.1 Study Subjects

The study was carried out in Nairobi county, at Mbagathi Hospital which is a district hospital owned by the ministry of health (MOH). The prevalence of pneumonia at Mbagathi District Hospital (MDH) was 11% (p), as obtained from hospital records as at 2012. 150 eligible caregivers with children U5 years admitted with pneumonia were recruited. This entailed those who consented and understood English and Swahili. Upon admission, the child was first examined by the paediatrician and diagnosed with either severe or very severe pneumonia. The criteria used to identify severity of illness was based on WHO guidelines of pneumonia (WHO, 2015). All this information was put into records in the patient file and patient registry book. This is what the principal researcher used to recruit caregivers into the study. To gain access to the hospital, the principal researcher sought permission from the medical superintendent who then introduced the researcher to the paediatrician in charge. An introduction letter from the college was issued to the eligible caregivers. The investigator introduced herself to the caregiver, explained the benefits of the study, discomfort involved, and the reason why he/she was most eligible to take part. Once the participants understood these, they signed an informed consent form prior to a face to face interview. The interview took approximately 15- 20 minutes. Once the interview was over the questionnaires was filed and stored safely in a lockable cabinet where it was only accessible to the principal researcher. Study participants were assured of confidentiality by use of codes on questionnaires to maintain anonymity.

3.2 Study Design

The study adopted a descriptive cross-sectional design. It employed the use of both qualitative and quantitive data collection methods. Questionnaires guides were used to collect data.

3.3 Data Management and Analysis

Data was entered in MS access and later exported to statistical package for social science (SPSS) for analysis. For any open ended questions, the researcher listed and quantified results by means of a priority list. The quantitative data was analysed using SPSS Version 24.0. Descriptive statistics including mean, standard deviations, cross tabulation and frequencies were performed. Univariate analysis was done using the Pearson's chi-square test and Independent T-test for testing associations of selected factors with mothers' knowledge of pneumonia and their health care seeking behaviour. Multivariate analysis was done using binary logistic regression to control for confounders and effect modification. Backward conditional 21 method was used to establish true predictors. The predictors of knowledge of pneumonia and health care seeking behaviour were estimated by the calculation of odds ratios (OR) and 95% Confidence Intervals (CIs) and $p < 0.05$ was considered as significant.

4. RESULTS

4.1 Health seeking behaviour among primary caregivers for children U5 years.

Findings from the study revealed there were more caregivers with inappropriate healthcare seeking behaviour 99(66.0%) than those with appropriate healthcare seeking behaviour 51(34.0%). There was a small proportion of the caregivers 32(21.4%) who promptly sought healthcare within 24 hours as compared to those who did not 118(78.6%). This is shown in the figure below. (figure 1).

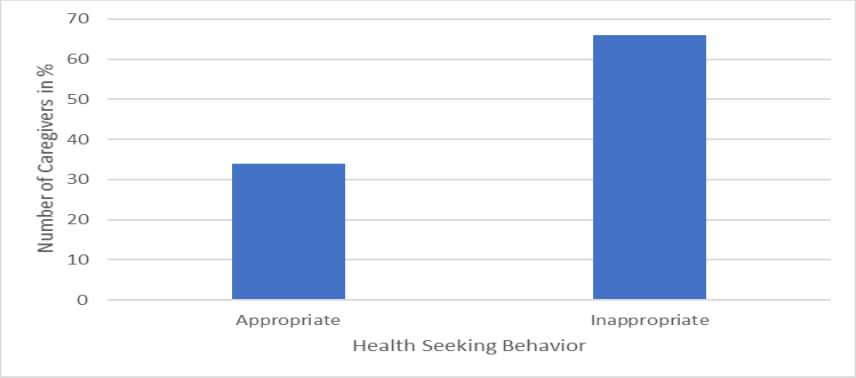

Figure 1: Health seeking behavior of primary caregivers

4.2 Factors influencing health seeking behaviour among caregivers for children under 5 years with Pneumonia.

The study findings showed that, the three factors that were found to be influencing health seeking behaviors of caregivers were; age of children, tertiary education level and knowledge level of pneumonia among caregivers remained statistically significant after controlling for other factors. Caregivers with children less than one year (AOR=1.620, 95% CI=1.142, 2.296 p<0.01), were more likely to have appropriate care seeking behavior compared to caregivers with children of more than one year. It was also noted that caregivers with tertiary education (AOR=0.671, 95% CI=0.482, 0.932; p<0.01) and those with knowledge of pneumonia (AOR=1.410, 95% CI=1.065 1.866 p<0.05) were more likely to have appropriate health seeking behavior. These characteristics of adjusted odds ratio are summarized in the table below

Table 1: Adjusted odds ratio from logistic regression analysis of selected factors influencing health care-seeking for children with Pneumonia

Characteristics	Inappropriate care, (%)	Appropriate care, (%)	Adjusted Odds Ratio	95% CI
Age group of children				
>= 1 year	42.5	57.5	1.620**	1.142-2.296
< 1 year	66.6	33.4		
Child hospital admission before		79.5		
Yes	72.0	20.5	1.118	0.902-1.385
No	81.0	29.5		
Education level of caregiver		19.0		
Primary (class 1 to 8)	70.5	25.0	Reference	Reference
Secondary (form 1 to 4)	81.0		0.777	0.590-1.023

Characteristics	Inappropriate care, (%)	Appropriate care, (%)	Adjusted Odds Ratio	95% CI
Tertiary (college/ university)	75.0		0.671**	0.482-0.932
Knowledge of symptoms of		80.7		
pneumonia		30.6		
Yes	19.3	63.7	1.410*	1.065-1.866
No	69.4	40.9		
Marital Status		86.2		
Married	17.3	13.8	1.189	0.795-1.776
Single	20.5			
Occupation	82.3	30.3		
Employed	17.7	19.7	0.741	0.420-1.321
Not employed				
Gender of child	69.7			
Employed	80.3		0.813	0.610-1.024
Not employed				

****P<0.01; *P<0.05 CI**-confidence interval

4.3 Association of selected factors with healthcare seeking behaviour

Using bivariate analysis, it was found that there were statistically significant associations between health-seeking behavior and some variables. Children who were aged less than 1 year were more likely to get appropriate care when compared to children of more than 1 year old (P- <0.001); parents who had tertiary education were more likely to provide appropriate health care than those who had secondary and primary education (P-0.05); Caregivers who had knowledge of symptoms of pneumonia were more likely to provide appropriate care than those who did not (P-0.001).The higher the income of the caregiver, the more the caregiver accessed health care services from a health facility (P-0.004). This is shown in Table 2 below.

Table 2: Association of selected factors with healthcare seeking behavior

Characteristics	Inappropriate care, (%)	Appropriate care, (%)	Odds Ratio	95% CI	P value
Age group of children					
>= 1 year	42.5	57.5	2.680	1.971-3.672	**0.001**
< 1 year	66.6	33.4			
Child hospital admission before		79.5			
Yes	72.0	20.5	0.594	0.224-1.575	0.291
No	81.0	29.5			
Education level of caregiver		19.0			
Primary (class 1 to 8)	70.5	25.0	Reference	Reference	Reference
Secondary (Form 1 to 4)	81.0		0.561	0.230-1.374	0.203
Tertiary (college/ university)	75.0		0.795	0.262-2.414	**0.051**
Knowledge of symptoms of		80.7			

Characteristics	Inappropriate care, (%)	Appropriate care, (%)	Odds Ratio	95% CI	P value
pneumonia		30.6			
Yes	19.3	63.7	0.54	0.332-0.881	**0.015**
No	69.4	40.9			
Marital Status		86.2			
Married	17.3	13.8	2.720	1.630-4.55	0.321
Single	20.5				
Occupation	82.3	25.5			
Employed	17.7	26.3	0.741	0.420-1.321	0.314
Not employed					
Caregivers Age	74.5	30.8			
18-29 years	73.7	23.5	0.956	0.447-2.043	0.908
30-49 years		20.6			Refernce
Economic status	69.2		Reference	Reference	0.749
Low Income	76.5		0.842	0.293-2.416	0.386
Middle Income	79.4		1.444	0.627-3.329	
High Income					

***P<0.05 CI**-confidence interval

There were no significant association between the socio demographic factors of caregivers with severity of pneumonia**. (table 2)**

4.4 Knowledge level of pneumonia among primary caregivers for children under 5 years

4.4.1 Symptoms of pneumonia

Fever was identified by most of the caregivers 39(26.0%) as the symptom of pneumonia followed by Coughs with 33(22.0%) which prolonged for approximately 3 to 5 days. Grunting was indicated by 14(9.0%) of caregivers while shivering, vomiting and loss of appetite were indicated by 8(5.0%) of the caregivers. Diarrhoea was next with 6(4.0%) of the caregivers indicating as one of the Pneumonia symptoms. Convulsions, headache and sweating were indicated by 3(2.0%) of the caregivers. A good number of the caregivers 27(18.0%) did not know the symptoms of pneumonia (Fig. 2).

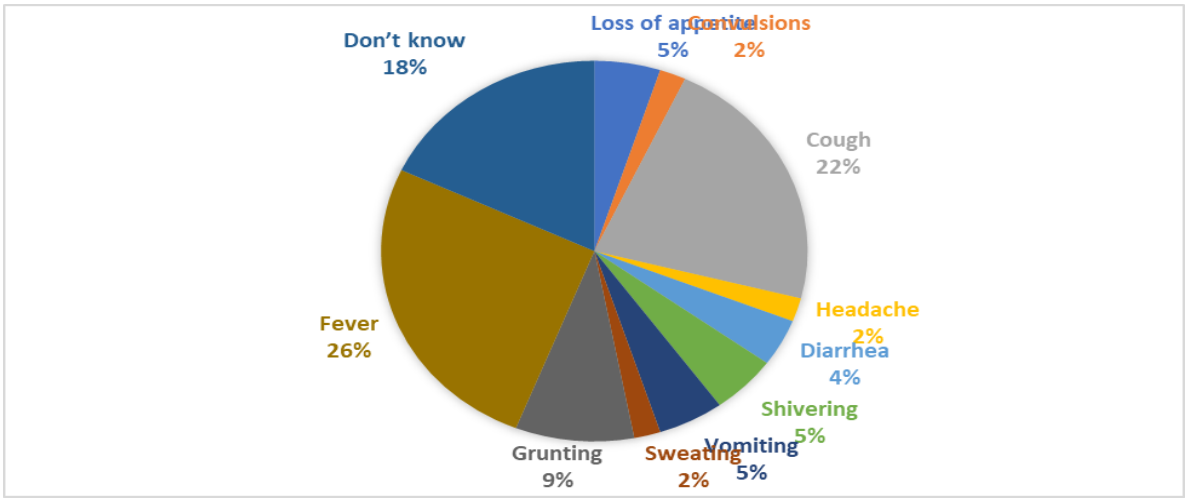

Figure 2: Symptoms of pneumonia.

4.2.2 Causes and transmission of pneumonia

Exposure of a child to cold was believed by most of the caregivers 144(96.3%) to be the main cause of pneumonia while 6(3.7%) of them believed that pneumonia was caused mostly by bacteria. Majority of the caregivers 105(70.0%) were not aware that pneumonia could be spread via air-borne droplets from a cough or sneeze while 45(30.0%) were aware. (figure 3).

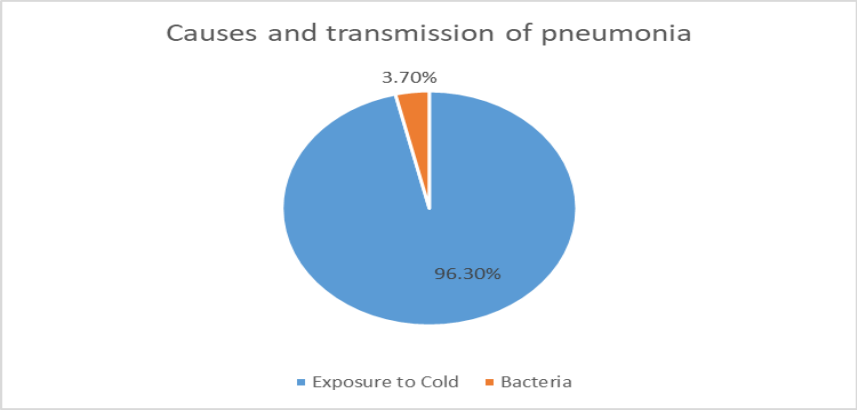

Figure 3: Causes and transmission of Pneumonia

4.4.3 Main preventive measures against pneumonia

On prevention of pneumonia, most of the caregivers indicated keeping warm 128(85.0%) as the main preventive measure followed by personal hygiene and environmental hygiene with 7(5.0%) and 6(4.0%) respectively. Others indicated sleeping under the net 4(3.0%), avoiding overcrowding 3(2.0%) and use of insecticides 2(1.0%).

4.5 Attitude (perception) and practices among caregivers towards pneumonia in children U5

In regards to home management practices prior to hospital treatment for a child suspected of pneumonia, majority 116(77.3%) indicated they would feed a child with liquid food/fluids (like milk and porridge), 72(48.3%) would breastfeed, 68(45.3%) would give drugs, for example, pain killers, aspirin, 19(12.6%) would do nothing while 1(0.7%) would use herbs and onions to rub on child's stomach. There was no known curable home management practice towards treatment of pneumonia in this study.

4.6 Severity of pneumonia for children under five years

Based on diagnosis made during admission from medical records children who had severe pneumonia were more than half 111(74.0%) as compared to those who had very severe pneumonia 39(26.0%). (figure 4)

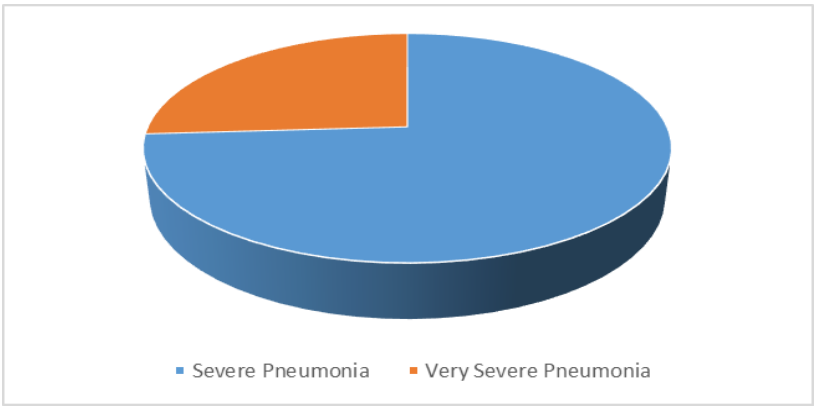

Figure 4: Severity of pneumonia

There were more male children with very severe pneumonia 104(69.2%) compared to female children with very severe pneumonia 46(30.8%). (figure 5)

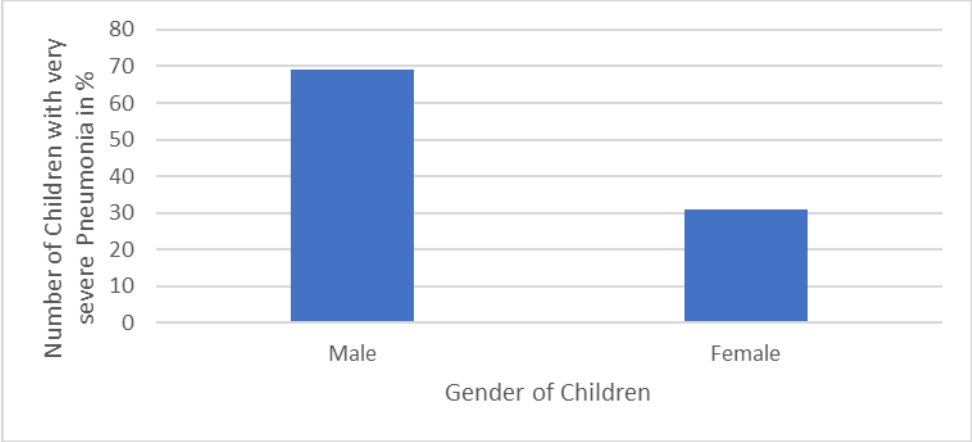

Figure 5: Number of children per gender with very severe Pneumonia

4.7 Socio-demographic characteristics of caregivers

The overall mean age of the caregivers interviewed was 27.05±6.37 years ranging from 18 to 62 years. Majority of the caregivers 111(74.0%) were between the age of 18 and 29 years while 42(28.0%) were between the age of 30 and 49 years. There was only one caregiver 1(0.7%) within the age group of 50 years and above. Majority of the caregivers 136(90.7%) had a parity of one. Caregivers who were married at the time of the interview were the majority at 122(81.0%) while the rest 28(19%) were single. Those who were not married, divorced or widowed were clustered as singles. There were few caregivers 20(13.3%) with college or university education as compared to those who had secondary education 42(28.0%) and primary education at 88(58.7%). In terms of employment, about 69(46%) of the caregivers were employed while majority 81(54%) were unemployed. The main source of income was through businesses 76(50.7%), followed by employment 44(29.3%) and casual jobs 30(20%.). The demographic characteristics of caregivers is summarized in table 3 below.

Table 3: Socio-demographic characteristics of caregivers

Characteristics	Frequency, N=150 (%)
Relationship of caregiver to child	
Mother	136(90.7)
Father	10(6.7)
Other (grandmother, sister, auntie)	4(2.6)
Parity of caregiver	
1 child	136 (90.7)
More than 1 child	14(9.3)
Age group of caregiver	
18-29 years	111 (74.0)
30-49 years	29(26.0)
Education level of caregiver	
Primary (class 1 to 8)	88(58.7)
Secondary (form 1 to 4)	42(28.0)
Tertiary (college/ university)	20(13.3)
Occupation of caregiver	
Employed	69(46.0)
Not employed	81(54.0)
Source of income for caregiver	
Employment	44(29.3)
Business	76(50.7)
Casual Jobs	30(20.0)
Residence	
Urban	18(12.0)
Peri-urban	69(46.0)
Slums	63(42.0)
Religion of caregiver	
Muslim	8(5.3)
Christian	142(94.7)
Marital status of caregiver	
Married	121(81.0)
Single (Divorced/Widowed)	29(19.0)
Do you or anyone in your household own a working cell phone?	
Yes	114(75.3)
No	36(24.7)
Do you own a working radio?	
Yes	93(61.6)
No	56(38.4)
Do you own a working television?	
Yes	92(61.7)
No	58(38.7)

4.8 Association of selected factors with severity of pneumonia

Children who had very severe pneumonia were more frequently younger in age ($p < 0.001$), had lower weight for age ($p = 0.02$), took more than 3 days before getting health care ($p < 0.001$), and their household had more than three members (p=0.05). It was also noted that children who had been admitted before were 2.8 times more likely to get appropriate care than those who had not

(OR 2.80; 95% CI: 0.786-9.970, p=0.099). Children with low weight for age were 1.5 times more likely to have very severe pneumonia (OR 1.47; 95% CI: 1.148-2.837).

Table 4a: Association between factors affecting care seeking behavior and severity of pneumonia

Characteristics	Very Severe Pneumonia Frequency, (%)	Severe Pneumonia Frequency, (%)	Odds Ratio	95% CI	P value
Gender of children					
Male	62(69.7)	27(30.3)	0.562	0.258-1.222	0.143
Female	49(80.3)	12(19.7)			
Age group of children					
>= 1 year	88(42.5)	119(57.5)	2.680	1.971-3.672	**0.013**
< 1 year	62(66.6)	31(33.4)			
Weight for age					
Low weight for age	85(72.0)	33(28.0)	1.594	0.224-1.575	0.291
Normal weight for age	26(81.0)	6(19.0)			
Child hospital admission before	32(68.1)	15(31.9)	1.543	0.718-3.315	0.265
Yes	79(77.5)	24(22.5)			
No					
Any child congenital malformation?	7(77.8)	2(22.2)	0.803	0.159-4.040	0.790
Yes	104(73.8)	37(26.2)			
No					
Parity of caregiver	100(73.5)	36(26.5)	1.320	0.348-5.002	0.682
1 child	11(78.6)	3(21.4)			
More than 1 child					
Education level of caregiver	62(70.5)	26(29.5)	Refer	Reference	Referenc
Primary (class 1 to 8)	34(81.0)	8(19.0)	ence	0.230-1.374	e
Secondary (form 1 to 4)	15(75.0)	5(25.0)	0.561	0.262-2.414	0.203
Tertiary (college/ university)			0.795		0.685
Knowledge of pneumonia symptoms	79(74.5)	27(25.5)		0.411-2.017	
Yes	32 (72.7)	12(27.3)	0.911		**0.05**
No					
Duration to medical care	45(73.8)	16(26.2)		0.486-2.143	
< = 24 hours	66(74.2)	23(25.8)	1.020		**0.01**
> 24 hours					
Pre-admission care	90(71.4)	36(28.6)		0.786-9.970	
Yes	21(87.5)	3(12.5)	2.800		0.099
No					

***P<0.05**

Table 4b: Association between factors affecting care seeking behavior and severity of pneumonia

Characteristics	Very Severe Pneumonia Frequency, (%)	Severe Pneumonia Frequency, (%)	Odds Ratio	95% CI	P value
Pre-admission care					
Yes	90(71.4)	36(28.6)	2.800	0.786-9.970	0.099
No	21(87.5)	3(12.5)			
Number of rooms					
1 room	72(75.0)	24(25.0)	0.867	0.408-1.842	0.710
2 or more	39(72.2)	15(27.8)			
Total number of family in your household			0.796	0.361-1.761	**0.05**
=< 3 members	29(72.5)	11(27.5)			
> 3 members	82(74.5)	39(25.5)			
Cooking fuel			0.650	0.200-2.109	0.470
Kerosene	78(70.9)	32(29.1)	0.349	0.093-1.303	0.110
Biomass fuels	17(56.7)	13(43.3)	Reference	Reference	Reference
Clean fuel (Gas & electricity)	15(78.9)	4(21.1)			
Residence			1.479	0.446-4.903	0.520
Urban	13(72.2)	5(27.8)	1.683	0.758-3.733	3.733
Peri-urban	48(69.6)	21(30.4)	Reference	Reference	Reference
Slums	50(79.5)	13(20.6)			
Age group of caregivers			0.77	0.781–1.384	1.04
18-29 years	62.4	37.6			
30-49 years	63.4	36.4			

***P<0.05**

DISCUSSION

5.1 Health seeking behaviour pattern among primary caregivers for children U5 years

Health seeking behavior refers to the action taken by an individual when seeking health services in a given health care system. Appropriate care in this study, refers to the healthcare sought from qualified medical professionals in a health care facility within 24hours from the onset of symptoms. Most caregivers did not seek health care first from qualified personnel in a health facility. Care was initially sought from; traditional healers, over the counter medication, used left over medication and home remedy. In this study government was the most preferred by majority of the caregivers in seeking health care as compared to private hospitals. This contrasts with previous studies done in Pakistan and Badin where it was found that caregivers preferred private health providers over public and that they saw private health providers as more competent (Aftab *et al.*, 2018; Geldsetzer *et al.*, 2014).

Self-medication was a practice mostly due to financial constraints and the distance to health facility. Caregivers could prefer to buy cheap medication and from unqualified personnel, in the act of reliving the symptoms rather than seeking a curative measure. This is similar to a study carried out by a survey in a Kenya (MOH, 2014) that cited there is a high prevalence of self-medication among its population.

5.2 Knowledge level about pneumonia among primary caregivers for children U5 years

In this context, knowledge of danger signs in infancy was assessed because this determines the likelihood of caregivers seeking health care. A good number of the caregiver's in this study were familiar with danger signs. About 82% mentioned coughs, grunting, shivering, vomiting, diarrhea, convulsions, headache, sweating and loss appetite as danger signs. This is different with a study conducted in Nigeria that indicated that majority (95%) of the caregivers had knowledge of only one danger sign and that is fever (Ekwochi *et al.*, 2015). However, this study is similar to one conducted in Nairobi in which (73.1%) of the caregivers were familiar with danger signs (Wambui *et al.*, 2018).

The main source of information was word of mouth from other mothers 79(53%) and health workers 45(30%) at the clinic compared to mass media (Television/radio) which was 12(8%) and 10(7.3%). Caregivers who previously had a child suffering from pneumonia were 2.8 times likely to have knowledge of pneumonia than those who did not (AOR 2.8, (95% CI 0.78-9.97). These findings concur with a study in Bangkok (B.-U. Zaman, 1994) but contrasts with other studies that found no significant associations between occurrence of childhood pneumonia and knowledge of pneumonia (Hui, 2000; Ngoclan, 1999; Siswanto *et al.*, 2007).

Majority 144(96.3%) of the caregivers believed pneumonia is caused by cold temperatures/weather while a few 6(3.7%) indicated bacteria. This is similar to Honduran mothers cited cold temperature to be the cause of pneumonia (Hudelson, 1994).

5.3 Attitude (perception) and practices among primary caregivers for children U5 years

Attitude and practices were found to have an associate with inappropriate health seeking behaviour. Majority of the caregivers were female and most came from male dominated households. The head of the home is the sole decision maker in most African homes. From the study caregivers had to seek consent from senior members of the family when to take their children to the hospital, and what kind of remedy to be sought from the onset of symptoms. This concurs with a study done by (Omotoso, 2010) that gender discrimination robs off women the power to solely make decision leading to delay in seeking medical care on time as well as seeking medical care from unlicensed personnel.

Majority of the caregivers indicated that they took their children to health facility when they are critically ill. Similar study in Yemen found that caregivers sought health care when they perceived the illness is severe and they could no longer manage the symptoms at home. (Webair & Bin-Gouth, 2013).

Another practice that was brought up from the study was from the onset of symptoms, caregivers could "*wait and see*" if the symptoms persisted. This deteriorated the child's condition from bad to worse thus increasing the mortality rate.

5.4 Social economic and demographic characteristics among primary caregivers of children U5

Educational achievement was a strong determinant of health care seeking such that children of educated caregivers would receive more medical care than those of uneducated caregivers. This is comparable to previous studies done in Nairobi (Taffa & Chepngeno, 2005) Bangladesh (Amin *et al.*, 2010) and Tanzania (Kahabuka *et al.*, 2013). But this contrasts with a study done in Sierra Leone that found no relationship between education and health seeking behavior (Diaz *et al.*, 2013).

From the study, education level was found to be associated with health-seeking behaviour. Majority of the caregivers had Primary education at 88(58.7%) while secondary level and tertiary level were at 42(28.0%) and 20(13.3%) respectively. It was found Caregivers with tertiary and secondary education were more likely to seek appropriate health care as compared to those who had primary level. This is because educated caregivers were likely to seek quality health services and have high chances of making informed choices since they are more knowledgeable. This is in concurrent to a study done by (Ahmed *et al.*, 2000).

In this study there was a significant association seen between socio-economic characteristics and immediate health seeking behavior. The higher the income of the caregiver the more the caregiver accessed health care services from a health facility. This is similar to a study which was conducted in Nigeria which reported that low social economic status has been associated with poor health seeking behavior and poor utilization of health care facilities (Ogunlesi *et al.*, 2005).

The social economic status of caregivers was found to be significantly associated with where treatment was sought from. Financial constraints were cited as a major hindrance to appropriate healthcare seeking by most caregivers. About 69(46%) of the caregivers were employed while majority 81(54%) were unemployed. This may be supported by the fact that there were more caregivers 65(43.3%) with low income status as compared to those with Middle 51(34.0%) and High-income status 34(22.7%). Caregivers with high income were 1.4 times more likely to seek appropriate care compared with those with middle and low income (OR 1.444; 95% CI: 0.627-3.329). This is an indication that majority of the caregivers had a low social economic status, and the uptake of health services was very low. This explain why most caregivers first sought treatment from over the counter medication, of which most were from unqualified personnel, using left over medication and seeking help from traditional healers after the onset of symptoms without clear diagnosis of the disease. 73(49.1%) of the caregivers had to "*wait and see*" whether the child will improve. This contributed to delaying in seeking appropriate health care. This is similar to findings carried out by (Filmer, 2005) where he strongly relates to socio-economic status with wealthier households being more likely to seek care or advice outside the home, compared to members of poorer homes.

Care givers age was found to have an associate with health seeking behaviour. Majority of the caregivers 111(74.0%) were between the age of 18 and 29 years while 26.0% were between the age of 30 and 49 years. This could be young mothers are not economically empowered hence their level of health service uptake is low contributing to inappropriate health seeking behaviour. These findings contradict that carried out in rural Tanzania by (Kante *et al.*, 2015), where young mothers were cited to be more likely to seek help when seeking medical care due to their exposure to mass media enabling them to be more informed and seek better health care.

This study did show that marital status of the caregiver was significantly associated with health seeking behaviour. Those who were single (Widowed/Divorced/Separated) were the least likely to seek appropriate care whereas those who were married were two times more likely to seek appropriate care (OR 2.720; 95% CI: 1.630-4.55).

Conclusion

The health-seeking behaviour of caregivers of children with pneumonia was first *wait and see*, use over the counter medication, and self-medication prior to seeking medical treatment in a health facility. This led to delayed seeking of appropriate medical care thus hindering effective management of pneumonia. Knowledge level of pneumonia was not low among the caregivers, by the fact they correctly mentioned at least two symptoms of pneumonia. The perception and attitude among caregivers towards pneumonia was that it was a dangerous disease due to the fact it causes difficulty in breathing leading to death. Low level of education, low income, and unemployment reflected a low social economic status among the caregivers. Financial constricts, ignorance and lack of information resulted in delayed seeking of appropriate healthcare.

Recommendations.

Raising awareness; There is a need to widely utilize media platforms like televisions and radio to run health education, in efforts to inform more caregivers on prevention and control measures/mechanisms of pneumonia thus enhancing appropriate health seeking behaviour.
Campaigns mobilized by CHW; although most caregivers knew what pneumonia is and they could mention at least one to two symptoms, efforts to sensitize more caregivers on danger signs of pneumonia should be made to enhance caregivers to seek medical invention on time.
Provide alternative source of income; to reduce dependency on employment. The government to find ways to encourage people to be self-employed either by reducing taxation and supporting SMEs. This in the long run will improve their social economic status.

REFERENCES

[1] Aftab, W. A.-O., Shipton, L., Rabbani, F., Sangrasi, K., Perveen, S., Zahidie, A., . . . Qazi, S. (2018). Exploring health care seeking knowledge, perceptions and practices for childhood diarrhea and pneumonia and their context in a rural Pakistani community. (1472-6963 (Electronic)).

[2] Ahmed, S. M., Adams Am Fau - Chowdhury, M., Chowdhury M Fau - Bhuiya, A., & Bhuiya, A. (2000). Gender, socioeconomic development and health-seeking behaviour in Bangladesh. (0277-9536 (Print)).

[3] Amin, R., Shah Nm Fau - Becker, S., & Becker, S. (2010). Socioeconomic factors differentiating maternal and child health-seeking behavior in rural Bangladesh: A cross-sectional analysis. (1475-9276 (Electronic)).

[4] Awasthi, S., Verma, T., & Agarwal, M. (2006). Danger signs of neonatal illnesses: perceptions of caregivers and health workers in northern India. *Bulletin of the World Health Organization, 84*(10), 819-826. doi:10.2471/blt.05.029207

[5] BE Egbewale, F. O., OO Odu, WO Adebimpe. (2009). Morbidity Pattern among under Five Children and Preventive Practices of Mothers and Care Givers in Olorunda Local Government Area. *4*.

[6] Black, R. E., Cousens S Fau - Johnson, H. L., Johnson Hl Fau - Lawn, J. E., Lawn Je Fau - Rudan, I., Rudan I Fau - Bassani, D. G., Bassani Dg Fau - Jha, P., . . . Mathers, C. (2010). Global, regional, and national causes of child mortality in 2008: a systematic analysis. (1474-547X (Electronic)).

[7] Black, R. E., Morris Ss Fau - Bryce, J., & Bryce, J. (2003). Where and why are 10 million children dying every year? (1474-547X (Electronic)).

[8] Dadi, A., Kebede, Y., & Mengesha, Z. (2014). Determinants of Pneumonia in Children Aged Two Months to Five Years in Urban Areas of Oromia Zone, Amhara Region, Ethiopia. *OALib, 01*, 1-10. doi:10.4236/oalib.1101044

[9] Diaz, T., George As Fau - Rao, S. R., Rao Sr Fau - Bangura, P. S., Bangura Ps Fau - Baimba, J. B., Baimba Jb Fau - McMahon, S. A., McMahon Sa Fau - Kabano, A., & Kabano, A. (2013). Healthcare seeking for diarrhoea, malaria and pneumonia among children in four poor rural districts in Sierra Leone in the context of free health care: results of a cross-sectional survey. (1471-2458 (Electronic)).

[10] Ekwochi, U., Ndu, I. K., Osuorah, C. D., Amadi, O. F., Okeke, I. B., Obuoha, E., . . . Obumneme-Anyim, N. I. (2015). Knowledge of danger signs in newborns and health seeking practices of mothers and care givers in Enugu state, South-East Nigeria. *Ital J Pediatr, 41*, 18. doi:10.1186/s13052-015-0127-5

[11] Fekadu, G. A., Terefe, M. W., & Alemie, G. A. J. S. J. o. P. H. (2014). Prevalence of pneumonia among under-five children in Este Town and the surrounding rural Kebeles, Northwest Ethiopia: a community based cross sectional study. *2*(3), 150-155.

[12] Filmer. (2005). Fever and its treatment among the more and less poor in sub-Saharan Africa. Health Policy Plan.20, 337-346. *Health policy and planning, 20*, 337-346. doi:10.1093/heapol/czi043

[13] Hudelson, P. M. (1994). The management of acute respiratory infections in Honduras: a field test of the Focused Ethnographic Study (FES). *Med Anthropol, 15*(4), 435-446. doi:10.1080/01459740.1994.9966104

[14] Hui, H. (2000). Risk factors of pneumonia among children under children under five years of age at Queen Sirikit National Institute of Child Health. *Bangkok, Thailand. NakhonPathom: Mahidol University*.

[15] Kahabuka, C., Kvåle, G., & Hinderaker, S. G. (2013). Care-Seeking and Management of Common Childhood Illnesses in Tanzania – Results from the 2010 Demographic and Health Survey. *PLoS One, 8*(3), e58789. doi:10.1371/journal.pone.0058789

[16] Kante, A. M., Gutierrez, H. R., Larsen, A. M., Jackson, E. F., Helleringer, S., Exavery, A., . . . Phillips, J. F. (2015). Childhood Illness Prevalence and Health Seeking Behavior Patterns in Rural Tanzania. *BMC Public Health, 15*, 951. doi:10.1186/s12889-015-2264-6

[17] MOH. (2014). *2013 Kenya Household Health Expenditure and Utilisation Survey*. Retrieved from http://www.healthpolicyproject.com/index.cfm?id=publications&get=pubID&pubId=745

[18] Ogunlesi, T., Okeniyi, J., Oyedeji, G., & Oyedeji, O. J. N. J. o. P. (2005). The influence of maternal socioeconomic status on the management of malaria in their children: implications for the'Roll Back Malaria'initiative. *32*(2), 40-46.

[19] Omotoso, D. (2010). Health seeking behaviour among the rural dwellers in Ekiti State, Nigeria. *African Research Review, 4*(2).

[20] Rudan, I., Boschi-Pinto, C., Biloglav, Z., Mulholland, K., & Campbell, H. (2008). Epidemiology and etiology of childhood pneumonia. *Bull World Health Organ, 86*(5), 408-416. doi:10.2471/blt.07.048769

[21] Simiyu, D. E., Wafula Em Fau - Nduati, R. W., & Nduati, R. W. (2003). Mothers' knowledge, attitudes and practices regarding acute respiratory infections in children in Baringo District, Kenya. (0012-835X (Print)).

[22] Siswanto, E., Bhuiyan, S., & Chompikul, J. (2007). *Knowledge and perception of pneumonia disease among mothers of children under five years attending Nakhon Pathom general hospital, Thailand.* Mahidol University,

[23] Tadesse, H., Deribew, A., & Woldie, M. (2009). Predictors of defaulting from completion of child immunization in south Ethiopia, May 2008 – A case control study. *BMC Public Health, 9*(1), 150. doi:10.1186/1471-2458-9-150

[24] Taffa, N., & Chepngeno, G. (2005). Determinants of health care seeking for childhood illnesses in Nairobi slums. *Tropical Medicine & International Health, 10*(3), 240-245. doi:10.1111/j.1365-3156.2004.01381.x

[25] Wambui, W. M., Kimani, S., & Odhiambo, E. J. I. j. o. p. (2018). Determinants of health seeking behavior among caregivers of infants admitted with acute childhood illnesses at Kenyatta National Hospital, Nairobi, Kenya. *2018*.

[26] Webair, H. H., & Bin-Gouth, A. S. (2013). Factors affecting health seeking behavior for common childhood illnesses in Yemen. *Patient Prefer Adherence, 7*, 1129-1138. doi:10.2147/PPA.S51124

[27] WHO. (2015). Intergrated Management of Childhood Illnesses Module 5.

[28] WHO. (2016). *Pneumonia Fact Sheet; World Health Organization Report 2016*. Retrieved from Geneva, Switzerland:

[29] WHO. (2018). *Children Reducing Mortality*. Retrieved from http://www.who.int/news-room/fact-sheets/detail/children-reducing-mortality

[30] Zaman, B.-U. (1994). *Knowledge, Perception and Self-card Practice Associating with URI and Pneumonia Or Bronchitis in Children Under Five Years of Age.* Mahidol University,

[31] Ngoclan, N. (1999). Self care of mothers with children under five years of age on ARI in Thanhdong commune of Binhminh district. *Vinhlong province, Vietnam. Bangkok: Faculty of graduated studies, Mahidol University*.