

DECLARATION

I, Epafra Anyolo, declare hereby that this study of effectiveness of health education in the prevention of diarrhea disease in Osire refugee camp, Otjiwarongo district, Namibia, is a true reflection of my own research, and that this work, or part thereof, has not been submitted for a degree in any other institution of higher education.

Signature: -----

Date: -----

DEDICATION

This thesis is dedicated to my dear wife, Prisca Nangoma Anyolo, and our children for their love, unwavering support and encouragement during the compilation of this document.

It is also dedicated to my grandmother, Taimi Nuugwanga Shapaka, my parents, Toivo Anyolo and Ester Iiyambo and to my Guardian, Josephina Kapenambili for their love, emotional support and encouragement.

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LIST OF ABBREVIATIONS

AHA	Africa Humanitarian Action
CHPs	Community Health Promoters
CHWs	Community Health Workers
DRC	Democratic Republic of the Congo
FGD	Focus Group Discussion
HIV/AIDS	Human Immune Virus/ Acquired Immune - Deficiency Syndrome
IPs	Implementing Partners
IFRC	International Federation of Red Cross
IEC	Information, Education and Communication
MOHSS	Ministry of Health and Social Services
NRC	Namibia Red Cross
NDHS	Namibia and Demographic Health Survey
NPC	Namibia Population Census
PHC	Primary Health Care
UNHCR	United Nation High Commissioner for Refugees
WHO	World Health Organization
W	Weights

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ABSTRACT

The Ministry of Health and Social Services (MOHSS) in collaboration with the United Nations High Commission for Refugees (UNHCR) and its Implementing partners has extended Primary Health Care Services to Osire refugee camp and implemented the system jointly. Health education program was introduced and Community Health Promoters (CHPs) were selected from the refugee communities. The training curriculum for the training of CHPs on the prevention of diarrhea was developed and training was conducted in the year 2000.

The researcher has observed that problems of diarrhea in Osire camp still exist despite the fact that CHPs were trained and were actually teaching the refugees skills to prevent diarrhea. Therefore this study was conducted to find the answer to the following question: How effective is health education in the prevention of diarrhea and what methods did CHPs used in delivering health education activities?

The Objectives of this study are:

- To determine the effectiveness of health education in preventing diarrhea in Osire refugee camp;
- To identify the methods used in delivering health education activities;
- To assess whether the refugees apply the health information given to them in preventing diarrheal disease.

A quantitative research design was used and a descriptive strategy was used to obtain the data. The study was done in Osire refugee camp in Otjozondjupa region. The study population includes all households in Osire refugee camp and all CHPs who were available at the time of the study. Since the number of households was known, a stratified sampling was done and a total of 302 households were sampled.

The research concluded that the majority of the respondents (64.0%) fall in the age bracket of 15 – 34 years old while 41.0% had attended primary school education, 25.0% have never attended primary school. The majority of the respondents, (79.4%) were taught about the basic factors to prevent diarrhea but on average, only 74.0% of the respondents were implementing what they were taught. The researcher concluded that health education was not effective in bringing required changes in refugee's health beliefs.

Majority of households with private pit latrines (91.1%) were found to be in a good state of cleanliness. About 6.6% of the households do not have pit latrines and some of the latrines are full and abandoned. The majority of the households (81.9%) did not have children's faeces nearby. However, the majority of the households were found to have functional refuse pits.

The researcher found that a significant number of CHPs indicated language was the major barrier to effective communication.

Recommendations made include regular refresher training courses and in-service training on the methods used in teaching, and reviewing content of the training curriculum and the implementation strategy. A mass information campaign is recommended in order to reach more refugees with health education.

CHAPTER 1: Rationale and Background

1.1 Introduction

This chapter describes the background, problem statement, purpose and objectives of the study, study significance and definitions of terms are given.

1.2 Formulation of the problem

1.2.1 Background to the problem

The United Nations High Commission for Refugees (UNHCR), together with the Government of Namibia, currently provides international protection and humanitarian assistance to approximately 6,357 refugees and asylum seekers in Osire refugee camp, located in Otjiwarongo District in the Otjozondjupa region. This region is one of Namibia's 13 regions, and is about 240km north of the capital, Windhoek. The majority of refugees come from Angola, with others from the Great Lakes region. Approximately 20 new arrivals per month are registered in Osire camp. In addition, a small number of refugees reside outside of the camp to attend school, receive specialized medical care, and for employment reasons.

During 1999, UNHCR recorded a high influx of refugees in Osire refugee camp, mainly from Angola and a few from other countries in Africa (UNHCR, 1999, p.3). The refugee population in Namibia increased from 7, 350 refugees in January 2000 to 17, 740 in December 2000 (UNHCR 2000, p. 211). In 2003, approximately 25, 000 refugees/asylum seekers were registered in Osire refugee camp and 412 Angolan refugees in Kassava transit camp in Rundu, Kavango region (UNHCR, 2003, p.7 -9).

Table 1.1: Demographic characteristics and location of refugees in Osire Refugee Camp, Namibia as on 30th June 2006 (UNHCR Osire Camp Statistics June 2006).

Country of Origin	Female (by age group)					Male (by age group)					Grand total
	0-4	5-17	18-59	>60	Total	0-4	5-17	18-59	> 60	Total	Population
Angola	457	1069	812	37	2,375	451	1,082	745	29	2,307	4,682
Burundi	10	17	8	2	37	33	36	89	2	160	197
Central Africa Republic							1	1		2	2
Cameroon								4		4	4
Congo Brazzaville		2	1		3			5		5	8
DRC*	90	166	200	8	464	100	186	375	3	667	1,131
Ethiopia								1		1	1
Guinea-Bissau								1		1	1
Liberia	1	2	2		5	1	1	7		9	14
Oman			1		1	1				1	2
Rwanda	27	33	52	5	117	33	26	131	1	191	308
Sera Leone								2		2	2
Somalia								1		1	1
Sudan								1		1	1
Zimbabwe								3		3	3
TOTAL	585	1,289	1,076	52	3,002	619	1,335	1,366	35	3,355	6,357

*Democratic Republic of the Congo

The arrival of many refugees, mainly from Angola, at one time posed a health risk in respect of personal and environmental hygiene. Environmental hygiene was grossly neglected during this emergency stage of the refugees' influx into Namibia, as provision for medical care and nutrition for malnourished people were given priority (Red Cross,

1999, p. 6). Africa Humanitarian Action (AHA) is one of UNHCR's main Implementing Partners (IP) in Osire and is responsible for Primary Health Care (PHC) services, medical referrals, home based care, management of food distribution, community services, shelter, water, sanitation, social services and camp management. The Health Centre and state clinic in the camp operated by Ministry of Health and Social Services (MOHSS) and AHA, provide preventative and curative primary health care services. The Health Centre is supervised by Otjiwarongo hospital, which also serves as the referral health facility.

According to the World Bank (1994, p. 15), the typical African child under five years has 10 episodes of diarrhea per year, a 10% risk of suffering from diarrhea on any given day, and 14.0% risk of dying from severe episodes. The latter indicates that diarrhea accounts for 25.0% of all illnesses in childhood and 15.0% of admissions to health centers. Katjujanjo et al. (1992, p.75) revealed that diarrhea accounted for 5.8% and 26.4% of deaths among children under one year of age and between 1- 59 months respectively.

The study by MOHSS (2000, p.138) "Namibia Demographic and Health Survey (NDHS)," indicated that 16.7% children whose mothers have no education appeared to be more susceptible to diarrhea. Diarrhea is notably higher among children aged from 6-23 months, the time when most children are weaned. Diarrhea emerged highest among other causes of deaths in the country especially among children. Nwagboso (2002, p.10-13) indicates that diarrhea outbreaks accounted for 13.0% of deaths and 19.0% of morbidity among the refugees in Osire refugee camp especially among the children younger than five years.

According to WHO (2002, p. 64), the vast majority of cases of diarrheal disease in the world (88.0%) were attributable to inadequate supplies of safe drinking water, poor sanitation, poor environmental and personal hygiene. There was insufficient water supply and improper sanitation in Osire refugee camp in 1999 due to a high influx of refugees (Red Cross, 1999, p.3). The high morbidity and mortality from diarrheal disease at this time could be attributed to these factors. To improve the situation, the International Federation of Red Cross (IFRC) drilled 40 boreholes in Osire refugee camp in order to

increase the water supply for human consumption and household use, including washing.

Figure 1.1: Main Water Tank



Courtesy of UNHCR/Anyolo: Osire refugee camp, August 2006

Six boreholes that were connected to solar panels and electricity, pumped water into two main and three small water tanks. Figure 1.1 shows one of the two main tanks with a capacity of 95, 000 cubic meters. The water is then connected through pipes to the refugee community so that they can have access to clean drinking water. Because the sources of water in Osire are chlorinated weekly, the water is considered safe for human consumption (Nwagboso, 2005, p.6). Family latrines were constructed and the community was mobilized and participated in constructing the latrines. The need to educate the refugee community about how to live healthy lives and avoid diseases was identified. Chin (2000, p. 152) emphasises the need for the community to be taught how to prevent diseases. However, the availability of human resources to deliver health education messages to the community was a challenge. According to Wood, Vaughan &

Glanville (1995, p.333), the aim of health education is, by planned efforts, to secure beneficial health promotion and changes in people's behavior. To overcome this challenge, 40 Community Health Promoters (CHPs) were selected and trained in the year 2000, to deliver health education to the community and with the aim of reducing diarrheal disease. The community members were involved in selecting CHPs who spoke relevant languages and were generally accepted. Currently, Portuguese is widely spoken by many refugees in Osire; other languages spoken in the camp include English, French, Swahili, Umbundu and Kinyarwanda. Literacy levels differ significantly among the groups (Red Cross, 2000, p. 4). Wood (1982, p. 6) indicated that training of CHPs for educating their communities about health and hygiene has been successful in refugee camps in Zambia, Angola and Southern Sudan.

The MOHSS policy document on the control of diarrhea recommended frequent hand washing, especially after defecation and before handling food, as well as using pit latrines for defecation in areas where appropriate sanitation facilities are not available (MOHSS, 1995, p. 8). One of the strategies recommended in the policy document for controlling diarrheal diseases is the promoting of community participation and involvement, especially of Community Own Resources Persons (CORPS), in the control of activities related to diarrhea (MOHSS, 1995, p. 8).

A key aspect of the PHC approach was to advocate and introduce the provision of front-line, first contact services within the framework of five basic principles. These are equitable distribution of resources, community involvement, focus on prevention, appropriate technology, and a multi - sectoral approach. Within the framework of these principles, some of the basic components of PHC are health education about diseases and the appropriate control measures; provision of safe drinking water and appropriate sanitation technology (Walt & Vaughan, 1981, p. 11). Therefore the CHPs, who live within the community, were trained to help the community to achieve better health, through health education, demonstration and practice in an atmosphere of patience, encouragement and understanding. According to Walt & Vaughan, (1981, p. 10), participation in health issues through Community Health Workers (CHWs) in China was

reported to be a success and CHWs became part of the new approach to health care. Based on the principles of PHC approach, preventive health measures are those services which help to prevent people from getting sick, such as prevention of diarrhea by always washing one's hands after using the latrine and before handling food, proper food storage, building and effective use of latrines, and burying of faeces including those of infants, and proper water storage. The principles of the PHC approach were used in the formulation of the content of the training curriculum of CHPs, which was supported in the WHO manual on the control of diarrheal disease at home (WHO, 1992, p. 59; WHO, 1995, p. 65) and the MOHSS policy document on the control of diarrheal disease (MOHSS, 1995, p. 9).

Following the repatriation program for Angolans in 2003, some of the trained CHPs left the camp.

Table 1.2: Reduction of number of CHPs in Osire refugee camp

Year	2002	2003	2004	2005	2006
CHPs	40	20	15	5	4
Percentage	100%	50.0% reduction	75.0% reduction	33.0% reduction	20.0% reduction

Table 1.2 indicates that the number of CHPs in Osire refugee camp reduced by 80.0% over the period of five years. This made it necessary to conduct on the job training for new CHPs in order to fill the gap.

In 2003, cases of watery diarrhea ranked among the top ten diseases with a rate of 161/1000/mth/population, with a malnutrition rate of 14.0% among children younger than five years. Gastro-enteritis accounted for 3.0% of deaths in Osire refugee camp (Nwagboso, 2003, p. 8). In 2004, diarrhea cases accounted for 156/1000/mth population in Osire refugee camp (Nwagboso, 2004, p. 9). In 2005, 1527 cases of diarrhea were recorded with an incidence rate of 127/1000/month/population (Anyolo, 2005, p. 8).

According to Caircross and Feachem (1993, p. 11), improvements and sweeping changes in personal cleanliness and environmental hygiene are required for prevention of diarrhea in the community.

1.2.2 Problem statement

Through CHPs, most of the refugees in Osire camp have been exposed to basic health education activities pertaining to the prevention of diarrhea. Despite the fact that sanitation facilities and the quality of the water supply have improved and the number of CHPs increased, there are still high incidences of diarrhea cases in Osire refugee camp (Dawit, 2005, p. 17).

Following the repatriation of Angolan refugees between 2003 and 2005, 22 (55.0%) of the trained and experienced CHPs were also repatriated. New CHPs were selected and trained to deliver health education on the prevention of diarrhea to the refugees. Although half of the population was repatriated back to Angola and health education intensified with new CHPs, there are still an increased number of diarrhea cases in the camp. The question is whether health education is effective in the prevention of diarrheal disease in Osire refugee camp in Namibia.

1.2.3 Research Question:

How effective is health education in the prevention of diarrhea and what methods did CHPs use in delivering health education information?

1.3 Purpose and objectives of the study

The purpose of the study is to explore and describe the effectiveness of health education in the prevention of diarrhea in Osire refugee camp.

The objectives of this study are:

1. To determine the effectiveness of health education in the preventing of diarrhea in Osire refugee camp
2. To identify the methods used in delivering health education activities.
3. To assess whether the refugees apply the health information given to them in preventing diarrhea.

1.4 Significance of the study

The study is important because it will generate information that will help CHPs and the refugee community in addressing the challenges that influence the effectiveness of health education activities in the prevention of diarrhea in Osire refugee camp. The results will further help the health planners to improve health education, educational methods, and the training curriculum so that there will be a reduction in diarrhea in the camp.

1.5 Ethical considerations

Permission was obtained from the University of Namibia and the UNHCR Country Representative in Namibia to conduct the study. The purpose of the study was explained to the respondents who were informed that their participation was voluntary and anonymous and that each respondent has the right not to participate.

1.6 Operational definitions

Diarrhea: This is usually defined in epidemiological studies as “the passage of three or more loose or watery stools in a 24-hour period (WHO, 1992, p. 4). However, mothers/caregivers may use a variety of terms to describe diarrhoea, depending for example, on whether the stool is loose, watery, bloody, or with mucous.

Refugee: As cited in UNHCR (2003, p. 8), the 151 Geneva Convention defines a refugee as: “any person who, owing to a well founded fear of being prosecuted for reasons of race, religion, nationality, membership of a particular of social group, or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.”

Community Health Promoters (CHPs): Wood (1982, p. 3) defines a community health promoter as “a community member chosen by the community to provide basic health information for the prevention of diseases to promote health through changing people’s behavior among the same community”.

Prevention: This is defined as “the ability to avoid or stop the event or disease from occurring” (Sykes, 1982, p. 814).

Health education: Dreyer et al. (1994, p. 35) define health education as “an instrument for prevention of disease and promotion of health. It forms the foundation of primary health care and is an important method of transmitting messages about modification of life-styles and/or health behavior, and prevention of diseases to as many people as possible”.

Effectiveness: Sykes (1982, p. 308) defines effectiveness as to “bring about remarkable change or successful results from the activities or tasks performed”. For the purpose of this the study, it is expected that the teaching by CHPs would change the health behavior of the refugees, who would be able to practice the following skills as evidence of the effectiveness of health education:

- Always washing their hands after having used the pit latrine
- Always washing their hands after handling children faeces
- Always washing their hands before preparing food and eating
- Disposing babies faeces by burying them or disposing them into the pit latrine

- Proper water collection and storage

The researcher set a measuring standard at 75.0%. This means that for health education to be effective, at least 75.0% of households interviewed should practice the above named skills.

1.7 Summary

This chapter covered the introduction to the setting of Osire refugee camp in Namibia and the distribution of the refugee population. It recounted what has been done and indicated the problem statement, research question, purpose of the study, the specific objectives and the significance of the study. The operational definitions used in the study are also stated. The next chapter will deal with literature review and examine what has been done about the problem being studied.

CHAPTER 2: Literature review and conceptualization

2.1 Introduction

The previous chapter provided an orientation to this study by discussing the statement of the problem, purpose and significance of the study, study objectives and the outline of the study. This chapter is concerned with the review of literature that relates to the study.

2.2 Conceptualization of the study

The Government of the Republic of Namibia has adopted the principles of the PHC approach in order to extend health service coverage to everyone. One of the PHC principles is that the community should be actively involved and participate in health issues that affect their health in attempt to find solutions for them. A key component for implementing the principle of community involvement and participation is the introduction of CHPs who live in each village/block and help their communities to achieve better health (MOHSS, 1995, p. 8). Sterwart (1985, p. 30) indicates that health cannot be achieved by any single medical discipline, nor can health measures be considered independently of social, economic or educational factors. Most of the refugees in Osire refugee camp came from countries that are severely affected by war and therefore have not been exposed much to concept of health, which makes it difficult to teach them about a healthy life style and the concept of disease prevention. According to Wood (1982, p.3), teaching a community about better health is a challenging job and it is therefore important that community should choose CHPs from among their own people. This idea is supported by Lankester (1995, p.5) who states that the community should ideally select CHPs who are trained in the community where they lives and primarily belong to the community.

The health center itself can encourage better styles of living and clearer understanding of health matters by its cleanliness and hygienic procedures as well as by the information that patients receive from staff members. Everyone working in health services, from

cleaner to medical officer, has a role to play in encouraging healthy living (Wood et al., 1995, p.34).

According to Berkow (1997, p. 514), epidemics of diarrhea in infants, children and adults are usually caused by microorganisms spread in water or food, generally after faeces have contaminated them especially where hygiene is poor. Therefore, the people need to know the importance of hand washing before handling food and after utilizing the toilet, and consistent utilization of available latrines as well as safe storage of kitchen equipment. Wood (1982, p. 4) indicates that diarrhea experienced in the refugee camps in Southern Sudan, Chad and Zambia is due to poor environmental sanitation while the WHO (2006, p. 81-160) indicates that diarrhea is common where personal and environmental hygiene is poor. Children tend to be affected most. The paper further discusses the current poor health situation in Darfur and Chad refugee camps, where the refugees suffer from diarrhea due to inadequate health education. The conclusion is that the community has a duty to prevent the occurrence of diarrhea by practicing preventive health behavior.

After the Rwanda genocide in 1994, many people fled for protection to other neighboring countries, while others were displaced within the country. AHA assumed humanitarian duty in Rwanda in 1994 by which time many cases of diarrhea had been reported in the villages where the returnees were re-allocated after being repatriated. The main health education topics were concerned with personal and environmental hygiene, as well as increased sanitation facilities and their proper use in an attempt to prevent diarrhea. Because there were insufficient Information Education and Communication (IEC) materials, the CHPs were the main source of information. The program was so successful that there was remarkable reduction in diarrhea among beneficiaries (UNHCR, 2000, p.115).

In Angola, the scope of humanitarian operations is relatively extensive, given the acute vulnerability of women and children. According to the report, literate women are good health care providers to their families. However women in rural areas of Angola that have been affected by war have had an average of only one year of schooling. In Viana

refugee camp, 33 CHPs were trained to provide health education and teach refugees, mostly women, about personal and environmental hygiene, the importance of safe excreta disposal including those of children and usage of safe drinking water as well as safe keeping of food. A weekly health education radio program was broadcast in the local languages (UNHCR, 2000, p. 218).

In Nangweshi, Mayukwayukwa and Kala refugee camps, Zambia, CHWs and house visitors were trained in the provision of health education. The high number of cases of diarrhea was attributed to the fact that because the refugees came from war ravaged countries such as Rwanda, Burundi, Angola and DRC, many of them had limited exposure to health concepts (UNHCR, 2000, p. 232). The refugees in Osire refugee camp came from the above named countries and therefore have been exposed to the same difficulties in accessing health information services as the refugees in Zambian refugee camps.

Water was transported to Nangweshi refugee camp during the period of high influx of refugees, a period during which there was a critical shortage of water for human consumption and basic personal hygiene. The water supply problem persisted in Maheba and Mayukwayukwa camps, particularly when the major influx of refugees coincided with heavy rain in November and December 1999, when there were only 13 boreholes located very far apart and 11 wells. These facilities were very inadequate to provide enough water, at least 20 liters, per person per day as per UNHCR standards. Unfortunately, refugees had to walk more than a kilometer to collect water for household use, which aggravated the incidences of diarrhea (UNHCR, 2000, p.233). Since diarrhea is categorized as water - borne and water washed disease, both sufficient quantity and good quality of water is needed to control disease and sustain a healthy life- style.

According to Wood et al. (1995, p. 181), it is recommended that to prevent water – washed diseases, one should get enough water first and then improve the quality later.

With regard to sanitation, most refugee families in the camps (73.0%) in Mwanze and

100% in Mayukwayukwa and Nangweshi had their own pit latrines and maintained good standards of cleanliness. Vulnerable refugees had pit latrines built for them. Most importantly, communal pit latrines and refuse pits were built and maintained in transit and reception centers, markets places, distribution centers, schools and clinics for good environmental hygiene (UNHCR, 2000, p.233). At Osire refugee camp, a pit latrine is shared among two to three families and few individual refugees have private pit latrine, unlike the situation in the refugee camps in Zambia, which is an example that should be emulated. As elsewhere, vulnerable refugees in Osire have pit latrines built for them.

Access to appropriate sanitation and safe water for drinking, cooking and personal hygiene is essential for the health and well being of refugees. The UNHCR responded effectively to these vital needs with a quick water point improvement program for refugee camps in Viana, Uige, Negage and M'Banza Congo in Angola as well as in Zambia. Following these interventions and supplemented by the CHPs' activities, a significant reduction in diarrhea was reported in all the camps (UNHCR, 2000, p. 219). It is clear that what AHA is doing in Osire is fully in accordance with global measures to improve healthy life styles in refugee camps.

In South Africa, there are no refugee camps and refugees are allowed to live where they choose. The UNHCR produces appropriate information materials on health education on the prevention of communicable disease, including diarrhea. These materials are translated into French, Portuguese, Kisiwahili and Somali languages. Initial feedback from the community has indicated a greater need for this type of material especially on diarrhea and HIV/AIDS (UNHCR, 2000, p.255).

Lankester (1995, p. 74) argues that CHPs have different roles. One is being an educator by teaching the community how to improve health and prevent communicable disease, including diarrhea, and the other is being an agent of change by helping community members to change their knowledge, attitudes and practices in respect of good health behavior.

2.3 Selection of CHPs

The community has the vital responsibility of selecting the CHPs from among themselves, because they know who would be best for the purpose. The main challenge in the selection of CHPs is the different levels of basic education amongst them as well as the range of age groups. A pre-requisite for being a candidate for CHP in Osire refugee camp was that he/she should be literate for the purpose of record keeping, and should be able to read to learn fresh ideas. The CHPs receive incentives to encourage them to deliver health education to the refugees. It is important that all health team members, especially the trainer, should be supportive to the CHPs service (Lankester, 1995, p. 83).

2.4 Training Curriculum for CHPs

Amri, Ngatia & Mwakilasa (1993, p.54-55) found that there are considerable variations in the definitions of “curriculum”. For the teacher of health workers, the term should mean “a written description of what happens in the course”. The curriculum differs from the syllabus in the sense that the syllabus is an outline of subjects or even topics students will cover in the course. Because social factors dictate to a great extent what student health workers should learn, the curriculum is usually designed to reflect the social and cultural needs of the local population. In this case the content of the training syllabus for CHPs included and stressed the importance of the following health areas: the principle of PHC; of washing hands with soap and water before preparing or eating food, after visiting the toilet, changing babies’ nappies, washing soiled clothing or linen, proper food storage to avoid flies, storing food on the food rack to avoid rats and domestic animals such as dogs, building and effective use of latrines, burying faeces of infants and small children or disposing of them in the latrine, storing water in covered containers, safe waste disposal, and clean household environments (Lankester, 1995, p.81- 83); WHO, 1995, p. 21-23, 41-61). Lankester further stresses that CHPs should be offered further training after the curriculum is covered and this might include revision, teaching, and introducing new techniques. The CHPs in Osire have been offered refresher courses on the delivery of health education messages on the prevention of diarrhea.

2.5 Training of CHPs

According to Lankester (1995, p.80 - 81), the trainers of CHPs should have the necessary qualifications which include practical experience in community health as well as nursing, paramedical or teacher training. The training for CHPs in Osire took three weeks to complete, after which they started working in the community. The author argues that the training of CHPs is usually comprises in two parts, first a block and then an intermittent training period. Teaching in block training initially occurs each day for a period of 1 week to 3 months, with 3 weeks usually considered to be an appropriate length. This approach helps trainees develop fresh attitudes and gain new knowledge which is reinforced every day. Teaching in intermittent training occurs 1 or 2 days, or even half a day, per week until the course is completed. In intermittent training, learning is slower and the knowledge is more easily forgotten between lessons. Lankester recommended block training because the CHPs can start working in the community within 3 months whereas intermittent training may take up to 6 months before actual work starts. This author argues that for the CHPs to be motivated, they should be rewarded for the services rendered. De Haan (1984, p. 14) recommends the following methods in teaching CHPs and delivering health education messages to the community:

- Face-to face (individual teaching) through home visits
- Focus Group Discussion (FGD): The members of the group derive considerable support and encouragement from one another
- Health talks at the clinic and home visits
- Lecturing method, which is largely used for a large group of people
- Health education through mass media: Using leaflets and posters with clear illustrations. The author referred to above further observes that the written words is often used but is of no value if the community is illiterate.

Johnstone & Ranken (1994, p.14) recommend that good PHC service delivery depends on continuous training so that the community knowledge and awareness of its health problems and how to deal with them is continually being improved.

2. 6 Concept of health education

Health education has been defined in many ways. According to Glanz, Lewis & Rimer (1992, p. 7), health education aims at “bringing about behavioral changes in individuals, groups and larger populations from behaviors that are presumed to be detrimental to health, to behaviors that are conducive to present and future health”. Dennill, Lock & Swanepoel (1995, p. 82) argue that health education is a necessary instrument that assists people to facilitate changes to more helpful behaviors.

Health education and information dissemination is one of the key inputs known to affect health at the household and community level. Other inputs that help to create an enabling environment for the health of households and community include safe water and sanitation, food security and nutrition, general education, the special roles and status of women, and cultural barriers. These inputs must be addressed if health education in prevention of diarrhea is to succeed in the refugee camps.

Health education is essential if people are to learn how to live a healthy life and avoid diseases. Primary prevention health education enables people to value their health, and to know about diseases and how to make the best use of the health services to prevent such diseases. Health education motivates people to practice hygienic personal habits and healthy behavior for themselves like using safe drinking water, hand washing, environmental hygiene and proper excreta disposal (Wood et al., 1995, p. 9-10). According to Johnstone & Ranken (1994, p. 15), people have to be made aware that some of their habits such as not washing hands before meals might cause disease. Where there are good habits, they should be encouraged. Johnstone & Ranken (1994, p. 15) further emphasizes that health education campaigns are the only way to make communities aware of their problems and motivate them to change. It is recommended that health education by health workers, CHWs and CHPs should concentrate on the following habits in persuading people to change their behaviors to prevent diarrhea:

- Always washing hands before preparing and eating meals;

- Always washing hands after:
 - visiting the toilet
 - cleaning cuts and wounds
 - caring for a sick persons
 - handling nappies and baby faeces
- Covering food to protect it from flies;
- Keeping drinking water in containers with lids;
- Disposing children's faeces in a pit or burying them

Health education on these matters can be given routinely by anyone with training such as CHWs and CHPs, as well as health workers in clinics and health centers. George (1995, p. 374) emphasized the fact that each culture differently knows and defines the ways in which they experience and perceive their health care world, as well as how they relate these experiences and perceptions to their general health beliefs and practices. Health education itself can also help medical workers to understand what the people want in their situations, their needs and demands, and their culture and environment. By working together, they can develop a healthier life. To create a conducive environment for effective health education, Glanz et al. (1992, p. 8) suggests that CHPs should also have effective communication skills to establish a therapeutic interpersonal relationship with the community served. It is only then that CHPs can change harmful cultural practices for a better and healthier life.

2.6.1 Some misunderstanding about health education

Experience in developing countries has shown more and more clearly that there is no quick and easy way of giving health education, and that the most effective method is still careful explanation by one person to another, even though this takes a lot of time. Others have thought that posters, pamphlets, and films would help. In the past, 'health education' usually meant gathering together a group of people and giving them a health talk. This method which was copied from school teachers, has not been helpful. It is now realized that unless the people in the group all have the same problem, and the same

difficulties and the same way of life, it is not possible to persuade them as a group to take the same steps to solve their problems. Health educators then would be able to persuade the communities to act in appropriate ways such as seeking safe drinking water, practicing regular hand washing before preparing food and after using the latrine or handling baby feaces, and carefully disposing of wastes especially human wastes that can lead to the spread of diarrhea in the communities. It is important to note that beneficiaries can only be persuaded to make these changes if the health educators understand why beneficiaries live as they do now, and how they can be led to see the benefits they will obtain from making the needed changes (Wood et al., 1995, p. 330- 332).

2.6.2 Improving health education

Health education is an important component of primary education. Therefore, time spent in helping people to understand, and in advising them, is not wasted. Health education should be designed with clear and measurable objectives in order to determine the degree of success. According to De Haan (1984, p. 13), the aim of health education is to secure changes in people's behavior because that is how its success is measured in the targeted population. For the success of a health education program, the following factors are important:

- Health education is more than simply supplying the public with information about an aspect of health. It should have a motivational factor for the people to change their harmful health behavior.
- The health educator should know the community in which she/he is working in order to be able to help the community change harmful health behavioral practices to produce a better and healthy life-style.
- The topics which are dealt with should be those that are important to the community and not those that the health educator thinks are important.
- The health educator should gain support of the leaders who best represent the opinions of the community.
- The community must be actively involved in the program.

It is advised that the better you know the community, the more you will enter into their problems, the more carefully they will listen to you, and the more you will be able to help them (De Haan, 1984, p. 15). Get to know them by visiting them in their homes. Then the advice you give will be feasible – they will be able to follow it; it will be relevant – they will see it meets their needs; it will be appropriate – they will see that it can immediately help them (Wood et al., 1995, p. 334). The CHPs in Osire were selected from the refugee community, speaking the same language, and sharing the same social problems, although they had different religious dominations.

A serious weakness of health education in the past was the failure to measure success by evaluating the activities that were initiated by health education. For effective prevention of diarrhea, health education should emphasize the importance of personal hygiene in households by teaching the children to wash their hands after using the latrine and before meals, until this becomes an automatic habit (Wood et al., 1995, p. 351).

2.7 Water and Sanitation

The sources of water in the refugee camps are generally unprotected and easily polluted, especially by pit latrines. Some of the latrines are constructed in the vicinity of the water source and thus allow easy pollution of underground water sources. Unsatisfactory disposal of human excreta leads to an increase in faecal – oral transmission and the spread of diarrhea. Poor disposal of household rubbish encourages flies and rats and this increase the transmission of diarrhea. In Osire refugee camp, refugees are encouraged to dig refuse pits for households' solid waste materials and pit latrines for defaecation.

Water can affect health in a number of different ways. Lack of water for personal hygiene may result in the increased transmission of some diseases, called water-washed diseases. Water may carry the organisms of specific diseases, called water-borne diseases. Water – washed diseases include diarrhea and dysentery, while water-borne diseases include typhoid and cholera.

Water-washed diseases are transmitted by the faecal-oral route due to lack of washing of hands and of eating utensils, because of unwashed vegetables and by lack of personal hygiene such as washing of face, eyes and body. The main cause of this is the lack of water, which generally occurs because either there is very little water available or because it has to be carried a long way home, thus requiring time and energy. For prevention of water-washed diseases such as diarrhea, the quantity of water is important. To prevent water-borne diseases, the quality of water is important (Wood et al., 1995, p. 178). In an attempt to control diarrhea, one should think about the importance of water in terms of both quantity and quality.

The water in Osire refugee camp is pumped from the six solar powered pumps into two 95,000 cubic meters tanks and three 10, 000 liter tanks. The tanks are filled and water is distributed twice a day in the camp through a reticulated piped water system, making a total volume of 420, 000 liters of treated water available per day. According to a UNHCR project sub-agreement document (UNHCR, 2006, p. 17), each refugee should have access to at least 20 liters per day for cooking and personal hygiene. In addition there are 23 functioning boreholes that supply water to the community for laundry and backyard gardening. Since the camp based population is 6,357; each refugee has access to more than 20 liters of safe drinking water per day. The quality of water is monitored on a quarterly basis for bacteriological analysis by an accredited laboratory (Dawit, 2005, p. 18.).

A review by Esrey, Potash, Roberts & Schiff (1991, p. 31) of the findings from 144 studies revealed that health education on the prevention of diarrhea becomes effective with improved sanitation and water supply, thus reducing child mortality by 50.0% and some times up to 80.0%, depending on the presence of risk factors such as poor feeding practices and maternal illiteracy.

2.7.1 Sources of Water Contamination

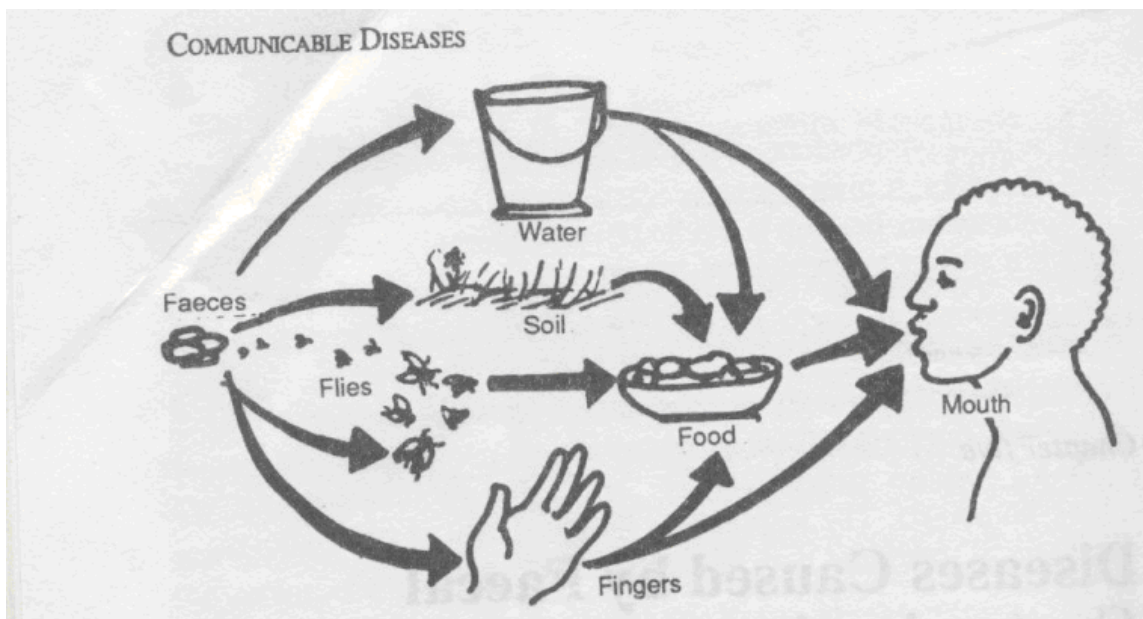
It is easier to prevent water from getting dirty than it is to clean it. Piped water may

become contaminated from leaks in the pipes, especially those passing near foul water or dirty drains. It is also believed that water may go bad if it is stored for too long in poor containers. Underground water is usually clean and is often plentiful and permanent. However, unlined pit latrines may contaminate underground sources. If there are many *Escherichia coli* in a sample of water (ideally there should not be more than 10 per 100ml) this shows that excreta are contaminating the water, which is a clear danger signal (Wood et al. 1995, p. 186 - 190). The provision of adequate quantities of safe water near people's homes is one of the most important aspects of primary prevention of diarrhea. In Osire camp, water is piped from the main water tanks and distributed into the camp at designated points for easy reach in all 15 blocks. Pit latrines have been lined to avoid contaminating sources of underground water.

2.7.2 Excreta Disposal

The hygienic disposal of excreta is important because the infective organisms for many diseases leave the body in the faeces, while some leave in urine. The portal of entry for the organisms that causes diarrhea is the mouth. Furthermore, the excreta (faeces) can be the source of a lot of sickness in the community if it is accessible to flies, and/or can be transferred from hands to food.

Figure 2.1: The faecal –oral transmission route



Courtesy of Bennet & Buga, 1993, p. 158

Faeco - oral transmission occurs mostly through faecal contamination of food, water and hands and very small amounts of faeces can carry enough organisms to cause an infection. Figure 2.1 above illustrates that Flies, Food, Fingers and Faeces are the four “Fs” in connection with the transmission of germs that cause diarrhea. It is often called the faecal – oral route of transmission (Bennet & Buga, 1993, p. 158).

Bennet & Buga further argued that contamination of fingers and eating utensils is most likely to occur when water for hand washing and cleaning is in short supply. Therefore health education alone, without increasing the quantity of water has less effect in the prevention of diarrhea. It is the quantity of water rather than its quality, which appears to be important in relation to the transmission of diarrhea. Refugees in Osire camp have easy access to safe drinking water as well as water for cleaning and washing at all times throughout the year. In Osire camp, each refugee has access to more than 20 liters of water per day for cooking and personal hygiene (Anyolo, 2006, p.12).

Poor sanitation and disposal of fecal matter complicates matters particularly in rural area and peri-urban slums where seepage and runoff can contaminate ponds, streams and wells. In the refugee camps and slums where latrines are mostly used, the underground water sources might be contaminated (World Bank, 1994, p. 31).

A study in Lesotho recorded a 36.0% reduction in diarrhea related to improved excreta disposal and concluded that health education should go together with interventions to improve excreta disposal, as this would have a greater impact than improvements in water quality, particularly in highly contaminated environments where the prevalence of diarrhea is high (Daniels, Cousens, Makoael & Feachem, 1990, p. 86). As a case in point, an outbreak of diarrhea in Osire refugee camp in 2002 was reduced following the increase in the number of, and the use of, pit latrines together with improved health education. This includes the proper disposal of fecal matter of infants and children who cannot use the pit latrines (Nwagboso, 2002, p. 7). To improve sanitation, it is necessary to provide simple pit latrines, which are cheap and easily made by any family.

According to Wood et al. (1995, p. 195), because the most important method of excreta disposal in rural areas is the pit latrine, health workers should know how to construct one and should teach the community about its importance. The latrine should be about 50 feet away from the water source if on the same level and 100 feet if it is above the source. At Osire, refugee families were taught about the importance of pit latrines and were shown how to construct a simple pit latrine. The refugee community was actively involved and participated in the construction of their pit latrines in the camp. The 50 feet distance between the pit latrines and the water sources were considered to be adequate because the land in the camp is even.

2.7.3 Social and cultural beliefs

Because there are local customs and traditional taboos that make health education difficult, CHPs need to find out what these taboos are in order to be able to change them gradually (Wood et al., 1995, p. 195). For instance, according to Kerr (1995, p.14)

women in Honduras do not use latrines for fear that they might become pregnant. Some children are not allowed to use the latrine for the fear that they might fall in. Other societal and cultural beliefs have it that excreta of men and women should not mix. A harmful belief is that faeces of children cannot cause infection. It is clear that such obstructive behavioral patterns should change, if possible. Most of the refugees in Osire camp came from the war - torn areas where they have not been accustomed to the use of pit latrines, so it is not known what types of taboos they have. However, health education addresses the importance of pit latrines and their use in the prevention of diarrhea in the camp.

2.7.4 Advantages of pit latrines

The advantages of pit latrines include the facts that they are cheap and simple to construct while the materials for construction can easily be obtained locally. Pit latrines do not need a piped water supply and, when properly made and used, are clean and unobstructive. When a pit latrine is full, it can easily be covered over and abandoned and another one made without incurring much expense. The disadvantage of pit latrines is that if they are not properly lined, then underground water sources will be contaminated. It is therefore important that all the pit latrines should be lined to avoid contamination (Wood, 1995, p. 198).

2.7.5 Pit latrines and public hygiene

With regards to toilet usage and public hygiene, health education should also emphasize the following measures:

- Open defaecation is the source of germs, bacteria and virus transmission.
- Always use the pit latrines where possible to prevent diseases associated with diarrhea.
- Do not use the bushes, especially those near water supplies, rivers or dams as a toilet. Instead go far away where there is no danger of human waste seeping into the water and contaminating it

- Do not urinate outside the pit latrine because:
 - ✓ It is unhygienic
 - ✓ It produces bad smells
 - ✓ It attracts flies
 - ✓ It pollutes (contaminates) the soil
- Wipe the seat of your toilet every day using water, soap or detergent.
- Pick up all papers lying around as this improves environmental hygiene.
- Keep the area around the toilet clean.
- Wash the floors and walls regularly.
- Keep the door closed at all times to control flies.
- Keep all water containers clean and covered.
- Keep drinking water in closed containers.

Wash hands with soap and water after visiting the toilet, changing babies' nappies, washing soiled clothing or linen, and before preparing or eating food (Bennet & Buga 1993, p.165).

2.7.6 Prevention measures for diarrhea control

A village community should be taught that prevention of diarrhea depends on overcoming the faecal - oral transmission cycle. Health workers and CHPs should teach the people to do the following:

- All refuse, any decaying matter, carcasses, and faecal matter must be properly disposed of by burying, burning or being properly composted for useful fertilizer.
- All household surroundings should be kept clean at all times.
- Food should always be properly cooked and eating utensils should be cleaned and dried after use.
- All households should be clean inside and food leftovers should be placed in covered dustbins or buried immediately.
- Cooking pots, utensils, cups and water containers should be kept clean.
- All foodstuffs should be protected from flies at all times.
- Streets, roads and other public areas should be kept clean. In Osire, cleaning up

campaigns being done on a monthly basis in order to motivate the refugees to clean their household environments regularly.

- Above all, people should always keep their hands clean by washing them with soap after using the latrine or after attending to a sick person, after cleaning soiled linen, or after and before preparing food and eating. If they do not have appropriate resources such as gloves, people are advised to use plastic/nylon bags to cover their hands when changing or cleaning patients.
- Control flies by proper refuse and disposal faeces. This can be done by:
 - ✓ Ventilated and improved pit latrines which are available in Osire refugee camp;
 - ✓ Screening kitchens and food stores;
 - ✓ Storing of leftover food where flies cannot reach it;
 - ✓ Spraying with insecticides for fly control is usually done twice a year in Osire refugee camp by the district health inspector (Bennet & Buga, 1993, p. 164; MOHSS, 1992, p. 13).

2.7.7 Domestic refuse disposal

Domestic refuse or solid waste is produced wherever there are human beings. This usually consists of bits of leftover food. To prevent diarrhea in the community, health education teaching should address indiscriminate disposal of refuse within each household as this is a factor that leads to the promotion and spread of diarrhea among people. Some of the negative factors are as follows:

- It is unsightly;
- It produces offensive smells;
- It attracts insects and vermin – particularly flies, cockroaches and rats;
- It might cause pollution of water and food and subsequently causes diarrhea.

Health education should emphasize that all domestic refuse should be put in a pit or burnt in order to keep the area around the household clean. House flies breed and feed on

decaying matter such as vegetable refuse, animal carcasses and particularly on human faeces. They then carry the bacteria from this decaying matter onto human food, skin and eyes, by vomiting on solid food in order to liquefy the food and by defecating on the food. Flies associate with people simply for food which can also include discharges from the eyes or sores, wounds and food around the mouths of children. It is only when people improves personal hygiene and cover food at all times that they will reduce the likelihood of flies' associating with people, and will thus prevent diarrhea. In Osire refugee camp, refugees are encouraged to have a refuse pit at each household and to burn all the refuse and solid waste produced at home. This is done so as to promote environmental hygiene in and around households and thus prevent flies (Bennet & Buga, 1993, p. 158).

2.8 Food as a source of infection

Food is a key factor in infection because it can be directly or indirectly contaminated via polluted water, dirty hands, contaminated soil, flies, and animals or animal products and thus cause diarrhea. A study by the World Bank (1994, p 33) revealed that poor hygienic food preparation, handling, and storage in Accra led to a higher prevalence of communicable diseases, as noted in:

- a 36.0% prevalence of diarrhea among children in households where hands were not washed before eating;
- flies
- absence of enforceable legislation on food quality and environmental hygiene.

Food, being essential for growth, development and energy, might also be responsible for the spread of a number of important diseases. Therefore, the aim of health education is to educate communities about food hygiene in order to prevent food going bad or becoming contaminated at any stage of production, collection, storage, preparation or consumption.

2.9 Community participation

The Joint WHO/UNICEF report on the Alma Ata Conference on PHC in 1978 defines community participation as “the process by which individuals and families assume responsibility for their own health and welfare and for those of the community and develop the capacity to contribute to their own and community’s development” (Kisubi & Ochola, 1992, p.24).

After the Alma Ata Declaration, some governments promised to adopt one of the prime elements of an enabling environment, namely, better primary and preventive health care and enhanced community participation. Better health in Sub – Saharan Africa hinges on the ability of households and communities to obtain quality health services at low cost and to use them more effectively. To achieve this goal, governments must have the following commitments:

- A strong political commitment to improving health, including refugees and asylum seekers within the territories.
- An intersectoral perspective in planning and operating systems of health care provision, including provisions for safe drinking water, sanitation, and health education.
- An appropriate organizational framework and managerial process.
- An equitable distribution of health care resources. This is one of the PHC principles of health care deliveries to the beneficiaries.
- Community involvement at all levels (World Bank, 1994, p. 3).

The Government of Namibia is committed to improve the health of refugees by strengthening health education through provision of primary health care services at the camp. The MOHSS has provided materials for latrine construction, supplementing the efforts of UNHCR/AHA in Osire refugee camp. This is an indication of the positive political commitment of the host government (Nwagboso, 2002, p. 7). There was active community participation and involvement in the construction of latrines in Osire refugee

camp as the refugees constructed their own latrines while AHA provided them with technical assistance and construction materials. The refugees keep the latrines clean, which ensures sustainability through ownership (Nwagboso, 2002, p.7; 2003, p. 10; 2004, p. 9; Anyolo, 2005, p. 15; 2006, p, 17).

People must be responsible for their own health. Sometimes there is a great danger that health workers will try to assume this responsibility for communities. The whole purpose of health education by CHPs is to teach the community what they should do and how should they do it. Health workers are sometimes surprised when they see that the community does not do what they were taught to do. This is usually the result of poor community involvement and participation in planning health issues that affect them. For control methods to be effective, all the villagers should understand them and agree to do the right thing. According to Kisubi & Ochola (1992, p.12), the role of CHPs should be that of 'technical advisers' helping the local people to carry out disease control. A positive result would be that society would realize that access to health care is a right and a responsibility of all.

Refugees were involved in their own disease control programs through committee and block leaders, and water committees as well as youth and women's groups. Thus they shared in important decisions, which, after all, affect them more than the health staff. Wood et al. (1995, p. 363) has emphasized that health education is essential and must precede and accompany a program of community involvement and active participation in matters that affects their own health.

2.10 Summary

In this chapter the researcher highlighted relevant work done previously by other researchers. The researcher identified similarities between and gaps in these studies and showed how the findings of this study will attempt to bridge those gaps. Literature has revealed that controlling environmental sanitation and promotion of hygiene is the most important aspects of primary prevention of diarrhea. Access to safe drinking water,

hygienic cooking and personal hygiene is therefore essential for the health and well being of refugees.

In the next chapter, the researcher will discuss how the research objectives were met by choosing the appropriate research design and research methods. Details about the study sample, data collection and analysis procedures will also be discussed.

CHAPTER 3: Research design and Methodology

3.1 Introduction

This chapter presents the research design and methodology. According to Burns and Grove (1995, p. 225), research methodology “refers to the strategy of the study, from identification of study design to final data collection.” This chapter contains the description of the research design, population, sample and sampling methods. The data collection method, data analysis, validity and reliability of instruments and piloting as well as ethical considerations and limitations were also described.

3.2 Research design

A quantitative descriptive study was designed to have 95.0% confidence level and 5.0% margin of error in reporting. A quantitative approach was selected for this study because it is descriptive and allows one to measure the proportion of the problem being studied (Brink 1996, p.119) According to Katzenellenbogen, Joubert & Karim (1997, p.66), a descriptive study gives information that will help the health service providers and planners to design services and allocate resources efficiently.

3.3 Study area

The study was conducted in Osire refugee camp, in Otjozondjupa region in Namibia.

3.4 Study population and sample

The refugee population in Osire refugee camp was 6357 individuals with 1400 households at the time of the study (UNHCR, 2006, p.1). The study included two groups. One group was all the households in Osire refugee camp from which a representative sample of all the households was drawn. Since the total number of households was known, the sample size was calculated using the following formula by Underhill &

Bradfield (1996, p. 21-27):

$$n = \frac{N}{\left[1 + \frac{N(L/100)^2}{1.96^2 p(1-p)} \right]}$$

N = household population in Osire refugee camp (1400)

L = margin of error (in this case: 5%)

n = sample size

P = 0.05

Substituting:

$$n = \frac{1400}{\left[1 + \frac{(1400)(5/100)^2}{1.96^2 (0.05)(1-0.05)} \right]}$$

n = 301.4438167 which amounts to 302 households

The second group was all the trained CHPs who were available in Osire refugee camp at the time of the study. These are the CHPs who were delivering health education information to all households in the camp.

3.5 Sampling

The camp is divided into fifteen administrative blocks in which all households are numbered. Stratified Random Sampling was applied whereby from each administrative block, households' were sampled randomly to represent the block proportionally. Weights (W) from administrative blocks were determined by using the following formula:

$W_i = \frac{N_i}{N}$ N_i = households population in Administrative Block i and $i = 1, 2, 3, \dots, 15$.

N = household population in Osire camp and

$n_i = W_i \times n$; n_i = household sample proportion from block i and n = sample size

$$W_1 = \{79/1400 = 0.057\} = n_1 = 0.057 \times 302 = 17.2 = 17$$

$$W_2 = \{70/1400 = 0.05\} = n_2 = 0.05 \times 302 = 15$$

$$W_3 = \{50/1400 = 0.036\} = n_3 = 0.036 \times 302 = 10.7 = 11$$

$$W_4 = \{73/1400 = 0.052\} = n_4 = 0.052 \times 302 = 15.7 = 16$$

$$W_5 = \{85/1400 = 0.060\} = n_5 = 0.060 \times 302 = 18.3 = 18$$

$$W_6 = \{91/1400 = 0.065\} = n_6 = 0.065 \times 302 = 19.6 = 20$$

$$W_7 = \{74/1400 = 0.052\} = n_7 = 0.052 \times 302 = 15.9 = 16$$

$$W_8 = \{113/1400 = 0.080\} = n_8 = 0.080 \times 302 = 24.3 = 24$$

$$W_9 = \{78/1400 = 0.055\} = n_9 = 0.055 \times 302 = 16.8 = 17$$

$$W_{10} = \{131/1400 = 0.093\} = n_{10} = 0.093 \times 302 = 28.2 = 28$$

$$W_{11} = \{97/1400 = 0.070\} = n_{11} = 0.070 \times 302 = 20.9 = 21$$

$$W_{12} = \{84/1400 = 0.06\} = n_{12} = 0.06 \times 302 = 18.1 = 18$$

$$W_{13} = \{80/1400 = 0.057\} = n_{13} = 0.057 \times 302 = 17.2 = 17$$

$$W_{14} = \{115/1400 = 0.082\} = n_{14} = 0.082 \times 302 = 24.8 = 25$$

$$W_{15} = \{180/1400 = 0.128\} = n_{15} = \frac{N}{N} = 0.128 \times 302 = 38.8 = 39$$

$$n = n_1 + n_2 + n_3 + n_4 + n_5 + n_6 + n_7 + n_8 + n_9 + n_{10} + n_{11} + n_{12} + n_{13} + n_{14} + n_{15}$$

$$n = 17 + 15 + 11 + 16 + 18 + 20 + 16 + 24 + 17 + 28 + 21 + 18 + 17 + 25 + 39 = \mathbf{302}$$

Table 3.1 Blocks sample size proportions

Block1 (n1) = 17	Block 2 (n2) = 15	Block 3 (n3) = 11	Block 4 (n4) = 16	Block 5 (n5) = 18
Block 6 (n6) = 20	Block 7 (n7) = 16	Block 8 (n8) = 24	Block 9 (n9) = 17	Block 10 (n10) = 28
Block 11 (n11) = 21	Block 12 (n12) = 18	Block 13 (n13) = 17	Block 14 (n14) = 25	Block 15 (n15) = 39

Therefore a sample size (n) of 302 households was arrived at by adding together the selection of households in each of the 15 administrative blocks (Brink, 1996, p.134-139).

Because all CHPs who were available in Osire refugee camp were included in the study, there was no need for sampling.

3.6 Development of research instruments

According to Burns & Grove (1995, p.368), a questionnaire is a printed self report designed to elicit information that can be obtained via the written response of the subjects. It is designed to determine facts about subjects or persons known by subjects, beliefs, attitudes, opinions, levels of knowledge, or intentions of the subjects.

The researcher prepared questionnaires and a checklist based on information and variables derived from literature. These were constructed in English and were translated into Portuguese and French by Portuguese and French teachers and back again into English by different experienced Portuguese - and French speaking people. This was to determine whether the questions had the same meaning in all languages commonly spoken in the camp (Brink, 1996, p.148-159).

Two questionnaires were developed, one for CHPs and the other one for households.

The households' questionnaires included the following variables:

- demographic characteristics e.g. age, gender, country of origin, educational level

- and the duration stayed in the Osire refugee camp;
- availability of health promoters in the camp;
- topics covered by health promoters in teaching the community about the prevention of diarrhea and the methods used;
- availability of water, food handling, proper sanitation and environmental and personal hygiene.

The CHPs' questionnaires included the following variables:

- demographic characteristics e.g. age, gender, country of origin, educational level and duration of stay in Osire refugee camp;
- topics covered by CHPs in teaching the community about the prevention of diarrhea
- methods used in teaching the community.

According to Woods & Catanzaro (1988, p.300), a questionnaire has the following uses:

- it identifies and explores events and meanings;
- it explores and tests relationships;
- it validates information.

The preliminary standardized data collection instruments were submitted to four professional nurses, one public health officer, one medical doctor and one statistician for review in order to ensure the correctness of the data collection instruments.

See Annexure B for the questionnaires and checklist

3.7 Pilot study

Polit & Hungler (1995, p.259) states that “pre-testing is the collection of data prior to the experimental intervention with the purpose of identifying flaws or assess time required for the study.” The purpose of conducting the pilot study was to investigate the feasibility of the intended study and detect possible flaws in the data collecting instruments such as ambiguous instructions or wording of questions.

The data collection instruments were tested on 40 households and 3 health promoters in Osire refugee camp, who were excluded from the main study to avoid biased information (Brink 1996, p.173). Trained field workers were used in collecting the data during pre-testing of the data collection instruments.

The piloting of the instruments was done to determine the following:

- Assess the relevance, wording, appropriateness, adequacy, and comprehensiveness, as well as suggestive and subjective undertones.
- Determine the usability of the instruments, ease of completion, distribution and collection of the completed instruments.
- Assess the appropriateness of the format of the questionnaires.

A few problems were identified during the piloting of the data collection instruments with the households and some questions were rephrased. The necessary changes were made and the questionnaires were amended and refined before the main study started. The field workers were also offered refresher training to correct the mistakes and misunderstandings detected from in pilot exercise.

The field workers were also informed that they should not react in leading ways to any replies from the respondents. The health workers were excluded from the study for the simple reason that they often make poor interviews since they have difficulty in remaining neutral and refraining from giving advice while the pre-tested households and health promoters were excluded from the main study in order to avoid biased information (Morrow & Vaughan, 1998, p. 81).

3.8 Validity and Reliability of the research instruments

3.8.1 Validity

In the definition used by various authors, validity is viewed as the degree to which an instrument actually measures the abstract construct it proposes to measure within the

environment in which it is applied (Leedy, 1997, p. 39; Burns and Grove, 1993, p.342).

Validity refers to whether an instrument accurately measures what it is supposed to measure, given the context in which it is applied (Brink, 1996, p.167). During the pilot study, the validity of the instrument was assessed. The questionnaires and checklist were submitted to the supervisors and the statistician for correction and proof reading. The data collection instruments were discussed with experienced health professionals, with AHA health officials in Osire health center, and with the Osire camp authority to ensure that they would examine the actual diarrhea situation in the camp.

3.8.2 Reliability

According to Brink (1996, p.171), reliability refers to the degree to which the instrument can be depended upon to yield consistent results if used repeatedly over time on the same person, or if used by two different investigators. The following criteria were incorporated into the questionnaire in an attempt to enhance reliability:

- Questions were formatted as simply as possible to reduce ambiguities.
- Questionnaires were translated from English to French and Portuguese by French - and Portuguese speaking persons and translated back into English by different French - and Portuguese - speaking persons.
- Ample time was allowed to complete the questionnaires.
- Field workers communicated with respondents in the language that suited them best.
- All questionnaires were administered in a consistent manner to all respondents by the researcher and field workers.

The field workers were supervised, collected data were checked to ensure completeness, and errors were corrected every day during data collection.

3.9 Data collection method

Structured questionnaires were used to collect relevant data from households and CHPs. Data was collected during August 2006 by the researcher and five field workers who were recruited from the refugee community. The field workers had all passed grade 12 school level and represented languages such as Portuguese, French, Umbundu, Swahili and Ligala. All of them were conversant with English as a requirement for easy translation. The practices of all households were noted on observational checklists. Open-ended and closed ended-questionnaires were used to collect the data. Open-ended questions were chosen to allow the respondents to respond in their own words whereas closed-ended (or fixed alternative) questions offered respondents a number of possible answers from which they had to choose the one that most closely matched, the appropriate one. The researcher wanted to find out whether the community had been taught about prevention of diarrhea and thus find out about the contents of the training curriculum used by the CHPs. Polit and Hungler (1995, p.279) indicated that close-ended questions limit the scope of study to the respondents. The researcher interviewed 12 CHPs and field workers interviewed 3 CHPs, because they were more conversant in Portuguese.

3.9.1 Training of field workers

The field workers were trained for two days to ensure that they had a common perception and understanding of the questions. This also increased the probability that similar questions would have carried the same meaning for the participants. The data collection took six days during which the researcher and field workers interviewed the household respondents and the CHPs.

3.10 Data processing and analysis

Data analysis is the process of bringing order, structure and meaning to the mass of collected data. Quantitative data analysis is mainly applied by statistical methods. The

researcher designed the capturing sheet in the computer and the collected data was entered using Microsoft Excel. The statistician transferred the data from Microsoft Excel into SPSS software. Frequency tables were produced and the researcher converted the information into tables and figures for calculations. Calculation of the correlation coefficient from SPSS program software was done with the assistance of the statistician. According to Katzenellenbogen et al. (1997, p. 102), the data set must be carefully checked to identify strange values (outliers), missing values, and coding errors before any analysis is done.

For quality control of the information, the researcher checked for the completeness and consistency of information before and during data processing. Analysis of data was descriptive in nature and the results were organized and presented in tables, graphs and figure forms using the SPSS software. The results were quantified in percentage forms and in proportionate statistics.

3.11 Ethical Consideration

3.11.1 Permission to conduct a study

The research protocol and consent form for the collection of data for the study were approved by the University of Namibia Research Committee. Permission to conduct the study and to use Osire refugee camp as a case study was sought from the Country Representative of UNHCR in Namibia, who gave written permission. A meeting was held with the Refugee Committee, the body that represents the rights and interests of refugees in the camp, to inform and explain the purpose of the study before commencement of data collection. (Refer to Annexure A)

3.11.2 Informed consent

The aim of the study was explained to the respondents in their local spoken languages to ensure that the rights of each respondent were respected, in the sense that respondents

understood the aim of the study and could make an informed decision to participate. The respondents were informed that the questionnaires could only be completed with their consent (Brink, 1996, p.148-159).

3.11.3 Voluntary participation

Complying with the principles of respect for human dignity, especially the principle of self-determination, CHPs and households' respondents had the right to participate in the study or to refuse to do so (Polit & Hungler, 1995, p.122).

The respondents were informed that participation in the study was purely voluntary and that they had the right to withdraw from the study at any time during interview without giving reasons. A decision not to participate was fully respected and the respondents were ensured that non-participation would not affect their accessibility to any form of assistance they might need or to which they were entitled to from AHA as refugees. This was emphasized because the researcher was a staff member of AHA at the time of the study.

3.11.4 Confidentiality and privacy

Individual rights to confidentiality were guaranteed to all respondents (Polit & Hungler, 1995, p.125). Strict confidentiality and privacy were ensured and maintained throughout the study. The field workers were trained as to how to approach the community and to respect the cultures and beliefs of people and maintain confidentiality and privacy of all respondents at all times.

A full explanation on the purpose of the study was given to individual respondents who were assured that the information they gave would only be used for the purpose of the study. The refugee committee was briefed prior to the data collection. Anonymity was observed as no names of respondents were required (Brink, 1996, p.148-159).

The process of data collection was concluded without causing any harm or concerns to

the respondents. This is particularly important because refugees are vulnerable. Should any harm be caused as a result of the data collection, it would be measured and brought to the attention of UNHCR and AHA officials and action would be taken whether to withdraw or to carry on with the study.

3.12. Summary

This chapter focused on describing research methodology, study population and sampling used in the study. Development of data collection instruments, pilot study, data collection and analysis procedure were discussed. Ethical issues that were adhered to by the researcher were also stated. In the next chapter, study findings are discussed and presented in tables and figures.

CHAPTER 4: Findings of the study and discussions of findings

4.1 Introduction

This chapter presents the findings from the household and CHP questionnaires, and the household checklist. The results are presented in three sections: Section A: Household's Findings; Section B: Checklist Findings and Section C: CHP Findings. Responses obtained from the questionnaires are fully displayed as descriptive statistics.

4.2 Section A: Findings from households questionnaires

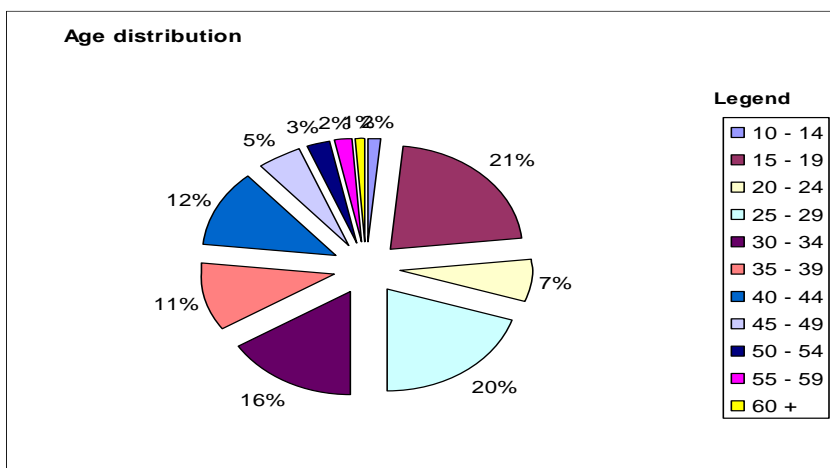
A total of 302 respondents were interviewed using structured questionnaires.

4.2.1 Biographical information

The information to be gathered included: age, gender, country of origin and education level of the respondents.

4.2.1.1 Age distribution of respondents

Figure 4.1: Age distribution of respondents (n=302)



According to Figure 4.1, the majority of the respondents namely 21.0% (n=63) were between 15 -19 years of age, 20.0% (n=57) between 25- 29 years, 16.0% (n=47) between 30 – 34 years and 12.0% (35) were between 40 -44 years respectively. 64.0% of the population interviewed is below 35 years, which is categorized ‘youth’ in the Namibia Population Census (NPC, 2001, p. 46-47). Youth could be an ideal age group to learn new information about the prevention of diarrhea.

4.2.1.2 Gender distribution

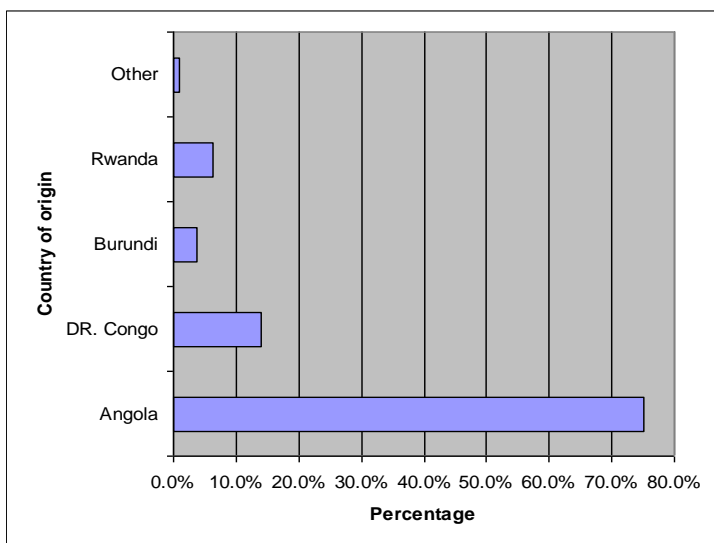
Table 4.1: Gender distribution (n = 302)

Gender distribution	Percent (%)	Frequency
Male	38.4	116
Female	61.6	186
Total	100%	302

The table indicates that a significant number of respondents 61.6% (n=186) were females while males accounted for 38.4% (n=116). This picture confirms the notion that females are more vulnerable in any risky situation, including the refugee phenomenon.

4.2.1.3 Country of origin

Figure 4.2: Country of origin (n =302)



According to Figure 4.2, 75.2% (n=227) of the respondents are from Angola. DRC is represented by 13.9% (n=42), Rwanda accounts for 6.3% (n=19) while Burundi represents 3.6% (n=11). Other countries in Osire refugee camp accounts for only 1.0% (3). This might be due to the closeness of Angola to Namibia and also the fact that refugees from Angola might have relatives in the country.

Angolans accounted for 74.0% (n=4,682) of the total population of refugees in Osire. This means that almost in each block there are Angolans (UNHCR, 2006, p.1).

4.2.1.4 Duration of the respondents stay in the camp

The study further reveals that the majority of the respondents 89.7% (n=271) have stayed in Osire refugee camp for more than two years, 6.3% (n=19) stayed less than two years while 4.0% (n=12) stayed for less than a year. This means that the respondents had a chance of being exposed to health education activities about the prevention of diarrhea.

4.2.1.5 Educational level of the respondents

Figure 4.3: Educational level of the respondents (n = 302)

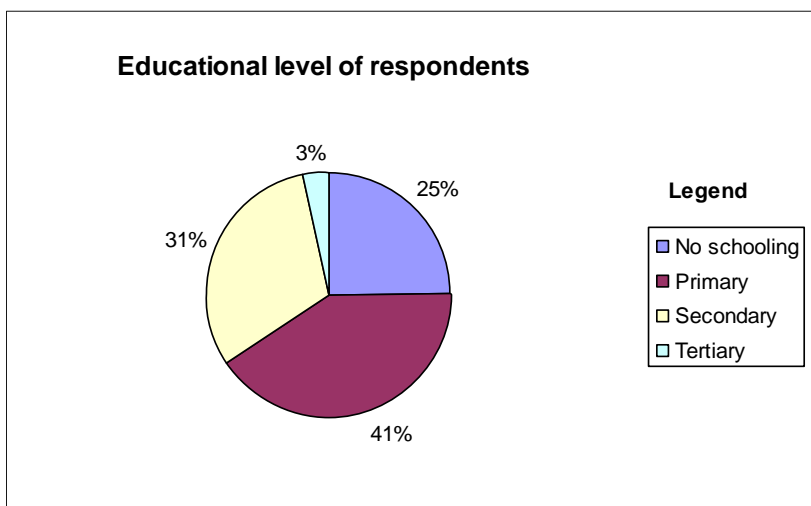


Figure 4.3 shows that 41.0% (n=123) of the respondents had primary education, 31.0% reached secondary education, 25.0% (n=75) never attended school and only 3.0% reached tertiary educational level. The educational level could affect the prevalence of diarrhea because some people might not understand information about how to prevent diarrhea. According to UNHCR (2000, p.218) many refugees especially from Angola had not attended primary school and this might have a negative impact on the effectiveness of health education.

4.2.2 Availability of CHPs in Osire refugee camp (n = 302)

Table 4.2: Availability of CHPs in Osire refugee camp

Responses	Percent (%)	Frequency
Yes	58.9	178
No	28.8	87
Don't know	12.3	37
Total	100%	302

The table shows that only 58.9% (n=178) have knowledge about the availability of CHPS

in Osire refugee camp, 28.8% (n=87) indicated that there were no CHPs, while 12.3% (n=35) did not know. This might be due to small number of the CHPs and/or because CHPs are not really visiting households to provide health education.

4.2.3 Households visited by CHPs

The study wanted to determine if CHPs visit households on a regular basis, the findings are displayed in table 4.3.

Table 4.3: Households visited by CHPs (n =302)

Responses	Percent (%)	Frequency
Yes	42.2	127
No	53.9	163
Can't remember	3.9	12
Total	100%	302

The table shows that the majority 53.9% (n=163) of the respondents indicated that CHPs did not visit households, 42.2% (n=127) indicated that households were visited, while 3.9% (n=12) could not remember whether households were visited or not. A minority of households (42.2%) were visited. One would not expect health education to be effective if all of the households are not covered. Health education would be more effective if CHPs were visiting all of the households and teaching them at home using relevant examples (Kisubi & Ochola, 1992, p.12).

4.2.4 Teaching done by CHPs

The study wanted to determine if the respondents were taught the importance of hand washing after various activities.

4.2.4.1 Teaching about washing hands each time after having used the latrine

Table 4.4: Washing hand each time after having used the latrine (n = 302)

Responses	Percent (%)	Frequency
Yes	77.2	233
No	17.5	53
Don't know	5.3	16
Total	100%	302

The table reveals that 77.2% (n=233) of respondents were taught about the importance of washing hands each time after using the pit latrine, 17.5% (n=53) were not taught, while 5.3% did not know whether they were taught or not. This study reveals that 79.4% (n=240) of the respondents state that they did wash their hands each time after using the latrine, while 20.6% did not do so. This signifies that health education teaching has emphasized this practice.

Most of the respondents 59.3% (n=179) reported that they did not wash their hands each time after handling baby faeces while 40.7% (n=123) did. It can be concluded that education about this practice was less effective. This finding is similar to the study on taboos by Kerr (1995, p.14) where it was found that faeces of children, which are traditionally believed to be innocuous, were sources of infections that might cause diarrhea in the community. Health education should emphasize the importance of personal hygiene in households by teaching the people, including children, to practice hand washing each time after using latrine as recommended by Bennet & Buga (1995, p.351).

4.2.4.2 Teaching about washing hands before preparing food and eating

Table 4.5: Washing hand before preparing and eating food (n = 302)

Responses	Percent (%)	Frequency
Yes	83.8	253
No	13.6	41
Don't know	2.6	8
Total	100%	302

According to table 4.5, a significant number 83.8% (n=253) of respondents were taught about the importance of regular hand washing before preparing and eating food, 13.6% were not taught, and 2.6% did not know they were taught or not. This study revealed that a significant number 94.4% (n=285) of the respondents reported practicing hand washing each time before eating, although 5.6% did not. Only 62.9% (n=190) of the respondents reported always washing their hands before preparing food. This indicates that health education is very effective in teaching refugees to always to wash their hands before eating food. This practice decreases the chances of developing diarrhea. The significant number of respondents who always wash their hands as taught could be attributed to the availability and accessibility to good quantities of water, as revealed by 95.3% of the respondents in this study. However, only 62.9% of the respondents reported practicing hand washing before preparing food and that health education was less effective in this area.

A study on food preparation and handling in Accra revealed that poor hygienic food preparation and handling led to 36.0% prevalence of diarrhea among children (World Bank, 1994, p.33). Hand washing is an important practice in prevention of diarrhea as stated by WHO (1992, p.50) and was part of the training curriculum and trained CHPs were expected to teach the refugees. Johnstone & Ranken (1994, p.15) indicated that habits such as not washing hands regularly before preparing and eating meals do contribute to developing diarrhea. It is clear that community should be taught to always washing their hands.

4.2.4.3 Teaching people to use pit latrine for defaecation

The majority of the respondents, which is 77.2% (n=233), indicate that they were taught about the use of pit latrine for defaecation, 21.1% were not taught and only 1.7% did not know whether they were taught or not.

The study reveals that 84.8% (n=256) of the respondents stated that pit latrines were used for defaecation. This implies that the health education teaching was effective and that the CHPs seem to have had a positive effect in the camp. It further suggests that majority of the respondents were given information about the benefit of using latrine for defaecation in preventing diarrhea.

4.2.4.4 Teaching people to dispose of children's faeces into a pit latrine

The study revealed that a minority of the respondents 41.7% (n=126) indicates that children faeces are disposed into pit latrines while a significant number 58.30% (n=176) did not do so. Faeces of infants are highly infectious and therefore should be disposed of appropriately.

4.2.4.5 Teaching people to bury faeces of infants

Table 4.6 Teaching people to bury faeces of infants (n = 302)

Responses	Percent (%)	Frequency
Yes	60.6	183
No	20.9	63
Don't know	18.5	56
Total	100%	302

Most of the respondents 60.6% (n=183) indicated that they were taught about the importance of burying faeces of infants. Only 20.9% were not taught. This study reveals that the majority 81.5% (n=246) of the respondents state that children faeces were not

buried while 15.2 % (n=46) indicate that children faeces were buried. This is an indication of a risk factor that encourages the spread of diarrhea in the community and was a clear indication that health education to prevent diarrhea was not at all effective because a significant number of people did not do what they were taught to do. Nwagaboso (2002, p. 7) revealed that the diarrhea outbreak in Osire was brought under control because of strengthened health education and increased use of pit latrines, including the proper disposal of faecal matters of infants and children who could not use the pit latrines. Burying faeces of infants is an essential measure in the prevention of diarrhea, as recommended by WHO (1994, p.65)

4.2.4.6 Teaching people to store drinking water in jerry cans with lids

The study wanted to ascertain in which containers the CHPs taught the refugees to store drinking water. The containers included jerry cans, buckets and basins. The results are displayed in table 4.7

Table 4.7: Store drinking water in jerry cans with lids (n = 302)

Responses	Percent (%)	Frequency
Yes	64.6	195
No	17.9	54
Don't know	17.5	53
Total	100%	302

Table 4.7 indicates that the majority of the respondents 64.5% (n=195) were taught about storing drinking water in jerry cans with lids while 17.9% indicate that they were not taught to do so.

4.2.4.7 Teaching people to collect drinking water in jerry cans with lids

Figure 4.4: Drinking water collected in jerry cans (n = 302)



Courtesy of UNHCR/Anyolo: Osire refugee camp, August 2006

Figure 4.4 above indicates children in Osire refugee camp collecting water from the tap. However, the majority of the respondents 66.9% (n=202) attest that water is collected in jerry cans while 33.1% (n=100) did not do so. Of 66.9% respondents, 74.3% (n=150) state that drinking water is stored in jerry cans with lids, an indication that the teaching on the prevention of diarrhea was less effective, because 33.1% of the households do not use jerry cans with lids to store water for human consumption. This could be attributed to the fact that water that is collected in a big open container is used for washing. Bennet & Buga (1993, p.158) recommended that water should be stored in covered containers to avoid contamination at every point during collection and storage.

MOHSS (1995, p.9) recommended that drinking water should be properly stored, preferably in the containers with lids to avoid contamination at every stage during

storage, and that this practice would prevent diarrhea in general.

4.2.4.8 Teaching people to store food in cooking pots kept on food rack (n= 302)

The study reveal that the majority of respondents 65.9% (n=199) indicate that they were taught to store food in cooking pots and keep pots on the racks, while 31.5% were not taught to do so.

Most of the respondents, namely 54.0% (n=163) indicated that food was stored in cooking pots on the food rack while 46.0% (n=139) did not. Of the 46.0% (n=139), 77% (n=107) leave their cooking pots on the kitchen floor while 23% stored pots in boxes and kept them in their sleeping rooms after cooking. This is an indication that health education coverage was less effective in changing the refugee's health beliefs and practices. It also demonstrates that although one might have knowledge, it does not automatically change one's practices/behaviors.

4.2.4.9 Teaching people to cover food to prevent flies

The majority of the respondents 69.9% (n=211) stated that they were taught to cover food in order to prevent flies while 27.1% (n=82) were not taught this and 3.0% did not know whether they were taught or not.

A significant number of the respondents, 77.5% (n=234) attested that they do cover cooking pots. This signifies that health education was effective in this regard and indicates that respondents have been exposed to good methods of preventing diarrhea. According to Bennet & Buga (1993, p.164), a village community should be taught that the prevention of diarrhea depends on breaking through the faecal – oral transmission cycle. Therefore health workers and CHPs should teach people to protect and cover cooking pots and all food commodities from flies at all times, because flies associate with people simply for food and contaminate food. The cooking pots must be covered and must be kept in safe place to avoid contamination by flies, as recommended by Lankester

(1995, p. 82).

4.2.5 Teaching methods used (n=302)

The study wanted to ascertain what teaching methods CHPs use when giving health education. The teaching methods included individual teaching, Focus Group Discussion (FGD), printed leaflets and posters, block meetings, and other means.

4.2.5.1 Individual teaching

The majority of respondents 77.5% (n=234) state that the individual teaching method was not used and only 22.5% responded positively. De Haan (1984, p. 14) strongly recommended that the individual (face to face) teaching method is a very effective method and is most frequently used in health education activities particularly by nurses during curative care and doctors in their consulting health facilities. This could imply that CHWs and CHPs need to be offered further intensive in-service training and introduced to new techniques of health education presentations as recommended by WHO (1995, p.41.)

4.1.5.2. Focus Group Discussion (FGD)

A significant number of respondents 85.1% (n=257) state that FGD method was not used when they were taught about the prevention of diarrhea while 14.9% (n=45) revealed that it was used. It is clear that CHPs did not apply and/or had difficulties in applying this method in teaching refugees about the prevention of diarrhea. FGD is a method of health education that produces notable results because there are forces operating within a group that increase motivation and facilitate attitude changes as recommended by De Haan (1984, p.14).

4.2.5.3. Using leaflets and posters (n =302)

A minority stated that 14.2% (n=43) of the respondents had been reached with printed information on the prevention of diarrhea through leaflets and posters while 85.8% (n=259) were not reached through this method. This implies that most of the households were not reached with printed information. Printed information was used effectively in South Africa where there are no refugee camps and refugees are allowed to stay where they choose. The UNHCR produces appropriate information materials on health education about the prevention of communicable diseases including diarrhea, they are translated into French, Portugues, Kisiwahili and Somali. The initial feedback from the refugee community indicated a great need for this type of educational material especially on diarrhea and HIV/AIDS (UNHCR, 2000, p. 255). Using leaflets and posters to teach the refugees about how to prevent diarrhea was included in the training curriculum of CHPs (Johnstone & Ranken, 1994, p.14). However, the study revealed that 25% of the respondents had never attended school and that therefore printed information would be useless unless it contained clear illustrations.

4.2.5.4. Block meetings (n =302)

It was found that the majority of the respondents 85.1% (n=257) were also not reached with health education through block meetings. This might indicate that there is no coordination of activities between CHPs and block leaders because meetings might have taken place without the knowledge of CHPs.

4.2.5.5. Teaching done through other means (n =302)

Nearly half of the respondents 49.3% (n=149) stated that they were exposed to teaching about the prevention of diarrhea through others means while above half 50.7% (n=153) were not taught through other means. Of the 49.3% (n=149), 53.7% (80) learned how to prevent diarrhea at school, 25.5% (38) learned through parents and 20.8% (31) learned through hospital and clinic visits. It was found that the school had a significant effect on

teaching learners about preventing of diarrhea as reflected by 53.7% of the respondents. This indicates that schools teachers are teaching learners about the prevention of diarrhea at school, an example that needs to be encouraged and supported by establishing a school health program in Osire refugee camp. Wood et al. (1995, p. 34) claimed that health centers and hospitals are good places to teach the community about the prevention of diarrhea as they should teach by example. The same result was indicated in the study done by Breckon, Harvey & Lancaster (1998, p. 99) on school health education, where it was found that school health educators typically are teachers who have greater or less exposure to health education and do teach learners about environmental health hygiene.

4.2.6 Availability of water

The study wanted to determine the number of households that have access to water and how the refugees have been collecting and store drinking water in their households. The results are displayed in table 4.8.

4.2.6.1 Households with access to water

Table 4.8: Households with access to water (n =302)

Responses	Percent (%)	Frequency
Yes	95.4	288
No	4.6	14
Total	100%	302

Table 4.8 indicates that the majority 95.4% (n=288) of the respondents had access to water while 4.6% did not have access to water. This means that refugees have enough water to maintain good standard of personal hygiene and thus prevent diarrhea. According to Dawit (2005, p.18), each refugee in Osire has access to more than 20 liters of safe drinking water per day, which is enough for cooking and to maintain good personal hygiene.

These results support the claims by Wood et al. (1995, p. 181) that since diarrhea is categorized as a water washed disease, for better prevention, it is important that one should increase the quantity and accessibility of water and improve the quality later. However, this result was contrary to the situation in Maheba and Mayukwayukwa refugee camps in Zambia, where refugees had to walk more than a kilometer to collect water from wells and boreholes for household use. In these places, the shortage of water exacerbated the incidences of diarrhea (UNHCR, 2000, p. 233).

4.2.6.2 Water collected with buckets and basins

Figure 4.5: Water collected with buckets and basins (n = 302)



Courtesy of UNHCR/Anyolo: Osire Refugee Camp, August 2006

Figure 4.5 shows that water in Osire refugee camp was being collected with jerry cans, buckets and basins. Stagnant water can be seen near the tap stand, and this could be another source of contamination. From observation, the containers were in a poor state of cleanliness. However the study found that just above half of the respondents 58.6% (n=177) were collecting water with buckets and 41.4% (n=125) were not. Of the 58.6%

(n=177), 55.4% (98) state that drinking water is being stored in the covered buckets and 44.6% not store water in covered containers. Health education in this regard proved to be less effective in changing the refugees' harmful health behaviors.

A significant number of the respondents 85.1% (n=257) indicated that water was not collected with basins while 14.9% did so. Although a significant number of respondents 85.1% did not use basins to collect water, observation from Figure 4.5 indicate that water has been collected with basins. It is not known whether water collected with basins is for human consumption or for washing/bathing. If the water collected with basins is for human consumption, such as cooking and drinking, then the results signify that health education was less effective to prevent diarrhea because basins are generally used for washing and bathing, and thus are a source of contamination. Water should be collected in covered containers to avoid contamination at any point, as recommended by WHO (1995, p.50).

4.2.7: Availability of pit latrines

The study intended to determine the number of pit latrines and their use in the camp.

Table 4.9: Private/shared pit latrines (n = 302)

Type of pit latrines	Percent (%)	Frequency
Private pit latrines	59.6	180
Shared pit latrines	33.8	102
No pit latrine	6.6	20
Total	100%	302

Table 4.9 shows that 59.6% (n=180) of respondents have private pit latrines, 33.8% (n=102) share pit latrines, and 6.6% do not have latrines. This indicates that 6.6% of the respondents have to use the bushes for defaecation, with children defaecating in vicinity of households. This practice invites flies, which in turn contaminate food through oral-faecal transmission (Bennet & Buga, 1993, p.158). This finding is similar to the situation

in refugee camps in Zambia where most of the families (73.0%) in Mwangwe, (100%) in Mayukwayukwa and Nangweshi refugee camps have private pit latrines, as many of the refugees have used local resources and it has been reported that the incidence of diarrhea has reduced (UNHCR 2000, p. 233).

According to Wood et al. (1995, p.1995), to improve on sanitation, it is necessary to provide the community with pit latrines which are cheap and easily made by any family members using locally available resources. Osire refugee camp is located amidst commercial farm areas and thus refugees have no access to local resources even if they understand the importance of using latrines as a means of preventing diarrhea.

The study done in Lesotho on excreta disposal concluded that health education should go together with interventions to improve disposal (Daniels et al., 1990, p.86). However, 6.6% (n=20) of the respondents who have no latrines are forced by the situation to use the bushes for defaecation and children might defaecate in the vicinity of households, a situation that encourage flies to get in contact with food and faeces and thus causes diarrhea through faeco – oral transmission

This study further revealed that 85.8% (n=241) of pit latrines are in use and 14.2% (n=40) are not in use. It further indicated that of the 14.2% of pit latrines that are not use, 23.0% (9) pit latrines were full and could not be used any more. This means that 23.0% of households have no pit latrines and therefore occupants defaecate in the bushes and children defaecate in the vicinity of households, which pollutes the environment thus encouraging diarrhea. Wood et al. (1995, p.198) argued that when a pit latrine is full, it can easily be covered over and abandoned and another one made without incurring much expense. Refugees depend on humanitarian assistance, and therefore UNHCR and IPs should provide refugees with construction materials immediately when a pit latrine is full.

Of the 241 85.8% (n=241) pit latrines (private and shared pit latrines) in use, 51.5% (n=124) of respondents indicated that their children also use the pit latrines for

defaecation while 48.5% (n=117) of the respondents indicated that their children do not do so. Of the latter group, 99.1% stated that there were no taboos attached to the use of pit latrines by children and only 0.9% indicated that there are taboos attached to the use of pit latrines by children. According to Kerr, (1995, p. 14) some children in Honduras community were not allowed to use the pit latrines for the fear that they might fall in the pit latrine. Younger children who can use the latrines should be taught the importance of doing so to prevent diarrhea and should also be taught how to use a latrine.

4.2.7.1 Cleaning of shared latrines

The item wanted to determine as who was responsible for cleaning the pit latrines in Osire camp.

Table 4.10: Cleaning of shared pit latrines (n = 102)

Responses	Percent (%)	Frequency
All users	78.4	80
This household only	21.6	22
Total	100%	102

A significant number of respondents 78.4% (n=102) stated that all users participated in cleaning the latrines while 20.6% stated that only their households were responsible for cleaning the latrines. All users should actively participate in maintaining the cleanliness of shared pit latrines at all level of planning and implementation as recommended by the World Bank (1994, p. 3).

4.2.8 Common diseases in households

The study wanted to ascertain common diseases and their causes in Osire camp.

4.2.8.1 Diarrhea as common disease

Table 4.11: Common diseases in households: Diarrhea (n =302)

Responses	Percent (%)	Frequency
Yes	45.7	138
No	54.3	152
Total	100%	302

Table 4.11 indicates that over half of the respondents 54.3% (n=152) stated that diarrhea was not common while 45.7% (n=138) indicated that diarrhea was a common disease in their households. This indicates that diarrhea is a problem and therefore an effective health education program should be established in Osire. Nawgboso (2002, p.10-13) indicates that an outbreak of diarrhea accounted for 13% of mortality cases and 19% of morbidity among refugees especially among the children under five years of age in the camp. The diarrhea incidence rate was recorded at 127/1000/month/population in the camp (Anyolo, 2005, p.8). These findings confirm the presence of diarrhea in Osire refugee camp as is the case with this study.

4.2.8.2 Beliefs about causes of diarrhea

Table 4.12: Beliefs about causes of diarrhea (n = 302)

Beliefs	Yes	No
Unhygienic	7.0% (21)	93.0% (281)
Flies	6.0% (17)	94.0% (285)
Contaminated water	6.0% (17)	94.0% (285)
Dust	44.0% (33)	56.0% (169)
Food eaten	25.0% (76)	75.0% (226)

Table 4.12 shows that the majority of respondents did not relate diarrhoea to unhygienic conditions. However, the WHO (2006, p. 81-160), revealed that diarrhea was common where personal and environmental hygiene is poor and children tend to be affected most.

A very significant number 94.0% (n=285) of respondents did not relate the incidences of diarrhea to flies while only 6.0% (n=17) related it to flies. This could be attributed to the fact that health education was not effective in bringing about the changes required. Bennet & Buga (1993, p. 164) recommended that all food commodities should be protected from flies at all times, that the pit latrines doors should be kept closed at all times as this is a good method for effective fly control, that ventilated improved pit latrines with fly traps should be used and that leftover food should be stored where flies cannot reach it.

The majority of the respondents 94.0% (n=285) indicated that diarrhea was not caused by contaminated water while 6.0% (n=17) reported that diarrhea was caused by contaminated water. This signifies that respondents are aware that water in Osire camp is safe for human consumption and thus does not cause diarrhea. This was supported by Dawit (2005, p.18) where he claimed that the quality of water in Osire camp is tested and monitored on a quarterly basis for bacteriological analysis by a government accredited laboratory, and therefore the water in Osire refugee camp was safe for human consumption.

Table 4.12 shows that most of the respondents 75.0% (n=226) did not relate diarrhea to food eaten in the households while a minority of 25.0% (n=76) related it to food. A study by World Bank (1994, p.33) in Accra revealed that unhygienic food preparation and handling produced diarrhea amongst 36.0% of children in the affected households. These findings are similar to the findings of this study.

Table 4.12 also shows that almost nearly half of the respondents (44%) (n=33) indicated that diarrhoeal disease was due to dust while the majority 56% (n=169) of the respondents did not relate diarrhea to dust.

On average, about 79.5% of the respondents did not relate diarrhea to unhygienic conditions, flies, dust and food eaten. This indicates that the majority of respondents had

not been reached with this information about the prevention of diarrhea and therefore it is a clear testimony that health education was not effective enough to bring about remarkable changes in the refugee's health beliefs and practices. Improvements and sweeping changes in personal cleanliness and environmental hygiene are required at all times to prevent diarrhea in the community as recommended by Cairncross & Feachem (1993, p.11).

It is important to note that CHPs should know that a community should participate in planning health education activities to address health issues that affect them. This statement is supported by Kisubi & Ochola (1992, p.12), where it is stated that health workers are sometimes surprised when they see that the community does not do what they were taught to do that this is due to poor community involvement and participation in planning health issues that affect them most. Chin (2000, p. 152) emphasises that there is a need for the community to be taught how to prevent diarrhea.

4.3 Section B: Findings from checklist

The study wanted to determine the cleanliness of households interviewed through observing various variables and the results are discussed below.

4.3.1 General cleanliness of households

Table 4.13: General cleanliness of households (n = 302)

State of cleanliness	Percent (%)	Frequency
Poor	25.5	77
Clean	74.5%	225
Total	100%	302

Table 4.13 shows that 74.5% (n= 225) of households were found to be clean while 25.5% (n=77) were in a poor state of cleanliness. This indicates that health education was effective in raising awareness about a household's cleanliness as a measure to prevent

diarrhea. Improvements and sweeping changes in environmental hygiene are required at all times to prevent of diarrhea in the community as recommended by Cairncross & Feachem (1993, p.11).

4.3.2 Cleanliness of kitchens and food stores

It was found that the majority of households 70.2% (n=212) had clean kitchens while 29.8% (n=90) were in a poor state of cleanliness. Most of the households 63.6% (n=192) had food stores and 36.1% (n=110) had no food stores. All of the food stores were in use. A kitchen is required to have high level of cleanliness because this is the place where food is prepared and cooked. Twenty nine percent (29.8%) of kitchens in a poor state of cleanliness is an indication that health education was less effective in this area which increases the chances of diarrhea (Bennet & Buga, 1993, p. 164).

4.3.3 Water stored in covered containers (n = 302)

Most of the households 72.8% (n=220) had stored water in covered containers while 26.5% (n=82) stored water in uncovered containers. These run the risk of water being contaminated during storage, which causes diarrhea. This means that health education teaching in this area did not yield effective results.

4.3.4 Cleanliness of households' water containers

Table 4.14: Cleanliness of household's water containers (n = 302)

Responses	Percent (%)	Frequency
Poor	28.5	86
Clean	71.5	216
Total	100%	302

Table 4.14 shows that the majority of the households 71.5% (n=216) had clean water containers, while 28.5% were in a poor state of cleanliness. This means that 28.5% of

households could acquire diarrhea because of the poor state of cleanliness of their water containers. Water could go bad in the containers if they are not clean, which thus will cause diarrhea. It is expected that 75% of the containers should be clean in order to demonstrate the effectiveness of health education (Buga & Bennet, 1993, p.167).

4.3.5 General cleanliness of private pit latrines (n = 180)

Of the 180 private pit latrines, 91.1% (n=164) were found to be clean while 8.9% (n=16) were in a poor state of cleanliness. This indicates that households with private latrines are conscious of cleanliness and take responsibility for cleaning latrines more seriously. This is a good method of preventing diarrhea as recommended by UNHCR (2000, p.215).

This study further revealed that a significant number of households, 81.9% (n=230) did not have faeces in the area around pit latrines. This is a good indication that health education was effective and that it has changed the refugee's health beliefs, thus acting to prevent diarrhea. Open defaecation should be avoided as it is a source of germs, bacteria and virus transmission, and therefore the area around pit latrines should be kept clean as recommended by Bennet & Buga (1993, p.165).

The majority of households 86.8% (n=262) did not have children's faeces in the vicinity and only 13.2% (n=40) did. This implies that the refugees understand the importance of environmental hygiene in preventing of diarrhea because it prevents flies from coming into contact with food. Of 13.2%, 6.6% are those households that had no pit latrines and thus run a big risk of acquiring diarrhea. Therefore, the surrounding of households should be kept clean for good hygiene. Bennet & Buga (1993, 158) indicate that excreta (faeces) can be the source of a lot of illness if it is accessible to flies and fingers, from which it can be transferred to food.

4.3.6 Households with refuse pits

This study revealed that only 68.9% (n=208) of the households had refuse pits and 30.8%

(n=93) did not have refuse pits. Of the 208 refuse pits, the majority, 95.2% (n=198) are in use while only 4.0% (n=10) that are not in use which suggests that health education was effective in this respect. This practice encourages the prevention of diarrhea because all households that have refuse pits, when produced waste, is deposited into the refuse pits. It is recommended that indiscriminate disposal of refuse is a risk factor that leads to the promotion and spread of diarrhea.

The findings show that majority of the households, 70.2% (n=212) had no leftover cooked food in their surroundings. However, leftover cooked food was observed in the kitchens and surroundings of 29.8% (n=90) households. This is not a good practice as leftover food will go bad and invites flies that will transmit bacteria that causes diarrhea to uncontaminated food. Therefore, health education should emphasize that whatever waste is produced should be put into the pit to keep the area around the household clean as recommended by Bennet & Buga (1993, p.158).

4.3.7 General appearance of respondents (n = 302)

Table 4.15: General appearance of respondents

General appearance	Percent (%)	Frequency
Poor state of cleanliness	25.8	78
Clean	74.2	224
Total	100%	302

Table 4.15 indicates that the majority of the respondents, 74.2% (n=224) appeared to be clean at the time of interview, while 25.8% (n=78) were in a poor state of cleanliness. This suggests that 25.8% of the respondents do not realize the importance of personal hygiene. To prevent diarrhea effectively, people need to maintain good personal hygiene at all times. Wood et al. (195, p. 351) indicate that for effective prevention of diarrhea, health education should emphasize the importance of personal hygiene. There is enough

accessible and available water in Osire, as was attested by 95.3% (288) of the respondents in this study.

4.4 Section C: Findings on Community Health Promoters

The information to be discussed is: age, gender, country of origin and education level of the respondents.

4.4.1 Biographical information

4.4.1.1 Age distribution of CHPS

Figure 4.6: Age distribution of CHPs (n = 15)

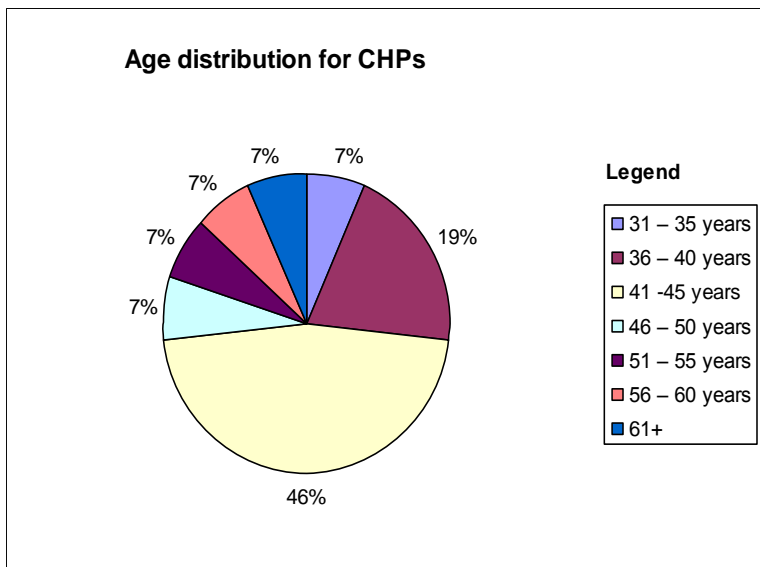


Figure 4.6 shows that the majority of the respondents 46.6% (n=7) were between the ages of 41 – 45 years while 20% (n=3) were between ages of 36 – 40 years. The study revealed that the majority of the respondents are mature and trainable, and thus are better placed to educate the community about the prevention of diarrhea.

4.4.1.2 Gender distribution

Over fifty percent of the respondents 60% (n=9) were male while the rest 40% (n=6) were female.

4.4.1.3 Country of origin

Angolans represented a significant number of respondents 86.7% (n=13) and only 13.3% were from DRC. This agrees with the statistics for household respondents where it was found that 75, 2% (n=227) of the respondents are from Angola while DRC is represented by 13.9% (n=42). This indicates that Portuguese was dominant in health education activities and as consequently, some refugees might have been taught in a language with which they were not conversant with by CHPs with different cultural beliefs and norms, which could be a factor that hindered positive learning. CHPs should be selected from communities where they live and with which they are acquainted with regard to cultural beliefs, norms and values as recommended by Lankester (1995, p.75).

4.4.1.4 Educational level

At least 60% (n=9) of the respondents had attended primary school and 40% (n=6) had attained a secondary level of education. This was a requirement for the selection of CHPs in Osire because they should be able to read and write and grasp new knowledge and skills in teaching refugees about prevention of diarrhea as recommended by Lankester (1995, p. 83).

4.4.2 Training of CHPs

All the respondents 100% (n= 15) stated that they were trained as CHPs. The study found that a significant number of respondents 86.7% (n=13) stated that training was conducted for five days and more while 13.3% (2) disagreed. This indicates that there was an inconsistency in the training schedule, as some CHPs were trained for only a few days

and the trainer could not cover all the topics in the training curriculum appropriately. This would result in CHPs having a lack of knowledge and skills to teach about preventing diarrhea. According to Lankester (1995, p. 80), the training of CHPs can last between 3 days and 3 weeks after which they will be ready to assume the responsibility of teaching the community about health issues.

4.4.3 Content of training curriculum of CHPs

The study revealed that all respondents 100% (n=15) indicated that they were taught to teach the community about the following health concepts for the prevention of diarrhea:

- Always washing hands after having used the latrine, as well as before preparing and eating food;
- using the latrine for defaecation and not bushes;
- always burying infants' faeces;
- store drinking water in jerry cans with lids;
- store food and cooking pots on the racks;
- always to cover food to avoid flies.

Ninety three percent (93.3%; n=14) of the respondents indicated that they were taught about burying solid waste materials or disposing of in an appropriate manner to avoid bad smells that attract flies and rats, as well as being taught the depositing babies' faeces into the pit latrine. The topics covered during training are those recommended by WHO (1992, p.50) and MOHSS (1995, p. 9) to improve personal and environmental hygiene that prevents diarrhea.

4.4.4 Methods used by CHPs in teaching the community about the prevention of diarrhea

The study revealed that all respondents 100% (n=15) indicated that they have used the following methods of teaching when disseminating health education about the prevention of diarrhea:

- Focus Group Discussion
- Using leaflets and posters
- Health talk during house to house visits

However, 93.3% (n=14) of the respondents indicated that they used individual teaching and block meetings as methods of teaching while 66.7% (n=10) stated that they used clinical sessions to give health talks as a method of transmitting health information. This signifies that not all CHPs used all methods recommended for health education. Block meetings and clinics sessions are the best methods to use because many people come together for a while for a common goal, and therefore are more likely to be receptive to health instruction.

Block meetings and clinic sessions should be used in teaching the community about preventing diseases as recommended by De Haan (1984, p. 14). Wood et al. (1995, p.334) recommended that house to house visits are the best method because one only gets to know peoples' customs and habits when one visits them in their homes.

This contradicted most findings in Section A of this study which showed that 77% of the respondents indicated that teaching was not conducted through individual teaching, FGD, using leaflets and posters, house to house visits, block meetings and clinic visiting methods. This could be attributed to the fact 46.7% of respondents indicated that there was poor communication when health education was taking place.

4.4.5 Conducting health education sessions

All of the CHPs revealed that they conducted health education sessions on a weekly basis as well as conducting health education when the supervisor requested them to do so. All indicated that there was no lack of supervision when conducting health education sessions in Osire refugee camp. This implies that CHPs should be very conversant with the topics covered in the training because there is constant supervision from their supervisor. The trainer of CHPs should have practical experience in community health or

should have nursing, paramedical or teaching training experience so that proper supervision can be ensured (Lankester, 1995, 80). This recommendation is in full agreement with the findings of this study.

4.4.6 Challenges experienced during delivering health education activities

The study revealed that 46.7% (n=7) of the respondents indicated that poor communication due to language barriers and refugees refusing to attend health education sessions were the main challenges while 53.3% (n=8) did not experience such challenges. This indicates that 46.7% of the CHPs could not communicate properly with the beneficiaries and therefore distorted information about the prevention of diarrhea might have been communicated. It is presumed that the supervisors would have identified this important challenge and rectified it during supervisory sessions. Language problems have an adverse effect on the prevention of diarrhea because effective learning does not take place. Because CHPs are agents of change, they should have effective communication skills in order to establish a therapeutic interpersonal relationship with the community they serve, as recommended by Glanz et al. (1992, p.8). The majority of respondents 60% (n=9) indicated that IEC materials are only available in English while 40% (n=6) stated that IEC materials were available in other languages as well, such as Portuguese and French. This means that there is a huge need to translate information materials into languages that are much spoken and well understood in Osire camp, such as Portuguese, French and Swahili.

4.4.7 Duration of employment as CHPs in Osire refugee camp

The majority of the respondents 80% (n=12) stated that they had been working as CHPs for more than two years while 20% (n=3) stated that they had worked as CHPs for less than that. The study showed that all of the respondents indicated that they had attended refresher courses. However, only 46.7% (n=7) of the respondents indicated that the courses were offered on a quarterly basis. This signifies that the refresher trainings courses occurred too infrequently as the majority of the CHPs could not remember when

they had taken place. The literature indicates that CHPs should be offered further training after the curriculum has been covered, which might include revision, teaching and introducing new techniques as recommended by Lankester (1995, p.83). It is expected that CHPs acquired good knowledge and skills in teaching refugees about preventing diarrhea because the majority of them have been in service for many years.

4.4.8 Effectiveness of health education in the prevention of diarrhea

This study showed that all of the respondents stated that health education activities about preventing diarrhea had actually reduced the prevalence of diarrhea in Osire refugee camp. The findings from the households and checklist indicate that in most areas of practices required to prevent diarrhea, health education was not effective enough to bring remarkable changes in the refugees' health beliefs and practices. Only in a very few areas of practices did health education prove to be effective with limited changes in health beliefs, but these skills alone cannot bring about significant changes in the refugee's behaviors in the absence other skills. Glanz et al. (1992, p. 7) defined health education as aimed at "bringing about behavioral changes in individuals, groups and larger populations from behaviors that are presumed to be detrimental to health, to behaviors that are conducive to present and future health". In support of this definition in relation to the study results, Dennill et al. (1995, p.82) argued that health education is the necessary instrument that assists people to facilitate changes to more helpful health beliefs.

4.4.9 Incentives for CHPs

This study revealed that all of the respondents indicated that they were receiving incentives (a small amount of money paid for services rendered) for the service rendered. It was observed that CHPs should have high morale in discharging their duties because they are remunerated for the service that they render. Lankester (1995, p. 81) recommended that CHPs should be given incentives for them to remain motivated in the execution of their duty.

4.5 Correlations of variables

The study sought to determine the significance of the educational levels of respondents to the cleanliness of households. The calculation was done with the assistance of the SPSS software program. Kendall's tau method was used to measure the relationship between two variables.

Correlation is a bivariate measure of association (strength) of the relationship between two variables. It varies from 0 (random relationship) to 1 perfect linear relationship) or -1 (perfect negative linear relationship (Bobko, 2001, p. 123). For this study, correlation is significant at the 0.05 level (2-tailed).

Test result: The correlation between education level and general cleanliness of the households is at 0.068 (2-tailed), an indication that there is a significant relationship between the two variables. Therefore the test proved that educational level has influence on the general cleanliness of households in Osire refugee camp.

4.6 Summary

In this chapter, quantitative data were discussed and integrated with literature. The next chapter presents the conclusions drawn from these data and appropriate recommendations.

CHAPTER 5: Conclusion, Recommendations and Limitations

5.1 Introduction

In the previous chapter, the results and the discussions of the results were presented. In this chapter, conclusions, study limitations and recommendations emanating from the results are presented.

The purpose of the study was to explore and describe the effectiveness of health education in teaching refugees about the prevention of diarrhea in Osire Refugee Camp.

Specific objectives of the study were:

1. To determine the effectiveness of health education in preventing diarrhea.
2. To identify the methods used in delivering health education activities.
3. To assess whether the refugees apply the health information given to them in preventing diarrhea.

5.2 Conclusions

The conclusions made are based on the discussion that has preceded this chapter.

Objective 1: To determine the effectiveness of health education in preventing diarrhea.

The research concluded that the majority of the respondents (64.0%) fall into the age bracket of 15 – 34 years old. This finding indicates that the Osire population is youthful and could be an ideal group to learn new information about the prevention of diarrhea.

The majority of the respondents (41.0%) have attended primary school, 31.0% reached secondary school and 25.0% have never attended primary school. The educational

background is vital, because education enables refugees to read and learn more easily about health problems and apply the teaching techniques appropriately to prevent diarrhea.

Most of the respondents indicated that they were taught about the importance of always washing hands after various activities, as well as its importance in the prevention of diarrhea. On average, only 71.5% of the respondents have been practicing hand washing techniques after various activities. This implies that health education about teaching refugees about the techniques of basic personal hygiene was not effective despite the fact that most of the respondents, 95.4% reported that there is a good accessibility and availability of water in the camp. Dawit (2005, p.18) indicated that each refugee in Osire has access to more than 20 liters of safe drinking water per day. However, much still needs to be done to increase awareness about basic personal hygiene in order to prevent diarrhea effectively.

The study revealed that 84.8% of the respondents stated that pit latrines were used effectively. Most of the respondents were taught about burying infants' faeces or depositing them into pit latrines. Only 70.0% of the respondents indicated that children's faeces were not buried or deposited into pit latrines.

The majorities of the respondents were taught about collecting and storing drinking water in jerry cans with lids or covered buckets. On average, only 66.9% of the respondents collected water in jerry cans while 70.6% stored drinking water in covered containers.

Therefore health education was not effective in this area which indicates that respondents have a low understanding about the importance of applying control measures to prevent diarrhea, which increases the chances of diarrhea among the refugees. The aim of health education is to secure changes in people's behavior because its success is measured by significant changes in the behaviors and practices of targeted population. Therefore, a community should be taught techniques and preventive measure in order to be able to prevent diarrhea as recommended by De Haan (1984, p.13).

It was found that 70.2% of the households had clean kitchens, and 71.5% had clean water containers. On average, 71.0% of the households practice good preventive measures for diarrhea. Although this indicates that learning has taken place, health education was less effective.

The study revealed that a significant number of households (81.9%) did not have children faeces nearby, a factor that discourages flies from coming into contact with faeces, which could be transmitted to food and causes diarrhea. This indicates that health education was effective because it brought about desired changes in the refugees' health beliefs.

Almost half of the respondents reported that diarrhea is common in their households. On average, 79.5% of the respondents did not relate diarrhea to unhygienic, flies, dust and food eaten. This indicates that the majority of respondents was not reached with this information and therefore provides clear testimony that health education was not effective enough to bring about significant changes in the refugee's health beliefs and practices. Improvements and sweeping changes in personal cleanliness and environmental hygiene is required at all times for better prevention of diarrhea in the community as recommended by Caircross & Feachem (1993, p.11).

The majority of households with private pit latrines (91.1%) were found to have good states of cleanliness. This indicates that households with private latrines are more assiduous in keeping the latrines clean at all times as stated by UNHCR (2000, p.233).

Objective 2: To identify the methods used in delivering health education activities.

The majority of the respondents from section A of the study (77%) indicated that they were not taught through individual teaching, FGD, using leaflets and posters, house to house visits, block meetings and clinic visit methods.

On contrary, all the CHPs indicated that they used the above mentioned methods in teaching the refugees about prevention of diarrhea. These study findings contradict each

other. A significant number of CHPs (46.7%) indicated that they had experienced communication problem when conducting health education. This implies that there was poor support from their supervisors as this major challenge could be identified, discussed and rectified through meetings and refresher courses. De Haan (1984, p. 14; Amri et al., 1993, p. 55) have strongly recommended that the above mentioned methods are effective in health education activities and should be used in teaching communities about preventing diarrhea.

Objective 3: To assess whether the refugees apply the health information given to them about preventing diarrhea.

A significant number of respondents (79.4%) indicated that they always washed their hands after using the latrine, 94.4% before eating, 62.9% before preparing food and 59.3% always after handling baby's faeces. On average, only 74.0% of the respondents implemented what they were taught to do in this respect. The researcher therefore, concluded that the health education had been less effective in bringing about significant changes that would lead refugees to practice behavior that would prevent diarrhea. Health education is the instrument that assists people to facilitate changes to more helpful behaviors as stated by Dennill et al. (1995, p.82).

The study revealed that the majority of respondents (81.5%) stated that children's faeces were not buried and 58.3% indicated that they are not deposited into the latrine. These are serious risk factors because flies will have contact with faeces and transmit them to food, so that people will get diarrhea through faecal - oral transmission. Reduction in diarrhea results from strengthening health education and increased use of pit latrines, and also includes proper disposal of faecal matters of infants who cannot use the pit latrines as stated by Nwagboso (2002, p.7).

A significant number of respondents indicated that they stored drinking water in jerry cans with lids as well as in covered buckets. The majority (85.1%) indicated that water was not collected in basins. This implies that the refugees have been practicing good

measures to prevent for diarrhea, which should be encouraged so that all refugees emulate them. WHO (1995, p. 50) recommended that water should be collected and stored in covered containers to avoid contaminations at anywhere during collection and storage.

Almost all private latrines (91.1%) were reported to be in a good state of cleanliness and to be used effectively. The study revealed that a significant number of households (81.9%) did not have children's faeces nearby, which will reduce the incidence of flies with their potentially harmful consequences for diarrhea. As Bennet & Buga (1993, p.158) have indicated, excreta can be the source of a lot of sickness if it is accessible to flies and fingers, from which it can be transferred to food. Therefore faeces should be disposed of appropriately.

Bennet & Buga 1993, p. 165) argued that open defaecation should be avoided as it is the source of germs, bacteria and virus transmission. Therefore, areas around pit latrines should be kept clean.

The majority of the households had functional refuse pits which contributed to a clean environment. In addition, a significant number of respondents were found to be personally clean at the time of the study.

It was found that a significant number of CHPs indicated that there was poor communication due to the language barrier as well as the fact that IEC materials were available only in English. A further challenge was the fact that the refugees refused to attend health education sessions. It is recommended that CHPs should have good communication skills to establish good therapeutic relationships with the community being served to be able to convince them to change towards better health beliefs (Glanz et al., 1992, p.8).

The study further revealed that while the majority of private and shared latrines were found to be in use, a number of pit latrines were full and could not be used any more. This means that these households had no other alternative but to use the bush for

defaecation. Wood et al. (1995, p.198) argued that when a pit latrine is full it can easily be covered over and abandoned and another one made without incurring much expense. Therefore UNHCR and IPs should ensure that the affected households are supplied with the required materials and technical support to construct pit latrines.

It was found that just above half of the respondents indicated that their children also used the pit latrines for defaecation. A significant number of the respondents stated that there were no taboos attached to the use of pit latrines. This is good practice as the children learn the importance of using latrines for defaecation and how to use them while Kirr (1995, p. 14) states that some children in Honduras community were not allowed to use the pit latrines for the fear that they might fall in, this was not the case in this study.

5.3 Recommendations

Based on the findings, the following recommendations are made with regard to the training for the methods used in teaching, the content of the training curriculum, and the implementation strategy.

In-service training: The researcher recommends that extensive in-service training should be given to all CHPs with regard to methods commonly used in health education, and new techniques of presentation. The importance of imparting knowledge through these methods should be emphasized.

Refresher courses: CHPs should attend regular refresher courses more often, dealing with the prevention of diarrhea with emphasis on the following points:

- Importance of always washing hands after handling baby's faeces;
- Importance of burying children's faeces ;
- Importance of disposing faeces of children's in a pit latrine;
- Collection of water in clean containers;
- Storage of drinking water in covered containers, preferably in jerry cans;
- Danger of flies, rats and cockroaches in food contamination.

Information, Education, and Communication materials should be made available in all of the common spoken languages e.g. Portuguese, French and Swahili. Information materials with clear and self explanatory illustrations are highly recommended.

The management should ensure that CHPs are supervised regularly when conducting health education sessions in order to identify shortcomings and challenges and rectify them in time, thus increasing the effectiveness of health education on the prevention of diarrhea.

Implementation strategy: It is recommended that a mass information campaign should be conducted to create awareness among refugees about the availability of CHPs. During the campaign, information materials should be displayed. The involvement and active participation of refugee committee and block leaders is vital. Therefore CHPs should organize and conduct health education activities through refugee committee, block leaders, and organized groups such as women and youth groups, in order to yield effective results in changing the refugees' health beliefs.

It is further recommended that the school health education program of the MOHSS should be extended and introduced in primary and junior secondary schools in the camp. Teachers, especially those involved in life science subjects, should be given an introductory course on the importance of school health education programs and their roles in enhancing health education learning at school.

The refugees should be encouraged to build pit latrines and made use of them effectively as a means of preventing of diarrhea. The management should ensure that households that have no pit latrines are given materials and technical support to construct them and should be encouraged to use them effectively for better hygiene and for the prevention of diarrhea.

It is recommended that a follow up study similar to this one, be conducted in the near future on a wide scale with individual interviews and covering more households in the

camp in order to verify and contextualize these findings.

5.4 Study limitations

Limitations applicable to this study were participation effect, population, the language barrier, and data collection and analysis.

The study was a small quantitative study focusing primarily on the effectiveness of health education in the prevention of diarrhea in Osire refugee camp. Broader application outside the study setting may not apply and would have to be judged independently.

5.4.1 Participation effect

Although it was assumed that respondents would answer honestly and with integrity to reasonable questions posed during the interview and in completing the questionnaire, respondents may have answered questions in a manner which they perceived as being more polite and might have given the answers that they thought the researcher expected. This is commonly referred to as the Hawthorne effect (Mounton & Marais, 1990, p. 86) (Wilson, 1993, p. 10).

5.4.2 Population

Because refugees move in and out of the camp, some of them might have not been present in the camp at the time of the study. Consequently, it was difficult to ascertain the full population for the study.

5.4.3 Language barrier

Language was a major barrier because the study groups were composed of people from different countries who spoke different languages.

5.4.4 Data collection and analysis

The use of many open - ended questions and semi – structured interviews made data collection and analysis difficult and time consuming (Polit & Hungler, 1995, p. 232).

5.5 Final conclusion

The study revealed that health education was less effective than it should have been in the prevention of diarrhea in Osire refugee camp and identified factors that hinder the delivery of effective health education. In addition, methods of improvement were discussed. It is hoped that the findings and recommendations will help improve the delivery of health education in Osire more effectively, resulting in positive impact on the improvement of diarrhea.

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ANNEXURE A

PERMISSION TO CONDUCT THIS STUDY IN OSIRE REFUGEE CAMP

Permission to conduct this study was obtained from Country Representative of UNHCR in Namibia, the University of Namibia and the permanent secretary of the MOHSS.

UNIVERSITY OF NAMIBIA

Private Bag 13301, 340 Mandume Ndemufayo Avenue, Pionierspark, Windhoek, Namibia



FACULTY OF MEDICAL AND HEALTH SCIENCES

Letter of permission:
Post graduate students
Masters Degree

Date: 4.8.2006

Dear Student: - Mr K Anyolo

The post graduate studies committee has approved your research proposal.

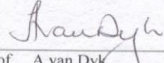
Title: Effectiveness of Health Education in prevention of
Cholera among refugees in Osire refugee camp
Namibia

You may now proceed with your study and data collection.

It may be required that you need to apply for additional permission to utilize your target population. If so, please submit this letter to the relevant organizations involved. It is stressed that you should not proceed with data collection and fieldwork before you have received this letter and got permission from the other institutions to conduct the study. It may also be expected that these organizations may require additional information from you.

Please contact your supervisors on a regular basis.

Faculty representative on Post graduate committee


Prof A van Dyk
PGSC/06/1090

UNAM
FACULTY OF MEDICAL AND
HEALTH SCIENCES
P/Bag 13301 WINDHOEK

Date 2006/08/04

19-JUL-2006 15:56 FROM:AHA

264 61 235251

TD:067306337

P.1/2

AHA Namibia

From: Stephen Abimbola [ABIMBOLA@unhcr.org]
Sent: 18 July 2006 14:52
To: aha@africaonline.com.na
Cc: David Banda; Joyce Mands-Cole
Subject: permission to conduct a research study in Osire Camp

To:
Ag. Country Rep (AHA Namibia)

Reference is made to Mr. Anyolo's request on a/m subject.
Provided the ethical consideration is respected, as stated in his letter of request, UNHCR has no objection for him to use Osire Refugee Camp as a case study for his MPH degree programme.

We would be glad to receive a copy of the study report (dissertation).

PLEASE INFORM MR. ANYOLO.

Thanks. (Stephen)

de lisen

ANNEXURE B

STUDY QUESTIONNAIRES:
HOUSEHOLDS QUESTIONNAIRE
CHECKLIST
COMMUNITY HEALTH PROMOTERS QUESTIONNAIRES

1. English version:

Student: E. Anyolo No. 8709750

Questionnaire for household: August 2006

Area of study: Osire Refugee Camp, Otjozondjupa Region, Namibia

Instructions

The purpose of the study is to explore and describes the effectiveness of health education in teaching refugees about the prevention of diarrhea disease in Osire refugee camp. You are requested to respond to the field worker and answer all questions. The information gained for the completion of this study will be treated as confidential. The names of the individuals are not needed. All questions must be completed. Circle either Yes or No, and where there are multiple options, tick what is stated.

1.0 General information

- 1.1 Date: ../.../..... **Serial no:**
- 1.2 House no:
- 1.3 Block number:
- 1.4 Age: years
- 1.5 Sex: Male [] Female []

1.6 Country of origin:

Angola DR Congo Burundi Rwanda Other country (specify)

1.7 How long have you been in Osire Refugee Camp?

Less than one year One year Less than two years Two years and above **2.0 Educational level**No schooling Primary Secondary Tertiary **3.0 Community Health Promoters**

3. 1(a) Are there Community Health Promoters in Osire refugee camp? Yes No
Don't know

3. 1(b) If the answer is yes to question 3.1(a) above, have Community Health Promoters
visited your house? Yes No Can't remember

3.1 © If the answer is yes, to question 3.1 (b) above, what did they teach you and your
family about the prevention of diarrhea? If the answer is no in the question above,
what do you do to prevent diarrhea disease in this household?

a) Regular hand washing after having used the latrine Yes No Don't know

b) Regular hand washing before preparing and eating food Yes No Don't know

c) Using latrine for defaecation Yes No Don't know

d) Burring feaces for infants Yes No Don't know

- e) Store drinking water in jerry cans with lids Yes No Don't know
- f) Store food and cooking pots on the rack Yes No Don't know
- g) Cover food to avoid flies Yes No Don't know

3.2 How was teaching on diarrhea prevention given (methods used while giving education)? Select all that apply

- a) Individual teaching
- b) Focus Group Discussion
- c) Using posters and leaflets
- d) Block meetings

4.0 Availability of water

4.1 Does the household have access to water? Yes No

4.2 How is the water being collected?

- a) Jerry can
- b) Buckets
- c) Basin

4.3 How is the drinking water being stored?

- a) In the jerry can with lid
- b) In the jerry can without lid
- c) In the buckets covered
- d) In the buckets not covered

5.0 Food handling

5.1 Where are the cooking pots kept?

- a) Food rack
- b) On the ground in the kitchen

5.2 Are the pots covered? Yes No

6.0 Sanitation

6.1 Does the household have a private or shared latrine? Private Shared No

6.2 If the answer in question 6.1 is private/shared, is latrine being used? Yes No

6.3 If the answer in question 6.2 is yes, do the children also use the latrine for defecation?
Yes No

6.4 If the answer in Question 6.3 is no, how do you dispose the faeces of children?

a) Burying the faeces

b) Throw faeces in the latrine

6.5 What are the reasons for not using the latrine?

a) Taboos

b) Do not know

6.6 Is the latrine private or shared? Private Shared

6.7 If the latrine is a shared one, who cleans it?

a) All users

b) This household only

c) Nobody

7.0 Personal hygiene

7.1 When do people wash their hands in this household?

a) Each time after using the latrine

b) Each time before eating

c) Each time before preparing food

d) Each time after handling baby faeces

7.2 If the answer in question No 7.1 is no, why?

a) Lack of water

b) Not important

c) Do not know

8.0 Common illness

8.1 What diseases are common in this household?

a) Diarrhea

- b) Skin diseases
- c) Gastro- Enteritis
- d) Intestinal worms

8.2 What could be the cause of illness mentioned in question no 8.1 above in this household, if any?

- a) Unhygienic
- b) Contaminated Water
- c) Flies
- d) Food eaten
- e) Do not know

Thanks you very much for your time

Student: E. Anyolo

STUDY OBSERVATION CHECK LIST July 2006

The enumerator will be expected to observe the hygienic situation of the households being interviewed and tick yes or no in the space provided against each question. There is no need for the enumerator to ask the respondents.

Block no: House no: Serial no. Date:

1. General cleanliness of the household.

Remarks:.....

2. Is the kitchen clean? Yes [] No []

3. Is there kitchen rack for cooking pots? Yes [] No []

4. Food store/granary available? Yes [] No []

5. Food store in use? Yes [] No []

6. Is the water stored in the covered containers Yes [] No []

7. Cleanliness of containers: Remarks

8. Does the household have an individual toilet? Yes [] No []

9. If yes, what is the states of cleanliness

10. Is there faeces in the surrounding of the latrine Yes [] No []

11. Are there any faeces of children in the vicinity
of the household? Yes [] No []

12. Is there a refuse pit at the household? Yes [] No []

13. Is the refuse pit in use?

14. Are there leftover of cooked food on the kitchen floor
that might invite flies? Yes [] No []

15. Evidence of vermin- rats and cockroaches Yes [] No []

16. What is the general appearance of household? (Cloths, faces, hairs)
.....

Student: Mr. E. Anyolo No. 8709750

Questionnaire for Health Promoters: July 2006

Area of study: Osire Refugee Camp, Otjozondjupa Region, Namibia

Instructions

The purpose of the study is to explore and describes the effectiveness of health education in teaching refugees about the prevention of diarrhea disease in Osire refugee camp. The information gained for the completion of this study will be treated confidential. The names of the individuals are not needed. All questions must be completed. Circle either Yes or No, and where there are multiple options, tick what is stated.

1.0 Demographic data

- 1.1 Date: /...../..... **Serial no:**
- 1.2 Block no:
- 1.3 Age:
- 1.4 Sex:
- 1.5 Country of origin
- 1.6.1 Angola
- 1.6.2 DR Congo
- 1.6.3 Burundi
- 1.6.4 Rwanda
- 1.6.5 Other countriesspecify

2.0 Educational level

- 2.1 Not attended school
- 2.2 Primary school
- 2.3 Secondary school
- 2.4 Tertiary education

3.0 Training and service of Health Promoter

- 3.1 Were you trained as a health promoter? Yes [] No []

3.2 If the answer in question 3.1 is yes, how many days were you trained?

- | | |
|------------------------|----------------|
| a. One day | Yes [] No [] |
| b. Two days | Yes [] No [] |
| c. Three days | Yes [] No [] |
| d. Four days | Yes [] No [] |
| e. Five days and above | Yes [] No [] |

3.3 What were you taught about the prevention of diarrhea?

- | | |
|--|----------------|
| h) Regular hand washing after having used the latrine | Yes [] No [] |
| i) Regular hand washing before preparing and eating food | Yes [] No [] |
| j) Using latrine for defaecation | Yes [] No [] |
| k) Burying faeces for infants | Yes [] No [] |
| l) Put faeces of babies into the latrine | Yes [] No [] |
| m) Store drinking water in jerry cans with lids | Yes [] No [] |
| n) Store food and cooking pots on the rack | Yes [] No [] |
| o) Cover food to avoid flies | Yes [] No [] |
| p) Burning solid wastes materials | Yes [] No [] |

3.4 How did you teach the refugee community (methods used while giving health education)?

- | | |
|---------------------------------------|----------------|
| a) Individual teaching | Yes [] No [] |
| b) Focus Group Discussion | Yes [] No [] |
| c) Using posters and leaflets | Yes [] No [] |
| d) Block meetings | Yes [] No [] |
| e) Health talk during clinic sessions | Yes [] No [] |
| f) Health talk during house visits | Yes [] No [] |

3.5 How often do you conduct health education sessions?

- | | |
|----------------------------|----------------|
| a) Daily | Yes [] No [] |
| b) Weekly | Yes [] No [] |
| c) Every second week | Yes [] No [] |
| d) When requested to do it | Yes [] No [] |

3.6 Were you supervised while conducting health education session? Yes [] No []

3.7 What challenges did you encountered during teaching refugees about health issues?

- | | |
|---|----------------|
| a) Poor communication due to language barrier | Yes [] No [] |
| b) Refugees refuses to attend health education sessions | Yes [] No [] |
| c) IEC materials only available in English | Yes [] No [] |
| d) Lack of supervision | Yes [] No [] |

3.8 How long have you been working as a health promoter?

- | | |
|------------------------|----------------|
| a) One year | Yes [] No [] |
| b) Less than two years | Yes [] No [] |
| c) Two years and above | Yes [] No [] |

3.9 Did you attend refresher training? Yes [] No []

3.10 If the answer is yes in question no. 5, how often did you attend refresher trainings?

- | | |
|--------------|----------------|
| a) Monthly | Yes [] No [] |
| b) Quarterly | Yes [] No [] |
| c) Yearly | Yes [] No [] |

4. Do you think that health education on the prevention of diarrhea has eventually prevented diarrhea disease in the camp? Yes [] No []

5. If the answer is No in Question no. 7, why diarrhea disease is still persisting?

- | | |
|--------------------------|----------------|
| a) Poor personal hygiene | Yes [] No [] |
| b) Contaminated water | Yes [] No [] |
| c) Poor flies control | Yes [] No [] |
| d) Poor food preparation | Yes [] No [] |
| e) Do not know | Yes [] No [] |

6. Did you receive incentives for the service you have rendered? Yes [] No []

Thanks for your participation

TRANSLATED VERSIONS**1. Portuguese version:**

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P. 7

Estudante: E. Anyolo No. 8709750

Questionário para as famílias: Agosto 2006

Área de estudo: Campo de Refugiados do Osire, Região do Otjozondjpa,
Namibia**Instruções**

O propósito deste estudo é de explorar e descrever a eficácia da educação para saúde no ensino aos refugiados acerca da prevenção da doença de diarreia no campo de refugiados do Osire. A informação adquirida para a realização deste estudo será tratada como confidencial. Os nomes dos indivíduos não são necessários. Todas as perguntas devem ser completadas. Circunde se sim ou não e, onde houver várias opções, assinale o que for afirmado.

1.0 Informação geral

1.1 Data/...../.....

Série no:

1.2 Casa no:

1.3 Bloco no:

1.4 Idade: anos

1.5 Sex:..... Masculino []

Feminino []

1.6 País de origem:

Angola []

Congo DR []

Burundi []

Ruanda []

Outros países (especifique) []

1.7 Há quando tempo está vivendo no Campo de Refugiados do Osire?

Menos de um ano []

Um ano []

Menos de dois anos []

Dois anos e mais []

2.0 Habilitações Literárias

Não estudou []

Primário []

Secundário []

Terciário (superior) []

3.0 Promotores de Saúde Comunitária

3.1 (a) Existe Promotores de Saúde Comunitária no Campo de refugiados do osire?

Sim [] Não [] desconheço []

3.1 (b) Se a resposta à pergunta 3.1(a) for sim, os promotores de Saúde Comunitária têm visitado a sua casa? Sim [] Não [] Não me recordo []

3.1(c) Se a resposta à pergunta 3.1(b) for sim, o que é que foi ensinado a ti e a tua família acerca da prevenção da diarreia?

Se a resposta à pergunta acima for não, o que é que tens feito para a prevenção da doença da diarreia nesta família?

- a) Lavagem regular das mãos depois de ter usado a latrina Sim [] Não []
Desconhece []
- b) Lavagem regular das mãos antes de preparar os alimentos e comer. Sim []
Não [] Desconhece []
- c) Uso de latrina para defecar Sim [] Não [] Desconhece []
- d) Enterrar as fezes das crianças Sim [] Não [] Desconhece []
- e) Conservar a água para beber nos bidons com tampa Sim [] Não []
Desconhece []
- f) Guardar a comida e panelas na estante Sim [] Não [] Desconhece []
- g) Tapar a comida evitando moscas Sim [] Não [] Desconhece []

3.1 Como é que o ensino da prevenção da doença da diarreia tem sido dado (metodos usados ao dar a educação)? Selecciona todos que forem aplicáveis.

- a) Ensino individual []
- b) Grupos de discussão focalizada []
- c) Uso de postais e panfletos []
- d) Encontros nos blocos []

4.0 Disponibilidade da água

4.1 A família tem acesso a água Sim [] Não []

4.2 Como é que a água tem sido colhida?

- a) Em bidons []
- b) Baldes []
- c) Bacias []

4.3 Como é que a água para beber tem sido conservada?

- a) Em bidons com tampa []
- b) Em bidons sem tampa []
- c) Em baldes tapados []
- d) Em baldes não tapados []

5.0 Manejo da comida

5.1 Onde é que as panelas da cozinha são guardadas/postas?

- a) No secador de pratos/estante []
- b) No chão da cozinha []
- c) []
- d) []

6.0 Saneamento

6.1 A família possui latrina privada ou compartilhada? Privada []

Compartilhada []

6.2 Se a resposta à pergunta 6.1 é privada/ compartilhada, esta latrina está sendo utilizada? Sim [] Não []

6.3 Se a resposta à pergunta 6.2 for sim, também as crianças usam a latrina para a defecar? Sim [] Não []

6.4 Se a resposta à pergunta 6.3 fôr não, como é que tem lidado com as fezes das crianças?

- a) Enterram as fezes
- b) Deitam as fezes na latrina
- c) Nenhuma das indicadas acima

6.5 Quais são as razões de não usar a latrina?

- a) Tabu
- b) Não sabem / falta de conhecimento

6.6 A latrina é privada ou compartilhada? Privada Compartilhada

6.7 Se a latrina fôr compartilhada, quem limpa?

- a) Todos que a usam
- b) Esta família apenas
- c) Ninguém

7.0 Higiene pessoal

7.1 Quando é que as pessoas lavam as mãos nesta família?

- a) Sempre depois de usar a latrina
- b) Sempre antes de comer
- c) Sempre antes de preparar os alimentos
- d) Sempre depois de lidar com as fezes dos bebés

7.2 Se a resposta á pergunta no 7.1 fôr não, porque?

- a) Falta de agua
- b) Não é importante
- c) Falta de conhecimento

8.0 Doenças comuns

8.1 Quais são as doenças comum nesta família?

- a) Diarreia
- b) Doenças da pele
- c) Gastro-Enterites
- d) Vermes Intestinais

8.2 Quais seriam as causas das doenças mencionadas na pergunta acima (8.1), se houver, nesta família?

- a) Falta de higiene
- a) Água Contaminada
- b) Moscas
- c) Comida ingerida/consumida
- d) Desconhece

Muito obrigado pelo seu tempo

Estudante: E. Anyolo

Lista de observação de estudo Julho 2006

Será exigido ao numerador observar a situação higiénica da família a ser entrevistada e marcar com Sim ou Não, nos espaços providenciados para cada pergunta. Não há necessidade do numerador perguntar os entrevistados.

Bloco no: Casa no: Série no: Data:

1. Limpeza geral da família
Reparos.....
2. A cozinha está limpa Sim [] Não []
3. Existe estantes para as panelas de cozinha? Sim [] Não []
4. Conservação da comida/Celeiro existente? Sim [] Não []
5. Comida guardada está em dia (não aspirada)? Sim [] Não []
6. A água está conservada em recipientes tapados? Sim [] Não []
7. Limpeza dos recipientes: Reparos
8. A família tem latrina individual? Sim [] Não []
9. Se sim, qual é o estado de limpeza.....
10. Existem fezes nos arredores da latrina? Sim [] Não []
11. Existe algumas fezes de crianças na vizinhança da família?
Sim [] Não []
12. Existe buraco de lixo para a família? Sim [] Não []
13. Existe buraco de lixo em uso? Sim [] Não []
14. Existe restos de comida no chão que possam convidar moscas?
Sim [] Não []
15. Evidencias de insectos, ratos e barratas? Sim [] Não []
16. Qual é a aparência geral dos membros da família? (Roupa, Face, Cabelos).....

2.French version

Etudiant: E. Anyolo No. 8709750

Questionnaire pour les familles

Milieu d'étude: Camp de Refuge d'Osire, Région d'Otjozondjupa, Namibie

Instructions

L'objectif de l'étude est d'explorer et de décrire l'effectivité de l'éducation sanitaire en enseignant les réfugiés concernant la prévention de la diarrhée dans le camp de refuge d'Osire. Vous êtes demandés de recevoir le travailleur sur terrain et de répondre aux questions.

L'information gagnée pour l'accomplissement de cette étude sera traitée confidentiellement. Les noms des individus ne sont pas nécessaires. Toutes les questions doivent être complétées soit par oui, soit par non, et coche ce qui convient là où il y a de multiples options.

1.0 Information Général

1.1 Date..... /...../..... **Série no.....**

1.2 Numéro de la maison.....

1.3 Numéro de Bloc:

1.4 Age.....

1.5 Sex Masculin [] Féminin []

1.6 Pays d'origine:

Angola []

RD Congo []

Burundi []

Rwanda []

Autres Pays (spécifie).....

1.7 Pendant combien de temps etez vous dans le camp de réfugiés d'Osire?

Moins d'an []

Un an []

- Moins de deux ans []
 Deux ans et plus []

2.0 Niveau d'études

- N'a pas étudié []
 Primaire []
 Secondaire []
 Supérieur []

3.0 Promoteurs de la Santé Communautaire

3.1 (a) Y a-t-il des promoteurs de la santé communautaire au camp des réfugiés d'Osire?

Oui [] Non [] Ne sais pas []

3.1 (b) Si la réponse à la question 3.1(a) ci-haut est oui, est-ce que les promoteurs de la santé communautaire ont déjà visité votre maison?

Oui [] Non [] Je ne me rappelle pas []

3.1 (c) Si la réponse à la question 3.1 (b) ci-haut est Oui, qu'est-ce qu'ils ont enseigné à vous et à votre famille concernant la prévention de la diarrhée?

Si la réponse est non, qu'est-ce que vous faites pour prévenir la diarrhée dans cette famille?

- a) Laver régulièrement les mains après l'utilisation de la toilette
 Oui [] Non [] Ne sais pas []
- b) Laver régulièrement les mains avant de préparer la nourriture et manger
 Oui [] Non [] Ne sais pas []
- c) Utiliser la toilette pour chiller Oui [] Non [] Ne sais pas []
- d) Enterrer les excréments des enfants Oui [] Non [] Ne sais pas []
- e) Garder l'eau à boire dans les bidons avec couvercle Oui [] Non []
 Ne sais pas []
- f) Garder la nourriture et les casseroles sur les étagères Oui [] Non []
 Ne sais pas []
- g) Couvrir la nourriture pour éviter les mouches Oui [] Non [] Ne
 sais pas []

3.2 Comment était l'enseignement sur la prévention de la diarrhée (méthodes utilisées pendant l'enseignement)? Sélectionnez toutes les méthodes utilisées.

- a) Enseignement individuel []
 b) Groupe de discussion focalisée []
 c) Utilisation des affiches et des brochures []

d) Réunions dans des blocs []

4.0 Disponibilité de l'eau

4.1 Est-ce que la famille a accès à l'eau? Oui [] Non []

4.2 Comment puisez-vous de l'eau?

- a) Bidons []
- b) Seaux []
- c) Bassins []
- d) Autres: Spécifie

4.3 Comment est gardée l'eau à boire?

- a) Dans des bidons avec couvercle []
- b) Dans des bidons sans couvercle []
- c) Dans les seaux couverts []
- d) Dans les seaux que ne sont pas couverts []

5.0 Conservation des aliments

5.1 Où sont gardées les casseroles pour la cuisine?

- a) Dans des étagères []
- b) Par terre dans la cuisine []
- c) Autres: (spécifie).....
- d) Les casseroles sont elles couvertes? Oui [] Non []

6.0 Sanitation

6.1 Est-ce-que votre maison a une toilette privée ou commune? Privée []

Commune [] Non []

6.2 Si la réponse à la question 6.1 est privée ou commune, est-ce-que la toilette est utilisée? Oui [] Non []

6.3 Si la réponse à la question 6.2 est oui, est-ce-que les enfants aussi utilisent la toilette pour chiller? Oui [] Non []

6.4 Si la réponse à la question 6.3 est Non, où est-ce-que vous mettez les cacas des enfants?

- a) Enterrer les cacas []
- b) Jeter les cacas dans la toilette []
- c) Aucune de ce deux options []

6.5 Quelles sont les raisons de ne pas utiliser les toilettes ?

- a) Tabous
- b) Ne sais pas

6.6 Est-ce-que les toilettes sont elles commune ou privées? Privées Communes

6.7 Si les toilette sont commun, qui les nettoient?

- a) Tous les utilisateurs
- b) Seulement cette famille
- c) Personne

7.0 Hygiene Personnel

7.1 Quand est-ce-que les membres de la famille lavent leurs mains?

- a) Chaque fois après avoir utilisée la toilette?
- b) Chaque fois avant de manger
- c) Chaque fois avant de préparer la nourriture
- d) Chaque fois après avoir touche les cacas

7.2 Si la réponse á la question 7.1 est Non, pourquoi?

- a) Manque d'eau
- b) Pas important
- c) Ne sais pas

8.0 Maladies Communes

8.1 Quelles sont les maladies communes' dans cette famille?

- a) Diarrhée
- b) Maladies de la peau
- c) Gastro-Enterites

8.2 Quel serez les causes de maladies mentionet á la question 8.1 en haut, dans cette famille, s'il y a?

- a) Manque d'hygiene
- b) L'eau contaminee
- c) Mouches
- d) Nourriture mangee
- e) Ne sais pas

Merci beaucoup pour votre temps

Etudiant: E. Anyolo No. 8709750

Questionnaire relatif aux Promoteurs de la Santé Julliet 2006

Milieu d'étude: Camp de Réfuge d'Osire, Region d'Otjozjupa, Namibie

Instructions

L'objectif de l'étude est d'explorer et décrire l'efficacité de l'éducation sanitaire en enseignant aux réfugiés sur la prévention de la diarrhée dans le camp de réfugiés d'osire. Les données gagnée collectées pour l'accomplissement de cette étude seront traitées confidentiellement. Les noms des individus ne sont pas requis. Toutes les questions doivent être répondues par oui ou par non. Là où plusieurs options se présentent, cocher celle que convient.

1.0 Données Demographiques

- 1.1 Date:...../...../...../ **Série no...**
- 1.2 Numéro du Bloc.....
- 1.3 Age.....
- 1.4 Sex.....
- 1.5 Pays d'origine:
- 1.6.1. Angola
 - 1.6.2. RD Congo
 - 1.6.3. Burundi
 - 1.6.4. Rwanda
 - 1.6.5. Autres Pays (spécifiez).....

2.0 Niveau d'études

- 2.1 N'a pas étudié
- 2.2 Ecole Primaire
- 2.3 Ecole Secondaire
- 2.4 Enseignement Supérieur

3.0 Formation et service de Promoteur de la santé

3.1 Etes vous formé en qualité de promoteur de la santé? Oui [] Non []

3.2 Si oui, à la question 3.1 pour combien de temps, avez vous été formé?

- | | |
|-----------------------|-----------------|
| a) Un Jour | Oui [] Non [] |
| b) Deux jours | Oui [] Non [] |
| c) Trois jours | Oui [] Non [] |
| d) Quatre jours | Oui [] Non [] |
| e) Cinq jours et plus | Oui [] Non [] |

3.3 Qu'avez vous appris sur la prévention contre la diarrhée?

- | | |
|---|-----------------|
| a) Se Laver régulièrement les mains après l'utilisation de la toilette | Oui [] Non [] |
| b) Se Laver régulièrement les mains avant de préparer les aliments et de manger | Oui [] Non [] |
| c) Utiliser la toilette pour la défécation | Oui [] Non [] |
| d) Enterrer les selles des enfants | Oui [] Non [] |
| e) Mettre les selles des bébés dans la toilette. | Oui [] Non [] |
| f) Garder l'eau à boire dans des bidons avec couvercles. | Oui [] Non [] |
| g) Garder la nourriture et les casseroles sur les étagères. | Oui [] Non [] |
| h) Couvrir la nourriture pour éviter les mouches. | Oui [] Non [] |
| i) Brûler les déchets jetés dans la poubelle | Oui [] Non [] |
| j) Autres: spécifiez..... | |

3.4 Comment avez- vous enseigné la communauté de réfugiés (méthodes utilisées pendant l'enseignement)?

- | | |
|--|-----------------|
| a) Enseignement individuel | Oui [] Non [] |
| b) Groupe de réflexion et de discussion | Oui [] Non [] |
| c) Utilisation des affiches et des dépliants / brochures | Oui [] Non [] |
| d) Réunions de bloc | Oui [] Non [] |
| e) Causerie pendant les sessions d'éducation sanitaire à la clinique | Oui [] Non [] |
| f) Causerie pendant des visites à domicile | Oui [] Non [] |

3.5 Combien de fois organisez-vous les sessions d'éducation sanitaire?

- a) Chaque jour Oui [] Non []
 b) Chaque semaine Oui [] Non []
 c) Chaque deuxième semaine du mois Oui [] Non []
 d) En cas de besoin Oui [] Non []

3.6 Etiez-vous supervisé pendant la session d'éducation? Oui [] Non []

3.7 Quelle sont les difficultés que vous aviez rencontrées au court des sessions d'enseignement sanitaires?

- a) Inefficacité de là communication due aux barrières linguistiques. Oui [] Non []
 b) Les réfugiés refuseint de prendre part à la session sur l'éducation sanitaire Oui [] Non []
 c) Le materiel d'information, éducation et communication sont seulement écrits en anglais Oui [] Non []
 d) Manque de supervision Oui [] Non []
 e) Autres spécifiez s.v.p.....

3.8 Pendant combien de temps avez vous tavailler comme promoteur de la santé?

- a) Un an Oui [] Non []
 b) Moins de deux ans Oui [] Non []
 c) Deux ans Oui [] Non []
 d) Plus de deux ans Oui [] Non []

3.9 Avez vous participé à la formation de recyclage? Oui [] Non []

3.10 Si la reponse à la question numéro 3.9 est oui, combien de fois avez- vous participé à ce genre de formation

- a) Chaque mois Oui [] Non []
 b) Chaque trois mois Oui [] Non []
 c) Chaque six mois Oui [] Non []
 d) Chaque année Oui [] Non []

4.0 Pensez-vous que cette éducation sur la prévention de la diarrhée a éventuellement prévenu la diarrhée dans le camp? Oui [] Non []

5.0 Si la réponse à la question numéro 4.0 est non, pourquoi la diarrhée persiste-t-elle?

- a) Pauvre hygiène personnel Oui [] Non []
- b) L'eau contaminée Oui [] Non []
- c) Pauvre contrôle de mouches Oui [] Non []
- d) On ne sais pas Oui [] Non []
- e) Autres, spécifiez S.V.P.....

6.0 Avez -vous reçu l'argent pour le service rendu? Oui [] Non []

Merci beaucoup pour votre participation

Etudiant: E. Anyolo

Liste d'observation d'étude- Juillet 2006

L'énumérateur s'attend à voir la situation hygiénique des familles à être interviewée et cochét, Oui ou Non, dans l'espace prévu en regard de chaque question. Il n'est pas nécessaire poser des questions aux personnes interrogées.

Numéro de Bloc.....Numéro de la maison.....Numero série.....Date.....

1. Propreté générale de familles.
Remarques.....
2. Est-ce que la cuisine est propre? Oui [] Non []
3. Y a-t-il une étagère pour les casseroles? Oui [] Non []
4. Magasin d'aliments disponible? Oui [] Non []
5. Les aliments stockés sont-ils en utilisation? Oui [] Non []
6. L'eau est-elle gardée dans des bidons couverts? Oui [] Non []
7. Propreté de récipients? Remarques
8. Est-ce-que la famille a une toilette individuelle? Oui [] Non []
9. Si oui, quel est l'état de propreté.....
10. Y a-t-il des selles au tour de la toilette? Oui [] Non []
11. Y a-t-il des selles dans les parages? Oui [] Non []
12. Y a-t-il une poubelle à la maison? Oui [] Non []
13. Est-ce que la poubelle est utilisée? Oui [] Non []
14. Y a-t-il de résidu de la nourriture par terre dans la cuisine qui peuvent inviter les mouches? Oui [] Non []
15. Evidence de rats et de cafars? Oui [] Non []
16. Quelle est l'apparence générale de la famille? (habits, figures, cheveux)
.....

ANNEXURE D

Map of Namibia showing Otjozondjupa region: Towns and main areas including Osire Refugee Camp

