

**KWAME NKRUMAH UNIVERSITY OF SCIENCE
AND TECHNOLOGY, KUMASI**



**COLLEGE HEALTH SCIENCES
DEPARTMENT OF COMMUNITY HEALTH**

**A REVIEW OF THE HEALTH EDUCATION STRATEGIES FOR A
SUSTAINABLE GUINEA WORM ERADICATION PROGRAMME
IN THE TOLON –KUMBUNGU DISTRICT OF THE NORTHERN
REGION ,GHANA**

BY

ISSAHAKU MUSTAPHA

SEPTEMBER 2005

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ISSAHAKU MUSTAPHA

**A THESIS PRESENTED TO THE SCHOOL OF GRADUATE
STUDIES, KWAME NKRUMAH UNIVERSITY OF SCIENCE
AND TECHNOLOGY, KUMASI, IN PARTIAL FULFILMENT
OF THE REQUIREMENT FOR THE AWARD OF A MASTER
OF SCIENCE DEGREE IN HEALTH EDUCATION
AND PROMOTION**

JULY 2006

DECLARATION

I, ISSAHAKU MUSTAPHA do hereby declare that except some references to other people's works, which I have duly acknowledged, this project is my own original product under the supervision of Dr Easmon Otupiri which has neither in whole or part been presented elsewhere in an academic institution for the award of a degree.

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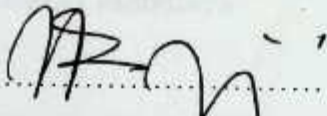


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ACKNOWLEDGEMENT

My profound gratitude goes to the Almighty Allah for guiding me through all the trying times of this course- Alhamdulillah.

I am most grateful to all the lecturers and staff of the Department of Community Health, School of Medical Sciences, KNUST, Dr ENL Browne, Professor Mrs. E A Addy, Dr E Owusu Dabo, Mr. Anthony Edusei, Mr. Peter A Baffour Auntie Becky and Florence and most especially Dr Easmon Otupiri, my supervisor, who defied his busy work schedule as Head of Department to take me through the entire work, offering academic guidance and useful suggestions when I much needed them.

I should also express gratitude to the entire staff of the District Directorate of Health Services, Tolon Kumbungu and Management and field staff of the Ghana Guinea Worm Eradication Programme in the National Secretariat and in the Tolon Kumbungu District. The personal assistance of the National Program Coordinator Dr Seidu Kokor Mr. Gilbert Dery and Alhaji A.B, Regional (Health Promoter) has been so immense that they cannot go unmentioned.

I owe an equal amount of gratitude to Mr. Amankwa Iddisa the Regional Program Coordinator and his entire field Staff – Mr. Tahidu, Mr. Yakubu, Miss Sadia Dawa Mahama, Hanan, and David for giving me a real experience of field Research and Community entry skills.

Lastly my sincere thanks goes to Mr. Adams of the Carter Center for editing and making very useful suggestions on my work, and all friends and well-wishers like Frank Laar who in diverse ways helped in the final production of this work.

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DEFINITION OF TERMS

- Case search:** Going from house to house in the community identify signs,
- Channel:** A medium by which a message is passed to its recipients.
- Collaboration:** Establishment of a working understanding between individuals, groups and organizations with the ultimate aim of solving, health related problem
- Diffusion :** A process by which an innovation is communicated through certain channels over time among members of a social system.
- Expressed needs:** The needs that the community ask for
- Folk knowledge:** Information on traditional norms passed on to generation for use and practice.
- Hard to reach:** Communities that are difficult to reach due to un motorable roads and water bodies.
- Innovation:** Any idea, attitude or behavior that is new to the members of a social class.
- Multi Flow Model:** A classic theory suggesting that the persuasive effect of mass media alone will be unlikely to change audience opinion.
- Needs assessment:** Identifying the needs as felt by the people.
- Opinion Leader:** Chief, assemblyman, influential members of community
- Overseas:** Communities that are across rivers without bridges and the only means of getting there is by canoe.

Tamale Oil:

Butter extracted from the Shea tree nuts

Technical assistant:

A field coordinator who supervises the activities of area,

Zonal coordinators and volunteers

ABBREVIATIONS AND ACRONYMS

C.C -	Carter Centre
C.P-	Community Participation
CBS -	Community Based Volunteer
CDCP -	Centre for Disease Control and Prevention
CI -	Community Involvement
CSIR -	Centre for Scientific and Industrial Research
CWSA -	Community Water and Sanitation Agency
F.M. -	Frequency Modulation
GBC -	Ghana Broadcasting Corporation
GDCP -	Ghana Danish Community Programme
GGWEP -	Ghana Guinea Worm Eradication Programme
GHS -	Ghana Health Service
GWD -	Guinea Worm Disease
GWEP -	Guinea Worm Eradication Programme
JICA -	Japanese International Co-operation Agency
MOH -	Ministry of Health.
NGO -	Non Governmental Organization
PCV -	Peace Corps Volunteers
TKD -	Tolon / Kumbungu District
TKDHMT -	Tolon / Kumbungu District Health Management Team.
UNICEF -	United Nations Children Fund.
V.BV -	Village Based Volunteer.
WHO -	World Health Organization

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ABSTRACT

At its 44th conference, the World Health Assembly endorsed a goal of eradicating dracunculiasis (Guinea Worm) by the end of 1995. The assembly recommended the establishment of National Guinea Worm Eradication Programme Offices in all endemic countries of which Ghana was one.

In Ghana the burden of the disease was heavier in three regions Brong Ahafo, Northern and Volta Regions, with Northern Region reporting the highest number of cases. Tolon Kumbungu District has been recording the most cases since the eradication campaign started in 1989, probably because of its deprived and poverty stricken characteristics as the disease is associated with poor communities in rural areas without safe water supply and a high illiteracy rate. (The Carter Center 1998).

Poverty and ignorance notwithstanding, former President Jimmy Carter stated that, other communities have eradicated the disease without digging a single borehole; all they did was to change their attitude and practices of handling water for domestic purposes.

This is why the central theme of the Guinea Worm Eradication Programme (GWEP) is on Health Education for behavior change initiated by individuals and communities themselves with the technical message being formulated and disseminated through strategically chosen channels that target the most vulnerable population.

This exploratory study, sourced both qualitative and quantitative data to examine the

educational strategy and methodology of the GWEP in effecting the desired change in behavior that could lead to the eradications of the disease in Tolon Kumbungu, where it is expected that school children can have a continued stay of uninterrupted school years, farmers can stay on their fields all year round, and general morbidity and incapacitation will be eliminated, only then that the people can live a dignified life free of poverty and disease

Data was collected from 139 respondents comprising, community members, field officials of the GWEP, opinion leaders of communities and key informants from the Ghana Health Service, and those in management within the GWEP.

The background information of the people revealed that they were predominantly illiterate whose main occupation is subsistence farming and the disease was most prevalent among people between the ages of 30-40 years.

Generally, Knowledge about the disease and its mode of transmission is high.

The findings revealed that majority of the people and community's source of drinking water was dams which are on the average more than 5 kilometers away from the community it. The dams usually dry up during the long dry season period.

Though the study showed that majority of people filtered their water before use, it was observed that procedures for filtering water was not followed carefully, which revealed some socio cultural practices like religion, funerals, festivals and beliefs as the main contributors.

Over 90% of respondents had the opinion that GWE campaign should continue, but it should be specific on GW eradication with the village volunteer spearheading the campaign in their various communities. This study concludes that the GWEP campaign of educating people to change their attitude is appropriate, but that the

educational messages should be designed "in the community" by the community" instead of "for the community".

The channels of dissemination should be reviewed using a carefully planned mix of all channels to suit the individual or group audience because of the effect of *Multi Flow Model*.

It also concludes that government should perform its social responsibility of providing safe water to all communities.

The Ghana Health service should re train village volunteers, with emphasis on the meaning of volunteerism.

It is recommended that the community should be involved in assessing its needs, planning and executing its education program and evaluating them.

The study recommends that partners in the GWE effort should help communities to implement the Household Mutual Water Handling and Usage Project, to cultivate the communal approach towards water

1.0 INTRODUCTION

1.1 Background Information

Dracunculiasis, more commonly known as Guinea Worm Disease (GWD) is a preventable worm infestation caused by the parasite *Dracunculiasis medinensis*. It was first recorded as a global epidemic in 1986 with thirteen (13) African countries hitting endemic proportions (WHO/UNICEF, 1986). Among the 13 African countries, Sudan, Ghana and Nigeria were the worst hit when an estimated 3.5 million people were infected annually (WHO, 1987).

The Guinea Worm Disease is of public health concern to the whole world, and as a result many organizations including the Global 2000 programme of The Carter Center, United Nations Children's Fund (UNICEF), Center for Disease Control and Prevention (CDCP) and the World Health Organization (WHO) are all putting together efforts to assist the last twelve (12) countries (all in Africa) to eradicate the disease. This campaign has been quite successful in bringing the global prevalence rate to one percent (1%) which the international community is now grappling with. Some West and East African countries such as Uganda, La Cote D' Ivoire, Benin, Mauritania, and Ethiopia now have just traces and would soon reach the certification stage while Sudan, Ghana, and Nigeria remain the most affected in the world. However Ghana (leading prevalence rate in West Africa) is taking giant steps towards the total eradication, while Sudan, the world's most endemic nation, is still struggling with 63% of the 32,193 cases reported globally (GWEP, 2003). As the disease was declared a public health problem, the WHO, UNICEF and The Carter Center together with its partners held a world summit for children in Geneva, and set themselves to eradicate the disease by 1995. As a result, national programme offices were instituted

and the Ghana Guinea Worm Eradication Programme started operation in 1989, six years afterwards, a remarkable progress in the eradication effort saw a 95% drop in the number of cases from 179,556 to 84,000. This achievement was due to the interventions that were put in place; these included active surveillance for cases, case containment and health education. According to the Guinea Worm Eradication Programme, (GWEP) Ghana recorded as many as 179, 556 cases in 1989, of which 101,524 representing 56.5% came from the Northern Region. By 2001 the national figure had reduced to 4,739, while a corresponding reduction to 2,929 was registered in the Northern Region.

In the same period (1989) Tolon-Kumbungu District had 4,324 cases which also dropped to 2,929 by 2001. This figure shot up to 5999 cases recorded in 1,327 communities by the close of the year 2003 (GWEP 2003).

The success rate of the national intervention strategy was initially positive, when a steep downward trend in cases was recorded; 101,524 in 1987 to 2,929 in 2001, since then it has always been on the increase, with up to 7,275 cases at the end of 2004. This relapse necessitated the re-launch of the programme by the former American President, Jimmy Carter together with the Director General of the World Health Organization in Jantong in the East Gonja District in February 2004.

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Table 1.1 Guinea Worm Disease Status of Top 20 Districts in Ghana

District	Jan-December 2004	Cases reported	
		Jan - June 2004	Jan - June 2005
Offinso	28	27	1
Nkwanta	1,266	1,179	137
Afram Plains	17	7	1
Nanumba	457	295	61
Kete-Krachi	235	302	85
Sene	23	16	5
Yendi	591	530	172
West Gonja	264	199	75
Zabzugu/Tatale	329	268	115
Tamale	405	381	190
Savelugu/Nanton	638	570	303
Gushegu/Karaga	443	329	198
Tolon/Kumbungu	1,260	980	691
East Gonja	524	329	282
Saboba/Chereponi	41	23	20
Kintampo	117	65	64
Sekyere East	18	5	7
Atebubu	167	33	58
Wa	181	40	81
Jirapa	20	7	17
Sub-total	7,114	5,585	2,563
Ghana total	7,275	5,700	2,660

Source: GHS/GWEP (Provisional Data, 20th June 2005.)

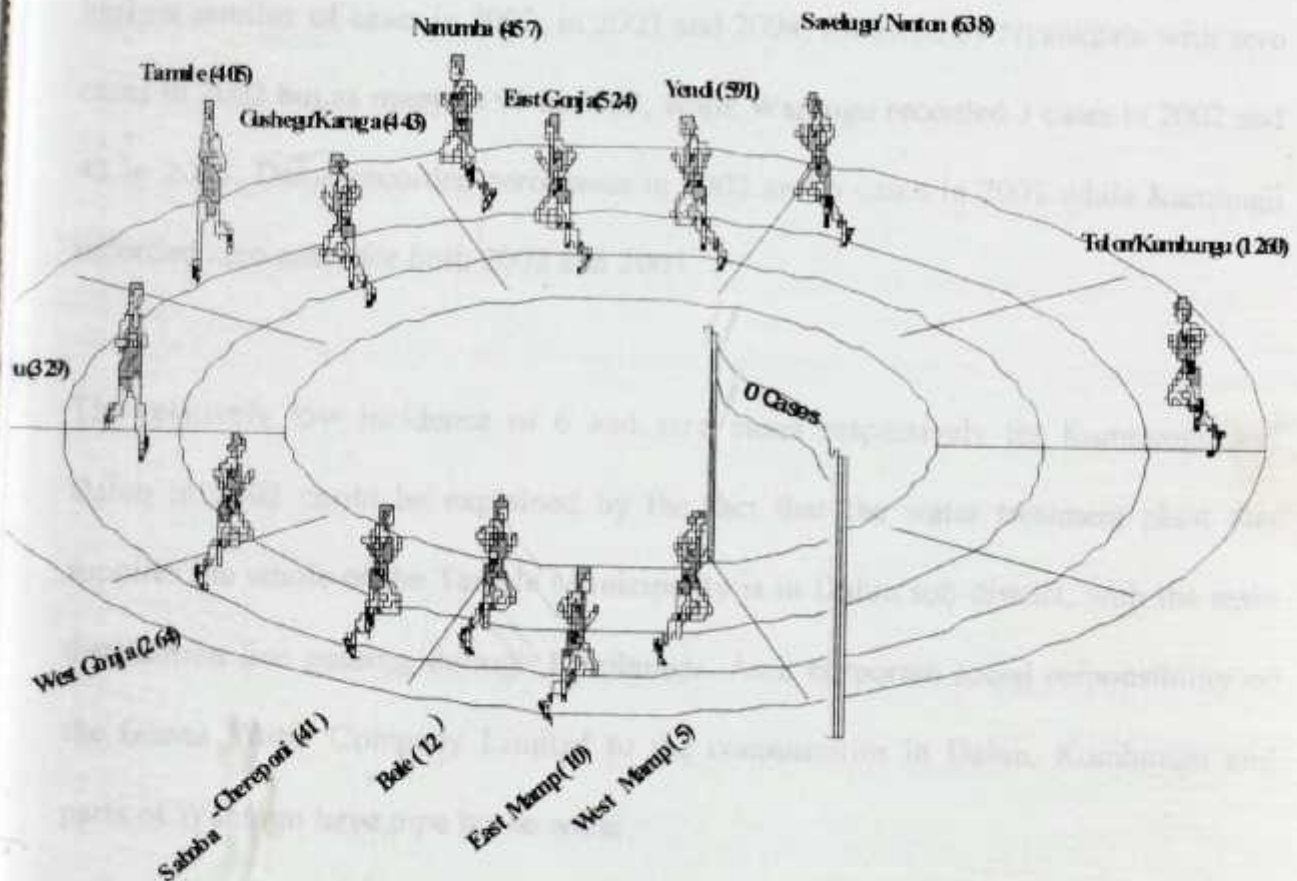
The nationwide case search that preceded the formal operations of the GWEP in 1989 revealed that 197,556 cases of Guinea worm were recorded from 6,515 communities nationwide with Northern, Brong Ahafo and Volta regions, accounting for most of the

cases. Of these 3 most endemic regions, the Northern Region has the highest number of cases with Tolon Kumbungu District (the study area) recording the highest cases among all the districts as cited by the Guinea Worm league table (Figure 1.2) at the close of year 2004.

Fig ,1.2 Guinea worm Prevalence ,Ghana (2004)

GHANA GUINEA WORM RACE NORTHERN REGION AT THE END OF 2004

WHICH DISTRICT GETS TO THE FINISHING LINE FIRST?



Source (GHS/GWEP 2004)

Table 1.2 Guinea Worm cases in Tolon-Kumbungu by sub-district, 2002-2003

Health sub district	YR 2002	YR 2003	Total-(2002-2003)	Relative Frequency
TOLON	60	101	161	52.10%
NYANKPALA	0	96	96	31.06%
DALUN	0	6	6	1.94%
WANTUGU	3	43	46	14.89%
KUMBUNGU	0	0	0	0.2%
Total	63	246	309	100%

Source: GW Cases Register TK (2003)

Tolon-Kumbungu District is divided into five (5) health sub districts namely; Tolon, Nyankpala, Wantugu, Dalun and Kumbungu, with Tolon sub-district recording the highest number of cases in 2002, in 2003 and 2004, followed by Nyankpala with zero cases in 2002 but as many as 96 in 2003, while Wantugu recorded 3 cases in 2002 and 43 in 2003, Dalun recorded zero cases in 2002 and 6 cases in 2003 while Kumbungu recorded zero cases for both 2002 and 2003.

The relatively low incidence of 6 and zero cases respectively for Kumbungu and Dalun in 2003 could be explained by the fact that the water treatment plant that supplies the whole of the Tamale Municipality is in Dalun sub-district, with the main distribution line passing through Kumbungu. As a corporate social responsibility of the Ghana Water Company Limited to the communities in Dalun, Kumbungu and parts of Wantugu have pipe borne water.

The incidence of the disease by sex in the district is 34% prevalence in female and 66% in males, while by age the most affected are the aged between 7 and 20 years - above 60 cases (DHMT annual report 2003). The programme in Ghana faced several

set backs, particularly during the 1994 ethnic clashes (GWEP, 2004). Paramount of the setbacks was the ethnic conflict between the Konkombas, Dagombas, Nanumbas and Gonjas, in the north eastern corridor of the Northern Region. The conflict saw thousands of deaths, while several other thousands fled their homes, wandered about and settled indiscriminately. They were therefore not mindful of the water they drank, whether it was filtered, boiled or even treated. Due to the fact that the conflict posed a high degree of insecurity to Programme Officers and Guinea Worm Volunteers, they abandoned the programme and its activities and fled. Thus there was an interruption of the awareness creation.

Those who stayed behind after the conflict were highly suspicious of each other such that when the Guinea Worm Programme Officers treated a drinking water source with Abate® they were not sure whether the 'enemy' might not have hired the Officers to poison their sources of drinking water and wipe out their community. Other factors such as under-funding of interventions such as medical supplies for case containment, supervision, surveillance and provision of safe water have also contributed to the setback. Guinea Worm Disease has gradually reemerged in about 308 communities which were initially declared free of Guinea worm.

These and other variables that accounted for the reemergence compelled the Jimmy Carter Center to re-launch the programme, this time committing themselves to adequate, uninterrupted and timely funding to undertake activities in Health Education, surveillance, case containment; prudent programme management, water supply and efficient collaboration and partnership (Akintunde, 2003).

1.2 Statement of the Problem

Despite the global collaborative effort that has seen effective mobilization of human and material resources locally and internationally to fight the Guinea Worm Disease since 1989, there is a continuous infection and or re-infection of communities in large proportions. The Guinea Worm Disease affects both male and female, adults and children.

In the Tolon-Kumbungu District, guinea worm cases are said to be increasing by more than fifty percent (50%) annually. In 2002 for instance, the number of guinea worm cases in all the five health sub-districts stood at sixty-three (63). In 2003, the number of cases increased to two hundred and forty-six (246), and by July 2004, it had further increased to one thousand, two hundred and sixty (1,260) (GHS/ GWEP, 2005). The rising rate of infection is an indication that the eradication of the disease is not in sight, at least, not in the near future, as shown in figure 1.2, depicting a race to the finishing line for all the endemic districts in the Northern Region.

The Guinea Worm Disease has health, psychological, and socio-economic effects on the lives of the people. The burden of guinea worm ranges from feverish conditions to disability and sometimes death, as well as its accompanying socio-economic consequences such as household food insecurity, poor nutrition, prolonged absence from school resulting in high drop out rates among others.

The disease will continue to threaten the very survival of the people, and perpetuate poverty in the Tolon-Kumbungu District unless immediate remedies are found. It is believed that behavior change communication (BCC) strategies have not been

effective in bringing about the desired change in the beliefs attitudes and practices of the people of Tolon-Kumbungu towards the eradication of guinea worm. This situation is worrisome in view of the fact that the rising incidence of the disease stems from poor education, societal beliefs and attitudes.

This study sought to examine the health education methods with the view to providing important input for a sustainable Guinea Worm Eradication Programme.

1.3 Research Questions

Based on literature review and the conceptual framework the following research questions were asked;

1. What is the extent of knowledge of the mode of transmission of GWD?
2. What are the socio cultural practices that are responsible for the non compliance with the education messages?
3. Are the communication models of the Guinea Worm Eradication Programme appropriate to effect the change in behaviour?
4. How does community participation affect the control and prevention of guinea worm?
5. What is the community's perspective about the Guinea worm eradication campaign?

1.4 Main Objective

To assess the appropriateness of the health education strategies of the Guinea Worm Eradication Programme in the Tolon -Kumbungu District.

1.4.1 Specific Objectives

1. To determine the community level of knowledge on the mode of transmission of GWD.
2. To identify the socio-cultural practices that is responsible for non-compliance by communities.
3. To assess the communication models used in Tolon-Kumbungu.
4. To determine whether an association exists between community participation in health education and outcome of control of Guinea Worm Disease in Tolon-Kumbungu.
5. To assess the trend of the eradication campaign from the perspective of the people.
6. To recommend to partners ways by which behaviour change communication can be packaged to effect the desired change.

1.5 Conceptual Framework

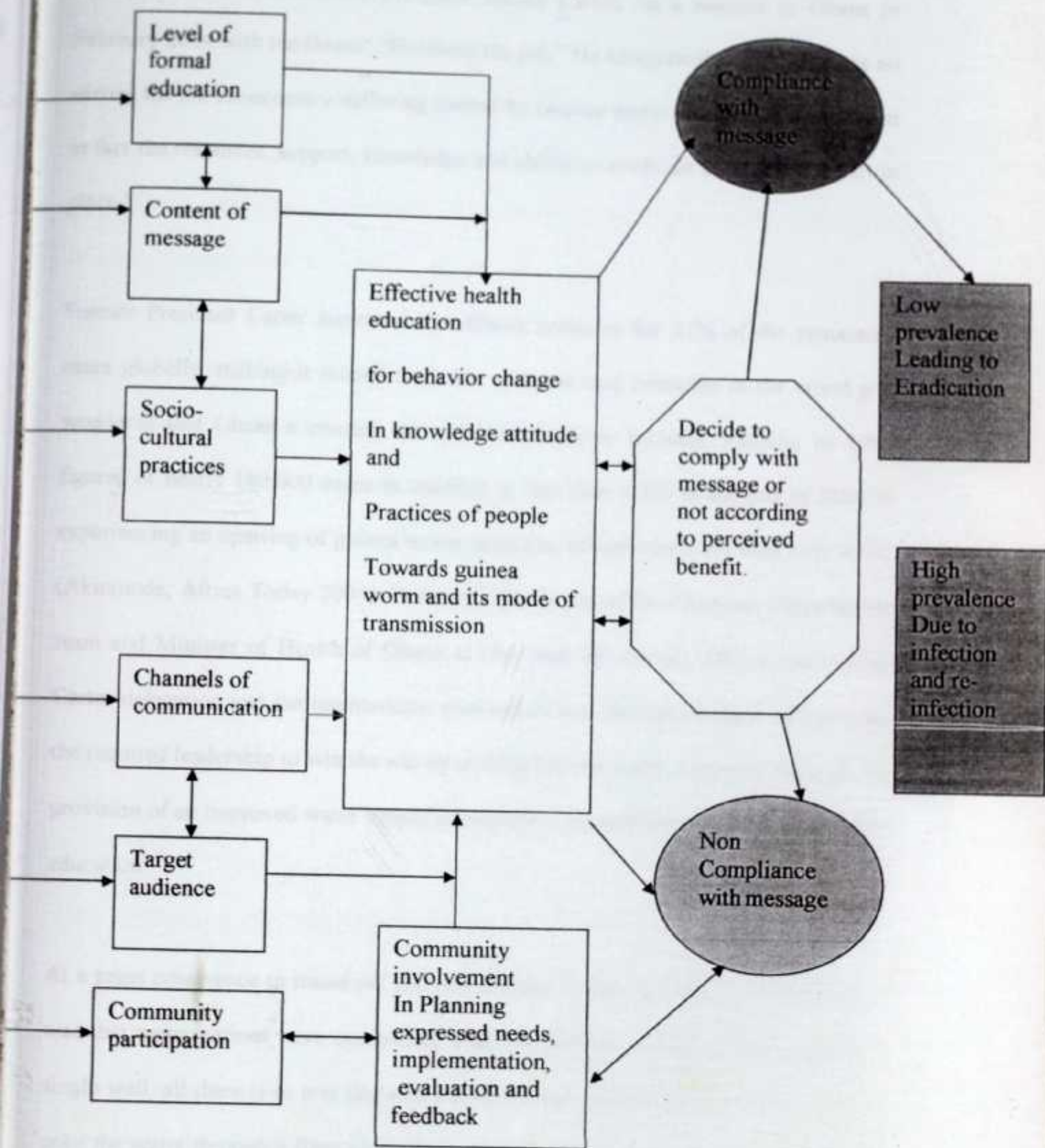
The most viable strategy to interrupt the transmission of the Guinea worm is mainly an issue of behavior change. The conceptual framework seeks to explain the processes that come to play in the effort to modify and maintain desired behavior.

This conceptual frame work is adopted from the diffusion of innovation theory of Everett Rogers (1995)

The theory explains that any idea, attitude or behavior that is new to members goes through a process; thus knowledge- Persuasion-Decision-Implementation-Confirmation.

The decision to comply however depends on the relative advantage, compatibility and complexity of the new behavior and the perceived benefits to be derived.

Fig 1.4 Conceptual Framework of factors involved in behaviour change related to Guinea worm control



Source: BCC concept from diffusion theory (Everett 1995)

1.6 Rationale for the study

The rationale behind this study emanates from the visit of a high powered delegation led by the -former American President Jimmy Carter, on a mission to Ghana in February 2004 with the theme: "Finishing the job." He categorically said "There is no excuse for the unnecessary suffering caused by Guinea worm disease in Ghana when in fact the resources, support, knowledge and ability to eradicate the disease are all in place."

Former President Carter lamented that Ghana accounts for 27% of the remaining cases globally, making it second to Sudan of worst case countries in the world and wondered that Ghana a country that celebrated success recently, slashing its 1989 figures of nearly 180,000 cases to stabilize at less than 6,000 at the end of 2002 is experiencing an upswing of guinea worm cases that closed year 2003 with over 8,200 (Akintunde, Africa Today 2004). In reaction the leader of the Ghanaian Government team and Minister of Health of Ghana at that time, Dr Kwaku Afriyie assured the Carter delegation and the international community that the Government will provide the required leadership to win the war by making Guinea worm a priority, through the provision of an improved water supply to endemic communities and increasing health education.

At a press conference to round off his visit, Former President Carter's main message was that many nations have completely eradicated Guinea worm without digging a single well, all there is to it is that every time a person takes a drink, he/she needs to pour the water through a filter cloth, it removes the Guinea worm, so that one never gets Guinea worm. This requires education. In the light of the global concern

expressed by President Carter, this research is significant because it addresses the concerns and worry of the international community which were expressed in Atlanta, USA, at the Guinea Worm Review conference in September of 2003 where at the closing session the relapse in Ghana was discussed (GW review conference, 2003). Additionally the study will contribute to the production of more appropriate educational strategies that can be replicated in other parts of Ghana and the world, so as to boost agricultural production and reduce school drop out rate of infected children, a pre requisite for national development.

1.7 SCOPE OF THE STUDY

The study was limited to the social structures that exist in the family clan and households that live within the geographical boundaries of the study district. They have similar characteristics and share the same culture, beliefs, values, norms and practices.

However due to resource and time constraints, only 3 out of the 5 sub district were sampled for the study. The study focused on the health education component of the Guinea worm eradication programme.

1.8 PROFILE OF THE STUDY AREA

The Tolon -Kumbungu District forms about 3.9% of total area of the Northern Region and is divided into 11 areas, called Area Councils, for purposes of effective administration. (GWEP Field data, DHMT 2003). It covers about 2,741 square kilometers. It is located to the west of Tamale Metropolis and boarded to the north by Savelugu-Nanton District to the south, by West Gonja District to the East and the

newly created Central Gonja District to the south. The district is 25 km from Tamale the regional capital and for the purposes of health administration, the district is divided into five (5) sub-districts with its district health directorate in Tolon the district capital.

1.8.1 CLIMATE:

The vegetation is mainly savanna grassland and interspersed with short hard drought resistant trees such as the baobab, shea, dawadawa ebony and others. Isolated pockets of virgin forest or scarce groves are found in the northern part and along the valley of the White Volta River.

1.8.2 POPULATION CHARACTERISTICS

The District has a population of 144,306 with a density of 50 persons per square kilometer of land with about 237 communities. It is considered one of the most deprived districts in the Region (GDHS, 2003). About 83% of the population is rural with low per capita income and very high poverty and malnutrition rate of about 42 % (DHMT, 2003). The predominant ethnic group is Dagomba with settlers such as Battor and Hausa along the White Volta River engaged in fishing.

Tolon-Kumbungu District has two main 'overseas' communities, Zantani in the Wantugu sub district and Singer in the Dalung sub district with smaller settlements around the two fore mentioned communities.

TABLE: 1.3 TARGET POPULATIONS FOR HEALTH INTERVENTIONS IN TKD

NUMBER	AGE GROUP	%	TARGET POPULATION
1	0 ----11 MONTHS	2.9	4,185
2	12 ----22 MONTHS	3.3	4,762
3	24 ----59 MONTHS	11.8	17,028
4	Expected Pregnancy	2.9	4,185
5	Expected delivery	2.9	4,185
6	WIFA	22.0	31,743
TOTAL		100	144,308

SOURCE: Annual Report of TKDHMT 2003

1.8.3 GENERAL INFRASTRUCTURE

The district is linked up to the regional capital and its neighboring districts by 3 second class roads, Tamale -Daboya, Tamale Kumbungu and Savelugu -Kumbungu, however all the roads are in a very deplorable state.

TABLE: 1.4 Distribution of health facilities and personnel by population in TKD

SUB DISTRICT	POPULATION	NUMBER OF COMMUNITIES	HEALTH FACILITIES	HEALTH PERSONNEL
TOLON	37,520	67	2	15
NYANKPALA	23,087	43	2	12
KUMBUNGU	34,633	43	2	7
DALUN	28,861	45	2	10
WANTUGU	20,203	40	2	5
TOTAL	144,306	237	10	49

Source: 2003 annual report (TKDHMT)

1.8.4 Communication

Tolon Kumbungu district has five sub districts health centers and five health centres which are connected with Motorola® equipment to make communication between them much easier and cost effective. There is also a community FM radio station established by an NGO, Ghana Danish Community Programme (GDGP) at Dalun. They mostly record community initiated educational programmes and broadcast them through the Regional FM station, Radio Savanna. There are also two postal agencies in Dalun and Tolon.

Table 1.5 Educational institution

EDUCATIONAL INSTITUTIONS	NUMBER
University	1
Senior Secondary schools	2
Junior Secondary Schools	18
Primary Schools	119
Nurseries	33
Bible School	1

Annual report TKDMT 2003

1.8.5 Economic Activities

The Savanna Agricultural Research Institute and the Animal Research Institute of the Council for Scientific and Industrial Research (CSIR) are both located in Nyankpala. Farmers in the District benefit from the presence of these institutions that provide high quality yielding grains and animals for multiplication. The people are mainly subsistence farmers with cotton being the only cash crop grown, however some farmers are being assisted with loans to do dry season cultivation at the 2 irrigation dams at Botanga and Nawuni through the only rural bank in the district at Kumbungu.

There are 3 major markets at Katinga, Nyankpala and Kumbungu where brisk business takes place once in a week. The District Assembly also generates revenue through sand winning at Nawuni under Dalun sub district.

The GDCP has its station at Dalun with facilities for organizing workshops training programme as well as accommodation facilities and a recording studio that feeds the local GBC FM station in Tamale to augment the community health education radio broadcast.

Table 1.6: Top 10 Causes of OPD, Admission and Deaths in TKD

OPD cases	Admission	Deaths
Malaria	Malaria	Malaria
ARTI	Diabetes	Accidents
Diarrhea	Cervical cancer	Diarrhea
Dysentery	TB	dysentery
Skin diseases	CSM	Child birth
Accidents	Iron deficiency anemia	Pre-natal deaths
Hypertension	Snake bites	Anemia in pregnancy
Pregnancy anaemia	Pregnancy related anemia	Iron deficiency anemia
Typhoid fever	Typhoid fever	Typhoid fever
Guinea worm disease	Ectopic Pregnancy	HIV/AIDS

Source: DHMT, 2003

1.9 ORGANIZATION OF REPORT

The research was conducted through six chapters using the following sequence;

1.9.1 Chapter One - Introduction and Background Information

This chapter gives a historical overview of the guinea worm disease globally. It also traces the trends and development of the disease at the National, Regional and District

levels to compare their prevalence rate with that of the study area. The chapter contains the conceptual framework from which research questions were derived. The scope of the study and the profile of the study area covered the socio demographic and economic characteristics of the study area.

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1.9.2 Chapter Two - Review of Related Literature

Chapter two contains relevant literature – both from primary and secondary sources- that this study has reviewed.

1.9.3 Chapter Three - Methodology of the Study

In chapter 3, an out line of the research methodology and design is explained, followed by technique of data collection, treatment and handing of the data. It also contains the method of sampling and the categorization of respondents that formed the study population. It also contains issues that bother on ethics.

1.9.4 Chapter Four - Analysis of the Results

It comprises a summary of the background variables of the respondents and the results that were drawn from the collation of the responses that subjects gave. The results were presented according to the specific objectives of the study.

1.9.5 Chapter Five - Discussions of the Findings

Chapter 5 contains a detailed discussion of the findings from the research according to the specific objectives, literature reviewed and results obtained.

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1.9.6 Chapter Six - Conclusion, Recommendations and Identification of areas for further research

The chapter draws conclusions based on the findings obtained from the survey. There are also a set of recommendations that will bridge the gap that exist between health education and non compliance.

CHAPTER TWO

2.0 Literature Review

2.1 INTRODUCTION

Guinea worm used to be a formidable public health problem, though not a major cause of mortality, but a real burden in terms of morbidity, incapacitation and suffering for those affected, however it is currently almost a thing of the past (WHO, 2000).

Though the disease is still found among the poorest rural communities in areas without safe water supplies in sub Saharan Africa, it is earmarked for successful eradication. Indeed Guinea worm may be the second disease after small pox, to be eradicated from the world; it would be the first to be overcome without vaccines or medication (The Carter Center 1998). Guinea worm commonly known as the "the fiery serpent" has been around for centuries, it is reported in the Africa Today Magazine that the disease has been discovered in 3000-year-old Egyptian mummies (Akintunde, Africa Today 2004).

Today, through the effort of The Carter Centre and its partners, the number of cases of this disease has been reduced worldwide by 99% from an estimated 3.5million cases in 1986 to less than 32,193 reported cases in 2003. Today we are fighting the last one (1) percent of the disease (Guinea Worm Eradication in Ghana, 2004)

The optimism that the disease will be totally eliminated stems from the fact that The Carter Center's Guinea Worm Eradication Programme has been able to eradicate the disease completely in Pakistan and other African and Asian Countries. Today the Carter Centre is spearheading the international eradication campaign with the Center for Disease control, The World Health Organization, UNICEF, Ministries of Health, and many other partners to eradicate the disease in the rest of the world.

2.2 GEOGRAPHICAL DISTRIBUTION OF GUINEA WORM

Asia is now completely free of Guinea worm. The disease is endemic in parts of sub Saharan Africa. These are Benin, Burkina Faso, Central African Republic, Cote d'Ivoire, Ethiopia, Ghana, Mali, Mauritania, Niger, Nigeria, Sudan, Togo and Uganda (WER 10, 2000; WHO 2000; WHO 2001; About, 2002).

The cases that are reported in Uganda, Benin, Mali, Mauritania, Ethiopia and Chad are relatively small numbers while over 73% of the worlds reported cases come from Sudan. The on-going civil war in that country continues to hamper efforts to eradicate the disease.

Similarly in the home front the disease eradication target was almost at hand when the worst hit region-Northern Region was bedeviled with ethnic clashes between four major tribes which posed a set back on the activities of the GWP (GWE in Ghana-MOH/GHS/Global 2000/UNICEF/WHO, 2003)

Geographically the most endemic regions; Brong Ahafo, Northern and Volta have an irregular rainfall pattern thus causing most of the water sources to dry up shortly after the rather long dry season sets in, this compels people to scramble for any available source of water. Interested partners in the provision of safe drinking water have also complained that when they sink boreholes and wells they hardly hit the water table (Akintunde, Africa Today 2004).

2.3 KNOWLEDGE OF THE MODE OF TRANSMISSION

The guinea worm disease, though not a major cause of mortality contributes significantly to morbidity, incapacitation and suffering on its victims Whether Guinea worm is a disease that causes ill health or disability depends on the individual and

community's concept of health, which is linked with people's social and cultural situations.

Whatever perceptions that the officials of the Guinea Worm Eradication Programme, the Ghana Health Service or Non Governmental Organizations might have about the people, the underlying responsibility they have assigned themselves is to eradicate the disease in the community. This they want to do by changing behavior of individuals and society towards healthier life styles, but as Ewles and Simnett (1996) put it, there are two often used approaches. That is, "to change the attitude and behavior of the individual or to change the socio-economic and physical environment?"

Most often the former, which is, changing people to fit the environment, is preferred to the latter, which is making the environment a healthy place for the people to live in. This option is feasible and more predictive than trying to persuade or threaten people to give up their attitude, which they have cultivated over the years in just a short period.

In explaining the knowledge, attitudes and practices gap, Everett Roger's Diffusion Theory of Innovation says that the rate of adoption of knowledge, the intension to change and the observed behavior change is linked to the hierarchy of effects and calls this the "attributes of innovation" thus ;

- (i) Relative advantage; that is whether the new behavior offers any advantage over the current behavior
- (ii) Compatibility; whether the new behavior is compatible with current behaviours, beliefs and values

(iii) Complexity; that is how difficult it is to perform the new behavior (Rogers 1995).

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In this context it will be prudent for designers of health education messages to examine the effects of the new behavior vis-a-vis the former. In analyzing the philosophy behind the choice of educational methods for health promotion, one way is informing people about the ways in which their behavior and lifestyle can affect their health to ensure that the information is understood and to help them to explore their values and attitudes and also help them change their attitudes. The other is to raise awareness of the many socio economic policies at national and local level, such as housing, environmental hygiene and good water supply, which are important for good health and advocate towards a change in those policies.

The Guinea worm Eradication programme has identified School Health Education an effective way of inculcating healthy life practices within the school environment and the community at large. Keith and Sylvia (1995) contend that when the all school going aged children cultivate good health practices they eternalize it, grow up with it and pass them on to their descendants through training, teaching, demonstrations and practices.

In an interview with the Regional Health Promotion Officer, during the conduct of the baseline survey, he said the School Health Education Programme is a good medium but it has its shortcomings, if it is not well organized with a short and straight forward message whose duration will not exceed their time span of concentration, usually 30 minutes.

The GWEP uses a variety of educational materials to suit the various target groups.

These include flip charts, cloth flip charts for field staff, snakes and ladders game on guinea worm, posters, comic strips, bill boards, animation procedures in story telling drama, role-plays, singing, proverbs and riddles.

In health education activities, teaching and learning aids are used extensively, these include videos posters and leaflets, which might not be used effectively, because, each one of them has its advantages and limitations.

The CARE - CDC health interactive (CCHI,2005) explored the use of traditional folk media to prevent HIV/AIDS. They revealed that as the Ghanaian population is predominantly illiterate or low literate people, with their occupation being mainly subsistence farming, these characteristics, makes most health communication strategies almost alien to the population.

Folk media are often used for personal as well as group information sharing, and they draw their popularity from the entertainment aspect of the whole message. Types of folk media include story telling, proverbs, visual arts drama, role play, concerts, gong beating, dirges, songs and, drumming and dancing. Folk media are used to communicate entertainment, news, announcements, persuasions and social exchanges of all types. www.care.CDC.Health) Interactive. (2005)

The Guinea Worm Eradication Program and Peace Corps Animation Book describe these folk media activities as "edutainment" an expression that the activities are multipurpose, as they combine entertain with education.

In confirmation of what Keith and Sylvia (1995) narrated as the power of media,

education and what it can do, (Solomon *et al* 2001) said "the power of folk media in changing behavior in rural Africa results largely from the media's originality and the audience's belief and trust in the sources of the messages, which often come from people to their audiences. Yet despite their power to capture people's imagination and subsequently to change behavior, the use of folk media in health education campaign has not been fully described in western literature. Folk media address local interest and concerns in the language and idioms that the audience understands; they are the appropriate communication channels for rural populations.

The Suhuyini Drama troupe in Tamale performs life shows and video films that sensitize people on the mode of transmission of Guinea worm while persuading people to change their perceptions, beliefs, attitudes and practices towards preventing the disease.

The Care Centre for Health Initiative (CCHI) is now creating funeral dirges with messages about health issues; they are combining folk media with long running serial radio dramas portraying characters who will adopt positive reproductive health behaviors such as condom use, family planning and early treatment of STDS.

Similarly, radio drama can be used to adopt hygienic domestic water usage by employing safety measures such as filtering water before using for domestic activities. The advantages of radio (mass media) outweigh its disadvantages in that it is affordable and accessible that is why it is the most popular in the remotest places of Ghana. It has the capacity of being heard by a large and diverse audience and offers opportunities for interactive participation by local residents.

In the light of the above, Solomon *et al* (2001,) in their own words, put it that,

“ Because folk media are an immediately recognizable vehicle for education they are easily accepted by most Africans ——— it is therefore imperative for projects whose goals aim at behavior change and sustainability in rural African setting to recognize and use the potential of folk media for the benefit of the rural Folk as well as project implementers and funding agencies. Finally, there is a need for research into the myriad folk media forms that abound in rural Africa both to explore ways to preserve these media and to document the effect they have on behavior change in rural communities”

2.4 SOCIO CULTURAL PRACTICES AFFECTING COMPLIANCE

There are many traditional beliefs and myths about Guinea Worm Disease. They vary from community to community, but some of the most common of them are;

1. Guinea worm is a loose vein or tendon.
2. Guinea worm is inherited
3. Guinea worm is a curse placed on the village because of a wrongdoing.
4. An angry local god causes Guinea worm.
5. Guinea worm emerges when they smell other Guinea worms nearby.
6. Guinea worm is caused by witchcraft.
7. Emerging Guinea worm should not be covered because it angers the worm and makes it look for another place to come out.
8. Guinea worm is always in the body and comes out when the blood is bad or weak.

A knowledge gap that is created here is the perceptions about Guinea worm as enumerated above and the understanding of the theory of disease causation (Peace Corps ICE Training Manual, 1989).

In theory, preventing Guinea worm seems simple; don't enter water with an emerging Guinea worm and don't drink unfiltered water especially if it is got from an open pond or stream, but the challenge lies in educating the villagers to always filter their water and ensuring that they have the necessary filters to do so.

Teaching these practices can come in conflict with traditional beliefs, for example some villages believe that guinea worm is the result of sorcery (The Carter Centre, 1998).

A typical example that confirms this is that the Asante of southern Ghana find faith in his hidden forces and in the personal ancestral spirit to guide the world view of the traditional social setting. The individual in such a setting is also aware of his dependence upon other members of his kin group and upon his ancestors. He is made aware of the fact that any deviant behaviour may be subjected to sanctions from the spiritual world, and ill health is one of the devices, which may be inflicted upon one who deviates from a tradition, (Twumasi, 1975). This may have been the reason why people prefer to abide by "loyal traditionally accepted behavior" to adhering to the simple principles and theories of disease causation- the germ theory.

Ewles and Simnett (1996) identified social and cultural barriers to effective communication of health messages to populations on disease control as,

- The different ethnic background; this he explained that, with the multiplicity of ethnic groups in society, it is difficult to compose a message that will not infringe on the social and cultural practices of a particular ethnic group.
- Social class of the community also has an effect on the acceptance of the message. An example is given of a Red Cross Volunteer who asked a GWEP

official who refused water offered her at a health education durbar, whether she felt she was superior in class than those of them who drank that water (Personal communication)

- Different cultural and or religious beliefs about hygiene issues were also identified as a barrier to compliance with educational messages.

The value of health as perceived by the individual, informs his choice of best health practices. Ben and Valerie (1999) assessed the socio cultural practices in water handling that are responsible for most cases of diarrhea diseases in Ghana, and concluded that the understanding of the population about the mode of transmission of diseases is how clean water is rated, as a priority.

Relating this, a field staff of the GWEP cited an example of some water bodies being deities, who the communities worship and therefore have the firm conviction that drinking water from it will never give illnesses except when the people incur their wrath, in which case it will visit sickness on the individual or community. In such instances people will not drink water from any source besides that of the river for spiritual loyalty.

In an attempt to diagnose the lack of improvement in the rate of parasitic diseases in his community where he was doing social service after studies in a Medical School, using the relevance of behavior sciences to disease prevention and control, Doctor Heriberto narrated his experience, thus, *" I spent the entire year trying to understand why even though a sewage system and house water supply had been built two years before, the prevalence of diarrhea and other parasitic diseases was the same as before the new system had been built. Sixty percent had running water in their houses, and the rest could get it from a public supply point no further than 70 meters from the house. The water was treated and purified. I know that I did not understand every*

thing. But what was the mission link?.....from where I was standing ,I observed the women of the village carrying small barrels from the river to their houses ,walking in some cases up to 1 kilometer ,.....why did they do that if they could get the water at home or close to the homes. I asked the women about it and they explained that the home water supply was used to wash dishes, cloths and to take showers. They did not use that water for drinking because it had an awful taste and people felt sick when they drank it, for that reason they drank water from the river. ''

The lesson learnt from this is that infrastructure alone cannot solve health problems, there should also be modification of socio cultural practices and knowledge about how to use those infrastructure. (Dasen, Berry and Sartorius 1988)

Doctor Heriberto pondered why the new infrastructure had not produced the expected results .He concluded; perhaps the people did not percieve the relationship between the quality of water supply and disease. Perhaps both diarrhea and parasitic diseases were so prevalent as to be considered 'normal'. Perhaps the taste of the treated water was such as to create a perceived new illness more uncomfortable and more threatening than the illness to which the people might be accustomed to.

In relationship with that, Gillet,(1985) has observed that human behavior in contrast to the behavior of pathogens responsible for tropical diseases and behavior of host other than man is the 'Forgotten factor' in tropical disease transmission.

2.5 THE CHANNELS OF COMMUNICATION

Guinea Worm Disease has no known treatment, all interventions that are put in place are tailored towards sharing information with the affected communities about the life cycle and its transmission, and best practices to avoid and eradicate the disease.

An effective prevention strategy thrives on a clear understanding by everyone in an infested community on the Guinea worm transmission and how the cycle can be broken through preventive behaviors. An effective control therefore must include adequate health education to promote the required behavioral changes (PCV, OTARS 1997). To effect a change in the behaviour of an individual or a community, communication which is a multi-level tool is used to tailor healthy messages in a variety of channels. (Www.fhi.Org, 2005).

Some key characteristics of effective communication and health education are that the methods to be used should take account of the nature of what is to be conveyed and of local beliefs, values, and practices - the characteristics of the intended audience, including educational, literacy levels and exposure to and familiarity with different educational methods; practical considerations, including the amount of money available and the experience of the staff.

Effecting the fundamental changes in lifestyle that are required to improve sanitation and hygiene will usually require an intensive programme of face-to-face communication in the community.

This might include visiting individual households or working with groups in community or other local settings like women's groups, mothers' groups, children in schools, or trade unions.

In hygiene education, it is important to emphasize *participatory learning methods*; these can include small-group teaching, simulations, case studies, group exercises, and role play. These methods should:

- avoid formal lecture presentations
- encourage discussion between participants

- encourage interaction during the sessions
- use a variety of games, puzzles, and exercises
- use learning aids that stimulate discussion and comments.

Participatory learning methods have a number of advantages: their active nature means that participants are more likely to remember what they have learned; participants draw from their own experience and are allowed to discover principles for themselves; opportunities are provided for learning problem solving skills; participants acquire the confidence to tackle problems and improve their conditions. However, many field staff will be unfamiliar with participatory learning methods and will require training.

Traditional media such as drama, songs, and story-telling are of great potential value and have been used for education in sanitation and hygiene. They combine entertainment with practical advice and can be used to stimulate discussion and community participation. The actors and musicians should be given the basic information on hygiene and health, and allowed to produce a performance that is both entertaining and understood by the community. It can also be valuable to involve members of the community in the performance.

One of the most powerful forms of communication is through real-life examples, e.g. a demonstration that latrines can be constructed in a well-chosen location can be beneficial to the community in deciding where to site theirs.

“Satisfied acceptors”— people who have improved their sanitation or hygiene practices and are pleased with the results, are the best people to explain the benefits to others, as they will use everyday language and will have greater credibility with the community, can also communicate valuable messages.

A range of learning materials such as flannel graphs, flip-charts, leaflets, posters, slide presentations, videos, and models can be developed to support the work. These should be pre-tested on a sample of the intended audience to ensure that their messages are easily understood and that the advice is relevant and meets guidelines and the community's needs.

Local artists can be used and encouraged to work with the community in preparing materials.

In general, health education messages should be reinforced by repetition, ideally through more than one medium.

Face-to-face education can be supported by the mass media such as radio, television, and newspapers if the initial survey shows that these will reach the community. Carefully designed and tested radio programmes, for example, can be used to spread simple information rapidly to large numbers of people, and to stimulate increasing awareness of, and interest in, the education programme.

Broadcasts should use a variety of entertaining and interesting formats such as songs, dramas, quizzes, and interviews with members of the community. The timing of such broadcasts should fit in with community activities.

Because the mass media reach large audiences, it is difficult to make messages specific to local communities; it may be useful to prepare radio programmes on cassettes, which can be played to small groups or through loudspeakers in public places.

A longer-term approach to improving hygiene in the community is working with children in schools. This enables the concepts of hygiene to become part of a general understanding of health and the influence of the environment. Schoolchildren can then introduce hygiene concepts to their parents. They learn from what they see around

them, so that the school environment itself should meet the requirements of good hygiene, for example by providing latrines, water for hand washing, generally clean surroundings, and hygienic facilities for the preparation and serving of school meals.

Hygiene education can take place in the classroom but also through activities in the school surroundings and community. It can be taught as part of a health education programme as well as of other subjects, such as mathematics, art, science, music, and drama, and should be integrated within a broad-based health education programme with a limited number of predefined educational objectives focused on the health needs of the community. This should provide a basic knowledge of health in the first years of school that can be extended by a more detailed discussion of health and disease with older schoolchildren. (Eirah et al, 1999)

2.6 COMMUNITY PARTICIPATION AND HEALTH EDUCATION ACTIVITIES

For effective community health delivery, the health worker should identify him/herself more positively with the community in which he/she works; the people's health issues and their welfare. To do this, there is need for him/her to identify the characteristics of the community in which he/she operates.

A community is characterized by old and established settlements of people with certain common identifiable traits, ethnic groupings such as clans, family's decisions in terms of religion, employment and others. They are also bond by important natural bounds such as common leadership, language traditional and customs which hold the members together. These could provide useful criteria for segmenting such communities into recognizable and practical units to facilitate sustained development activities (Fiagbe, Tweedie and Nazzar 2001).

On the other hand, the beliefs and customs of some of such traditional communities could hinder the work of health workers on such beliefs and customary practices may conflict with conventionally acceptable health practices.

Rifkin and Padmore (2001) reported that there is an association between community participation and health information generation, as they put it, partnership between professional and people in generating health information through participatory planning is crucial for community participation. The involvement of people in generating information leads to the ownership and utilization of the knowledge that has been generated. Gradually, the idea of community participation has gained wide acceptance as a strategy for Health Promotion.

The level of community participation determines the extent of success of health. Community Participation was one of the main principles of Primary Health Care (PHC) in the global strategy of health for all by WHO. Community Participation in programmes is measured according to the level of contribution of communities in the areas of;

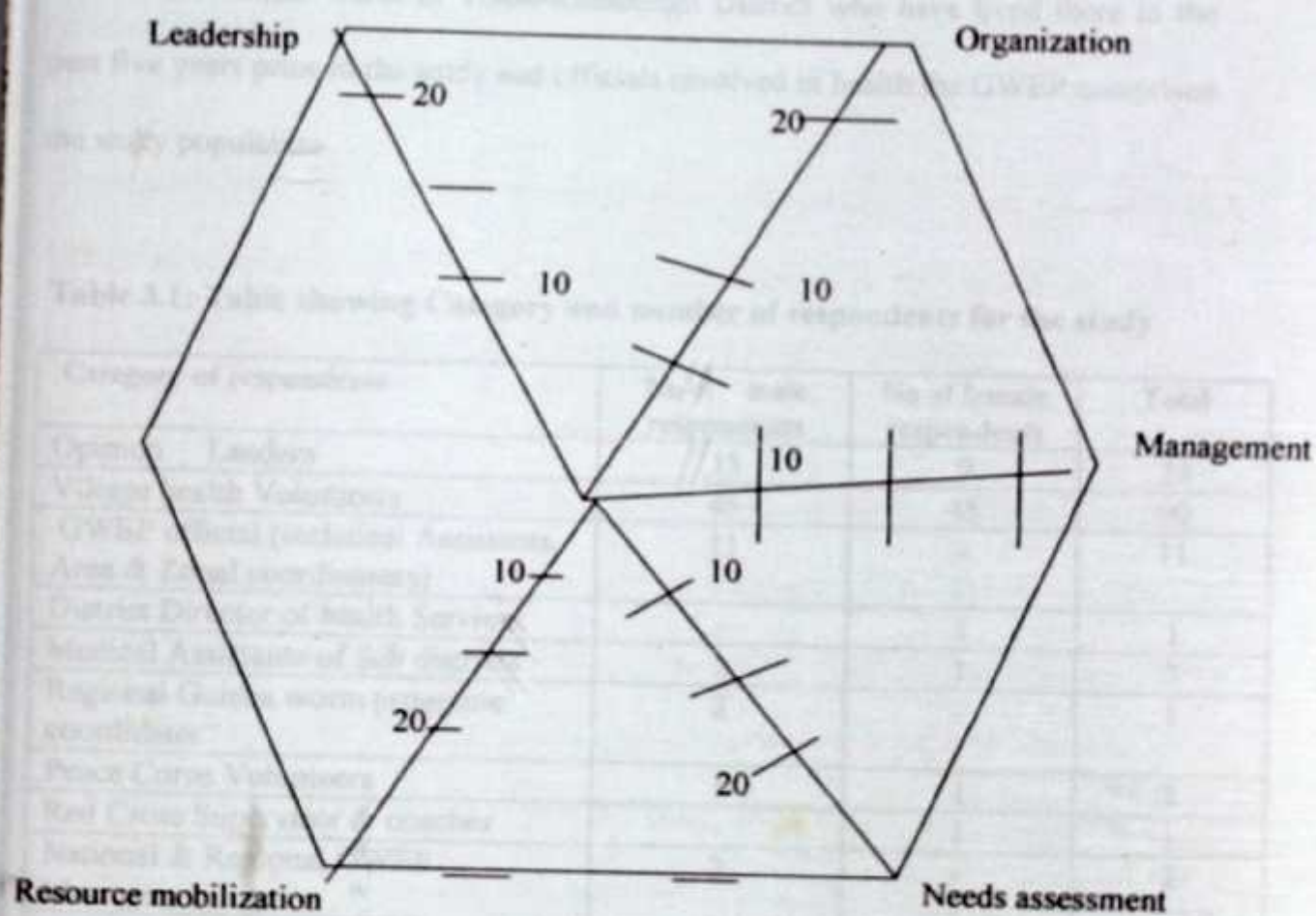
1. Management
2. Organization
3. Resource mobilization
4. Leadership
5. Needs assessment (Rifkin 2001)

The status of management, leadership organization and needs assessment are the areas in which the GWEP officials control while the communities participate in resource mobilization (Oberfel, 1994).

The idea of "volunteerism" versus paid work, "community burn out" and maturation and maintenance is a limitation to community mobilization (Fiagbe *et al.*, 2001). During the baseline survey for this study, most community volunteers complained that they were getting disillusioned about the remuneration that they get from the programme organizers, they felt cheated.

Susan Rifkin (2001) has developed what has come to be known as the pentagon spider web as a measuring tool for community participation. Low scores on the indicators show narrow participation while high scores indicate high participation

Fig.2.1: Susan Rifkin's measurement tool for community Participation



Source: Susan Rifkin (2001)

METHODOLOGY

3.1 Study Type and Design

The exploratory study type was adopted. New areas and events were closely examined. It was evaluative in nature and sourced both qualitative and quantitative data. It involved an assessment of the educational interventions and health education strategies, and models; the origin, the channel and the destination of the message.

3.2 Study Population

Victims of Guinea worm of Tolon-Kumbungu District who have lived there in the past five years prior to the study and officials involved in health the GWEP comprised the study population.

Table 3.1: Table showing Category and number of respondents for the study

Category of respondents	No of male respondents	No of female respondents	Total
Opinion Leaders	15	9	24
Village health Volunteers	45	45	90
GWEP official (technical Assistants, Area & Zonal coordinators)	11	-	11
District Director of health Services	-	1	1
Medical Assistants of Sub districts	2	1	3
Regional Guinea worm programe coordinator	2	-	1
Peace Corps Volunteers	1	1	2
Red Cross Supervisor & coaches	-	1	1
National & Regional GWEP Managers	2	-	2
TOTAL	78	58	136

Source: author, 2005

3.3 Sampling Method and Sample Size

A blend of probability and non-probability sampling techniques were used. Purposive sampling technique under the non-probability sampling was employed to select key informants drawn from the Ghana Guinea Worm Eradication Programme (GGWEP), the Ghana Health Service, non governmental organizations and opinion leaders. These are people with professional knowledge in their various fields of endeavour. The convenient sampling technique was used to choose 3 out of the 5 sub districts that are under the District Health Administration. This became necessary due to time, logistics resource constraints and also the difficult nature of the terrain in the overseas communities which rendered areas geographically inaccessible during the rainy season (period of study).

Having sampled the 3 sub districts, lists of communities in each of them were compiled separately and 10% of the total communities in each of the sub districts were further selected for study through systematic random sampling.

Calculating a sample interval derived at this percentage; the preferred percentage divided by the number of communities in the sub district. For example in a sub district with 60 communities, the sample interval became; the preferred percentage, (10%) divided by the number of communities (60) giving a sample interval of 6. The list of the communities was assigned number tags, after which a systematic random sampling technique was used to pick every 6th community. The first community was selected through a lottery drawn from all the numbers representing each community.

The subjects representing community members and village health volunteers were also selected through simple random sampling as follows: from the monthly returns

forms of the zonal coordinators, a register of cases of the sampled communities were compiled as from 2002 to date, and coded. The corresponding numbers were put in a box and lots drawn, one after the other, until the required sample size was obtained; those names on the register that corresponded with the drawn numbers formed the subjects of study.

3.4 Study Variables

3.2 Table of variables

Variables	Operational Definition	indicator	Scale of measurement	Objectives addressed
Health education strategies	Knowledge about the mode of transmission	Seen or experienced GW disease	Ordinal	One
Lack of formal education	Level of formal education attained	Ability to interpret any print material on GW	Ordinal	One
Perception about guinea worm disease	Responses to questions asked	harmful	Ordinal	Five
Method of dissemination of information on guinea worm	Response to some specific questions	understandable	Ordinal	three
Content of message	Response to questions	Precisely on guinea worm	Ordinal	three
Communication models used	Response to questions	Accessible on daily bases	Ordinal	Three
Socio cultural practices	Response to questions	Believe in germ theory	Ordinal	Two
Target audience of the message	Response to questions	Old enough to collect water for domestic use	Ordinal	Three
Community participation	Based on Suzan Rifkin's model	Proximity to nucleus on Rifkin's Pentagon	Nominal	Four

Source: author (2005)

3.5 Data Collection Techniques and Tools

Various tools were used to generate both qualitative and quantitative data. These tools included direct observation, semi-structured interviews and questionnaire administration.

Direct observation was used to observe the water sources of the communities and to examine the physical outlook of the patients among other things. Both the semi-structured and structured interviews were used to gather information on the communities' perception of the GW disease, adherence to the educational messages and the collection and treatment of water for domestic use among other things. The semi-structured interviews (key informant interview) was particularly used to collect data from the management of the GWEP, Ghana Health Service staff and other collaborators in the eradication effort who by virtue of their position and work schedule, have exclusive information and knowledge on the subject under study.

A questionnaire as a measurement tool were also sent to some field staff of the eradication team and sampled members of communities to seek views on the appropriateness of the origin, the channel and the destination of the educational messages. Tape recorders and a still camera were used to record proceedings during interviews and observations.

3.6 Data Processing and Analysis

Data from the key informant interviews conducted in the local language (with some opinion leaders and volunteers) were translated into English and transcribed. Common issues were then identified and grouped. Responses from the questionnaire were entered into the computer

Processing was done manually and in some cases the SPSS version 11.0 (1997) statistical Programme was used. The results were presented through tables, graphs, histograms and bar charts.

3.7 Limitations

As the study employed both probability and non probability techniques for data collection the likelihood of bias occurring cannot be ruled out due to the purposive and convenience sampling techniques.

There were a number of non-responses due to apathy and other reasons such as fear of stigmatization and victimization.

Other limitations included financial and logistical resources.

3.8 Pretesting

The structured questionnaire and other tools were pre-tested in the other two sub districts, Kumbungu and Dalun that were not selected for study, but which have typical and representative characteristics like the Tolon, Nyankpala and Wantugu. The structured questionnaire was updated by modifying some of the questionnaire to bring out the appropriate responses in line with the set objectives.

3.9 Ethical consideration

Note was taken of certain cultural practices in the study area that do not allow women to give accusing information about their husbands, subjects do not accuse chiefs and children do not prompt, correct or challenge adults. In such instances anonymity was guaranteed for such respondents. Where anonymity could not be assured, confidentiality was guaranteed.

Permission was sought from the Ghana Health Service and traditional leaders. Due consent was obtained from all respondents and interviewees, including those whose photographs were taken.

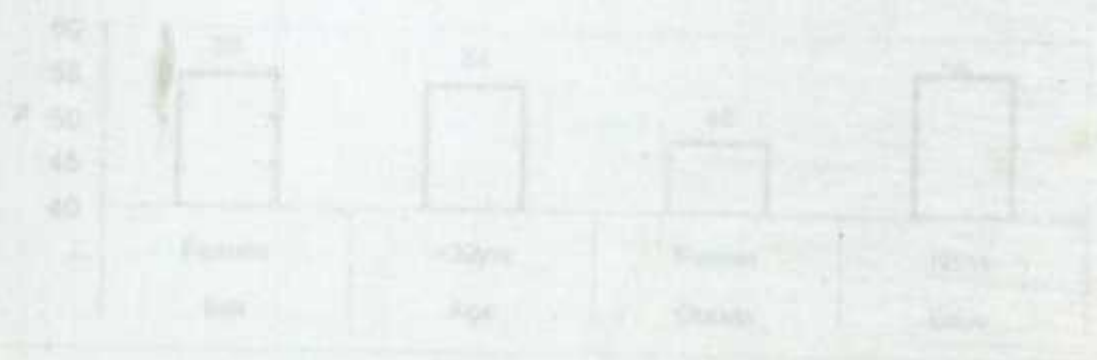
3.10 Assumptions

It was assumed that;

1. Respondents have adequate knowledge of the guinea worm disease and its mode of transmission.
2. That the people's perception of the diseases is affecting the rate of compliance with the educational messages.
3. That field assistants conducted the interviews according to the operational definition that was given them.

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Fig 4.1: Summary of background of respondents



Source: Field Data 2005

CHAPTER FOUR

4.0 RESULTS

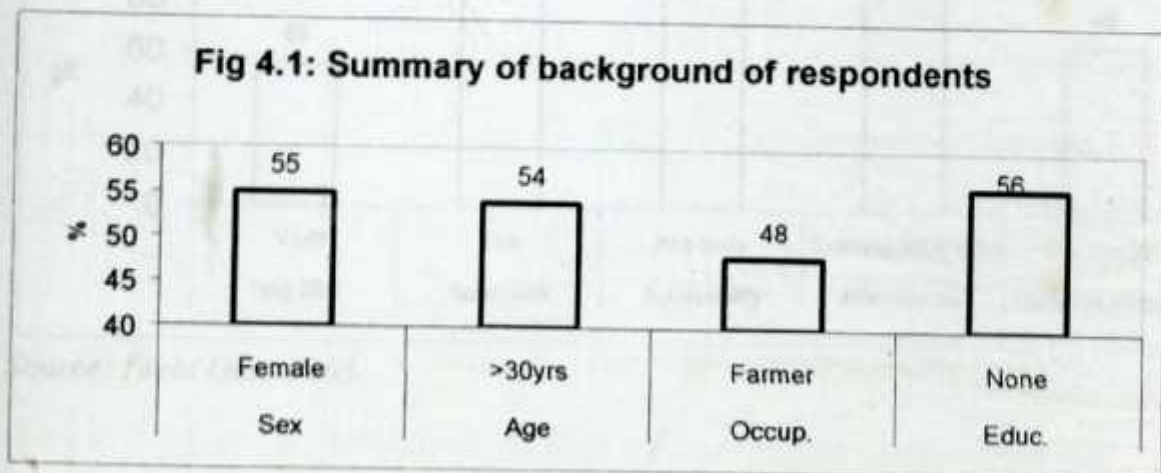
An integrated approach to qualitative and quantitative methods was used to collect data through interview guide, interviewer questionnaire, observation checklist and statistical data. The data was processed and the results presented in tables and graphs as follows.

4.1 BACKGROUND OF RESPONDENTS

In all 136 respondents were interviewed, 78 males and 58 females forming 55% and 45% respectively. Within the age groups, 38% were between 30 – 40 years, 32% fell within 20 – 30 years, while 40 – 50 years and those under 20 years constituted 14%. Those above 60 years were 2% of the respondents. Three (3) of the respondents forming 27% had basic education or the MSLC, 10% had secondary education, while the majority (56%) of the respondents had no education at all. The main occupation of the respondents was farming, comprising 48% while the rest were housewives, artisans,

traders, civil servants students and pensioners.

Figure 4.1: Details of the background information of respondents

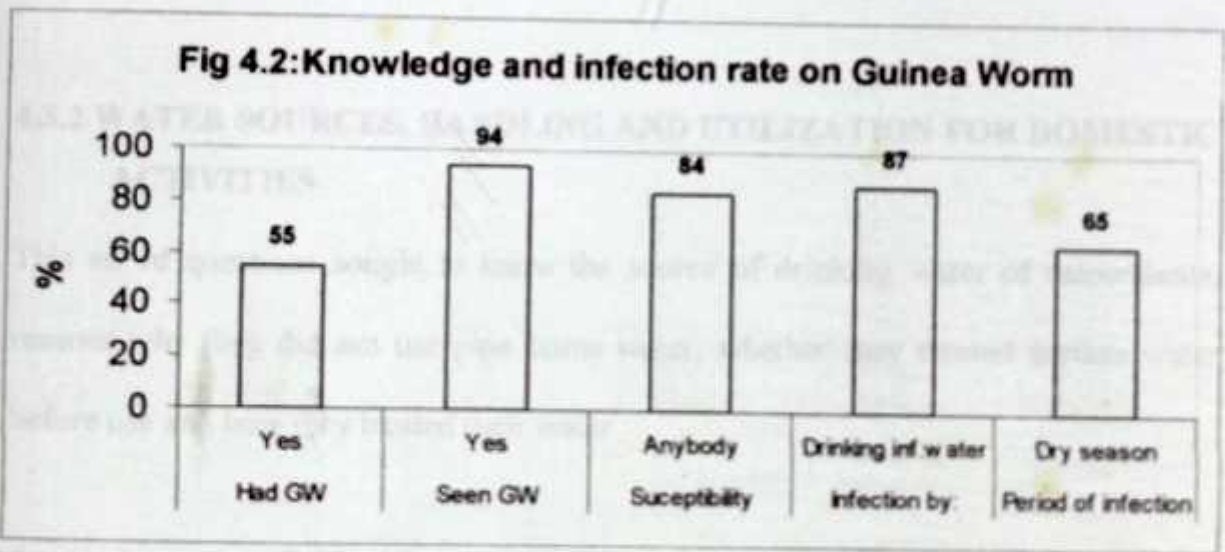


Source: Field Data 2005

4.2 KNOWLEDGE OF GUINEA WORM

To assess the community level of knowledge about Guinea Worm Disease, various questions were put to the respondents and results are as shown in table 4.2. On whether they had ever had Guinea Worm Disease, 55% of them said yes. Follow up questions sought to determine whether respondents had ever seen the Guinea worm lesion, majority 94% said yes. Most respondents (84%) were of the opinion that anybody could get the worm. Majority (87%) knew that the disease is got from drinking infested water, 9% said it is got from bathing infested water while 4% said it is got from curses, indicating, sorcery, witchcraft and superstitions. Sixty-five percent (65%) knew that cases show up mostly during the dry season, 28% said it could come at anytime of the year while 7% mentioned rainy season as the peak period. The Regional Program Coordinator said the cases have a peak period but because the disease has an incubation period of between 9 and 4 months, individual lesions appear depending on the time the victim ingested the Cyclops.

Figure 4.2: Knowledge about Guinea Worm Disease

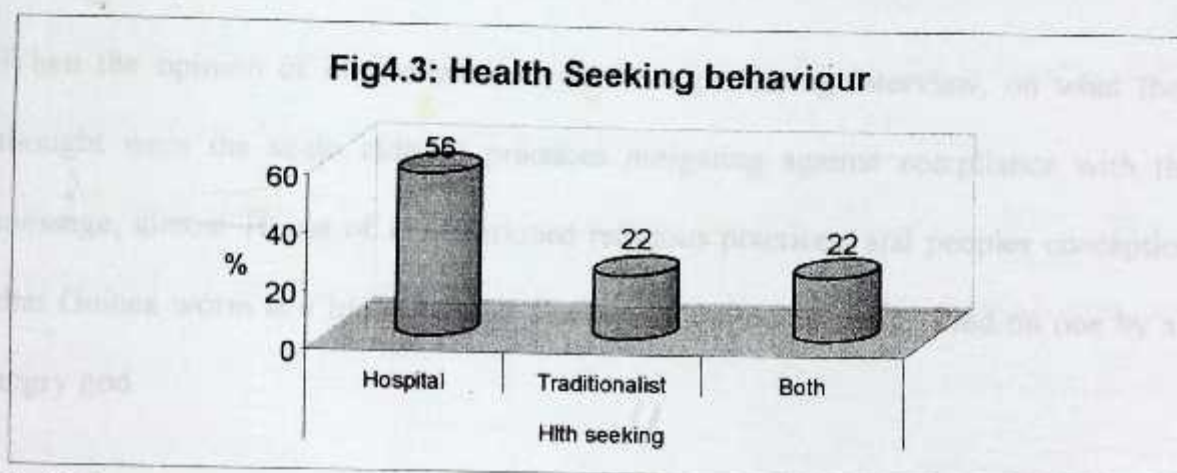


Source: Field Data 2005

4.3 SOCIO-CULTURAL PRACTICES

4.3.1 Health seeking behaviour

In relation to the health care seeking behaviour of the respondents, 56% intimated that they source treatment from the hospital when anyone gets Guinea worm while 22% said they consult traditional healers. Another 22% also said they consult herbalist to get to know the cause of their infection before they extract it, and then go to the hospital to get the ulcer treated, but as one of the key informants put it, they do not want their limbs bandaged with white gauze because it depicts the final dressing of a corpse before it is buried, that is why they go to the health centre only as a last resort.



Field data, 2005

4.3.2 WATER SOURCES, HANDLING AND UTILIZATION FOR DOMESTIC ACTIVITIES

This set of questions sought to know the source of drinking water of respondents, reasons why they did not use pipe borne water, whether they treated surface water before use and how they treated their water.

As can be seen in Table 4.3, only 4% said their source of drinking water was from pipe or borehole, 8% said they drunk from wells, those who drunk from open source – ponds and dams were 84 out of the 136 respondents, constituting 61%.

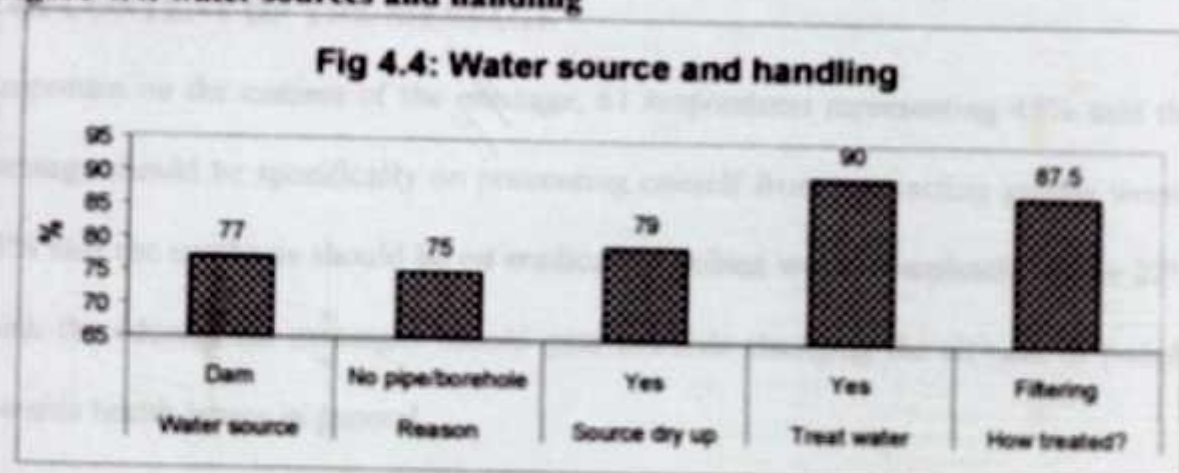
The majority (85%) said they had no pipe borne or borehole water, 19% said they could not pay for the levy on boreholes, 10% said they are used to dams and the source is readily available. Other forms of responses constituting 22% gave answers such as dam water is palatable, the borehole water is salty and does not quench thirst and soap does not lather in it.

4.4. APPROACH TO THE GUINEA WORM CAMPAIGN

Specific questions put to the 84 respondents whose source of water is open, whether they treated their water before using for domestic purposes, 90.4% answered in the affirmative, 9.6% said they did not treat at all.

When the opinion of key informants were sought during interview, on what they thought were the socio cultural practices mitigating against compliance with the message, almost 10 out of 11 mentioned religious practices, and peoples conception that Guinea worm is a blood related diseases which could be inflicted on one by an angry god.

Figure 4.4: water sources and handling



Field Data 2005

4.4 ASSESSING THE APPROPRIATENESS OF THE COMMUNICATION MODELS USED

In table 4.4, three variables were used to determine the appropriateness of the communication models.

4.4.1 APPROACH TO THE GUINEA WORM CAMPAIGN

Fifty-six (56) respondents representing 41% were of the opinion that community durbars was the best medium, 36% said the mass media – radio, television video shows- should be used to send educational messages, 25 respondents (81%) are of the view that the village Health Volunteer is the right channel to disseminate the messages, but 6% subscribe to Guinea Worm Eradication Programme Officials visiting households and communities to inform the people.

This picture in figure 6.5 is a case in point of a Health Education session in Tolon Primary School, where the researcher observed that the five children that are highlighted by the arrows have lost concentration and were probably not paying attention to the message

4.4.2 CONTENT OF THE MESSAGE

Responses on the content of the message, 61 respondents representing 45% said the message should be specifically on preventing oneself from contracting guinea worm, 33% said the emphasis should be on eradicating guinea worm completely, while 22% think the educational messages should gear towards changing the attitude of people towards health issues in general.

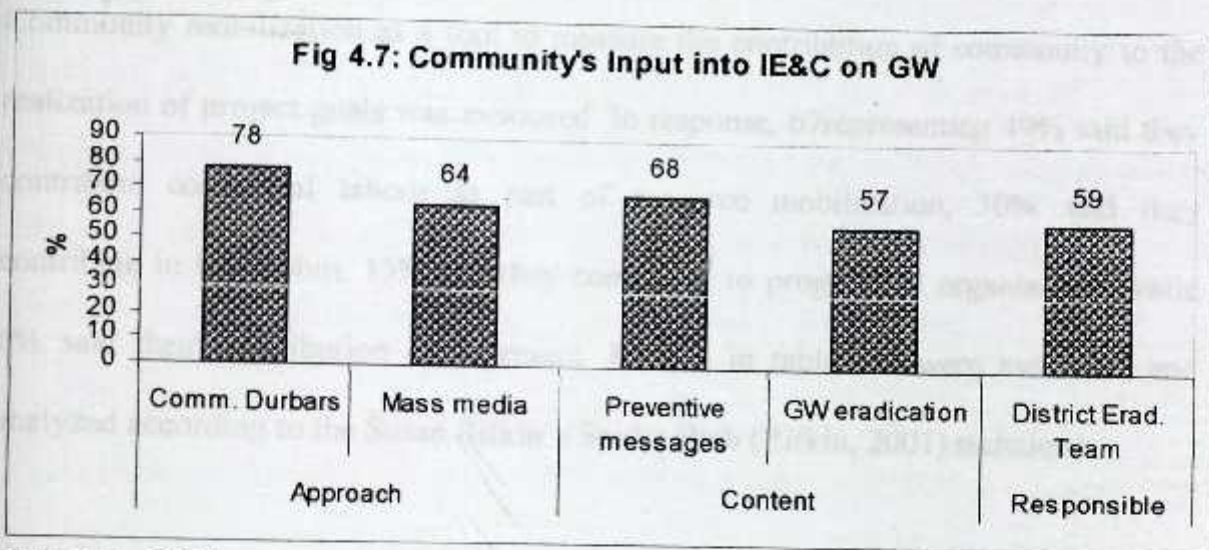
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4.4.3 SOURCE OF THE MESSAGE

The study found out from respondents who in their opinion are the right persons or group of persons to convey educational messages to the people. In response, 80 people representing 59% are of the opinion that the District Health Eradication Team should disseminate information on guinea worm. Twenty-eight percent (28%) however are of the view that the village Health Volunteer should be the source of the message, while 11% said they prefer the message coming from fellow community members, while 2% think opinion leaders in the community should be the source of the message.

Figure 4.5: Approaches, Content and Audience of the Message



Field Data 2005

4.5 Relationship between Community Participation and Health Education Strategies

Table 4.5 presents quality and form of community participation in the eradication process, 56% of the respondents intimated that village health volunteers should be community leaders in GW activities 8% said assembly men should be the leaders 25%

said the Health Workers, while 11% representing 15 respondents were of the opinion that traditional chiefs should be the leaders of the campaign activities.

From the same table, 64 representing 47% said those who would lead the community on GW eradication should be nominated, 37% said they should be appointed while 16% said any community member who thought he/she had the time, competencies and support of the people should impose his or herself and assume the leadership role.

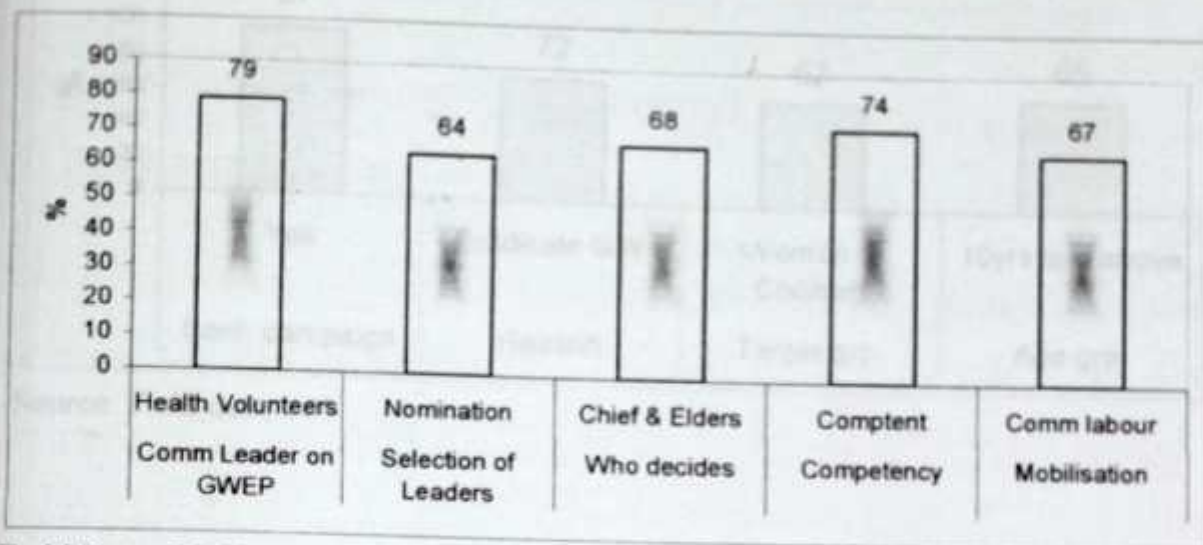
A follow up question as to who should choose the leader for the community, 32% subscribed to the community members, 2% think the community health worker should choose the leader while 15% support that the assembly man should choose the leader.

On whether the current leadership of the community on GW are competent enough 54% agreed that the leaders are competent while 19% said they are not, 5% rated them as fairly competent, but 2 people representing 1% said they could not rate them.

Community mobilization as a tool to measure the contribution of community to the realization of project goals was measured. In response, 67 representing 49% said they contribute communal labour as part of resource mobilization, 30% said they contribute in leadership, 15% say they contribute to programme organization while 6% said their contribution management. Results in table 4.5 were measured and analyzed according to the Susan Rifkin's Spider Web (Rifkin, 2001) technique.

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Figure 4.6 Community Participation



Field Data, 2005

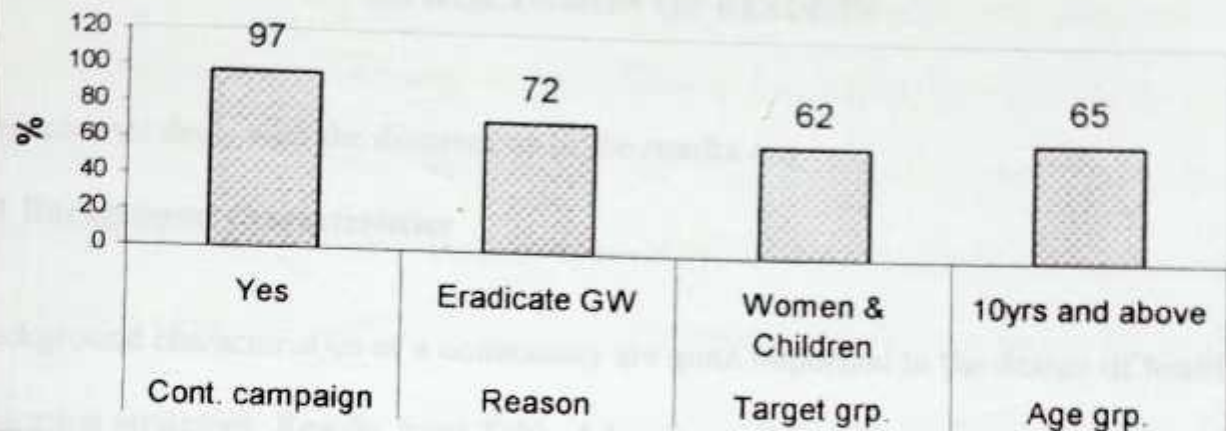
4.6 Respondent Perspective of the GWEP campaign

One other variable that was measured was the respondents' perspective of the GWEP campaign, where 97% of 136 respondents agreed that the campaign against GW should continue while 3% said it should be discontinued, assigning reason to their responses, 64 out of the 136 said with the campaign, GW would be eradicated, while 23 people said the continuous campaign would serve as a reminder.

The remaining 16 people said the people's wrong perceptions about the disease could change. Responses from 6 out of the 10 key informants were that the campaign should continue, and assigned the reason that the global prevalence of the disease has been reduced to as low as one percent mainly through eradication campaigns.

Sixty-two (62.2%) of the despondence said the campaign should target at women and children, further more the age group of people between 10 years and above should form the main target audience.

Fig 4.7: Perspective of GWEP campaign



Source: Field data, 200

CHAPTER FIVE

5.0 DISCUSSION OF RESULTS

This chapter deals with the discussions of the results.

5.1 Background characteristics

Background characteristics of a community are quite important in the design of health education strategies. Results from Table 4.1 indicate that only 4% were employed in the public sector with 65% being farmers, thus confirming the DMHT report 2003 that 42% of the population has low income.

The population is mainly illiterate as revealed in Table 4.1, 76% of the population have not had any form of formal education. This is usually associated with high incidence of illness and poor health due to poor living conditions and environment. As Lucas and Gilles (1990) explained, there is an association between poverty ignorance and disease, dubbed, the 'vicious cycle'.

The finding confirms the assessment of The Carter Centre's Technical Assistant that because of poverty, communities could not contribute the 10% counterpart funding that partners demanded to meet cost of providing safe water, they said because of the low literacy level, it makes it difficult for the village volunteer to explain some terms in the educational material, and also makes it difficult for clients to interpret the comic strips on the guinea worm training manual, prepared by (WHO, 1999).

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5.2 KNOWLEDGE OF MODE OF TRANSMISSION OF G.W

The study results demonstrated that over 77% of the respondents had heard, seen or even experienced guinea worm, they also have an idea about the mode of infection, period of high infections and those who are most susceptible to the disease. This finding is derived from the calculated mean of the variables as the responses showed, previous studies and existing literature confirms this. A possible explanation to the high level of awareness about GW could be the effect of intensive education programmes that the Ghana Health Service and Guinea Worm Eradication Programme have undertaken. The results also revealed that of those who had heard of the Guinea worm, 55% heard of it from the village health volunteers, 33% mentioned the radio while 12% said they heard the message through friends and community members, on the number of times that they heard the message, 64% mention weekly, 13 present mentioned daily while 18% said they heard a message on Guinea worm at least every month.

However because the message could be heard always but not understood, the Animation Skills book for Peace Corps Volunteers put it "your message may be received but not understood, (it may be in the wrong language or too technical, you may be speaking too fast or mumbling or not connecting with our audience.

In consistence with existing literature, this study also confirmed that the village volunteer is the focal person on Guinea worm education in the community, followed by mass media (radio). Friends and members of community as sources of information, which is shown in the results, is an indication that GWD is been discussed among people in the community.

As pointed out in chapter four, the high level of knowledge of the mode of infection as indicated by the results, should have been enough to change people's behaviour and attitude, notwithstanding, the traditional concept that links knowledge and practice is not a fast rule. Again the Animation Training Manual for Peace Corps put it that "The message may be received and understood, but it may come into conflict with traditional attitudes and beliefs" Therefore though the villagers may receive and understand the message but they still have their belief that Guinea worm comes from evil spirits to punish families, or they may prefer the taste of water from a traditional source.

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5.2.1 Susceptibility

From the responses collated, a majority 84% are aware that anybody is susceptible to guinea worm disease and as the Assembly man for Voggu put it, Guinea worm does not respect persons, whether you are the chief, the Assembly man, or the teacher, so long as you do not filter water that is from an open source you can get Guinea worm. The District Supervisor of the Red Cross Volunteer service narrated the ordeal of a village old lady who was banished from her village (Tali), for cutting the leaf of a baobab tree for soup; she was warned that the baobab tree that she was harvesting was what was causing Guinea worm in the village. She added "the people do not still believe that Guinea is not from the blood but from water that is infested (personal communication, 23/06/05).

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5.2.2 Modes of infection

The study also sought to find out whether people were aware of the mode of infection and in response to those set of questions, 87% were much aware that one becomes infested if he drunk water that contains the Cyclops that causes Guinea worm and to

confirm that (IRIN, West Africa 2005) writes that "simple procedure such as straining water through nylon filters before drinking can strain out the larvae" (IRIN news, 2005).

At a group interview with chiefs and elders and a section of the youth in Singa one of the overseas communities in the Dalun Sub district, the linguist queried, "you keep telling us to drink good water from under the ground but where is the good water...Look at our borehole, it was drilled last year and as we sit now, we are still waiting for the person responsible to fit a hand pump to it for us to start using, may be we would not all be wasting this time here talking about something we know the solution".

From the responses of the community members and the observation of communities that the researcher made, the people are aware that Guinea worm can simply be eradicated by providing endemic communities with potable drinking water but unfortunately the 75 endemic communities in TKD with 1,260 cases as at 2004 in 17,391 households should have had ideally 339 boreholes to serve their water needs adequately, but as at July 2004 there were only eleven (11) functional ones and 14 nonfunctional (GGWEP water provision data base 2004).

Amofa's statement that in over 40% of villages where Guinea worm is still endemic, the only source of drinking water is shared with animals makes it basically a breeding ground for the disease (IRIN news, 2004). He however added that Government effort at sinking boreholes in those areas have failed to bring clean water supplies to those villages, with the reason that attempts in certain communities to get the water table have proved futile.

Amofa advised that they should concentrate on other ways of getting clean water instead of still trying to drill boreholes. However, Former President Carter said in Jantong in East Gonja District "Guinea worm has been eradicated in some communities without digging a single well. (Africa Today 2004) Perhaps through education on the use of filter cloth to strain the Cyclops can be a better and less expensive alternative.

Nevertheless, there is a window of hope, as the Ghana Minister of Health, Major (rtd) Courage Quasigah said at a re-launch and sensitization durbar in Diare, the current most endemic community, on the 2nd of September 2005, that the Ministry of Health is collaborating with the Ministry of Food and Agriculture, who have acquired a new and less expensive technology of using a windmill to pump water for irrigation purposes would be extend to the community for domestic use.

5.3 Socio Cultural practices responsible for the non compliance

The main variables that were used to assess the factors responsible for non compliance leading to high infection rate were; the health seeking behaviour and the water handling and utilization for domestic purposes.

5.3.1 Health seeking behavior

Results showed that 56% of respondents say they seek treatment from the formal health institutions, 22% said they will consult traditionalist, herbalist or spiritualist while the remaining 22% said they sourced both orthodox and traditional care.

Twumasi (1975) in his study on Medical Systems in Ghana, said sick people access health care and treatment on the advice of the clan head, who also uses folk knowledge of the illness concern, which skill was passed to him as part of a cultural heritage from their generation. With the number of respondents (56%) who said they consult orthodox medicine, presurposes that they have learnt that the disease is not in the blood but water borne disease.

On the contrary, 44% of respondents who say they source treatment from herbalist, it tend to suggest that the educational messages are not going down well with almost half of the study population that is why they do not have confidence in the village volunteers diagnosis and treatment, despite the fact that it is at no cost.

During a key informant interview the Area coordinator for Dalun said though the treatment for all Guinea worm cases is free, most indigenes do not patronize it for fear that an injection will be prescribed for him, or his ulcer will be bandaged with white gauze. The DDHS said they associate white gauze with calico materials which is used in wrapping and burying corpses, she also said they do not take injection because they believe they have fortified themselves against iron of any sort piecing their body.

Another key informant, the DDHS also confirmed this and said they have factored GW education into their daily OPD Health education talks, they have also introduced gauze bandage of colors either white.

From the community observation, the researcher gathered that the case containment shed at Gbrurmani is not operational, when he enquired, the District coordinator said

the people feel it is an abomination to be kept in quarantine since that is associated with certain abominable diseases like cirrhosis. They will never stay there no matter what incentive or reward you place on it.

The National Coordinator of the Guinea Worm Eradication Programme remarked that *"the people do not seek health; they look for it after they have lost it"*. He said it is so because of their socio cultural perception of health and wellness. He concluded that Public Health should be given a bigger boost in the health delivery system in Ghana. (Personal communication 22/10/05).

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5.3.2 Water Handing and utilization

Results from the study showed that 95% out of the 136 respondent had no save drinking safe water, and cited reasons of non availability of it. The 84 respondents who said they had no piped born water added that their only source, (the dams) dry up in the dry season until the rains set in again in July.

Statistics from the (GWEP 2003) show that potable water supply to the 237 communities is less than 20% of the expected target. This falls far short of the standard set by the community water and sanitation agency that, ideally, between 2000 and 3000 people should share one borehole.

Because of the close link between safe drinking water and guinea worm eradication, the Carter Centre decided in 1988 to improve water safety in developing nations as part of a broader effort of prevention (Paulson 2001).

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From the community observation, a village health volunteer for Tingoli (the 2nd most endemic community in TKD) said their dams dry up. He blamed it on the contractor, that he did not excavate it wide and deep enough according to the specification given him. He added, *"we travel to Gbulahigu, a neighboring village over 8 kilometers away for our water, the ordeal we go through before getting a 20 liter bucket of water to the house is so traumatic that going the extra mile of filtering is a waste of the time and energy that has already been depleted"*.

In support of the above a zonal coordinator with the Carter Centre disclosed that in Diare, it can take up to six hours in a queue to fetch a 20 liter bucket of water in one of the two boreholes that have been over 30 years in operation and serves over 8000 people in Diare and its adjoining villages (Akintunde, 2004).

A youth leader under anonymity said that the assistance is given according to political loyalty. But the then Minister of Works and Housing confessed that *"we admit we already have lack of capacity in drilling boreholes", our emphasis is on shifting to filtering the water before use*" (Akintunde, Africa Today 2004)

5.4 Community's participation in Education on Guinea worm

The community members undertake projects carried out by people under their own control in order to improve their collective condition. This community action may involve campaigning and negotiating with or challenging authorities and those with power (Ewles and Simnett, *ibid*)

There is evidence that community participation became an essential element of health development programme sponsored by international donors. Multilateral agencies have accepted the principal and initiated activities for promoting community

participation (World Bank, 1994), (OECD, 1994). Community participation was also one of the principles of PHC in the global strategy of health for all by WHO (WHO, 1978). A case to note here is that, in the overseas community Singa, in the TKD which has the second highest number of cases, the zonal coordinator of the Carter Center initiated a community action to collect stones to form a step way into the water so that people will not have to step inside the water to fetch. The exercise failed as only a few people responded. When he complained about the lack of input by the community members, in executing community projects, the youth leader (Zaachi) told him " *you have not identified the right people who will take your message to the people...those who go to fetch water are the youth and women, who apparently do not have control of themselves, so if you ask my wife or my son or daughter to go and carry stones, when I have asked him or her to go to the farm, you can be sure that your programme will fail, and if you sanction, him or her, he will not comply because he has a backing*"

The Zaachi assured that, today that some of us have participated in your meeting for this type of deliberation towards a worthy course, you can be sure that we will take it up, that together we will fight guinea worm. (Personal communication, June 10, 2005). One school of thought holds that communities can be mobilized to participate in the development process by merely increasing the knowledge and awareness about development projects, lack of which is perceived as the main reason behind the non-participation. (Oakley 1989)

Communities have a role to play in project needs identification and implementation in the wake of donor requirement of a percentage as counterpart funding, which is aimed at getting the community members committed to the sustenance of the project and ensure ownership (Bracht and Tsouros, 1990). But considering a population that has

up to 42% of its people below the poverty line, being asked to contribute up to 5% of the sixty million cedis, being cost of drilling one borehole may not be a fair deal. In such circumstances the community is handicapped in the level of input towards programmes activities.

6.1 CONCLUSIONS

6.1.1 Background characteristics

From the results of this study it can be concluded that there is high literacy rate in

6.0 CONCLUSIONS AND RECOMMENDATIONS

This chapter is the concluding part of this work and includes conclusions and recommendations.

6.1 CONCLUSIONS

6.1.1 Background characteristics

From the results of this study it can be concluded that there is high illiteracy rate in the Tolon-Kumbungu district.

6.1.2 Level of knowledge of guinea worm infection

The level of knowledge of the disease and its mode of transmission is high (90%)

6.1.3 Socio cultural practices

The study limited the scope of the socio cultural practices of the people to their health seeking behaviour and water handling and usage.

The result revealed that there is general lack of good drinking water in the part of the district. It was also found out that the people did not perceive the Guinea worm disease as one that could cause anything apart from pain for a short while. This is

evident in the results that revealed that nearly half (44%) of the respondents did not report their Guinea Worm cases to health authorities. However more than half (60%) filter their water.

6.1.4 Appropriateness of the communication models

More than half of the people (59%) agree that the Guinea Worm Eradication Team should disseminate the message centered on how to prevent Guinea worm. Most of the respondents subscribed to the village volunteers been the leader of the GWE campaign.

6.1.5 Community Participation and Health education in Guinea Worm Prevention

The communities (67%) are willing to contribute communal labour, leadership and management to the GWE campaign. The village volunteer should lead the GW eradication campaign and less than half (47%) wants them selected through nomination by the community chief and elders.

It has also been observed that the GWEP operates a Top-down approach, rather than the Bottom-top which is the basis for community participation.

6.1.6 Exposure to the messages from the perspective of the eradication campaign

Majority (97%) support the idea that the campaign should continue but varying methods of delivery of the message should be employed.

6.2 RECOMMENDATIONS

Based on the findings and conclusions of this study the following recommendations were made to the GWEP and other actors with the view to strengthening the Health Education intervention.

THE GUINEA WORM ERADICATION PROGRAMME:

1. The concept of disease causation (Host- Environment -Vector) should be demystified by providing evidence-based education to prove that Guinea worm is water borne disease. This can be done by training volunteers to use magnifying glass to show guinea worm Cyclops in water.
2. The channel of communication for conveying complex messages like attitudinal change, beliefs and practices should be made through small groups, one-on-one interaction, counseling and teaching.
3. The 'Tokenistic' system of community participation, especially in recruitment of Community Based Health Volunteers should be de-emphasized, and programme planning, management evaluation to be led by community gate keepers, opinion leaders, chiefs and political representatives with GWEP programme official playing oversight supervisory role. This can be read in section 6.5
4. The GWE program should built platforms as step ways into surface water sources in all communities to prevent the continuous re infection.
5. The comic strips on the flip charts and other pictorial messages of the GWEP should be retested and if found ambiguous, it will be redesigned through community participatory initiative, since, as V. Marsh et al put it, some messages are difficult if not impossible to convey through pictures, for example that people are happy to sleep in mosquito nets, while most communication

messages do not conform with the Gobbledygook theory of poster writing.

TOLON/KUMBUNGU DISTRICT ASSEMBLY

6. District Assemblies should play a more proactive role in providing safe drinking water to endemic communities unconditionally. In situations where donor agencies demand the usual counter part funding the District Assembly should provide that on behalf of the needy community.
 7. The programme should explore ways of strengthening the Rumor Registry system so that school children can be trained to do case searches.
 8. The District assembly should institute by- laws that will advocate for the abolition of those socio cultural practices that are detrimental to the eradication effort. Education on these bye-laws should be propagated at community durbars, where the chiefs and elders will announce the new innovation using the Theory of Reason Action Model by Fishbein and Azjen(1980)
- GHANA HEALTH SERVICE:**
9. The competencies of the village-based volunteers should be developed well enough for effective health education communication. The attributes of an effective communicator can be read in section 2.4
 10. The communities and their members should be educated on the meaning and ideals of volunteerism as a self sacrifice of ones time and expertise in service to his community for no expected material gain. This should be re echoed during the renewal of their contracts with the Ghana Health Service at their monthly review meetings.
 11. Should use 'satisfied acceptors' for education as sources of the message

COLLABORATORS (CWSA, UNICEF, WVI, DAs)

12. Drillers of boreholes should engage the services of competent consultant geophysicist to determine with accuracy the water table, so that the waste resulting from unsuccessful drilling will be minimized such that much value will be placed on the scarce resources of both Government and donor agencies.
13. The Collaborating agencies should mobilize resources and initiate a project on pilot basis which the researcher has designed to be called –Community Water Handling and Usage project (COWAHU) Will be a project that will encourage house holds, families clans and even the entire community to acquire water storage facilities like poly tanks and sizeable plastic containers with a tap fitted to it and a large enough size cloth filter fitted to the mouth, all users are persuaded or obliged to pour all waters they have collected in to the container through the filter, where one can only draw water for use through the tap in to the compound with a different container that has not been used to the river side. Periodically, may be fortnightly or monthly, the mutual users of the facility and the trained village volunteer together with the Guinea Worm Eradication Programme officials will inspect the filter, clean them, or replace them, and also clean inside the tank and disinfect it of other germs that could cause other health problems.

With this project, a strong community Involvement spirit and culture will be built among community members, and it is then that the community can claim genuine ownership of the project.

The basis for this recommendation is the fact that there is already in existence a communal assistance policy where every member of the community is obliged, especially the women to send basins of water to any member who is building a

new house, performing a funeral or out doring a new born child within the community

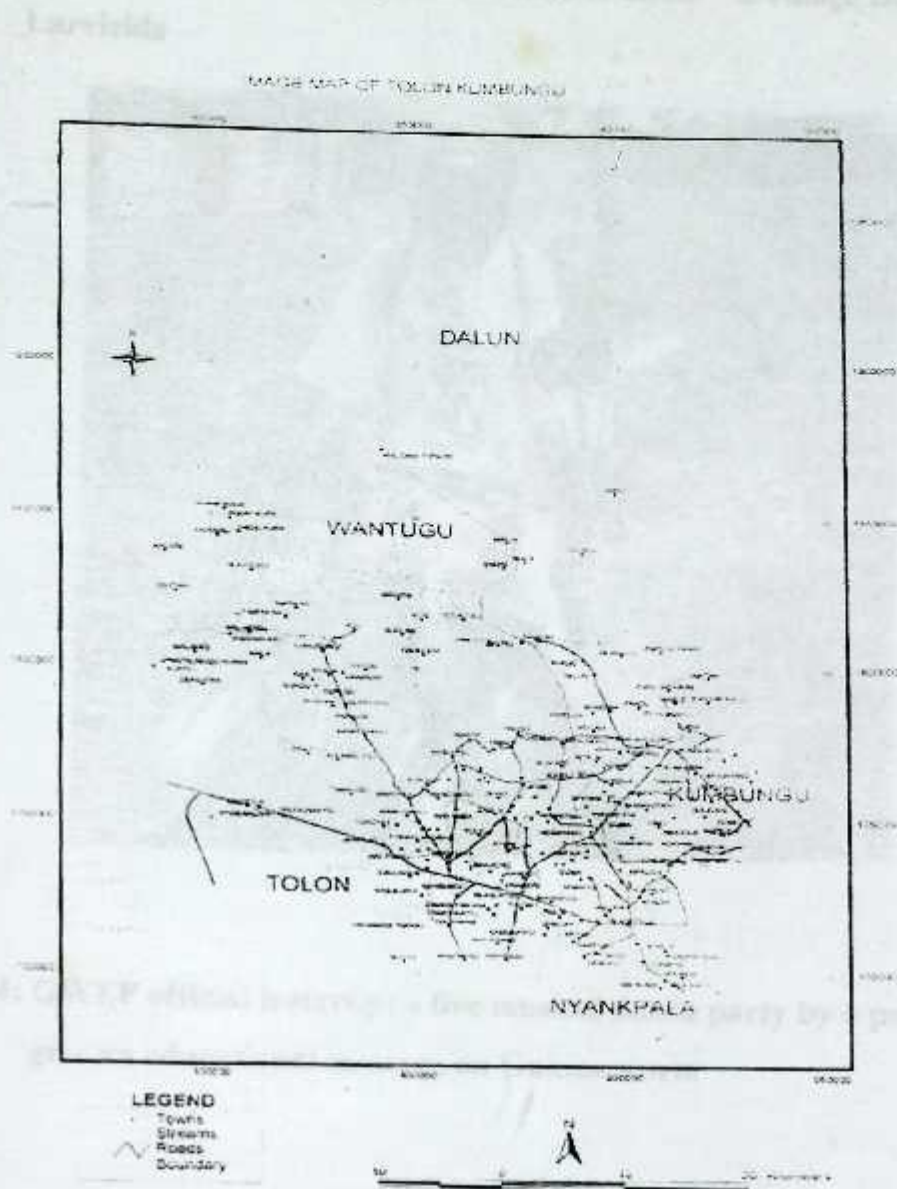
This could serve as a temporary cost effective alternative to the capital-intensive mechanization of boreholes projects that collaborators are embarking upon.

Figure 6.1: Map of Ghana highlighting guinea worm endemic Districts



Source: GHS/GWEP 2004

Figure. 6. 2: Map of the study area-Tolon



Source : Tolon Kumbungu District Assembly

Fig. 6.3: GWEP Area Coordinator on the field to abate⁽²⁾ a village Dam with Larvicide



Figure.6.4: GWEP official interrupt a live musical dance party by a pop star to give an educational message on Guinea worm

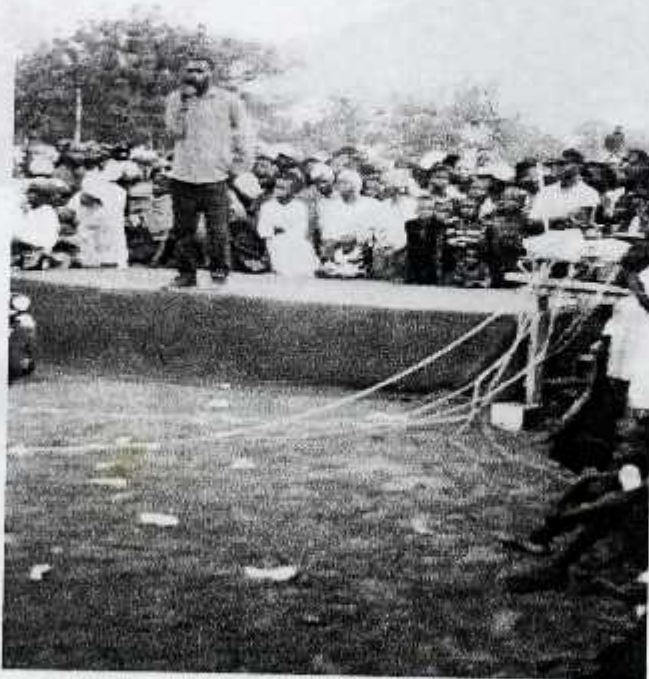
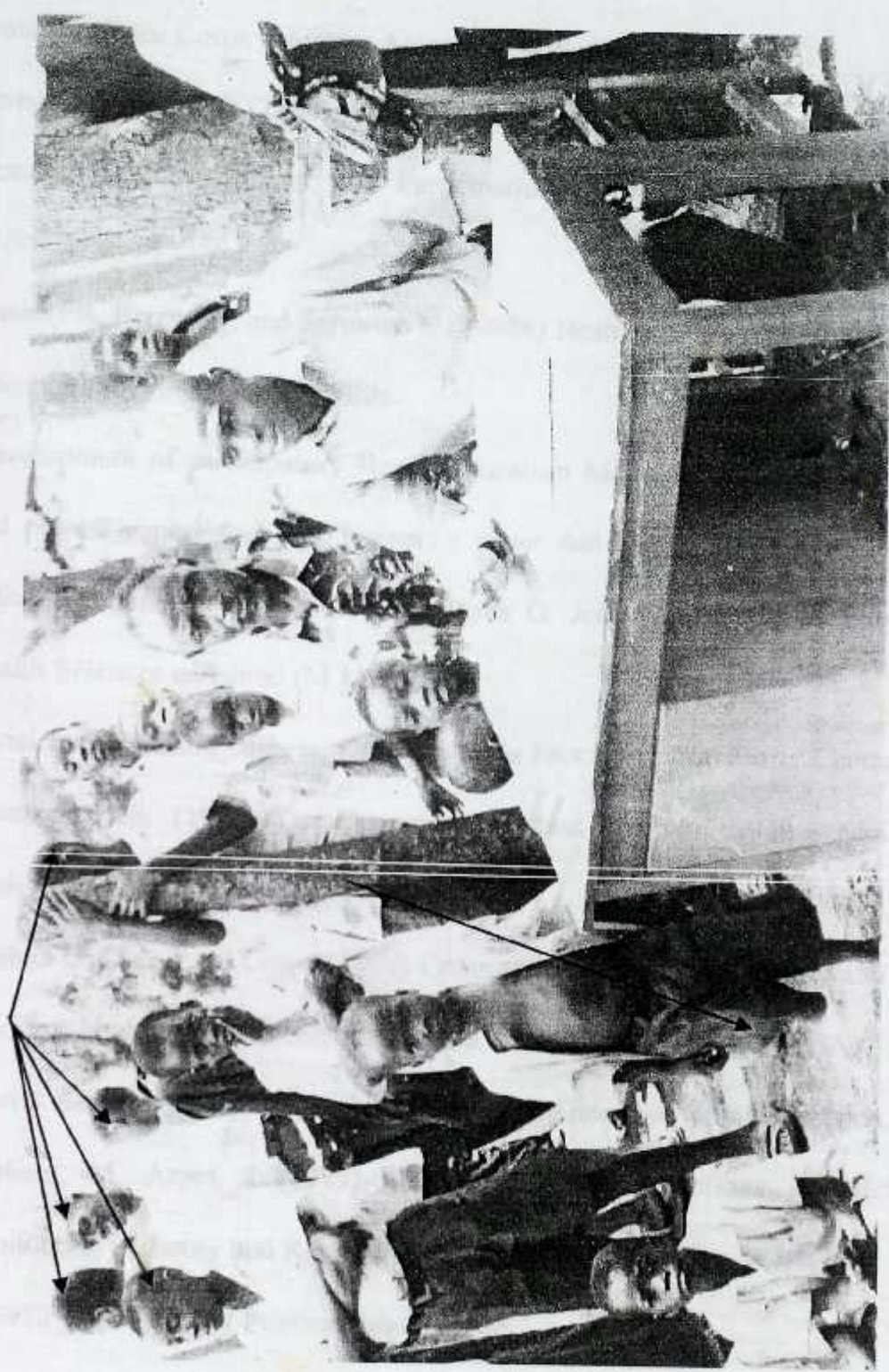


Fig.6.5: Officials of the GWEP conducting a school quiz program on Guinea Worm



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QUESTIONNAIRE FOR KEY INFORMANTS OF THE GUINEA WORM ERADICATION PROGRAMME ON THE STUDY OF THE IMPACT OF THE HEALTH EDUCATIONAL STRATEGIES FOR THE ERADICATION OF THE GUINEA WORM DISEASE.

The researcher is a student of the Department of community Health, School of Medical Sciences of KNUST, who is conducting a study as part of the requirement for the award of an MSc degree in Health education and promotion.

Your effort to provide the necessary information to the questions below will be highly appreciated. All information provided will be treated as strictly confidential as possible and will be used for academic purposes only.

Thank you for your anticipated cooperation.

NAME: (optional) -----

Sex : male [] Female []

1. Level of education Title -----

(a) Post Graduate []

(b) Graduate []

(c) Professional nurse []

(d) Allied health professional []

(e) Others (specify) -----

2. Which organization do you work for?

(a) Ghana Health Services []

(b) Carter center []

(c) Peace Corp/ JICA Volunteer []

(d) Red Cross Volunteer []

(e) Water provision agency []

PROGRAMME MANAGEMENT

1. What is the general mission statement of your organization?

3. What are the specific objectives of the GWEP with regards to its educational strategies?

4. What specific educational methodology does your organization use?

Probe for the: Content of the message, the channels, the medium of dissemination, target Audience or destination and the source of the message.

i) Content of message; -----

b) Channel of dissemination; -----

c) Target audience; -----

d) Source of message; -----

5. What specific educational tools do you use? List them.

(a) -----

(b) -----

(c) -----

(d) -----

(e) -----

7. Give reasons and guidelines that explain your choice of the use of the following;

(a) Method -----

(b) Model of communication; -----

(c) Tools: -----

(d) Content: -----

(e) Channels: -----

(f) Destination/ Audience: -----

INPUT ASSESSMENT

APPENDIX 2

1. Mention other agencies that are also working towards guinea worm eradication in Tolon-Kumbungu district.

A. B. C. D.

3. Are there any other sectors or agencies collaborating with your organization in the eradication of the disease? List them; -----

4. How many volunteer workers are there under your organization? -----

5. How do you motivate the volunteers? -----

6. What are the main sources of funding available to your organization?

7. What is your overall annual budget for the programme?

8. What percentage of your budget is met by your funding agent/ices?

9. During your community participation process, do your demand counterpart funding from communities as part of their involvement in programme designing, implementation and evaluation? Give details -----

PROCESS ASSESSMENT

1. As stated above, has each activity specified in the action plan been implemented as intended? NO, [] YES []

(Probe each one of the action plans mentioned)

i) Health Education; -----

ii) Supply of cloth/pipe filters; -----

(iii) Treating surface water source with Abate; -----

iv) Treating and containing cases; -----

How do you obtain feedback on the programme impact from the

community?

APPENDIX 2

**QUESTIONNAIRE FOR OFFICIALS OF GWEP PROGRAMME
FOR THE ACTIVITIES NOT WELL IMPLEMENTED AS PLANNED, WHAT
ARE YOUR REASONS FOR THE POOR IMPLEMENTATION?**

RATE THESE

3. (TICK IN THE BOX THAT YOU DEEM APPROPRIATE)

	Very high	High	Low	Very low
(3.a) Resource Constraint	[]	[]	[]	[]
(3.b) Decline in interest of the community members	[]	[]	[]	[]
(3.c) Decline in Interest in volunteers	[]	[]	[]	[]
(3d) Declined in interest in opinion leaders	[]	[]	[]	[]

4. What action have you taken to remedy the constraints that militate against successful implementation of the programme?

OUTCOME EVALUATION

- How do you evaluate your programme?
 - Formative evaluation []
 - Summative evaluation []
 - Both []
 - Others (specify) []
- How is the evaluation conducted? -----

- How frequently do you conduct evaluation?

- Who conducts evaluation for the organization? -----
How do you obtain feedback on the programmes impact from the communities -----

5. How much has your programme impacted on the reduction of guinea worm cases since 2001? -----

6. Is the reduction in prevalence rates significant enough for you to justify the intervention strategies you are using? -----

7. In your candid opinion give a brief assessment of the Ghana Guinea Worm Eradication Programme's activities in the Tolon-Kumbungu District for the year 2001 to date -----

8. From your experience so far in the use of the GW education intervention techniques would you say the programme is producing the desired change in behavior? -----

APPENDIX 3

INTERVIEW GUIDE FOR COMMUNITY MEMBERS ON THE STUDY OF THE IMPACT OF THE EDUCATIONAL STRATEGIES OF THE GHANA GUINEA WORM ERADICATION PROGRAMME IN THE TOLON KUMBUNGU DISTRICT OF THE NORTHERN REGION

The researcher is a student of the Department of community Health, School of Medical Sciences of KNUST, who is conducting a study as part of the requirement for the award of an MSc degree in Health education and promotion.

Your effort to provide the necessary information to the questions below will be highly appreciated. All information provided will be treated as strictly confidential as possible and will be used for academic purposes only.

Thank you for your anticipated cooperation.

SECTION A: Please tick () in the applicable box unless otherwise indicated

1. Sex: Male Female 2. Age _____
3. Sub district: Tolon Kumbungu Dalun Nyankpala Wantugu
4. Occupation: _____
5. Educational level reached:
Basic school MSLC Secondary school Tertiary
Others (Specify): _____

SECTION B:

1. Have you ever had guinea worm infection? Yes No
2. Have you ever seen a guinea worm lesion Yes No
3. Who can get guinea worm? Male female anybody
Those who have guinea worm in their blood [] others: []
Others (Specify) _____

4. How does one get guinea worm?
- a. Through curses - []
- b. Drinking water that is guinea worm infested []
- c. Bathing/swimming in water infested with guinea worm []
- d. Others - []
- (Specify).....
5. What symptoms and signs are present at the side of the lesions?
- a). Itching [] b). Swelling [] c). Sore [] d). Pain []
- e. Others (Specify).....
6. What time of the year do people often get guinea worm infection?
-
-
7. What type of treatment do you seek when some one has guinea worm infection?
- a. Herbalist/traditional [] b. Hospitals []
- c. Both hospital and herbalist [] e. Others []
- (Specify).....
8. If the answer is A, why do people consult traditionalist/herbalist when they have infection?
- a. It is cheap b. readily available c. It is more efficacious
- d. It cures faster e. Others
- (Specify).....
9. What traditional/cultural practices influence prevention and management of guinea worm?
-
-

SECTION C

1. What is your source of drinking water in the community?
- a). Pipe borne water [] b). Well [] c). River/Stream []
- d. Pond [] e. (Others Specify).....
2. If your source is not pipe or well water or borehole, what is the reason?
- a. Pipe, boreholes or well are not available []
- b. Pipe boreholes or wells are expensive []
- c. Rivers/Stream/Ponds are readily available and inexpensive []
- e. Others []

(Specify)-----

- 3. Does the source dry up in the dry season? Yes No
- 4. If not (a) and (b) in (1) above how do you treat your water before drinking?
Yes No
- 5. If yes, what method do you use to treat/purify your water before drinking?
a. Boiling [] b. Filtering [] c. Do not treat at all []
(Others Specify).....
- 6. Have you heard of the guinea worm eradication education programme?
Yes No
- 7. If yes through what medium? a. Village volunteer: [] b. Radio programme: []
c. Friends and community members: [] d. Others (Specify)....
- 8. How often do you benefit from the education programme.
.....
- 9. Would you advise that the campaign against guinea worm should continue?
Yes Explain.....
No Explain.....
- 10. Which specific groups should be targeted?
Why? -----
- b. Which age groups should be targeted? -----
(Why).....
- c. In which way could we best approach them?
- d. What should be the content of the message?
.....
- e. Who should package the messages for dissemination?.....
a. the district eradication team
b. The village Health Volunteer
c. The community members
d. The opinion leaders of the community

SECTION D

APPENDIX I

1. Who are the main leaders in your community? Probe for formal and informal leadership.....
2. Who are the leaders with respect to the guinea worm program?.....
3. How are leaders selected in the community.....
4. Who in the community decides and selects leaders of the guinea worm eradication programme.....
6. How competent/good are the leaders? YES SOMETIMES NO
a. Not competent b. fairly competent c. competent d. Very competent
7. How does your community leaders mobilize the members for community participatory activities.....
8. What is your perception about the abate treatment that is used to treat the Surface water sources?.....

(B) EDUCATION: Addressing to the perceived strategies of GWHF

1. Families and individuals talking and discussing the guinea worm disease.....
2. People are understood the basic steps that are used to eradicate guinea worm and preventive measures.....
3. Observe the positions of water use in public gathering like health center, workplaces, markets and restaurants.....
4. Take families, households and individuals through the program.....

APPENDIX 4

AN OBSERVATION CHECKLIST TO RATE THE DOMESTIC WATER USAGE AND USE OF CLOTH AND PIPE FILTERS IN 3 COMMUNITIES IN A STUDY ON THE EDUCATION STRATEGIES OF THE GUINEA WORM ERADICATION PROGRAMME.

(a) Observation; Water handling and treatment for domestic use.

(Tick the appropriate boxes or record observation where necessary)

	YES	SOMETIMES	NO
1. Source of water is 2km and above from community	[]	[]	[]
2. Children who go to fetch water for domestic use are Below 10 years	[]	[]	[]
3. The communities' source of water is dams/ dugouts	[]	[]	[]
4. All the house holds have water filters	[]	[]	[]
5. Only women handle water for domestic use	[]	[]	[]
6. Most women do not filter their water before use	[]	[]	[]
7. Women are not conversant with method of filtering	[]	[]	[]

(b) EDUCATION; Adherence to the preventive strategies of GWEP.

1. Families and individuals talking and discussing the guinea Worm disease.	[]	[]	
2. People can understand the comic strips that are used to illustrate transmission of guinea worm and preventive measures.	[]	[]	[]
3. Observe good practices of water use in public gatherings like funeral houses, weddings, outdoorings and festivals.	[]	[]	[]
4. Take families, households and individuals through the posters,			

APPENDIX 5

INTERVIEW WITH KEY INFORMANTS OF THE GUINEA WORM EDUCATION PROGRAMME:

INTERVIEWER: Principal Investigator (PI)

INTERVIEWEE: Regional Coordinator (RC)

- P.I - What is the guinea worm status of the Tolon Kumbugu District the end of the 2004.
- P.I - What cause will you assign to the high prevalence in that district?
- P.I - What activities are you undertaking to educate members on how to prevent Guinea Worm?
- P.L - Of all the methods, which are the 3 most effective?
- P.L - What are their disadvantages?
- P.L - What are the cultural practices and beliefs that conflict with the educational messages of the GWEP.
- P.L - What are the major sources of drinking water to the community?
- P.L - In terms of community participatory initiative, what does the community
Contribute to the execution of projects in their communities
- P.L - What suggestion will you give to the GWEP officials in designing Educational messages that will be more effective in preventing GW Infection in the district?
- P.L - What is your over all budget for education?
- P.L - How do you evaluate the programme, and would you say it is effecting the desired change in behaviour?

APPENDIX 6

INTERVIEW SESSION WITH KEY INFORMANTS OF GWEP OFFICIALS

INTERVIEWER: Principal Investigator (P I)

INTERVIEWEE: TECHNICAL ASSISTANT (T A) CARTER CENTER

- P.L - What is the status of Guinea worm in the district?
- P.L - What is the community doing to support the fight against G.W?
- P.L - Which educational interventions are most effective?
- P.L - Why do you think it is effective?
- P.L - What cultural practices and beliefs conflict with the educational Messages?
- P.L - How can community participatory initiative be strengthened?
- P.L - What suggestions will you give to the GWEP officials to improve their Message?

APPENDIX 7

INTERVIEW WITH KEY INFORMANTS OF THE GUNIEA WORM ERADICATION PROGRAMME:

INTERVIEWER - Principal Investigator (PL)

INTERVIEWEE: - Peace crop Volunteer (PCV)

- P.L** You are an expatriate, which Organization do you work for, and what is your
Designation?
- P.L** What health Education activities do you undertake?
- P.L** Which of these is most effective in descending order?
- P.L** Why are these effective?
- P.L** What cultural practices conflict with the educational messages?
- P.L** What is the level of community participation in the eradication effort?
- P.L** Who designs the education interventions?
- P.L** In your view, are the Health education messages effecting a change in
attitude?
- P.L** What suggestions will you give to GWEP in designing more effective
Educational messages?

APPENDIX 8

INTERVIEW SESSION WITH KEY INFORMANT OF THE GUINEA WORM ERADICATION PROGRAMME

INTERVIEWER: - PRINCIPAL INVESTIGATOR (PI)

INTERVIEWEE: - RED CROSS SUPERVISOR (RCS)

- P.L** What is the guinea worm status of the TKD district?
- P.L** What are the communities doing towards eradicating the disease?
- P.L** What activities do you undertake to educate members?
- P.L** What are the sources of drinking water for the communities?
- P.L** What educational methods do you employ?
- P.L** Which of these is most effective in terms of capturing a wider audience?
- P.L** Which of these target the most vulnerable target, women and children?
- P.L** Which cultural practices conflict with these educational interventions?
- P.L** How do you measure community participation in your health education?
Activities
- P.L** What suggestions will you give to improve the effectiveness of the
education Methods?