

Health Seeking Behaviour Determinants among Caregivers of Children Facing Diarrhoea in Homabay County, Kenya

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Abstract: Maternal health seeking behaviours in humanitarian and development prisms affect the children and their mothers immensely. Failure or delays in seeking proper health care for children in developing countries results to significant numbers of deaths attributed to high diarrhoea morbidity. The study examined patterns of health seeking behaviour of caregivers in prevention of diarrhoea morbidity. Statistics confirm higher diarrhoea morbidity in Nyanza twice the rate from Central Kenya in children under five despite a national decline from previous years. The study thus sought to explore health-seeking behaviour of caregivers of children under five years facing diarrhoea in Homabay County.

A descriptive cross sectional study design was used in the study. Focus Group Discussions (FGDs) and Key Informants interview (KII) were employed as data collection instruments. A sample size of 384 households was used with 10% to account for non response was incorporated. Statistical Package for Social Sciences (SPSS) Version 20 was used for the analysis of quantitative data. Qualitative data from both questionnaire and Key Informants interview guide were triangulated. Open-ended questions were also analysed through a quantitative content analysis. Chi square test with statistical significance set at $\alpha < 0.05$ was used to test relationship between categorical variables, odds ratio calculated at 95% confidence intervals (CI).

Delayed health seeking behaviour was evident from majority of the respondents (68.4%) who sought healthcare more than a day after the onset of diarrhoeal incidences. There was no significant relationship between knowledge of diarrhoea and awareness of the danger signs $\alpha = 0.31$, 33.8%. Children experienced diarrhoea at a frequency of 3 episodes per day and 3-4 per day, ORS was used by 60% of the respondents, 39% used ORS + Zinc for treatment. Poor health-seeking behaviour was evident and the study attributed it to diminished finances, few health facilities and poor services in them. The study recommends enhanced community knowledge, better practices for identification and mitigation of danger signs to improve diarrheal management in children.

Keywords: Health care seeking behaviour, children under five years, caregivers, health facilities.

1. INTRODUCTION

More than 10 million children die every year globally as a result of preventable diseases [36]. Approximately 2,200 children below the age of 5 years die every day from diarrhoea or diarrhoea related complications [38]. Poor health seeking practices among caregivers of children below the age of 5 years has been found to have significant impacts on diarrhoea morbidity and mortality rate of children under five years [27]. Several studies found that the failure to seek care or delays in seeking proper care for children resulted in significant numbers of child deaths in developing countries [3], [8], [31]. An evaluation of care-seeking behaviours, [caretakers of under-five children was thus imperative in prevention of diarrhoea-related child deaths. Health seeking behaviour of children under the age of five is predisposed to their mothers and evidence of higher diarrhoea morbidity in developing countries has been documented. The study sought to

examine how the health seeking behaviour of caregivers enables prevention of diarrhoea among children less than five years and evidence of health seeking behaviour of caretakers influencing the prevention of diarrhoea was confirmed. Ignorance amongst caretakers significantly contributes towards diarrhoeal infection of children under the age of five. Inherent unawareness of the risks of diarrhoeal morbidity plagues the republic of Kenya occasioning a mortality rate of 86 children per day. Previous research revealed that approximately 30% of Kenyan children affected by diarrhoeal diseases did not receive any oral rehydration salts fluids [13].

In Sub-Saharan Africa, the mortality rate of children under 5 years of age still remains high despite the global efforts to meet the Sustainable Development Goals (SDGs) on health by 2030 [34]. The global mortality rate for children below the age of 5 years was 43 deaths per 1000 live births in 2015 being a 44% reduction since 2000 while in the Sub-Saharan Africa it was recorded at 84 deaths per 1000 live births [34]. Majority of the deaths of children under 5 years children in Africa have been attributed to diarrhoea as a result of poor health seeking behaviour among their caregivers [35]. Awareness levels of diarrhoea morbidity were not adequate in reduction of diarrhoea levels owing to the accompanying complex influences. Vaccination is deemed the best strategy for infection prevention in cases of rotavirus diarrhoea [22], [28], [33]. Residences of caretakers in rural or urban settings influenced their health care seeking behaviour with urban caretakers evidenced with better health seeking behaviour than rural caretakers. In Ethiopia, mothers in urban set-ups were more likely to seek care from health facilities compared to their rural counterparts [19], [11]. In Kenya's urban slum settlements, preference for over the counter products and seeking health care after symptoms exacerbated to dangerous levels was confirmed [21].

Statement of the Problem:

Kenya is ranked among the top fifteen countries globally bearing the greatest burden of diarrhoea occasioning the death of one child every 15 minutes [39]. Diarrheal diseases are the second leading cause of death among children under five years [26]. Poor sanitation and unsafe water use predisposes the highest risk for high morbidity and diarrhoea ranks third in the top ten causes of ill health in Homabay County. The findings conform to the SPHERE Standards on prevention of water borne diseases, [24]. Global Action Plan for Prevention and Control of Pneumonia and Diarrhoea (GAPPD) aspires to realize diarrhoea treatment at 90%. However, only 37% of children with diarrhoea received Oral Rehydration Solution (ORS), and less than 1% received Zinc because it is rarely available [15], [36].

Significance of the study:

Approximately 23,000 Kenyans die from diarrheal diseases every year while thousands lack safe drinking water and proper sanitation. Children under five years are more vulnerable to small doses of pathogens owing to their undeveloped immune systems. With an estimated 70-80% of local health issues pointing towards waterborne diseases, many diseases flourish during extreme weather events, such as floods and drought seasons [39].

During emergencies and humanitarian response, water and sanitation occasion's great risk of waterborne diseases exposing children to consumption of contaminated water [6], [7], [30]. Disruption of health service delivery may slow the treatment of various diseases [2], [7]. The study sought to fill the knowledge gap owing to variation of water, sanitation and hygiene intervention outcomes by context and interaction effects. Conflicting evidence on the effects of water and sanitation interventions on diarrheal diseases spurred the study. This was with a view of having it accentuate policy as regards to encouraging legislations for area specific of child morbidity due to diarrhoea.

2. METHODS AND MATERIAL

Research Design:

The study employed a descriptive cross sectional study design and utilized multi stage random sampling. Homabay County was selected via purposive sampling, simple random sampling for the Sub-counties, the divisions which entailed Sub-county Lambwe, East Karachuonyo, Kochia and Nyarongi. Sub locations in each division were alphabetically listed and one picked randomly from each division. Two villages were randomly picked from each sub-location all totaling eight. Selection of subjects was done purposively by use of the rule of the left direction where every subsequent household was jumped before getting to the other. The research assistant interviewed mothers/care takers of children under five years of age after making them understand objectives of the study and getting express authorization for interviews until the required sample sizes from the villages was attained.

The results of the study had a 5% level statistical significance and a confidence level of 95%. The Z value at 95% confidence is 1.96. When the study population is 10, 000 and above, a sample size of 384 is adequate. This was arrived at using the following formula: $n = Z^2 pq / d^2$, to account for non response, an additional of 10% of the sample was considered hence the study used a sample size of 423.

Primary data comprised quantitative and qualitative data and it was collected using structured questionnaires targeting caregivers selected for supplementing information gathered through Focus Group Discussions (FGDs). Additional qualitative data was collected from key informants entailing Public Health officers, facility in-charges, Community Health Extension Workers and Pharmacists. Observation checklists were also utilized at household levels. Semi-structured interview guides were used to collect information from key informants from the sampled health care facilities. The instrument contained open-ended and closed-ended questions and health facilities in reducing diarrheal cases among children less than five years of age. A pilot study was conducted to establish Validity and Reliability of instruments. The study was conducted between November 2015 and March 2016.

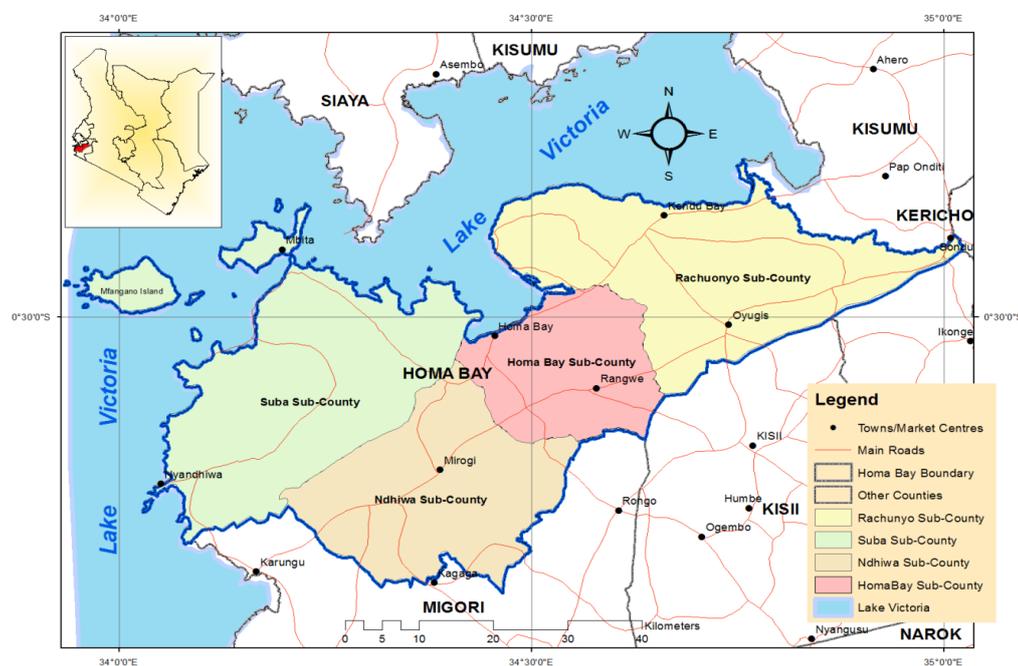
Data Analysis:

Qualitative data was transcribed for emerging themes, categories and sub-categories. Verbatim transcriptions in *Dholuo* were made from recorded FGDs and Key Informant Interviews. Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) Version 20. Eight Focus Group Discussions (FGD) each of ten participants were carried out.

Ethical Approval:

Ethical clearance for the study was obtained from the International Ethics Review Commission (IERC) based in Masinde Muliro University of Science and Technology and National Commission of Science, Technology and Innovation (NACOSTI). Purpose and procedure for the study were explained to the participants and verbal and written consent was sought.

Study area:



Source; Homabay County, CIDP, 2016

Figure 1: Map for Homabay County, Kenya, showing various Sub counties

The study was carried out in Homa Bay County. It borders Lake Victoria to the West and North, located at 0.52° South latitude, 34.45° East longitudes. The county is divided to eight subcounties). Doctor- population ratio still at 1: 40,000 and nurse-population ratio 1:1,500. There is an estimated population of 1,038,858 persons consisting of 498,472 males and 540,386 females based on the 2009 population census [16], [25].

3. RESULTS AND DISCUSSIONS

Education levels and health seeking behaviour:

The number of caretakers who sought care varied with Pakistan, having diarrhoea accounting for 16% of all child mortality cases despite 80.3 % of care takers seeking health care for sick children. Mothers with no formal education were the primary respondents comprising 84.9 per cent [29]. This confirmed that education level had little effect on seeking health care. In Niger, 70.4% of caretakers sought care in same type of health facility [27].

Reasons for not seeking medication during child diarrhoea incidences were multifaceted with accessibility to health facilities, cultural beliefs, social and economic class and women's independence among others having an adverse effect on care-seeking behaviour [32]. In developing countries, cultural practices and beliefs caused inappropriate care-seeking behaviour. In Kenya, lack of properly regulated health care facilities was a major factor impeding mothers from seeking proper health care for their sick children [21].

Oral Rehydration solution use coverage in Kenya was fairly consistent for the last decade, Zinc coverage remained comparably low. Kenya National Bureau of Statistics reports show that about 39% of children were treated with ORS while none of the caregivers in Kenya had reported using Zinc for diarrhea treatment in conformity with a 2008-09 KDHS report detailing that only 1 per cent of respondents used zinc supplements to treat diarrhoea in their children despite being introduced in the country in 2006 [15], [21]. In Pakistan, inappropriate medication had been reported with 77% of children with diarrhoea administered with antibiotics against recommendations by the Diarrheal Disease Control Programme. In low-income peri-urban communities in Pakistan, only 2% of healthcare practitioners administered zinc supplements, 31.1% prescribed injectable medicine and 40.8% administered ORS [29].

An analysis of health-seeking behavior provides an understanding on the motivations prompting caretakers to seek and not to seek medication for sick children under their care. From the literature reviewed, it was evident that health-seeking behaviour varied from region to region and according to the caretaker's area of residence [32]. The dearth of literature was attributed to confinement to behavioural patterns and failure to expound on root causes of such behaviour and in the process neglecting to provide the requisite recommendations [12].

Sources of health information:

It was established that 46.2% of the respondents got information from Community Health Volunteers (CHVs)/Hospitals, 36% from the radio, 13.4% from friends and relatives which contrasted with that of the participants from FGDs and KIIs. Most female respondents were predisposed to seeking information from other sources other than the health facilities. The sources entailed pharmacists, relatives and friends and the old folk. The mentioning of hospitals and health volunteers as main source of information was disputed as one of the female participants from female FGD in Ndhiwa argued that,

There is a nurse here at Ndhiwa hospital that has made women afraid to even go to deliver there. We are farmers and one day a woman was from the farm and got home only to find the child ill, so she quickly picked the child not bothering how she appeared and ran to hospital. Instead of the nurse getting concern to help the child, she first quarreled the woman on how dirty she was, since then that woman does not go to hospital. Female FGD No.#2 Ndhiwa

The fear of women taking their children to hospital was attributed to ignorance, lack of money or language barrier owing to doctors and nurses in the facilities using *Swahili* that was not understood by all community members. The claim was consistent with the findings of another study which confirmed that a significant number of mothers (27.3%) did not seek treatment from health facilities for their children attributed to the assumption that the illness was not serious (53%) while 26.7% of the mothers linked it to lack of money [15].

I do not know what happened at the hospital that our women do not want to see their children to hospital when sick. Some say that the doctors speak Swahili and it is hard for them to explain their status and that of the children in Swahili. But during pregnancy they are there until they deliver, though not all of them. Male FGD No. #1 Ndhiwa

Caregivers' knowledge on diarrhea

A total of 94.9% of the respondents acknowledged knowing diarrhea and identified a number of signs related to diarrhea among children below five years. Sixty four percent of the respondents reported 3-4 unformed stools in 24 hours as a sign of diarrhea while 32% indicated that diarrhea is associated with abdominal pain. Vomiting was also identified by 27.5% of the respondents and only 21.5% linked fever with diarrhea among children below five years. Additionally, 15.8% and 10.8% mentioned fecal urgency and cramps as signs of diarrhea respectively with small percentages of 9.5% and 3.2% of respondents mentioning nausea and blood stains or mucus in stool respectively, as symptoms of diarrhea as evidenced in Table 1.

Table 1: Main signs and symptoms of diarrhea

	Frequency	Percent
3-4 Unformed stools in 24 hours	203	64.2
Abdominal pain	101	32.0
Fecal urgency	50	15.8
Cramps	34	10.8
Nausea	30	9.5
Vomiting	87	27.5
Fever	68	21.5
Blood/mucus in stool	10	3.2

Comparison between the knowledge of diarrhea and awareness of the signs of diarrhea had χ^2 (9.542, N=315) = 10.948, $p < 0.005$ which was less than the tabulated critical value of $\chi^2 = 10.948$ and there was thus no significant relationship between association $\alpha = 0.31$. The findings were as shown in Table 2.

Table 2: Chi-square test on the knowledge of diarrhea and awareness of the signs of diarrhea

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.542 ^a	7	0.216
Likelihood Ratio	10.948	7	0.141
Linear-by-Linear Association	3.860	1	0.049
N of Valid Cases	315		

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .31.

The study established that other than knowing the signs of diarrhea, the participants in the study area were observed to have varied types of diarrhea defined by their causes, color and looseness. The types were essential as they reported each having a different technique for treatment. The commonly mentioned types were,

Green watery stool (Orianyanja)

Loose brownish stool (Caused by dirty water and food) it comes in line with malaria. When taken to hospital then the child is diagnosed with malaria

Yellow, whitish stool (Karendarenda-Father living an adulterous life)

Green and yellow (A child is put on diet above its age)

Extensive eating (Treated by one bottle top of chang'aa)

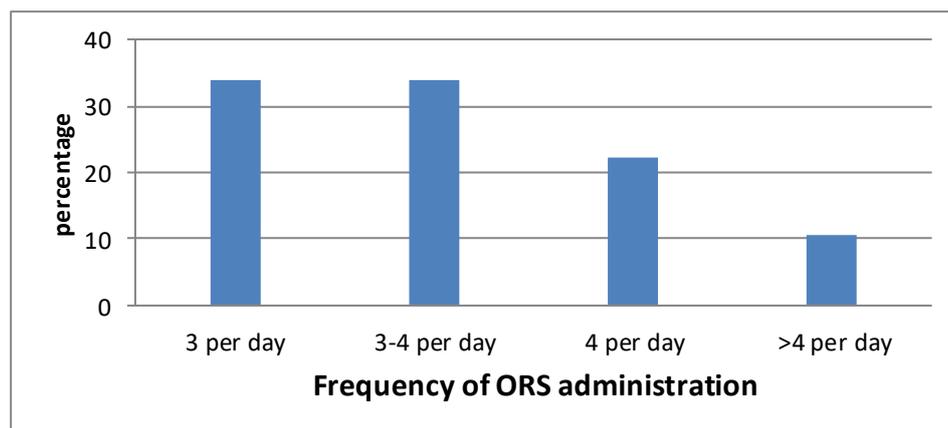
Blood diarrhea (Caused by varied cooking oils such as Poa, Chipsy, Somo, Fry Kings, Sunshine written free from cholesterol). Male Participant FGD No.#1 Ndhiwa

The study deduced variation in knowledge on diarrheal diseases and their treatments and this explains why the populations in the study area sought health information and treatment from wide-ranging sources. For instance, there are high chances that children with whitish yellow stool diarrhea will not be taken to the health facility when the caregivers/mother believes that such diarrhea in children below five years is a proof that the father is living an adulterous life.

Further relation of the diarrhea cases in children under five years and the ages of the mother of the child under five years had a χ^2 (7.891, N = 315) = 8.713, $p < 0.005$. which was less than the tabled critical value of $\chi^2 = 8.713$ and thus statistically there was no significant relationship between diarrhea incidences in children aged less than five years and the ages of their mothers. $\alpha = 2.92$. The findings showed that regardless of the mothers' age, other factors not attributed to the care accorded the child may lead to incidences of diarrhea in the children under five years.

A further confirmatory test on the relationship between diarrhea cases in children under five years and the highest education levels of the household heads had a χ^2 (7.891, N=315) = 8.713, $p < 0.005$ which was less than the tabled critical value of $\chi^2 = 8.713$. There was no statistically significant relationship between incidences of diarrhea in children aged less than five years and the education level of the mothers with children under five years old at $\alpha = 2.92$ as shown in table 3. These findings further reinforced the position of the children's mother's ages not being a predisposing factor to the occurrence of diarrhea. However, a research conducted in Eastern Ethiopia contradicted these findings when it established through a multivariate logic regression analysis that maternal education had a significant relationship with the occurrence of diarrhea among children below five years [18]. The analysis indicated that children whose mothers had low education level were five times more likely to have diarrhea as opposed to the children who have higher educated mothers (AOR [95% CI] = 5.6 [1.52, 19.4]).

Fig. 2 shows that the children who had stool in the past 2 weeks experienced it in varied frequencies, an equal rate of 33.8% of the respondents argued that their children experienced diarrhea at a frequency of 3 episodes per day and 3-4 per day. 22.1% reported a frequency of 4 episodes per day and the remaining 10.4% experienced frequencies of more than 4 times a day.



Source: Author 2016

Fig 2: Diarrhea incidences frequency

The Table 3 shows that 192 (61.9%) of the respondents reported organisms entering the body as the highest cause of diarrhea, 54 (17.2%) reported worm infection as a cause of diarrhea, while only 1(0.3%) of the respondents linked it to evil spirits. It was noted that only 1 (0.3%) of the respondents were not aware of any causes of the disease.

Table 3: Distribution of the Respondents with Regard to Causes of diarrhea perceptions

	Frequency	Percent
	1	0.3
Indigestible food	30	9.6
Worm infection	54	17.2
Crawling	9	2.9
Teething	27	8.6
Organisms entering the body	192	61.9
Don't know	1	0.3

The area of study had evidence of poor sanitation with some having no toilets at all. In Ndhiwa and Mbita, the study established that construction of toilets was difficult due to loose soils. The participants revealed that any time they raised the latrines then they would sink after a short while and more especially during the rainy seasons. Moreover, a number of them had latrines constructed for the chief to avoid being in conflict with the law. A male respondent from Ndhiwa argued that,

Truly speaking, our children have diarrhea because we do not have latrines. In this area we cannot construct reasonable toilets since the soil sinks with them. Constructing a good toilet is so expensive and due to poverty we cannot afford that. Hence we use the bush. But when we hear that the health people and the chief are doing inspection, then we dig a one fit pit and construct it well so that when the chief comes, we have a toilet. We always call it 'Choo mar chief (Toilet for chief)'. Male Participant FGD No #1 Ndhiwa

Confirmation that diarrhea was a health hazard to children was agreed upon by 311 (99.4%) of the respondents and they further affirmed awareness of the best ways to prevent diarrhea. Only 45 (22.5%) of the respondents reported having ORS sachets in their houses and 166 (82.6%) of the respondents reported their children having not received ORS sachet in the last 2 weeks. The responses from the participants in FGDs and KIIs demonstrated that the community resorted to other contingency measures before undertaking conventional treatment methods. This was based on the fact that varied kinds of diarrhea were treated differently. Moreover, they sought health services from other sources before resorting to the hospital or modern techniques of treating diarrhea. One of the PHOs argued that,

Some children are treated at home and they get cured. But a wide number do not get well and run to the health facility. However, in cases of bewitching, traditional herbs are considered as a solution and when it persists they run to us and they are warned not to give injection in such cases. We try to explain and later on they understand. They believe that if injection is administered then the child will die. Male Participant PHO No. #3 Mbita

Oral Rehydration Solution was mentioned by 60% of the respondents, 39% reported ORS + Zinc as the current treatment method while 1.0% reported Flagyl as a new treatment. Responses showed that 62.2% reported not knowing how frequently Zinc solution should be administered, 35.2% reported administering of the Zinc 1-3 times and the remaining 2.6% reported administering the Zinc solution 4-5 times. Use of both traditional and scientific methods was observed in the mothers in the treatment of diarrhea. The semi-structured questionnaire showed that ORS and zinc were the common treatment method. Additionally, the responses from the pharmacists, nurses, CHEWs and public health officers mentioned the regimens as the first to be administered to re-dehydrate the baby. One of the Nurses reported that,

We are not able to test the stool for children and so we first give ORS and Zinc Sulphate to re-dehydrate the child. Male Nurse No.#4 Rangwe

This contrasted with other studies which showed that caretakers in urban areas did not always exhibit positive health seeking behaviours. A study carried out in two urban slums in Nairobi between 2006 and 2010 showed that 55 per cent of the caretakers in these two slums took highly inappropriate care whilst 35 per cent took no action whatsoever [20]. The findings introduced poverty levels as a factor influencing health care-seeking behaviour in rural and urban slum areas accentuated by lack of a proper health care infrastructure [40].

Table 4: Mixing ORS solution, the frequency and quantities

For children given ORS solution, how is it mixed?

Responses	Frequency	Percentage
Correctly (1 sachet in 1 litre of water)	129	41.0
Incorrectly	173	54.9
Don't know/can't answer	13	4.1
Total	315	100.0

How many times (frequency)		
Every time the child has loose stool	247	78.4
Don't know/can't answer	20	6.3
1-2	6	1.9
3-4	33	10.5
Above 5	9	2.9
Total	315	100.0
How much ORS solution should be given to the child each time the child has loose stool?		
As much as the child can drink	132	41.9
Don't know/can't answer	141	44.8
1-2 spoons	11	3.5
3-4 spoons	10	3.2
Above 5	21	6.7
Total	315	100.0

As illustrated in table 4, the study found out that 41% of the respondents were able to mix ORS correctly while 54.9% recorded wrong mixing of the ORS. Only 13 (4.1 %) of respondents admitted that they did not know how to mix the ORS sachet content. The results showed that 78.4% of the respondents administered ORS every time a child had loose stool as recommended by WHO [41]. Only 6.3% indicated that they didn't know the number of times it should be administered while 1.9% respondents indicated that ORS should be administered 1-2 times a day. Similarly, 10.5% of the respondents said they administered ORS 3-4 times a day while 2.9% indicated that they gave ORS above 5 times to a child suffering from diarrhea. The respondents were of the view that the ORS solution should be given to a child every time that they have a loose stool at 41.9%, 44.8% didn't know 3.5% 1-2 spoonfuls, 6.7% 3-4 spoonfuls and 6.5% above 5 spoonfuls. This was an indication that the requisite exposure and knowledge levels had not been realized in the community as regards the usage and regimes allowable for the ORS solution.

The study found out that 14.3% of the respondents had ORS sachets in their homes at the moment of conducting the study, while 85.7% did not have. The responses reflected a situation whereby adoption and usage of the ORS solution was low. Awareness on the length of time that the ORS solutions should be kept after preparation showed that most of the respondents did not know and could not answer (41.9%) while (22.5%) were of the view that it should be kept until finished. Only (32.1%) were of the opinion that ORS should be kept for 0-1 days after preparation. This was in line with the recommendations made by [40]. Instances whereby the local community members had failed to get ORS solution to treat diarrhea were evident in (36.1%) of the respondents. This was evident that the risk of failure to effectively manage diarrhea was profound in the local community since ORS solution was sometimes unavailable in the requisite manner.

Most of the respondents had not had the opportunity of purchasing ORS for their usage (78.1%) while (21.9%) had purchased it. The responses denoted inadequacy on the part of the respondents from the community with regard to the ability to effectively purchase the ORS solution at will. The responses identified with the position taken by [20] who were of the view that Oral Rehydration solution use coverage in Kenya had stayed fairly consistent for the last decade, Zinc coverage remained comparably low. According to the 2009 Kenya Demographic and Health Survey (DHS), about 39% of children were treated with ORS. None of the caregivers in Kenya had reported using Zinc for the treatment of diarrhea and this was in line with a 2008-09 KDHS report where only 1 per cent of respondents had used zinc supplements to treat diarrhoea in their children despite being introduced in the country in 2006. Even in Pakistan, inappropriate medication use had been reported with 77% of the children with diarrhoea administered with antibiotics which was not recommended by the Diarrheal Disease Control Programme. In low-income peri-urban communities in Pakistan, only 2% of healthcare practitioners administered zinc supplements, 31.1% prescribed injectable medicine while 40.8% administered ORS [29].

The women and men in the study reported herbs and traditional practices being adopted in case of diarrhea to administer treatment. The common herbs taken during diarrhea were Nyalwet, Kwach, Omweny, mwarubaini and Akech. One of the male respondents in Ndhiwa argued that,

Our women use traditional herbs such as Omweny, Akech, Kwach and Nyalwet to treat diarrhea. The herbs are very bitter and we give the solution to the children and they are just fine. Male Participant
 FGD No.#1 Ndhiwa

To deal with certain cases of diarrhea, traditional practices have to be conducted for treatment. Others involve washing of breasts, greeting of strangers, collecting of dust at crossroads and burning them in a metal plate over a child's head as well as crossing of a particular type of grass for cure. The varied practices were meant to treat diarrhea of different causes. For instance, the man who engages another woman and not the wife has to secretly go and cross the grass for the child's diarrhea to stop. Additionally, the situation is also treated by a woman collecting dust from a crossroad and burning it over the child's head. Greeting of strangers and washing of the breast is a practice to be conducted by the woman to avoid the spirit of women who lost their children not to follow them and cause diarrhea to their own. One of the female respondents in Rachuonyo argued that,

Our mothers in law tell us that we go and collect dust from a crossroad and burn the dust over the child's head when the diarrhea is caused by a man's unfaithful behavior. Female Participant FGD No.#4 Rachuonyo

A third of the respondents (88.6%) got the ORS sachets from the government health facility, and 2 (5.7) reported getting the sachet from the CHV while 1(2.9) reported getting the sachet from the private clinic and the drug shops.

The situation in the study area was a contrast to research carried out in Pakistan where an analysis into where treatment was sought by caretakers during the onset of diarrhoea on children was likewise crucial. In low-income peri-urban areas, the first place that caretakers chose to seek care for the children was a local licensed doctor (56.2%) [29]. The study obtained consistent results with a similar research in Ethiopia where an majority of caretakers (87.2%) indicated that they sought treatment from health facilities while a comparatively lower number of 72.7 per cent of caretakers in the rural region of Bahir Dar sought care from governmental and private health care facilities [4]. Caretakers in Niger preferred health centres and health posts with less than 10 percent seeking care in a hospital [27]. In Kenya's urban slum settlements, mothers preferred to give their sick children home treatments or over the counter products, only seeking health care after symptoms had exacerbated to dangerous levels [1], [21].

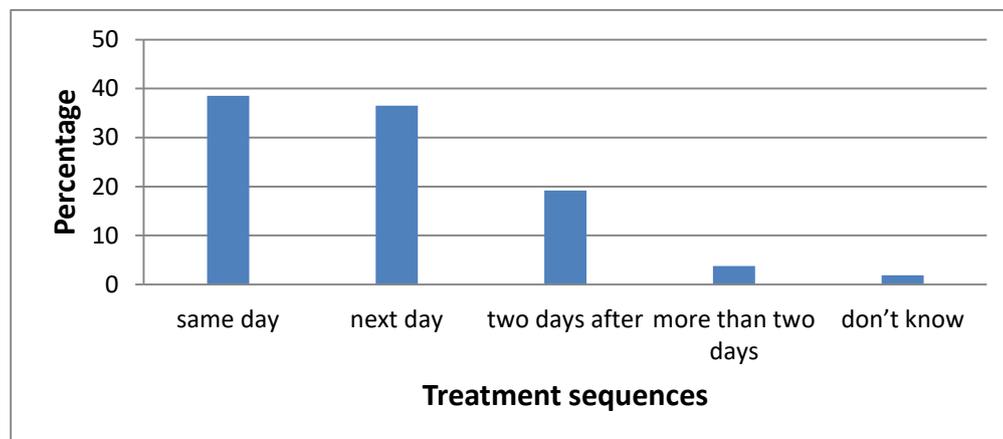


Fig 3: Duration taken to seek treatment when child experienced diarrhea source: Author 2016

With regard to the duration taken by the caregivers to seek treatment, a total of 20 (38.5%) reported seeking treatment in the same day, 31.9% reported seeking treatment the next day, 19 (36.5%) reported seeking treatment two days after while 1 (1.9%) didn't know as illustrated in fig 3. Almost half of the respondents (46.8%) reported the health center to be the nearest facility, 43.3% reported dispensary being close, the drug shop was mentioned to be close by 5.4%. Other than the closest facility, the majority of the respondents (50.3%) reported seeking treatment from the health center when the child was sick. 41.4% reported seeking treatment from the dispensary, an equal rate of 3.8% was reported by respondents who seek treatment from drugs shop and private clinics. The remaining 0.6% recorded seeking treatment from the herbalist.

Contrasting findings were recorded on the health seeking behavior of mothers and caregivers of children below five years in rural Niger who suffered from diarrhea during the recall period [27]. More than 70.4% (95% CI: 66.6-74.1) reported to have sought for healthcare from health facilities while in severe cases, it is reported that 83.8% (95% CI 75.2-92.4) sought for medical care from the health facilities near their residence. The study found out that choice of the place to seek treatment varied from a number of respondents to another. 33.5% of the caregivers indicated that choice of the facility to seek treatment was based on the fact that they had confidence that the child would be cured, 37.1% reported choice of the

place due to services being available all the time while 20.8% of the respondents reported choice of the facility due to its closeness to home. Only 7.3% of the respondents reported choosing the facility due to free services and the remaining 1.3% chose the place because they were referred by previous provider.

The choice of place of treatment and why it was considered best for seeking treatment for children was based on advice given from various sources. Generally people tend to seek treatment in regard to the advice they receive from neighbors. The participants acknowledged having sought for advice on care for under 5 years outside the home. The theory of interdependence in humanity was observed to also apply to care given to under 5 years children in the study area. The choice of the participants to seek advice from outside their homes was based on a number of reasons. Distance, doctors' attitudes, availability of credit and bad experience in hospitals pushed people to look for alternatives. In a male FGD in Ndhiwa a participant in Ndhiwa argued that,

The nearest hospital we have here is Ndhiwa District Hospital. It is one being used by people around this place and beyond. When you go there with your child when sick the queue is lengthy and they give numbers like the cooperative bank you cannot crossover and at times the child ends up dying in the queue the woman returns home wailing. Next time we opt for the pharmacy than getting a long queue that leads to death. Male Participant FGD No. #1 Ndhiwa

The statement contradicts response of health facilities being the area for seeking treatment and choice for medication. The long queues and low attention accorded to emergency cases in hospitals and the attitudes of health practitioners explains why many people fail to seek treatment of children from the hospital until the condition of the child gets beyond other treatment sources.

The respondents gave varied reasons over why some people do not seek health care at the hospitals. 28.8% reported not having money as the barrier, 14% recorded bad experience, 12.1% reported not knowing the reason behind such practice, 10.8% mentioned traditional beliefs and religion while 9.2% recorded the belief that the child will get well over some time. Over years, the economic positions of individuals have been reported to affect health seeking behaviors of many people in the society. The study area was not an exception as participants reported poverty as a barrier to their health seeking practices. A participant from the female FGD in Ndhiwa argued that,

Truly, poverty is another thing that has made people not to go to hospitals. That money you would take to the hospital, because the treatment is not free there are at times we are to pay for small things like books, syringe and such like things and we do not have that money to feed and pay for treatment so we rather buy food and use other forms of treatment. Female Participant FGD No.#2 Ndhiwa

Additionally, the information from a male respondent in Ogongo said,

Actually in our area here, poverty is what is affecting many people. Let me give you an example of even this water guard for treating water many people cannot buy. That is why diarrhea cannot come to an end in this area. Male Participant FGD No. #7 Rangwe

The responses above exhibit the reasons behind poor health seeking behavior. The participant from Ogongo explains that as long as poverty is still a problem in the community then diarrhea among children under 5 years will not be brought to a stop as the prevention mechanisms cannot be attained and the correct medication cannot also be accessed.

The table further illustrates that more than half of the respondents (55.1%) take between 15-60 minutes to travel to the facility. A total of 31.8% take less than 15 minutes to get to the facility while 10.2% take between 60-120 minutes to travel to the facility and the remaining 2.9% mentioned a period greater than 2 hours used to travel to the health facility.

Previous research has shown that increased number of children dying before their fifth birthday is largely attributed to the caregivers' delays in accessing quality healthcare for the child [36]. The study explains this delay using the three-delay model in which the first delay is experienced while the caregiver is taking time to decide whether to seek care or not, second delay happens when identifying and reaching the health facility while the third delay takes place on receiving adequate and appropriate treatment for diarrheal diseases. The findings of this study are consistent with those of studies explaining the delay experienced between the onsets of a disease to the time the child gets access to quality healthcare [14], [37]. Despite the fact that 122 caretakers considered their children's illness as severe, only 19 of them took the sick children for medical care during the first day of the illness [38]. The study also indicated that about 43% of those who sought medical services and advice at the healthcare centres did so 24 hours after the onset.

Table 5: Distribution of the respondents with respect to why some people do not seek health care at the hospital, time to travel to the facility and who decides whether the child should be taken to hospital

Item		Frequency	Percent
Reasons why people don't seek health	Too far	22	7.0
	Long waiting time at the health facility	24	7.6
	They have no money to pay	88	28.0
	ad experience	44	14.0
	Belief that the child will get well with time	29	9.2
	Easy to get drug from shop	12	3.8
	Fear to get tested	23	7.3
	Traditional beliefs and religion	34	10.8
Don't know	38	12.1	
Time to travel to the Facility	Less than 15 minutes	100	31.8
	15-60 minutes	173	55.1
	60-120 minutes	32	10.2
	Greater than 2hrs	9	2.9
Decision to take the child to hospital	Head of household (Father)	20	6.4
	Mother	221	70.4
	Both parents	68	21.7
	Guardian	5	1.6

In the Table 5, respondents recorded various persons who make decisions on whether the child is to be taken to hospital. A majority of the respondents (70.4%) reported the mother to be the one deciding on whether the child is to be taken to hospital, 21.7% reported both parents making the decision, and only 6.4% mentioned the household head or the father being the one deciding on whether the child is to be taken to hospital. The women reported their male partners to be the decision makers for they are the bread winners. One of the women from a female FGD in Ogongo argued that,

If best the decision is to be made by the two parents, but in most cases it is our husbands who make the decisions for they provide finances. Female Participant FGD No.#8 Rangwe

The idea was opposed by some women seconded by the responses of some male participants in the study area. The female participants in all the FGDs in the four areas of study acknowledged being the decision makers in the household as they stay with the children over a long period compared to their male partners.

4. CONCLUSION

The study concluded that health seeking behaviour was poor, significantly influenced by neighbours and being aware of diarrhoea was not in tandem with appropriate practices. There are a number of factors influencing poor health seeking behaviour among the respondents such as lack of money, distance to facilities and bad experience with health care providers. Health information was available from diverse sources which ranged from hospitals, the media and personal contacts with friends and relatives.

5. RECOMMENDATIONS

The Health service delivery stakeholders should work towards enhancing the communities' sustained appropriate practices on diarrhea risk reduction with enhanced danger signs identification create enabling supportive environment so as the community can seek advice from health facilities at all times. Pharmacy and Poisons board should streamline and monitor activities of chemists/drug shops particularly with regard to sale of drugs such as antibiotics and antidiarrhoeal drugs without prescription through Provider Behaviour Change Communication especially on diarrheal management in children.

Suggestions for Further Research

Further research on health workers prescription patterns in management of diarrhea with regards to IMCI should be done with a view of determining the extent to which the personnel use ORS and Zinc for diarrhea management and how it is prescribed.

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REFERENCES

- [1] African Population and Health Research Centre (2002). Population and Health Dynamics in Nairobi's Informal Settlements. Nairobi, Kenya: African Population and Health Research.
- [2] Allen, C. (2015). Evidence Aid: Resources for preparing for and responding to disasters, humanitarian crises and major healthcare emergencies.
- [3] Amarasiri de Silva, M. W., Wijekoon, A., Hornik, R., & Martines, J. (2001). Care seeking in Sri Lanka: one possible explanation for low childhood mortality. *Social Science & Medicine*, 53(10), 1363-1372.
- [4] Assefa, T. (2008). Mothers' health care seeking behavior for child- hood illnesses in Derra District, Northshoa Zone, Oromia Regional State, Ethiopia. *Ethiopian Journal of Health Sciences*.
- [5] Awoke, W. (2013). Prevalence of childhood illness and mothers'/caregivers' care seeking behavior in Bahir Dar, Ethiopia: A descriptive community based cross sectional study. *Open Journal of Preventive Medicine*, 3, 155-159. doi: 10.4236/ojpm.2013.32020.
- [6] Cronin, A., Shrestha, D., Cornier, N., Abdalla, F., Ezard, N., & Aramburu, C. (2008). A review of water and sanitation provision in refugee camps in association with selected health and nutrition indicators—the need for integrated service provision. *Journal of water and health*, 6(1), 1-13.
- [7] Dhanaseela, M. P. P., & Ono, T. (2016). Planning for Water and Sanitation Facilities in an Emergency-A Case Study. *Engineer: Journal of the Institution of Engineers, Sri Lanka*, 43(2). 1571-1573.
- [8] D' Souza, R. M. (2003). Role of health seeking behavior in child mortality in the slums of Karachi, Pakistan. *Journal of Biosocial Science*, 35(1).
- [9] El Arifeen, S, Blum LS, Hoque DM, Chowdhury EK, Khan R, et al. (2004) Integrated Management of Childhood Illness (IMCI) in Bangladesh: early findings from a cluster-randomized study. *Lancet*.
- [10] ESHE (2005). Twelve Baseline Health Surveys Household Health Facility Health Systems Performance Health Care Financing Conducted in: Amhara, Oromia and Southern Nations Nationalities & Peoples' Regions Addis Ababa, Ethiopia.
- [11] Fasil, T. (2002). Mothers' Health Services Utilization and Health Care Seeking Behaviour during Infant Rearing: West Ethiopia. *Ethiop J Health Dev*, 16 (Special Issue): 51-58.
- [12] Grundy, J and Annear P. (2010). Health-Seeking Behaviour Studies: a Literature Review of Study Design and Methods with a Focus on Cambodia. Australia: University of Melbourne, The Nossal Institute for Global Health
- [13] IRIN News (2010). Kenya: Plan to halve infant diarrhoea prevalence. Retrived 10,18,2014; <http://www.irinnews.org/report/88651/kenya-plan-to-halve-infant-diarrhoea-prevalence>
- [14] Kallander, K., Hildenwall, H., Waiswa, P., Galiwango, E., Peterson, S. & Pariyo, G. (2008). Delayed care seeking for fatal pneumonia in children aged under five years in Uganda: a case-series study. *Bull World Health Organ*. 86 (5):332–338
- [15] Kenya National Bureau of Statistics, (2009). The 2008-2009 Kenya Demographic and Health Survey. Retrieved from <http://www.dhsprogram.com/pubs/pdf/FR229/FR229.pdf>
- [16] Kenya National Bureau of Statistics, (2010). The 2009 Kenya Population and Housing Census; Population Distribution by Age, Sex and Administrative Units, p 8-11.

- [17] Kotloff, K. L., Nataro, J. P., Blackwelder, W. C., Nasrin, D., Farag, T. H., Panchalingam, S., & Faruque, A. S. (2013). Burden and aetiology of diarrhoeal disease in infants and young children in developing countries (the Global Enteric Multicenter Study, GEMS): a prospective, case-control study. *The Lancet*, 382(9888), 209-222.
- [18] Mengistie, B., Berhane, Y. and Worku, A. (2013) Prevalence of diarrhea and associated risk factors among children under-five years of age in Eastern Ethiopia: A cross-sectional study. *Open Journal of Preventive Medicine*, 3, 446-453. doi: 10.4236/ojpm.2013.37060
- [19] Mohamed, E. (2006). Treatment-seeking behaviour for malaria in children under five years of age: implication for home management in rural areas with high seasonal transmission in Sudan. *Bio Med centre malaria Journal*; 5:60
- [20] Molyneux, C. S. (1999). Maternal responses to childhood fevers: a comparison of rural and urban residents in coastal Kenya. *Tropical Medicine & International Health*; 4 (836)
- [21] Mukiiira, Carol and Ibisomi, Latifat (2012). Health care-seeking practices of caregivers of under-five children with diarrheal diseases in two informal settlements in Nairobi, Kenya. African Population and Health Research Centre (APHRC).
- [22] Mwenda, J.M. (2010). Burden and epidemiology of rotavirus diarrhoea in selected African countries: preliminary results from the African Rotavirus Surveillance Network. *J Infect Dis*; 202
- [23] Nelson, E.A. (2009). A decade of the Asian Rotavirus Surveillance Network: achievements and future directions. *Vaccine*; 27 (Suppl 5): F1–F3.
- [24] Nganga, V. G., Kariuki, F. W., & Kotut, K. (2012). A Comparison of the physico-chemical and Bacteriological quality of grey water from water deficient households in Homabay Town and Githurai Estates in Kenya. *The Open Environmental Engineering Journal*, 5, 110-118.
- [25] Obonyo, J. B. (2012) "Kenya 2009 Population and Housing Census Analytical Report on Projections of Special Population Groups, 2010-2030," Kenya National Bureau of Statistics, Ministry of Planning, National Development and Vision 2030. Vol. XI.
- [26] Opisa, S., Odier, M. R., Jura, W. G., Karanja, D. M., & Mwinzi, P. N (2012). Faecal Contamination of public water sources in informal settlements of Kisumu City, western Kenya. *Water Science and Technology*, 66(12), 2674-2681.
- [27] Page, Anne-Laure, K. (2011). Healthcare seeking behaviour for diarrhoea in children under 5 in rural Niger: results of a cross-sectional survey. *BMC Public Health*; 11; 389
- [28] Parashar, U. D., Burton, A., Lanata, C., Boschi-Pinto, C., Shibuya, K., Steele, D., & Glass, R. I. (2009). Global mortality associated with rotavirus disease among children in 2004. *Journal of Infectious Diseases*, 200 (Supplement 1), S9-S15.
- [29] Quadri, F. (2013). Health Care Use Patterns for Diarrhoea in Children in Low-Income Periurban Communities of Karachi, Pakistan. *Am J Trop Med Hyg*; 89 (1 Suppl): 49-55
- [30] Ramesh, A, Blanchet, K, Ensink JHJ, Roberts B. (2015). Evidence on the Effectiveness of Water, Sanitation, and Hygiene (WASH) Interventions on Health Outcomes in Humanitarian Crises: A Systematic Review. *PLoS ONE* 10(9): e0124688. doi:10.1371/journal.pone.0124688
- [31] Reyes, H., Perez-Cuevas, R., Salmeron, J., Tome, P., Guiscafere, H., & Gutierrez, G. (1997). Infant mortality due to acute respiratory infections: the influence of primary care processes. *Health policy and planning*, 12(3), 214-223.
- [32] Shaikh B.T and Hatcher J. (2005). Health seeking behaviour and health service utilization in Pakistan: challenging the policy makers. *J Public Health (Oxf)*. 2005;27(1):49–54.
- [33] Steele, A.D. (2009). Rotavirus vaccines for infants in developing countries in Africa and Asia: considerations from a world health organization-sponsored consultation. *J Infect Dis*; 200 (Suppl 1): S63–S69
- [34] Sustainable Development Goals. New York: United Nations; (2015). Retrieved on 18th July 2017. Available from: <https://sustainabledevelopment.un.org/?menu=1300>
- [35] Tsion, Assefa. et.al. (2008). Mothers' Health Care Seeking Behaviour for Childhood Illnesses in Derra District, Northshoa Zone, Oromia Regional State, Ethiopia. *Ethiop J Health Sci*, Vol. 18, No.3

- [36] UNICEF (2012). Pneumonia and diarrhoea: Tackling the deadliest diseases for the world's poorest children. Retrieved from: http://www.unicef.org/media/files/UNICEF_P_D_complete_0604.pdf
- [37] Wang, P. S., Berglund, P., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey. Replication. *Archives of general psychiatry*, 62(6), 603-613.
- [38] Webair, H. H., & Bin-Gouth, A. S. (2013). Factors affecting health seeking behavior for common childhood illnesses in Yemen. *Patient Preference and Adherence*, 7, 1129–1138.
- [39] World Health Organization. (2013). Progress on Sanitation and Drinking Water Update. http://www.childinfo.org/files/JMP2013Final_Eng.pdf
- [40] Wilson, S., Morris, S., Gilbert, S., Mosites, E., Hackleman, R., Weum K, *et al.* (2013) Scaling up access to oral rehydration solution for diarrhea: Learning from historical experience in low and high performing countries. *J Glob Health*; vol 3 pp38-50.
- [41] World Health Statistics (2011). Geneva, Switzerland: World Health Organization; http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf. Accessed May 16, 2015.