A PSYCHO-CULTURAL APPROACH TO HEALTH EDUCATION

BY

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DECLARATION

This Thesis is my original work and has not been presented for a degree in any other University

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This Thesis is dedicated to my father, Mr. Paul Kariuki Gathitu, who is a great source of inspiration. Finally I would like to thank Mrs. Antonina Wanga and Mrs. Esther Gichuiri of the Kenya Medical Research Institute for patiently typing the thesis.
Health education was officially recognized as an important component of Primary Health Care by the World Health Organization in 1978. Over a long period of time, it has been approached from the point of view of giving people information. The expectation has been that people's health behaviour would change, as a result of receiving the information that they are given by health personnel. However, this expectation has failed to materialize, leading to a re-examination of the whole practice of health education. This study was concerned with the methods used to deliver health education to a rural community in Kiambu, a district of Kenya.

The objectives of the study were:

a) To investigate and identify the traditional methods of education practised by one ethnic group of Kenya.

b) To develop a health education model for that particular ethnic group, based on adaptations from the traditional methods of education.

c) To determine the knowledge, attitudes and practices as an indicator for necessary change.
d) To apply the remedial health education messages to the model developed.

e) To implement the health education model containing the remedial messages.

f) To determine the effect of the model on the knowledge, attitudes and practices related to diarrhoea in the study community.

The study focussed on identifying how the various life processes such as childcare, hunting, animal and crop husbandry, the transition from boyhood to manhood, or girlhood to womanhood, were passed on from generation to generation. Specifically, detail was sought on how the "classes" were organized, like who taught the various processes to the various age groups and through which media.

The study also attempted to find out whether there were special times for handling the teaching of different materials and whether all the people of different age groups would be given the lessons while sitting together in one group. The interviewees were 86 men and women aged 55 years and over. These teaching methods were adopted in the formulation and implementation of a teaching model. Knowledge, attitudes and practices regarding definition, causation, treatment and prevention of diarrhoeal disease were established in 741
child caretakers at the beginning of the study.

Based on these findings, remedial health education messages were formulated and applied in Thigio Village. Conventional educational methodology was used in Kami-rithu village whilst Rironi was the control village where no health education was applied. Health education was taught by trained field workers, recruited from the study area. At the end of the study, another 'Knowledge, Attitudes and Practices' study was carried out on a sample of 417 of the same child caretakers, in order to assess any changes that might have occurred.

Sources of data were all the subjects of the study, and supportive research material was obtained from published material from the College of Health Sciences of the University of Nairobi, Kenyatta University, Ministry of Health and available local and international journals.

The results showed that after health education, the child caretakers in Kamirithu had more knowledge of the signs of diarrhoea than those from Thigio. They also mentioned a wider range of possible ways that diarrhoea can be caused, and all leading to contamination (of food, utensils and environment) and infection whilst those from Thigio focussed their responses on unsuitable food and uncleanliness as the major causes
of diarrhoea. A significant percentage of child caretakers from Thigio mentioned incorrect methods of preventing occurrence of diarrhoea, as compared to the more focussed and correct responses given by the Kamirithu child caretakers.

Oral Rehydration Therapy was defined correctly by a significant percentage of child caretakers in both Kamirithu and Thigio but at the same time, more caretakers in Thigio than Kamirithu gave descriptions that were not related to Oral Rehydration Therapy. A lot more child caretakers heard about Oral Rehydration Therapy at home in Thigio than in Kamirithu. Diarrhoea was recognized as an illness by a significantly higher percentage of caretakers in Kamirithu than in Thigio, and this could also be linked to their preference for a combination of self administered home therapy and a health facility based one. On the type of substances that were administered to children when diarrhoea occurred, Clinical solution, Sugar/Salt solution and a combination of Clinical and Sugar/Salt solution were the fluids of choice for the Kamirithu child caretakers, whilst those of Thigio preferred a wide range of combinations of fluids and solids. The practice of rehydrating children suffering from diarrhoea was good in both villages.

Further, the child caretakers in Thigio were more know-
ledgeable on the frequency of administering fluids to a child suffering from diarrhoea. Balanced diets were given by a significantly higher percentage of caretakers in Kamirithu than in Thigio. Thigio child caretakers preferred to feed children with diarrhoea on a wider variety of foodstuffs, unlike the Kamirithu ones. The caretakers from both villages disposed of household waste either indiscriminately, in the garden or into compost pits before and after health education. There was very little change between the two patterns.

In conclusion, health related messages were received more correctly by the child caretakers in Kamirithu village, where the conventional approach to health education was used. The responses were better defined and more focussed. This group also gave the most of correct responses pertaining to the various aspects of diarrhoea. In Thigio, the messages seemed distorted judging by the great diversity and unfocussed nature of the responses.

The following recommendations were made:

1. Use of existing cadre of Family Health Field Educators should be continued. However, they need strengthening through training, provision of equipment and supervision.
2. Use of Audio-Visual aids that have been adapted to the local situation should be encouraged and intensified.

3. Teaching adults in groups as opposed to individually, achieves better results.

4. Emphasis should be placed on the place of educational methodologies in the context of modern socio-economic-political environment, rather than on traditional forms of education.
1.1 Background Information

Many community based studies on disease patterns, their prevention and control carried out in recent times throughout the world point out that health education has an important contribution to make towards achieving health for all by the year 2000. However, maximum utilization of this tool as a means to this end has been hampered by failure to come up with effective methods for the delivery of health education. This has been evidenced by little or no change in incidence and prevalence rates of diseases, resulting from control programmes which have incorporated health education as a component. Various workers in health education have attempted to find explanations for this phenomenon, and have more or less agreed that more research should be carried out in the area of process rather than just outcome of health education (Tolsma, 1985). Tolsma further stresses the need to know what works, how and why it works. In view of the above, there is need to understand the definition and scope of health education.
The World Health Organization (1969) attempts to define Health Education as concerning:

"all those experiences of an individual, group or community, that influence beliefs, attitudes and behaviour with respect to health, as well as the processes and efforts of producing change when this is necessary for optimal health".

Lutwama et al, (1969) define it as a systematic process of persuading people to change their responses to disease problems. Earlier efforts in health education were concentrated on the giving of information with the assumption that people will change their behaviour according to the recommended practices (Richards, 1974). Parikh (1987) observes that education must be approached from a community and collective responsibility point of view, rather than a teacher - pupil one. Education then should be a comprehensive learning process involving local human, physical, spiritual resources which are relevant to life in a particular community.

Even in terms of modern education in general, a gap has been identified between education given through modern systems and real life, in the sense that it does not seem to be catering for life needs. In other words there lacks a link between education as provided in educational institutions and education that is needed for full community living. These were observations that were made by an education commission in India in
1964 which recommended that every educational institution should develop programmes that involve rich community life and participation of the school community in the activities of the larger community.

In the field of education for health, lack of understanding and support by the public led to a realization by health education workers that information and knowledge may not in themselves lead to recommended action, if they conflict with existing beliefs, practices, attitudes, values and norms of the society (Mwalenga and Nyamwaya, 1988). Richards (1974) and Kimilu (1977) argue that health education must be approached from the point of view of the social, psychological, cultural, economical, political and the organizational structure of life activities of a particular society; because it consists of more than mere imparting of information. It is implied here that what people know does not necessarily lead to behaviour change. Many pressures exist, such as anecdotal health messages from family members around a person, village elders, women's groups and religious organizations - to name a few. Depending on specific culture, some may be more effective than others in the process of moulding behavioural patterns. An area of research priority in health education is an attempt to understand the cultural, social, and psychological pressures which help mould behavioural patterns, and the processes by which people acquire
knowledge, pass it on, change their behaviour, and factors influencing or inhibiting such changes; and hence the need for this study.

Since little research has been done in the area of community health education in Kenya, this study attempts to unfold and exploit existing social systems in communities, that could be used with some effect, to communicate health information to people.

1.2 Public health education in Kenya

In recognition of the important role that health education can play in disease preventive and health promotional efforts, the health education division was established by the Kenya Ministry of Health in 1953, and the assumption at that time was that any cadre of health could educate people on health matters.

Later however, this was found to be inadequate and in 1962, two candidates were sponsored to study health education at the University of London and later another three left for universities in the United States of America. This stimulated the Kenya Medical Education Committee to consider setting up a formal health education course at the Medical Training Centre, in order to develop a health cadre which is specialised in health education. Candidates for this course, were
to be selected from those already trained in some other paramedical field, so that the health education course was and still is being undertaken at a post basic level. It takes one calendar year, after which the newly qualified health education officers are posted out to the districts. In addition to the health education officers, there are some 800 family health field educators who are based in the villages and are directly supervised by the health education officers, who are based at the district hospitals (College of Health Professions, 1985).

A look at the place of health education in the overall health care service delivery system today shows that it is actually one of the eight essential elements of Primary Health Care, as identified at Alma Ata in 1978 (W.H.O., 1978).

Health education is the first of these essential elements, underscoring its importance and the great expectations that are placed on it in changing health behaviour. An internal evaluation conducted by the Kenya Ministry of Health in 1984/85 showed that at the end of 30 years of health education in Kenya, no relationship could be established between health education and behaviour change, and a well defined modality or framework for conducting health education did not exist (Mwalenga, 1988). By 1984, the Ministry of Health set about revising health educational strategies and methods in order
to come up with those strategies and methods that would effectively influence people's health behaviour positively (Division of Health Education, 1984/85). These recommendations are echoed in the national guidelines for the implementation of Primary Health Care in Kenya (1986), and they are some of the issues that have been addressed by this study.

1.3 Diarrhoeal disease

Childhood diarrhoeal disease was selected for this study because according to the World Health Organization's Global Diarrhoeal Diseases Control Programme (1984), approximately five million children under the age of five die from acute diarrhoea annually, in the developing countries of Asia, Africa and Latin America, with each child suffering 2-6 episodes per year. For Kenya, the mean incidence is 4 episodes of diarrhoea per child per year (National survey, 1987).

Further, in the developing countries, about 1.4 billion episodes of diarrhoea occur each year, and in every ten children with diarrhoea, one is likely to develop dehydration (UNICEF, 1987). Dehydration causes child deaths in diarrhoea. Diarrhoea is a preventable illness involving educating mothers or caretakers of children on good personal hygiene, good environmental hygiene, and in the case where diarrhoea has already occurred, proper
management of the child, in order to avoid death and poor nutrition; to mention only a few.

On diarrhoea definition and causation, it is generally defined as an abnormal increase in the frequency of stool output, volume and fluidity (Kamya, 1988), and this is caused in Kenya, by organisms, mainly viruses and bacteria (Chunge et al, 1989). Other causes are; disorders of the endocrine system, tumours, and poor feeding habits (Kamya, 1988). Through a number of mechanisms, the different microorganisms that cause gastroenteritis may influence disorder in digestive, absorptive and secretory functions, resulting in excessive loss of salts and water in the stools (Onyango, 1985). The World Health Organization (1984) states that this rapid loss of fluid and electrolytes in diarrhoeal stools is the primary cause of death, which is due to dehydration. During diarrhoeal episodes, malnutrition may occur due to loss of appetite, body's decreased ability to absorb nutrients, or simply due to the action of mothers withholding food when diarrhoea occurs. Recurring diarrhoea in itself can result in malnutrition.

The World Health Organization Control of Diarrhoeal Disease Programme further advances that:

"Diarrhoea also places a heavy economic burden on a country's health care system. In many countries, more than one third of the beds in
children's hospitals or wards are occupied by patients suffering from diarrhoea. These patients are often treated with expensive intravenous fluid".

Nearly all ethnic groups in Kenya have a local name for diarrhoeal disease, examples of which are "ruharo" in Kikuyu, "okhunyalala" in Kiluhya, and "kuendesha" in Kiswahili (Kinoti et al, 1987; Kenya et al, 1989). This indicates that in Kenya, the disease occurs commonly irrespective of ethnicity.

The mode of transmission is through the faecal-oral route, meaning that food and water get contaminated with the diarrhoea causing organisms, which thus find their way into the body (Benenson, 1980). This contamination can occur when food is handled with contaminated hands, or when flies which have been in contact with faecal material sit on food. Other ways of contamination include dust particles which have faecal matter, settling on food which is then ingested. Direct injection of diarrhoea causing organisms is also possible through contaminated hands and utensils (Black, 1988).

Important components in the management of acute diarrhoea, are Oral Rehydration Therapy (O.R.T.) to prevent dehydration, and continued feeding to shorten individual attack and duration of diarrhoea, in order to prevent malnutrition (Alwar, 1988). Oral Rehydration Therapy
consists of giving by mouth, a solution that replaces fluids and electrolytes that have been lost to the body, through diarrhoea. The solution can be made from ingredients that are normally used in the home such as sugar and salt, or a cereal which has been mixed with water. A solution can also be made by mixing water with already packed glucose and salts which are either supplied free of charge at Government Health facilities, or bought at the drug stores or shops (Bennet, 1980; UNICEF, 1987; Alwar, 1988 and Kamya, 1988). According to UNICEF (1987), the deaths of 3 million children a year could be prevented through use of this simple, safe and cheap therapy. Any child caretaker can administer Oral Rehydration Therapy at home without any supervision, once they have been taught how to mix it.

Oral Rehydration Salts (O.R.S.) which are sometimes referred to as clinical ORS consist of the following ingredients:

3.5 grams of Sodium Chloride
2.5 grams of Sodium Bicarbonate
1.5 grams of Potassium Chloride
20 grams of Glucose

All these ingredients are mixed in one litre of water.

Sugar/Salt Solution (S.S.S) consists of:

Eight level teaspoons of sugar
One level teaspoon of table salt
All these ingredients are mixed in one litre of water. Feeding the child who is suffering from diarrhoea should go hand in hand with the rehydration process, because studies have shown that this increases appetites and encourage gaining of weight in children so managed (Ashworth et al, 1985).

Prevention and control involve proper case management, improved nutrition, use of safe water, and good personal and domestic hygiene (Martinez et al, 1988).

Due to the very nature of the disease which revolves around child care practices, the mother or child caretaker is the target for any intervention programme for diarrhoeal disease. Their cooperation is vital for the success of the programme because they are the ones with the children before, during and even after the occurrence of diarrhoea. No doubt an intervention programme would also involve and in fact influence the entire population, but more specifically, it must be tailored to suit and reach the proper or appropriate target group - which in this case, is the child caretakers who include the mothers. The need therefore, for a study that would attempt to look into the issues that have been raised; cannot be over emphasized.
1.4 Statement of the problem

This study was motivated by issues that have been raised by researchers and other concerned persons working in the area of health education and who have identified a grey area concerning those strategies and methods that would effectively influence people's health behaviour, positively.

The purpose of the study was to design and test a health education model for a local situation in Kenya, based on adaptations from traditional methods of education, and to look at changes in the knowledge, attitudes and practices pertaining to diarrhoea; which occur as a result of using this model.

1.5 Objectives of the study

This study was designed to achieve the following objectives:

a) To investigate and identify the traditional methods of education practiced by one ethnic group of Kenya.

b) To develop a health education model for that particular ethnic group, based on adaptations from the traditional methods of education.

c) To determine the knowledge, attitudes and practices
as an indicator for necessary change.

d) To apply the remedial health education messages to the model developed.

e) To implement the health education model containing remedial messages.

f) To determine the effect of the model, on the knowledge, attitudes, and practices related to diarrhoea, in the study community.

1.6 Working definition of terms

The following terms have various meanings, but they were used as follows, for the purpose of this study:- Community - a place in which people maintain their homes, earn their livings, rear their children, and in general carry out most of their life activities. Community members share common norms, values and ties. The community in this study is rural.

Health education - the systematic process of persuading people to change their responses to disease problems through appropriate communication methods, which involves giving health knowledge including the technical knowhow.
Family - basic unit consisting of a household head, children and other members.

Child caretaker - a child custodian who cooks for, feeds and looks after the child for the most part of the daylight hours.

Household - a person or group of people who normally or habitually eat and or sleep together whether or not they are related by blood or marriage, by sharing a dwelling, their living expenses, gardens or shambas, granary and so on.

1.7 Basic assumptions

The following basic assumptions were considered for this study:

a) Traditional teaching methods can be retrieved from the elderly members of the community under study, and that adaptations from these teaching methods can be used effectively in the delivery of health education to a rural Kenyan community.

b) Remedial health education messages for the control of diarrhoeal disease that have been delivered through a model that has incorporated traditional teaching methods will increase the diarrhoeal disease knowledge of the child caretakers.
c) Remedial health education messages for the control of diarrhoeal disease that have been delivered through a model that has incorporated traditional teaching methods will positively affect the attitudes of the child caretakers towards diarrhoeal disease.

d) Remedial health education messages for the control of diarrhoeal disease that have been delivered through a model that has incorporated traditional teaching methods will have a positive effect on the practices pertaining to diarrhoeal disease of the child caretakers.

1.8 Delimitation of the study

The scope that was covered by this study is delineated as follows:-
The study focussed on identifying how the various life processes such as childcare, hunting, animal and crop husbandry, the transition from boyhood to manhood or girlhood to womanhood; were passed on from generation to generation. Specifically, detail was sought on how the 'classes' were organized, like who taught the various age groups and through which media.

The study also attempted to find out whether there were special times for handling the teaching of different
materials and whether all the people of different age
groups would be given the lessons while sitting together
in one group. These teaching methods were adopted in
the formulation and implementation of a teaching model.
Knowledge, attitudes and practices regarding definition,
causation, treatment and prevention of diarrhoeal disease
were established in the child caretakers at the begin-
ning of the study.

Based on these findings, remedial health education mes-
sages were formulated and applied.

At the end of the study, another knowledge, attitudes
and practices study was carried out on the same child
caretakers, in order to assess any changes that might
have occurred.

The study was carried out using the sampled subjects of
the study from three rural villages, situated in one
district of central Kenya. Data was collected from all
the subjects of study, and supportive research material
was obtained from published materials from the college
of Health Sciences of the University of Nairobi, Kenya-
tta University, Ministry of Health and available local
and international journals.
1.9 Limitation of the study

The study was carried out in one geographical area of Kenya - which is in central province. The results therefore cannot be taken to represent what would be true of the whole country. They will however give some useful insight into the problem being investigated, and similar work could then be undertaken among other communities for validation purposes.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Research on various aspects of health education has been undertaken in Kenya and also in other parts of the world. Literature that is related to the subject of study was reviewed, in order to assist the investigator to focus on the real issues of concern, which need to be further investigated.

According to the health education division of the Ministry of Health (1979), approximately 70-79% of the Health problems that affect the majority of Kenyans are preventable if individuals, families and communities are informed and educated on essential health topics such as hygiene and sanitation. The affected people may feel the need to live a healthier, disease free life, but they may not be able to adequately articulate the health problems that exist in their community, thus compounding any intended intervention measures such as health education. Jolly and King (1966) state that health education is the most important disease preventive measure in the rural areas, particularly that directed towards improving environmental sanitation and modifying bad health habits.
In recent years, health education has been accepted and used widely in disease control programmes throughout the world. In Kenya, health education is a major responsibility of the Government, and in order to cater for this need, the health education unit of the Ministry of Health was set up in 1953. The need for health education in Kenya has been evidenced by a number of surveys that have been carried out by various interested researchers and organizations, in search for appropriate and effective disease control methods. A national survey was carried out in July 1979 by the health education unit of the Ministry of Health, and the objectives were among others, to find out the attitudes of teachers and students towards health education. Five hundred teachers and students from 35 schools in 9 districts of 5 provinces of Kenya were interviewed. The majority of interviewees felt that although they thought that health education is important, they did not think that the Ministry of Education and the community at large took it seriously.

Another survey conducted by Medical Research Centre (1979) showed that the majority of the community members expressed a wish to be educated in health matters, and especially in diseases that are endemic in the area. Teachers in Kibwezi, Kenya, whilst expressing a need for health education seminars during the school holidays in order to increase their knowledge in Public Health,
they also proposed that health education programmes should be initiated within schools, within families and within the community, (AMREF 1980).

As early as 1964-1968, Bohdal et al working in Kenya, recognized the need to educate mothers on more hygienic child care practices, and at the same time appraised the applied nutrition field workers' programme. They observed that:

- Although it is usually more difficult to train older women particularly in technical areas, the village woman has more confidence in the older woman than in the younger one, and is therefore more likely to listen to her advice.

- The time taken to teach the mothers was not adequate and particularly so because the field workers were likely to see the mothers only once.

- Language was a limiting factor because although Kiswahili was widely spoken in Kenya, not all mothers knew it.

- The nutrition field workers needed supervision, support and encouragement from their superiors, which was very minimal at the time that the evaluation was done.
The points raised in this report made about twenty years ago may still to a great extent be the issues that still concern us today, as was demonstrated by Oniang'o (1986). Her study of maternal and infant care practices in Kenya showed that the older age group (over 35 years) relied heavily on experienced elderly women in the community for information regarding reproduction and infant care, whilst the younger group (under 35 years) consulted both the modern facilities such as the health facilities and the media, as well as the elderly women.

In urban areas, modern facilities played a greater role in educating the mothers than in the rural areas. The study reaffirmed the educative role that these older women in the community continue to play even up to today, and her recommendations were that the Government health educators should work hand in hand with these traditional advisors for maximum work output; because they are available in the communities where they are needed.

Although health education is seen to lend support and to facilitate other efforts that are put into the promotion of good health in the community, the issue of most importance at the moment, is the methods used to disseminate knowledge and information about health and disease in Kenya. Health educational activities by the various Government Ministries are not research oriented,
but are geared towards the solving of any immediate health problems that may present themselves. They are therefore lacking in supportive data, which makes it difficult to tell substantially whether or not any of the methods used have been effective in raising people's health knowledge levels (Personal Observation), Mwalenga (1988) reaffirms this by saying that

"health education had all along been taken for granted in that inadequate attention was being given to who got the message and how it got there"

He further observed that evaluation of achievements by health educators was non-existent as was a well defined method of delivering health education.

Lessons can be learnt from projects that have been implemented and evaluated elsewhere in the world, in order to avoid making similar mistakes and to build and improve on the strong points of such projects, while planning and implementing similar programmes in Kenya. The major elements of two intervention programmes carried out in Europe included general health education of the population in cardiovascular disease control and coronary heart disease prevention; through newspaper articles, radio programmes, mass distribution of a variety of leaflets and posters and meetings. They also used persuasion, training of practical skills, environmental modification and community organization. The observed
net change in the total health knowledge level was 4% for men and 2% for women, and the reductions in coronary heart disease risk were 17% among the male and 12% among the female middle aged population (Kornitzer et al, 1980 and Puska et al, 1981).

Environmental modification and community organization strategies used in this study may have greatly enhanced the good results obtained, because as Olenja (1988) comments:

"there is a need to provide the community with the means to apply the knowledge".

Interventions like water, sanitation and agricultural procedures may need to go hand in hand with educational programmes.

However, the methodology used in the cited European studies is obviously only suited for their kind of communities where visual literacy is high. In the rural villages of Africa where there are no pictures to look at and visual literacy levels are very low, people would have problems with understanding and interpreting the pictures correctly (Mcbean, 1982). Further, it can not always be assumed that because the villagers are illiterate and may not be able to understand and interpret the visual aids correctly, they are therefore ignorant. Although they may not have attended
formal schooling, they have gone through a lot of life's experiences and informal training within their own systems and have therefore formed perceptions, attitudes and behaviours that are culturally viewed as logical and acceptable.

In view of this, it would seem logical to start at the level where the people are, and to build up on this rather than to introduce completely new and sometimes conflicting ideas. This idea is also expressed by Jarmul (1980) who said that good graphics are as important as good writing and that many illiterate adults in developing countries are not used to working with printed, western representations of reality. Their perception is not necessarily better or worse than that of more educated people, it is different.

de Haes et al, (1985) question the value of posters and leaflets in changing people's knowledge, attitudes and practices in the general population, whilst others are of the opinion that visual aids may be seen as decoration to be hung up in such places as houses. In this case the educational value of the posters is lost. The point here is that it is not always appropriate to use visual aids in order to convey messages, and on the other hand there is nothing wrong with using them if they are appropriate.
It seems that the real issue at hand, is one of first establishing that which is suitable and feasible to do - in the face of numerous constraints, before embarking on health education. Health education is seemingly shifting from authoritarian to supportive and one of its main concepts is that of participation of the individual in health care as a competent actor in a community setting, rather than by passive compliance (Kickbusch, 1981; Botros, 1987; Nyamwaya, 1988).

The most important aim of an educational programme for an adult noncaptive audience is to provoke and therefore stimulate the mind to internalize, analyse, consider, choose and reject new information given, as well as question existing beliefs and practices. Resulting action therefore, should be based on what the person has been able to make of the content, rather than on what he/she thinks is expected of them especially by the source of the information.

On educational approaches in agricultural extension programmes and their applicability to environmental management for vector control, El-Zoobi (1988) comments that:

"the effectiveness of any agricultural extension programme in a given ecosystem depends, to a large extent, on their adaptability to the social and cultural norms, roles of expectations and the basic geopolitical orientation in this society, as well as on the understanding of extension workers to these norms, values and orientations".
Other factors like the venue and time taken to cover the lessons may also influence the process of communication as demonstrated by Ndiku et al., (1986) working in Kenya. The main objective of the study was to investigate the extent to which mothers' visits to the health facilities are used to improve their knowledge and therefore their practices, for prevention of dehydration in children suffering from diarrhoea. The investigators interviewed mothers who had taken their children to the Maternal Child Health Clinic of the out patient department of the Nakuru General Hospital. The children had diarrhoea as one of the major complaints. Mothers were interviewed before they took their children to the clinical officer, and again immediately after receiving Oral Rehydration Solutions at the pharmacy.

The observations made were that there is need to re-orientate health workers of all cadres in the Oral Rehydration Therapy (ORT), suggesting that the mothers were actually not being given the correct information regarding ORT.

The Clinical officer was overloaded with patients and therefore could not spend much time with each mother, suggesting that the material that he was able to cover may have been inadequate. They further suggested that communication with mothers would have been made easier if advise was given by the nurses who would deal with
diarrhoea cases directly, and only refer those children needing the Clinical Officer's attention for other medical problems. Demonstrations on how to reconstitute the Oral Rehydration Salts which would include use of standardized containers was lacking, resulting in either too dilute or too concentrated solutions, thus reducing the value of the therapy.

The investigators also recommended that teaching of the Oral Rehydration Therapy ought to be taken down to the grassroot level where it would be handled by community health workers, because they are the ones in constant touch with the mothers. These observations tally with those that were made by Bohdal et al in their 1964-1968 report.

In another hospital based study, Singano et al, (1986) recommend that diarrhoeal disease education should be focussed on mothers whose children are at risk of developing diarrhoea. The authors further suggest that before any health education can be carried out, a baseline assessment of the mothers in order to identify those whose children are at risk of getting diarrhoea needs to be undertaken. This would be the ideal thing to do but it may not always be possible because of financial constraints, rather, one would tend to be guided by a general disease trend in the community initially as reflected by health facility records. This brings
up the issue of target groups. McCron et al, (1979) note that good health education practice tailors an education programme to a specific target group with a message fit for that group and with a method that takes into account the culture and lifestyle of that group. They further explain that education aimed at the general population will only create awareness, but may do little to change peoples' behaviour. It appears that most or all the workers in health education concur that special attention should be paid to target groups, content and method of delivery or communication of education for health, in the sense that they must be appropriate for the specific groups to be taught.

The anticipation by Nigerian researchers that by including a health education component in the Idere Guinea worm control project there would be a reduction in the prevalence rate of the disease, was quashed because of bad planning initially. The community's socio-cultural factors were not taken into consideration and the programme had later to be redesigned (Akpovi et al, 1981).

Other findings from this project and projects by Nyambura (1981) working in Kenya, Kasonde et al, (1983) working in Zambia, Chakravorty (1983) working in India, La Paz (1983) working in Phillipines; showed that it was crucial to involve the community in the planning and implementation of health education programmes.
It is this realization that calls for a better understanding of the cultural dynamics of the rural communities, and especially in matters related to the educational process and health care. In the traditional family set up, the child from birth, went through a continuous process of learning, up until his death. Children were expected to learn from the older members of the community, including their parents on a day to day basis. This was done as children moved from stage to stage Kenyatta (1965), Huntingford (1968), Muriuki (1978), Kenya Social Cultural profiles (1985 and 1986). The content of education was based on immediate environment and life, and was utilitarian in nature. It covered life activities within the family, clan and the tribe as a whole. The elders were the custodians of knowledge and wisdom, which was passed down to all members of the community in various ways depending on the specific tribe or community; but they all employed some common basic principles.

Up to the age of about five, the children were looked after by their mothers and early education was given by the same mothers. The age at which mothers stopped playing this role varied in the various communities, like for example among the Taita she stopped playing a dominant role when the child was fifteen years old - just before initiation (Taita/Taveta Social Cultural profiles (1986). As children grew older, the boys were
taught by their fathers the skills of their father's profession, whilst the girls were taught by their mothers the role of womanhood (Kenyatta, 1985; Kenya Social Cultural profiles, 1985 and 1986). In addition, other members of the extended family came into the picture and took up some of the roles of preparing the young people for life in the community. Some of those extended family members were aunts, uncles, grandparents, mothers-in-law and other in-laws.

Indeed education was seen and described in terms of its ability to make an individual into a useful and "full" member of the community (Samburu District Social Cultural profiles, 1986). Social norms, values and practices were imparted through observation, imitation, participation in social and economic activities, roleplay, drama, dance, folklore, among others. The Tugens used riddles to test reasoning ability and proverbs to give advice. Use of idioms and proverbs in speech was seen as a sign of wisdom (Baringo District Social Cultural profiles, 1986).

Discussions were greatly encouraged like in the case of the Abagusii (Kisii District Social Cultural profiles, 1986). The Kisii and the Samburu expressed the wish to preserve these cultural practices by involving the elders in modern educational activities that take place at the schools, whilst the Taita felt that already a lot of the traditional way of doing things had already been
lost; and it would be a futile effort to try to retrieve. The researchers into the Taita traditional education system attribute the dissolution of the traditional way of doing things to a number of factors;
- initiation rites have been abandoned.
- parents have handed over their educational roles to the school.
- the young people do not see any advantages of preserving the traditions of the Taita.

In conclusion, the authors recommend that the schools should work closely with the parents and the community elders (Taita and Taveta Social Cultural profiles, 1986). Although the communities studied showed appreciation for modern education and could see its relevance, they felt that it was too far removed from village life, and that it was actually designed for the city and white collar jobs. The Iteso and Luyia expressed their concern at lack of interest in practical skills in the modern youth (Busia District Social Cultural profiles 1986).

A seminar for traditional birth attendants on "food for the child" (Pertet, 1983) recommended: -
- that mothers should not leave their children in the care of "Ayahs" or child caretakers, but should
take care of them themselves

- the traditional weaning foods should be reintroduced

- children should be breastfed until the age of two years.

- mothers should sleep in the same bed with their young babies and not with their husbands, in order to aid birth spacing.

- working husbands should not call their wives to their working places in the towns, but should leave them in the rural areas to cultivate, for more food production.

These statements further lend support to the need to re-examine the present educational system which actually determines lifestyle, beliefs, attitudes and practices; in terms of its relevance and value. The older people have at least two reference points which is an advantage over the younger people, because they are able to compare what was with what is and the advantages and disadvantages of both. It would therefore seem appropriate to consult with the older generation from time to time and especially when developing community programmes.
This study has attempted to look into the Kikuyu traditional education system, details of which are given in the next chapter, and has actually adopted some elements of the traditional approach to education that were found feasible, in view of the fact that a lot of political, social and economic changes have taken place. In this regard, it will be appreciated for example that not all families even in the rural areas of Kenya still maintain extended family set up, and as such it is not rare to find a family composed of only a young couple and their children. In a case like the one just cited, the role of another "instructor" other than the mother or mother-in-law becomes very significant.

Family characteristics in the rural areas are no longer homogeneous and indeed are as complicated as those found in the urban areas where previously, families with heterogeneous characteristics were only to be found. What all this leads to is the fact that whereas there is no harm looking at rural—or any other community as an entire whole, some pockets of it would need preferential treatment, in order to cater for specific needs.

Windsor (1986) described a systematic process of examining the Predisposing, Reinforcing and Enabling factors in our educational diagnosis and evaluation of a health education programme.
This is called the PRECEDE model which basically involves reviewing the relationship between each major component from a cause and effect point of view. The components are expounded on as given below:

a) The predisposing factors are the cultural values, knowledge, attitudes and practices of the community(ies).

b) Enabling factors refer to the accessibility and availability. If people are motivated enough to want to use a service, is the service available, accessible and does the person have the means to use that service?

c) Reinforcing factors refer to the support in-built system that assists in the maintenance of a specified behaviour. Reinforcing factors could involve the provision of consultation, in-service training, or technical assistance to service providers so that they may become more skilled and more reinforcing in their day to day interaction with the consumers of their services.

The general concept of this study seems to fit well into the above theoretical model. The study design and the various procedures that were followed in order to achieve the objectives of the study, are described in Chapter 3.
CHAPTER 3

METHODOLOGY

3.1 Description of the study area

The study was conducted in Kiambu district of Kenya, twenty five kilometers North West of Nairobi. This study area was selected by the Kenya Ministry of Health for the purposes of conducting a pilot study, to test the feasibility of launching a National Diarrhoeal Disease Control Programme. The selection criterion was an area having the most frequent occurrence of diarrhoeal disease in the district. The study was located in a semi arid rural area, situated between the Ngong hills to the East and the Rift Valley to the West. It receives very little rainfall from March to June which is the planting season, and also from October to November.

The people are of the Kikuyu ethnic group drawn from various districts, and living in settlement villages that were set up during the colonial era. Each family is settled on a quarter acre piece of land, giving an "estate" like effect where houses are constructed close to each other. Most of the houses have timber walls, roofed with corrugated iron sheets and have mud floors.
The families however, have other land elsewhere, either within or in the surrounding areas, and the holding is between less than one acre to about seven acres. 20% have no land, 46% have less than one acre, 19% have between one to three acres whilst a very small group have more than four acres. As a result of this the majority of the people do not keep livestock. Main crops grown are: maize, beans, potatoes and vegetables. A little pyrethrum is grown for sale, but overall, most of the crops grown are for home consumption.

Seventy nine percent of the heads of households have no businesses, and the few who have; run market stalls, butcheries and shops. In terms of overall income, a staggering 43% realise no cash money at all, with the others getting between Kenya shillings 500 to 3000 - although there are some who get much more than the figures quoted within that community. Most of the able bodied residents of these villages work in the surrounding well established farms within the district and others engage in all forms of employment in the city of Nairobi.

The study area consists of three villages which have a population of approximately 9,000 people, living in approximately 2234 households, composed of 6 - 7 persons each. Out of this population, about 2000 are children aged under five. These three villages are: Thigio, Kamirithu and Rironi. Thigio is a smaller village than
the other two, with about 400 households. Overall prevalence rate of diarrhoea is 3% and the number of diarrhoea episodes per child per year ranges between 0.8 - 1.2 (Kinoti et al, 1984-1986).

The health education model developed in this study was tested in Thigio, whilst the other educational programme was implemented in Kamirithu and Rironi as the control.

3.2 Sampling and sources of data

Thigio village being the smaller of the two, had only 247 households with children under five years of age, and they were all entered into the study. The sample size for the other two villages was based on the Thigio sample, and by simple random sampling technique, two similar and equal samples of 247 households were selected from Kamirithu and Rironi, making a pre-intervention total sample of 741 child caretakers. Ten months after the implementation of health education, the same child caretakers were revisited for the collection of post-intervention data, but they were not all available, due to migration. The post-intervention sample therefore comprised of: 134 child caretakers for Kamirithu, 91 for Rironi, and 192 for Thigio giving a total post-intervention sample of 417. Forty four men and 42 women aged 55 years and over, non senile and living in Thigio,
Kamirithu and Rironi were interviewed for information pertaining to traditional forms of education.

3.3 Description of study subjects

a) Child caretakers

The ages of the child caretakers from the three study villages ranged from 19 years to 50 years, with the majority (over 50%) being aged between 20-35 years. The under 20s were very few. As regards their educational levels, 80% of them were literate, with 56.4% having up to primary level of education. The distribution of those having that level of education was more or less the same in the three villages (see Table 111.1).

About 20% of the caretakers in Kamirithu, Rironi and Thigio had no education. More of them were in Thigio (22.3%) as compared to 17.8% in Kamirithu and 19.4% in Rironi. Kamirithu and Rironi had almost twice as many child caretakers with secondary level of education as Thigio (20.6%, 23.5% and 11.7% respectively). Only one (1) caretaker from Thigio had any postsecondary level of education. The caretakers said that the children aged under five were under their care all the time. A total pre-intervention sample of 741 was entered into the study.
Table 111.1: Showing the level of both formal and informal education attained by child caretakers in each village

<table>
<thead>
<tr>
<th>EDUCATIONAL LEVEL</th>
<th>VILLAGE</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
</tr>
<tr>
<td>No education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44 (17.8%)</td>
<td>55 (22.3%)</td>
<td>48 (19.4%)</td>
</tr>
<tr>
<td>147 (19.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 (2.8%)</td>
<td>2 (0.8%)</td>
<td>28 (11.3%)</td>
</tr>
<tr>
<td>37 (5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>145 (58.7%)</td>
<td>132 (53.4%)</td>
<td>141 (57.1%)</td>
</tr>
<tr>
<td>418 (56.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 (20.6%)</td>
<td>58 (23.5%)</td>
<td>29 (11.7%)</td>
</tr>
<tr>
<td>138 (18.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post secondary level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1 (0.4%)</td>
</tr>
<tr>
<td>1 (0.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>247</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>741</td>
<td></td>
</tr>
</tbody>
</table>
b) Aged persons

The main criterion used in selecting the aged persons was that they were aged 55 and over, given the life expectancy at birth for Kenya which is 54 years for males and 57 years for females (Central Bureau of Statistics). Further, they were also supposed to be non senile and resident in Kamirithu, Thigio and Rironi. Forty four (44) men and forty two (42) women fulfilled that criteria and were therefore the interviewees for information pertaining to traditional forms of education.

3.4 Strategies for collection of data

Data was collected by use of structured and unstructured interview schedules, and also from the records of the National Diarrhoeal Control Pilot Project that was conducted in the same area of study by Kinoti et al, (1984-1986).

The interviews were administered by the investigator with the help of research assistants, in the local language. Specific information sought about traditional education methods included questions regarding passage of traditional folklore and way of life from generation to generation, and who was responsible for
making sure that this information was passed on, and how. Specific information sought from child caretakers included knowledge about the aetiology and control of diarrhoeal disease, what attitudes mothers had about its potential severity, and what practice they used to prevent or treat the disease. Certain observations relating to household waste and faecal disposal were made in each household.

3.5 Pretesting of the interview schedules

The interview schedules were pretested before being used in the field for data collection. For the purpose of pretesting the interview schedules, a sample of 20 persons aged over 55 and 20 child caretakers were drawn from the study sample, and interviewed. Observations were also made on the twenty households from which the caretakers came. After the pretesting exercise, the necessary adjustments were made on the interview schedules.

3.6 Procedure for administration of the interview schedules

The investigator together with the two research assistants visited all the study households and administered the interview schedules to all the child caretakers and persons aged over 55 years. The child caretakers'
interview schedule took about 20 (twenty) minutes to administer, whilst the one for persons aged over 35 years took about 60 minutes.

3.7 Research design

As already explained earlier, the study was carried out in three villages. The model was tested in Thigio, conventional methods of health education were used in Kamirithu, and apart from data collection, no health education was administered in Rironi. The study therefore utilized an experimental design, which was divided into five phases.

3.7 1) Phase one: Recruitment and training of the research assistants, and baseline data collection

Phase one involved various activities namely; involvement of the community, training of the field workers, pretesting of interview schedules and observational items, and collection of baseline data.

a) Involvement of the community

As this study depended heavily on community participation for its success, the community and local Government officials were involved right from the beginning. The investigator briefed the local administration on the
objectives, and details about the procedures that the study was going to follow, starting with the District Officer, who then instructed the locational leaders to assist the investigator. The locational chief together with his sub chiefs organized introductory meetings (barazas) for the investigator and the villagers in each village.

During these meetings, the study was explained to the community members, who were subsequently requested to nominate research assistants of their own choice, who would work with the investigator. This was important because it has a direct bearing on the response rate. Response rate and quality of the responses are usually higher when people are talking to people who they are familiar with (personal observation). In addition, the research assistants were able to detect when the responses were not honest, in which case the investigator looked for another way of asking the question. Most important, the villagers did not feel like they are talking to complete strangers about their personal lives. About sixty young men and women who had attained at least form four level of education with a division four pass were nominated for the recruitment interview. The interviewing panel comprised of the investigator, the local Government administrators and village elders.
The interview included an aptitude test, character assessment, initiative and previous working experience. Six were recruited for the study and trained for a period of two weeks.

b) Training for data collection

One week was spent in the classroom where they learnt basic interview and observation techniques and how to record the responses correctly, both theoretically and practically. The other week was spent in the field where the trainees spent time interviewing the villagers and making observations. During these practicals, the structured interview schedules were translated into the local language and pretested using 30 respondents - 10 from each village, and then they were adjusted accordingly (see appendices). Observational items were also pretested.

Those interviewed during the practicals were not interviewed again in the actual data collection period. Baseline data on knowledge, attitudes and practices pertaining to diarrhoeal disease was collected. The data collected was on the child caretaker's knowledge of signs of diarrhoea dangers, causation, prevention, Oral Rehydration Therapy; and their attitudes and practices regard-
ing feeding when a child has diarrhoea, rehydration if any, type of medical care sought and at what stage of illness, and household waste and faecal disposal practices.

The research assistants made home to home visits in households with children under five years of age, and interviewed the child caretakers. The child caretakers as defined earlier on, were not necessarily biological mothers of the children, but any that took care of the child for most of the daylight hours. They would also have to have been engaged in providing most of the child's physiological needs, during the hours that the child was awake. Such needs were for example feeding, changing the child's soiled clothes, disposing of the waste material and so on.

When the child caretakers were not home at the time of interview, a revisit was made. All the entries in the interview schedules and observation forms were checked to make sure that all items had been filled out and that household identification details had been completed. The filled in interview schedules and observation forms were collected and after developing a code book, processing of the data started.
Meanwhile, pretesting of the unstructured interview schedules to be used for the people aged 55 and over started, and adjustments were made. A sample of 20 was used and this group was not interviewed again. The interviews were recorded on tape, and then put on script later on.

3.7 2) Phase two: The traditional, conventional and modified approach to health education

The next stage of the project involved interviewing the aged people with a view to formulating the model that was to be tested in Thigio. Information was obtained from 44 men and 42 women aged 55 and over on the following:

a) The traditional approach to education

- How the various aspects of life processes were passed on from generation to generation, for example taboos, dances, songs, food and medical practices; in terms of communication methods used.

- The teachers that handled the various materials—were they special in the way of training, experience or age grouping?
Whether there were special times of the day or year, season or as the case may be for teaching the various materials.

The venue for teaching the different materials in terms of whether all people of different age groups would be sitting together in one place while being taught or whether they would be separated, and also the actual venue for the lessons.

The old people interviewed were drawn from the community under study, and were at the time of interview, resident in the study area. The important feature of this study of the traditional methods of education was the similarity of the responses from the various interviewees.

It is also gratifying to note that the information obtained compares very well with the information that was collected by the authors of the Social Cultural profiles of the other districts of Kenya. Analysis of the interviews yielded the following information:

Dances

During the dances, all people young and old would
be invited to attend but they would not mix during the actual dancing process. While members of the old age group danced, those from the rest of the age groups stood by and watched, or tried copying the steps on their own by the side. However, the immediate older age group to the one that wishes to learn to dance would coach that younger age group on how to do the steps.

There were dances to be danced at night and those to be danced during the day time. It seems that the dancing season was the period after planting and the crops were above ground, and also immediately after harvests. Presumably this was the time period when the community members would have free time. Most of the songs were of praise to some deserving hero or of rebuke to some misdeed, or sometimes of events that had taken place and which were important to the community.

They would sing about an important medicineman, warrior, soothsayer, prophet, but not about the actual procedures that the person employs in his or her practice. This was also true of other aspects of life processes like childcare, medical practice, hunting and so on. Actual procedures were taught practically during the commission of the specific task.
Training of the youth

Young people had prescribed behaviour or behavioural trends which were expected of them at all stages of their lives. Parents were responsible for the earlier education of their children in all matters that pertained to life in general. Young boys would stay in their father's huts where they would receive instructions from their fathers on how to cope with what was expected of them in life. This included all tasks that were the responsibility of men, like providing the meat for the family meals or how to manage the home and its occupants.

Young girls too would stay with their mothers, and they would undergo training in the chores that they were expected to perform in life. This included matters to do with childcare, food preparation, working in the fields and so on. In addition to verbal instructions, the pupils were expected to observe very carefully, all processes that were being undertaken by their parent instructors, whether they were in the field or at home.

The venue for learning always depended on the materials being handled. For example, crop husbandry was taught in the fields. Food preparation was taught at home in the kitchen and so on. Folklore
was used a lot in the teaching of culture to the children. Time was not a constraint because as earlier said, everything was handled as it came, and as can be imagined, the same material was taught and repeated many times.

Different age groups would not mix during teaching, and it was always done by an older person who was respected by the learners. In childhood, the parents either biological or foster would do the teaching, later the aunts and uncles would teach matters especially related to sexuality and then in the eve of manhood or womanhood the "caretaker" or the one that supports (fosters) the boy or girl during the circumcision ceremony and subsequently through life, would take over. Learning was by listening, observing and imitating or doing. It was also believed that good and bad behaviour were passed on from parents to their children in this way. Witchcraft and traditional medical practice were also handed down to the children by their parents, meaning that it was difficult for one to acquire certain specialised skills like medical ones if one did not inherit them from their parents.

Discipline was maintained by the mothers for their daughters and fathers for their sons. Failure of
a mother to discipline her daughter prompted the husband disciplining the mother instead. Girls rarely came into contact with their fathers - in fact it was unheard of. That meant that all education for girls was undertaken by the mother or their approved representatives. As the young people grew up however, a 'caretaker' (foster parent) took over some of the teaching responsibilities from the parents for their children primarily to instruct them on how to adopt a life and responsibilities that befit adulthood. One of the major tasks was that of preparing the youth for circumcision and the tasks and responsibilities that follow circumcision like courtship, marriage and parenthood. The caretaker would remain a very close friend of the family and would continue instructing the one that they are supposed to be taking care of, long into life. The caretakers were always mature men and women, of great integrity, as measured by the community.

Training of the adults

Adult women who were of child bearing age, would be in the hands of their mothers-in-law primarily, although other older members of the family would also take part in advising and teaching the younger women, on a continuous basis. The role of the younger women would also be gradually changing
because as time went by, they were getting experienced and in fact they were already engaged in advising those women who were younger than themselves.

Whereas children could not teach each other, to a certain extent, women of the same age group also advised and taught each other because they were considered as adults, and could therefore share their experiences with each other - the same case applied to the men.

In all cases, men learnt what they had to learn separately on their own, and this applied to the women as well. The only time that all age groups and all sexes mixed was during the dances, although different age groups danced separately while the others watched. In most cases, young adults mixed with older ones in the course of their daily duties, such that the process of learning was really more on a continuous basis rather than one based on targeted time.

b) The conventional approach to health education

In Kenya, current approach to community health education involves several approaches; the first
approach involves teaching at the Maternal Child Health Clinics (M.C.H). The health educator teaches a group of child caretakers who are of mixed ages, ethnicity and belonging to different households. The mothers being taught would have taken their children to the health facility for other services which are offered at the M.C.H clinic. An observation of this approach is that the teaching time, space and preparedness on the part of the mother are inadequate. Another observation is that communication is usually one way, from teachers to mothers, and hardly the vice versa.

The second approach is through public meetings (barazas) which are called to discuss various development issues, usually by the local Government administration. There would then be various speakers from different Government ministries, including health. A point to note here is that this is a very mixed audience of males, females and children. Time allocated to the health person to talk about health matters is short. The "educator" may not necessarily be a trained health educator but could be any cadre of health personnel, depending on where the meeting is being held.

The third approach is mainly utilized by research and service delivery projects by non-Governmental
organizations whereby, fieldworkers are recruited and trained so that they become community health workers. These community health workers are trained and supervised by the project heads and are employed for the time period that the project lasts, after which their services are terminated or they get passed on to work in other projects. This group of educators usually have resources to plan and carry out their health educational activities to satisfy the project objectives and as can be expected, the methodology differs from project to project.

c) The educational model incorporating some aspects of traditional methods of education

For this study, some aspects of the traditional approach to education were adopted. It was not practical or realistic to adopt all of them because as can be appreciated, circumstances have since changed, due to modernization. The elements found feasible for adoption were the choice of the teacher, non use of visual aids in order to give more time for discussion, and teaching of the mothers individually and only at their homes. Another reason for leaving out the visual aids was because the literacy rate is quite low for Kenya, the caretakers were not expected to gain much from the
use of visual aids. Only 45% of the females in Central province can read in their first language, and even less can read in Kiswahili and English (Social perspectives, 1977). This figure may have gone up by the time of writing this thesis, but the latest statistics show that enrollment into adult literacy classes for women was 77.5% in 1985 (Kamunge, 1988). The report however does not go into the details of the languages that the women can read or write in.

d) Selection of the educators

Teachers were recommended to the investigator by the community members - who included both men and women. Since these teachers were not necessarily related to the women that they taught, it was very important that the men also gave consent to the teachers visiting the homesteads to teach their wives. To do this, they first had to understand the objectives of the study, which were explained to them by the investigator.

The women recommended had to be literate and intelligent enough to understand the theory about diarrhoeal disease in sufficient detail, and be able to communicate the same to the other women. The investigator therefore selected suitable ones from the
ones recommended, and for the experimental model, the ones selected were older than the group of child caretakers that they were to be assigned to. There were four of them; one to teach the age group under 20, two for age group 20-35 because that age-group had the majority of child caretakers, and one to teach the age group 36 and over. One aged 22 years was selected for the conventional approach to health education.

e) Training of the educators

The teachers for both the conventional and modified approach to health education were trained together, at the same venue, using the same materials; for the purposes of standardization. The selected women were taught how to impart basic knowledge on diarrhoea definition, causation, signs, symptoms, classification, management, prevention, control, nutrition, household waste and faecal disposal; both in the classroom and in the field. Also taught was human relations, specifically how to approach and handle the caretakers. Training took a total period of four weeks and the various topics were taught by staff from Kiambu district hospital, as well as from the Kenya Medical Research Institute.
f) Teaching methodology and content

For the approach that adopted traditional elements of education, home to home visits were made by appointment and each child caretaker was taught individually at their own home, allowed to ask questions, prepare the oral rehydration solution until the teacher was satisfied that the message had been transmitted and received comprehensively. Teaching time was between one hour and one hour and fifteen minutes, and it was done in the local language. Other female members of the family who wished to sit through the lessons were invited to attend. Each child caretaker was taught at least twice individually.

In the conventional approach to community health education, group meetings were often used as venues for education, whereby the educator taught a group of child caretakers who were of mixed age, and also who belonged to different households. Home to home visits were also made, where the educator taught the child caretakers at home in their kitchens. In addition to this, the educator was a young girl aged 22 and she taught all the child caretakers who belonged to all age groups. Visual aids which had been prepared by the educator during the training that made her a community health educator, were
used always, during teaching; together with demonstrations on how to make both the sugar/salt and the packet Oral Rehydration Solutions. Further, it was not possible to leave the visual aids displayed in the village, because of lack of a suitable display venue. Each lesson lasted between 30-45 minutes, depending on the length of the discussions that followed the lessons. In addition, a film on diarrhoeal disease filmed in many countries of the developing world by the Health Sciences division of the International Development Research Centre of Canada (Prescription for health) was shown to all the villagers in the local social hall twice, during the daylight hours. Although the film commentary was in English language, a commentary in the local language was made simultaneously, by one of the research assistants. It is assumed that all the child caretakers attended, but this was not verified. Caretakers were neither provided with the actual salts which are packed in satchets, nor sugar and salt. It was left up to the caretakers to obtain these ingredients when they needed to use them.

The following topics on diarrhoea were covered exhaustively in English, and then the local language. Visual aids were also designed for all the topics, for use in Kamirithu where education was being
given using the conventional approach to community health education. The topics covered on diarrhoea were: definition as per the World Health Organization, causes of diarrhoea, other diseases that can cause diarrhoea, the faecal-oral transmission route, signs and symptoms of diarrhoea, treatment of diarrhoea, management of dehydration including the Oral Rehydration Therapy (ORT) - both the sugar/salt and the sachet clinical solution, feeding during diarrhoea, referral of cases for both diarrhoea and other medical conditions, prevention and control of diarrhoea including safe water, human and household waste disposal (including latrine and rubbish dump construction), personal hygiene, good nutrition even without presence of diarrhoea, kitchen gardens, livestock rearing and immunization. The same topics were taught to the child caretakers by the educators. A teaching kit was provided to each educator, and it consisted of the following:

Pencil/pen
Rubber
Notes file
Charts and posters (for Kamirithu only)
Measuring cups, spoons, bowl, water glasses and kimbo tins
Sugar
Salt
Oral Rehydration salts (both the 250 and the 1000 millilitre satchets)
Growth chart
Record book

2.7 3) Phase three: Implementation of the health education programme

This was the implementation stage of what had been planned in stage two of the project. It involved institution of the health education programme as follows:

a) Thigio Village

Information on diarrhoeal disease was given using the model based on adaptation of the traditional approach to education, by community health educators. The villagers were divided into three age groups - under 20 years, 20-35 years, 36 years and over. There were 25 caretakers in the under 20 age category, 169 in the age category 20-35 and 53 aged 36 and over. One educator taught the under 20s, two the 20-35s, and one the over 36s, at the child caretakers' home on a one to one basis. The medium of instruction was Kikuyu, and each of the child caretakers was taught at least twice. Other interested members of the family were allowed to sit in during the lesson in the homes. Except for the ingredients used in making the oral rehydra-
tion solutions like sugar, salt, satchet oral rehydration salts, water, and the equipment used like spoons and cups, no posters or any form of print media was used. Average time spent teaching was one hour.

b) Kamirithu Village

Information on diarrhoeal disease was given in this village using conventional teaching methods whereby, the child caretakers of all ages were taught by one educator in groups of a maximum of five child caretakers per lesson. The child caretakers did not have to come from the same family, but could come from mixed households. Visual aids as well as the ingredients and the equipment used for preparing oral rehydration solution, were used during teaching. In addition, a film on diarrhoeal disease was shown to the villagers, who included the child caretakers. Kikuyu was the medium of instruction, and each caretaker had at least two health education exposures. Average time spent teaching was forty minutes.

c) Rironi

No information on diarrhoeal disease was given in this village. It was used as the control village,
with the baseline (pre-intervention) and the post-intervention data collection activity being the only chance of interaction with both the child caretakers and community at large in this village.

The implementation phase took a total period of one year.

3.7 4) Phase four: Post intervention data collection

This was the post intervention data collection stage of the project. Ten months after health education was implemented, and after every child caretaker had been taught at least twice, post intervention data on knowledge, attitudes and practices pertaining to diarrhoea was collected, and observations were also made. The respondents were the same child caretakers that were interviewed in the baseline period in Thigio, Kamirithu and Rironi. Further, the data was collected by freshly recruited and trained field workers, who had no previous contact with the project. The same interview schedule and observation forms that were used during the pre-intervention period were used in the post intervention stage.
A description of the baseline data on knowledge, attitudes and practices related to childhood diarrhoea of child caretakers in one control and two treatment villages, and the same information collected from the same child caretakers ten months after they were given health education; is presented in this chapter. Also presented is the method of data management and analysis.

4.1 Data processing

A code book was developed by listing the responses recorded in 30 questionnaires and observation forms. The responses were categorized and given codes. All the rest of responses in the questionnaires were coded and entered into the computer using the SPSS data entry and analysis programme, which yielded cross tabulations of the data. After tabulating the results of the two time periods, it was necessary to subject them to statistical testing, in order to determine the significance of the change that occurred between the two time periods in each of experimental groups and the control.
4.2 Method of data analysis

The normalized T-test for comparing two proportions was used in the statistical analysis of the data. The formula applied was:

\[ T = \frac{P_1 - P_2}{\sqrt{\frac{P_1 q_1}{n_1} + \frac{P_2 q_2}{n_2}}} \]

Where \( P \) = proportion, \( q = 1 - p \) and \( n = \) sample size.

The level of significance is 0.025% and less, determined by dividing the p value which is usually 5% by two paired comparisons. The two paired comparisons are Kamirithu and Rironi versus Thigio and Rironi (Ref: Statistics in Medicine by T. Colton, 1974).

It is worth noting that changes that occurred in the control group occurred randomly and it is assumed that they also occurred in the other two villages, over and above the changes that occurred due to intervention. The two study areas were compared with the control one. Table IV.1 shows an example of how the comparisons were worked out, by use of the microstat statistical package.
Table IV.1: Showing method of calculating the P value using responses for knowledge of diarrhoea signs as an example

<table>
<thead>
<tr>
<th>Responses</th>
<th>Kamirithu</th>
<th>Rironi</th>
<th>Thigio</th>
<th>Intervention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Difference</td>
<td>P value</td>
</tr>
<tr>
<td>Watery stool</td>
<td>82.2</td>
<td>48.5</td>
<td>33.7</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>Watery Stool + others</td>
<td>3.6</td>
<td>5.9</td>
<td>-2.3</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>Other signs</td>
<td>3.6</td>
<td>43.3</td>
<td>-39.7</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>Don't know</td>
<td>10.5</td>
<td>2.2</td>
<td>8.3</td>
<td>P &gt; .001</td>
</tr>
</tbody>
</table>
4.3 Observations

The results will be presented in three sections: Section 4.3a will comprise of knowledge aspects of diarrhoeal disease, whilst Sections 4.3b and 4.3c will comprise of aspects of attitudes and practices respectively. Further, for clarity and better visual presentation, the results of each variable during the two time periods, will be presented together.

Section 4.3a: Diarrhoeal disease knowledge of child caretakers

The various items that are universally considered as necessary for constituting diarrhoeal disease knowledge are presented in this section.

Signs of diarrhoea

The child caretakers were asked to state the signs that would normally demonstrate to them that diarrhoea had occurred in children under their personal care, and who are aged under five years. The signs that were mentioned by the child caretakers as confirming to them the occurrence of diarrhoeal disease in children under five years of age, are presented in the following table.
Table IV.2: Showing the child caretakers' knowledge of diarrhoea signs during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGES</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTERVENTION PERIOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Watery stool</td>
<td>203</td>
<td>65</td>
<td>211</td>
<td>73</td>
<td>178</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>(82.2%)</td>
<td>(48.5%)</td>
<td>*(80.2%)</td>
<td>(72.1%)</td>
<td>*(48.4%)</td>
<td>(79.9%)</td>
</tr>
<tr>
<td>Watery stool</td>
<td>9</td>
<td>8</td>
<td>2</td>
<td>12</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>and others</td>
<td>(3.6%)</td>
<td>*(5.9%)</td>
<td>(0.8%)</td>
<td>(13.2%)</td>
<td>(13.8%)</td>
<td>(25.5%)</td>
</tr>
<tr>
<td>Other signs</td>
<td>9</td>
<td>58</td>
<td>25</td>
<td>6</td>
<td>19</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>(3.6%)</td>
<td>*(43.3%)</td>
<td>(10.1%)</td>
<td>(6.6%)</td>
<td>(7.7%)</td>
<td>*(24.0%)</td>
</tr>
<tr>
<td>Don't know</td>
<td>26</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(10.5%)</td>
<td>(2.2%)</td>
<td>(3.6%)</td>
<td>(0.0%)</td>
<td>(6.5%)</td>
<td>(2.1%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
<td>247</td>
<td>192</td>
</tr>
</tbody>
</table>

*P = 0.025
More child caretakers in Kamirithu (10.5%) could not mention any sign of diarrhoea as compared to (6.5%) in Thigio. This decreased in both villages to 2.2% in Kamirithu and 2.1% in Thigio, during the post intervention period. "Watery stool" alone or in combination with "other signs" was mentioned as signifying that a child was having diarrhoea by more than 80% of the child caretakers in the three villages: before intervention. Ten months after intervention, the percentage mentioning "watery stool" alone decreased from 82.2% to 48.5% and from 72.1% to 48.4% in Kamirithu and Thigio respectively. The "other" responses were all related to diarrhoea and they ranged from "sunken eyes" to "body weakness", with many of them appearing as combinations of several signs.

During the post intervention period, those mentioning a combination of "watery stool and others" increased in both villages, with the biggest increase occurring in Thigio. The child caretakers mentioning "other signs" related to diarrhoea increased from 3.6% to 43.3% in Kamirithu and from 7.7% to 24% in Thigio, in the pre- and post intervention periods respectively.

Causes of diarrhoea

The causes of diarrhoeal disease as mentioned by the child caretakers from both villages during the pre-
and post intervention periods, are presented in the table on the next page.

The percentage of child caretakers who responded that they did not know what causes diarrhoeal disease in both Kamirithu and Thigio were nearly the same (27% and 21.4% respectively), during the pre intervention period. These reduced to zero in Kamirithu, and from 21.4% to 5.7% in Thigio during the post intervention period. "Teething" as a cause of diarrhoea was mentioned by more caretakers in Thigio than in Kamirithu before intervention was instituted. The reverse was true during the post intervention period, where an increase of 3.9% and a decrease of 4% were observed in Kamirithu and Thigio respectively. 4% of child caretakers in Thigio as compared to 14.2% in Kamirithu, mentioned "unsuitable food" as a cause of diarrhoea, during the pre intervention period. During the post intervention period however, this changed to 7.5% in Kamirithu and to 4.2% in Thigio. "Uncleanliness" was the most frequently mentioned cause of diarrhoea in Kamirithu (40%), increasing by 3.3% during the post intervention period. In Thigio, 27% mentioned the same during the pre intervention period, increasing by 8.9% during the post intervention one. "Other causes" of diarrhoea were mentioned by slightly over twice as many child caretakers in Thigio as in Kamirithu (29% and 12.1% respectively). Responses that were put into this category were mentioned by over
<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTALS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAUSATION</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Don't know</td>
<td>67</td>
<td>0</td>
<td>51</td>
<td>16</td>
<td>53</td>
<td>11</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>(27.0%)</td>
<td>(21.0%)*</td>
<td>(17.6%)</td>
<td>(21.4%)</td>
<td>(5.7%)</td>
<td>(23.1%)</td>
<td>(6.5%)</td>
</tr>
<tr>
<td>Teething</td>
<td>16</td>
<td>14</td>
<td>52</td>
<td>8</td>
<td>46</td>
<td>28</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>(6.5%)</td>
<td>(10.4%)</td>
<td>(21.0%)</td>
<td>(8.8%)</td>
<td>(18.6%)</td>
<td>(14.6%)</td>
<td>(15.4%)</td>
</tr>
<tr>
<td>Unsuitable food</td>
<td>35</td>
<td>10</td>
<td>24</td>
<td>23</td>
<td>10</td>
<td>8</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>(14.2%)</td>
<td>*(7.5%)</td>
<td>(9.4%)</td>
<td>(25.3%)</td>
<td>(4.0%)</td>
<td>*(4.2%)</td>
<td>(9.3%)</td>
</tr>
</tbody>
</table>
Table IV.3a Continued

<table>
<thead>
<tr>
<th>Uncleanliness</th>
<th>99 (40.0%)</th>
<th>58 *(43.3%)</th>
<th>78 (31.6%)</th>
<th>13 (14.3%)</th>
<th>67 (27.0%)</th>
<th>69 *(35.9%)</th>
<th>244 (32.9%)</th>
<th>140 (33.6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>30 (12.1%)</td>
<td>50 (38.8%)</td>
<td>42 (17.0%)</td>
<td>31 (34.0%)</td>
<td>72 (29.0%)</td>
<td>76 (39.6%)</td>
<td>144 (19.0%)</td>
<td>157 (38.0%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
<td>247</td>
<td>192</td>
<td>741</td>
<td>417</td>
</tr>
</tbody>
</table>

* P = \(\leq 0.025\)
a quarter of the respondents in both villages, during the post intervention period.

Since a large percentage of child caretakers gave responses that were categorised as "other signs", that item was broken down in order to show the specific responses that were given. The range of responses was very wide, with many appearing as combinations of several causes. The breakdown is presented in table IV.3b.

"Other causes" of diarrhoea fitted into one of various broad categories. The majority of the responses classified as "other causes" fell in the category of "uncleanliness, teething and infection", increasing for Kamirithu from 40% in the pre intervention period to 46% during the post intervention one; and decreasing for Thigio from 58.3% to 38.2% during the same period of time. Those mentioning "uncleanliness and unsuitable food" increased from 6.7% to 50% in Kamirithu and from 5.6% to 44.7% in Thigio during the pre and post intervention periods respectively.

A decrease occurred in those who mentioned "other diseases" in Kamirithu from 50% to zero, and from 33.3% to 3.9% in Thigio during the pre and post intervention periods respectively.
Table IV.3b: Showing a breakdown of the "other causes" of diarrhoea that were mentioned by the child caretakers during the Pre- and Post-intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGES</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER CAUSES OF DIARRHOEA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Infection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.0%)</td>
<td>(2.4%)</td>
<td>(2.8%)</td>
<td>(7.9%)</td>
<td>(2.0%)</td>
<td>(4.5%)</td>
</tr>
<tr>
<td>Uncleanliness, Teething and Infection</td>
<td></td>
<td>12</td>
<td>23</td>
<td>23</td>
<td>26</td>
<td>42</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(40.0%)</td>
<td>(46.0%)</td>
<td>(54.8%)</td>
<td>(83.9%)</td>
<td>(58.3%)</td>
<td>(38.2%)</td>
</tr>
<tr>
<td>Uncleanliness and Infection</td>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.0%)</td>
<td></td>
<td>(2.6%)</td>
<td></td>
<td>(2.6%)</td>
<td>(1.9%)</td>
</tr>
</tbody>
</table>
Table IV.3b Continued

<table>
<thead>
<tr>
<th>Uncleanliness and Unsuitable Food</th>
<th>2   (6.7%)</th>
<th>25 *(50.0%)</th>
<th>3   (7.1%)</th>
<th>3   (9.7%)</th>
<th>4   (5.6%)</th>
<th>34 *(44.7%)</th>
<th>9   (6.3%)</th>
<th>62 (39.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold water</td>
<td>1   (3.3%)</td>
<td>0   *</td>
<td>1   (2.4%)</td>
<td>1   (3.2%)</td>
<td>0</td>
<td>3   (3.9%)</td>
<td>2   (1.4%)</td>
<td>4   (2.5%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>30</td>
<td>50</td>
<td>42</td>
<td>31</td>
<td>72</td>
<td>76</td>
<td>144</td>
<td>157</td>
</tr>
</tbody>
</table>

* P = < 0.025
Methods of diarrhoea prevention

The child caretakers' knowledge on methods of preventing diarrhoea was assessed by asking them to mention any methods that they knew that could be used to prevent the occurrence of diarrhoea in children under five years of age. Their responses were categorized and they are presented in table IV.4.

In Kamirithu, the percentage of caretakers who did not know whether or not diarrhoea can be prevented decreased from 29.6% during the pre intervention period to 3% during the post intervention one; whilst in Thigio the decrease was from 36% to 12.5% during the same time period. A good percentage of the caretakers from both Kamirithu and Thigio knew at least one correct method of preventing diarrhoea during both time periods, increasing from 64% to 64.9% in Kamirithu and from 54% to 74% in Thigio; during the pre and post intervention periods respectively. Very few of the child caretakers mentioned incorrect methods of preventing diarrhoea during the pre intervention period (4.8% in Kamirithu and 5.6% in Thigio), but during the post intervention period, those caretakers mentioning incorrect methods of preventing diarrhoea increased by 26% in Kamirithu and by 2.2% in Thigio. The "correct methods" mentioned by the child caretakers ranged from "using clean utensils" and others related to hygienic preparation and
Table IV.4: Showing the child caretakers' knowledge on methods of preventing occurrence of diarrhoea during the Pre- and Post-intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGES</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PREVENTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTERVENTION PERIOD</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpreventable</td>
<td>4 (1.6%)</td>
<td>1 (0.7%)</td>
<td>9 (3.6%)</td>
<td>0</td>
<td>10 (4.0%)</td>
<td>11 (5.7%)</td>
<td>23 (3.1%)</td>
<td>12 (2.9%)</td>
</tr>
<tr>
<td>Don't know</td>
<td>73 (29.6%)</td>
<td>4 (3.0%)</td>
<td>60 (24.3%)</td>
<td>8</td>
<td>89 (36.0%)</td>
<td>24 (12.5%)</td>
<td>222 (30.0%)</td>
<td>36 (8.6%)</td>
</tr>
</tbody>
</table>
Table IV.4 continued

<table>
<thead>
<tr>
<th></th>
<th>Correct methods</th>
<th>Incorrect methods</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>158 (64.0%)</td>
<td>12 (4.8%)</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>87 (64.9%)</td>
<td>42 (31.0%)</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td>148 (59.9%)</td>
<td>30 (12.0%)</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>41 (45.0%)</td>
<td>42 (46.0%)</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>134 (54.0%)</td>
<td>14 (5.6%)</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>142 (74.0%)</td>
<td>15 (7.8%)</td>
<td>192</td>
</tr>
<tr>
<td></td>
<td>440 (59.0%)</td>
<td>56 (7.5%)</td>
<td>741</td>
</tr>
<tr>
<td></td>
<td>270 (64.7%)</td>
<td>99 (23.7%)</td>
<td>417</td>
</tr>
</tbody>
</table>

* P = 0.025
storage of food to "washing hands" and other aspects of personal and environmental hygiene. The "incorrect methods" ranged from "by going to hospital" to "eating hard food".

The percentage of child caretakers who said that they did not know whether or not diarrhoea can be prevented decreased in all the villages. The percentage of caretakers mentioning correct methods of preventing diarrhoea in Thigio increased by 20%, whilst those caretakers mentioning incorrect methods in Kamirithu increased by 26%. The percentage of child caretakers who said that diarrhoea was not preventable remained more or less the same during the two time periods in all the villages.

Knowledge of Oral Rehydration Therapy (ORT)

The child caretakers were asked whether they knew what Oral Rehydration Therapy was, and when they responded positively, they were asked to define it in their own words. During the pre intervention period, 16.2% of the child caretakers in Kamirithu and 36% in Thigio correctly described it as addition of fluids into the body, through the mouth (see Table IV.5). These percentages increased to 63.4% in Kamirithu and to 66.7% in Thigio, during the post intervention period. Seventy seven percent in Kamirithu and 36.4% in Thigio did not know what Oral Rehydration Therapy was before health
Table IV.5: Showing child caretakers' description of Oral Rehydration Therapy during the pre and post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Don't know</td>
<td>189 (76.5%)</td>
<td>11 (8.2%)</td>
<td>113 (45.7%)</td>
<td>39 (36.4%)</td>
<td>90 (36.4%)</td>
</tr>
<tr>
<td>Liquidsthrough mouth</td>
<td>40 (16.2%)</td>
<td>85 (63.4%)</td>
<td>88 (35.6%)</td>
<td>36 (39.6%)</td>
<td>89 (36.0%)</td>
</tr>
<tr>
<td>Liquidsthrough veins</td>
<td>1 (0.4%)</td>
<td>32 (23.9%)</td>
<td>11 (4.5%)</td>
<td>1 (1.0%)</td>
<td>35 (14.2%)</td>
</tr>
<tr>
<td>Other responses</td>
<td>17 (6.9%)</td>
<td>6 (4.5%)</td>
<td>35 (14.2%)</td>
<td>15 (16.5%)</td>
<td>33 (13.4%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
<td>247</td>
</tr>
</tbody>
</table>
education was given but these decreased to 8.2% and to 9.4% in Kamirithu and Thigio respectively, during the post intervention period. Thigio had the highest percentage of child caretakers (14.2%) describing Oral Rehydration Therapy as addition of fluids through the veins during the Pre intervention period, decreasing to 1% during the post intervention one. Kamirithu had .4% giving that response during the pre intervention period, increasing to 23.9% during the post intervention period. Other unrelated responses like "giving energy foods" or "preventing diarrhoea" were given by 6.9% and 4.5% of the child caretakers in Kamirithu and by 13.4% and 22.9% of those in Thigio during the pre and post intervention periods respectively (see Table IV.5).

Source of ORT knowledge

There was interest to find out where those who said that they had heard about Oral Rehydration Therapy (ORT) had obtained their information from. The child caretakers were asked to reveal their source of information on Oral Rehydration Therapy. During the pre intervention period 70% of the child caretakers in Kamirithu and 31.6% in Thigio had never heard of ORT. This decreased to .7% in Kamirithu and to 3.1% in Thigio, during the post intervention period (see Table IV.6). Of those who said that they had heard of the therapy, 25.9% and
Table IV.6: Showing the child caretakers' source of knowledge on Oral Rehydration Therapy during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
</tr>
<tr>
<td>SOURCE OF ORT KNOWLEDGE</td>
<td>INTERVENTION PERIOD</td>
</tr>
<tr>
<td>Never heard</td>
<td></td>
</tr>
<tr>
<td>At health facility</td>
<td></td>
</tr>
<tr>
<td>At home</td>
<td></td>
</tr>
<tr>
<td>At health facility and at home</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
</tr>
<tr>
<td>SOURCE OF ORT KNOWLEDGE</td>
<td>INTERVENTION PERIOD</td>
</tr>
<tr>
<td>Never heard</td>
<td></td>
</tr>
<tr>
<td>At health facility</td>
<td></td>
</tr>
<tr>
<td>At home</td>
<td></td>
</tr>
<tr>
<td>At health facility and at home</td>
<td></td>
</tr>
</tbody>
</table>

---

Table containing the data for each village and intervention period.
Table IV.6 continued

<table>
<thead>
<tr>
<th>Mass media, at health facility and at home</th>
<th>4 (1.6%)</th>
<th>6 (4.4%)</th>
<th>2 (0.8%)</th>
<th>5 (5.5%)</th>
<th>3 (1.2%)</th>
<th>4 (2.1%)</th>
<th>9 (1.2%)</th>
<th>15 (3.6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At shops and markets</td>
<td>0</td>
<td>0</td>
<td>1 (0.4%)</td>
<td>0</td>
<td>2 (0.8%)</td>
<td>0</td>
<td>3 (0.4%)</td>
<td>0</td>
</tr>
<tr>
<td>TOTALS</td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
<td>247</td>
<td>192</td>
<td>741</td>
<td>417</td>
</tr>
</tbody>
</table>

* P ≤ 0.025
20.1% in Kamirithu and 58.3% and 7.8% in Thigio had heard about it at a health facility, during the pre and post intervention periods respectively.

During the pre intervention period, 2.4% and 8% of the child caretakers had heard about Oral Rehydration Therapy (ORT) at home in Kamirithu and Thigio respectively. Very few child caretakers had heard about Oral Rehydration Therapy at either the shopping centre or by a combination of mass media, health facility and home. The channel of communication about ORT before intervention was largely through the health facilities. During the period after intervention however, there was a change in the source of information about ORT, as presented in Table IV.6.

The child caretakers who said that they had never heard of ORT decreased from 70% in the pre intervention period to .7% during the post intervention period in Kamirithu and from 31.6% to 3.1% in Thigio, during the same time periods. Child caretakers reporting that they had heard about ORT at home increased by 33% in Kamirithu and by 21% in Thigio, in the period after intervention. None of the child caretakers in any of the villages reported having heard about ORT at both the health facilities and at home before intervention.
After intervention however, 38.8% of the child caretakers in Kamirithu and 57.8% in Thigio said that they had heard about ORT at both the health facilities and at home. During both periods, very few child caretakers had heard about the Oral Rehydration Therapy through a combination of mass media, health facility and home. None of the child caretakers had heard about Oral Rehydration Therapy at the shopping centre or at the market during the period after intervention.

Section 4.3b: Attitudes of the child caretakers towards diarrhoeal disease

Attitudes of the child caretakers towards diarrhoeal disease were assessed by two questions. The first question sought to know what the child caretakers regarded diarrhoeal disease as, in terms of whether or not they considered it normal for children under five years to go through diarrhoeal episodes as part of growing up. The second question dealt with the child caretakers' attitudes towards management of diarrhoea, in terms of choice of remedies that they sought if any. Over 80% of the child caretakers in both villages regarded diarrhoeal disease as an illness during the pre and post intervention periods, with only 5.7% and 8.1% saying that it is not an illness in Kamirithu and Thigio respectively, during the pre intervention period. Those describing it as not being an illness decreased from
Table IV.7: Showing the attitudes of the child caretakers regarding diarrhoeal diseases during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIARRHOEA AS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILLNESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERVENTION PERIOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
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<td>Pre</td>
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<td>14</td>
<td>4</td>
<td>18</td>
<td>5</td>
<td>20</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td>(5.7%)</td>
<td>(3.0%)</td>
<td>(7.3%)</td>
<td>(5.5%)</td>
<td>(8.1%)</td>
<td>(3.1%)</td>
<td>(7.0%)</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>221</td>
<td>120</td>
<td>210</td>
<td>86</td>
<td>218</td>
<td>181</td>
<td>649</td>
</tr>
<tr>
<td>(89.5%)</td>
<td>*(89.6%)</td>
<td>*(85.0%)</td>
<td>*(94.5%)</td>
<td>*(88.3%)</td>
<td>*(94.3%)</td>
<td>*(87.6%)</td>
</tr>
<tr>
<td>Not sure/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>don't know</td>
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</tr>
<tr>
<td>12</td>
<td>10</td>
<td>19</td>
<td>0</td>
<td>9</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>(4.8%)</td>
<td>(7.5%)</td>
<td>(7.7%)</td>
<td>(3.6%)</td>
<td>(3.6%)</td>
<td>(2.6%)</td>
<td>(5.3%)</td>
</tr>
<tr>
<td>TOTALS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
<td>247</td>
<td>192</td>
<td>741</td>
</tr>
</tbody>
</table>

* $P < 0.025$
5.7% to 3% in Kamirithu and from 8.1% to 3.1% in Thigio during the post intervention period. Those child caretakers who were not sure or did not know whether diarrhoea is an illness increased from 4.8% to 7.5% in Kamirithu and decreased from 3.6% to 2.6% in Thigio.

Type of medical care sought

The child caretakers were asked to state and describe the type of medical care that they would resort to if a child under five years of age under their care developed diarrhoea. A vast majority (87.4% in Kamirithu and 76.1% in Thigio) said that they would administer Clinical Oral Rehydration Salts if diarrhoea occurred, during the pre intervention period. This decreased to 34.3% in Kamirithu and to 33.9% in Thigio during the post intervention period. Further, the child caretakers said that they would obtain the Clinical Oral Rehydration Salts from the health facilities (see Table IV.8).

A small minority (6.9% in Kamirithu and 8.1% in Thigio) said that they would not administer anything if diarrhoea occurred before health education was given, but this changed to .7% in Kamirithu and to 6.2% in Thigio during the post intervention period.
Table IV.8: Showing the type of medical care that the child caretakers would seek during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>KAMIRITHU</th>
<th>RIRONI</th>
<th>THIGIO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE OF MEDICAL CARE</td>
<td>PRE</td>
<td>POST</td>
<td>PRE</td>
<td>POST</td>
</tr>
<tr>
<td>None</td>
<td>17 (6.9%)</td>
<td>1 (0.7%)</td>
<td>5 (2.0%)</td>
<td>0</td>
</tr>
<tr>
<td>Clinical ORS</td>
<td>216 (87.4%) * (34.3%)</td>
<td>46 (86.2%)</td>
<td>62 (68.0%)</td>
<td>188 (76.1%) * (33.9%)</td>
</tr>
<tr>
<td>Sugar/salt solution</td>
<td>3 (1.2%) * (35.1%)</td>
<td>47 (0.4%)</td>
<td>10 (11.0%)</td>
<td>5 (2.0%)</td>
</tr>
<tr>
<td>Traditional medicine</td>
<td>1 (0.4%)</td>
<td>2 (0.8%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medicine from shops</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>(0.4%)</td>
<td>(0.7%)</td>
<td>(1.2%)</td>
<td>(2.2%)</td>
</tr>
<tr>
<td>Clinical ORS &amp; sugar/salt solution</td>
<td>5 (0.2%)</td>
<td>33 *(24.6%)</td>
<td>12 (4.9%)</td>
<td>9 (9.9%)</td>
</tr>
<tr>
<td>Clinical solution and other solutions</td>
<td>2 (0.8%)</td>
<td>2 (1.5%)</td>
<td>6 (2.4%)</td>
<td>2 (2.2%)</td>
</tr>
<tr>
<td>Sugar/salt solution and other solutions</td>
<td>0 (0.7%)</td>
<td>1 (0.8%)</td>
<td>2 (0.8%)</td>
<td>2 (2.2%)</td>
</tr>
<tr>
<td>Other combinations</td>
<td>2 (0.8%)</td>
<td>3 (2.2%)</td>
<td>3 (1.2%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
</tr>
</tbody>
</table>

* P < 0.025
Those who would administer sugar/salt solution increased from 1% to 35% in Kamirithu and from 2% to 11% in Thigio, during the post intervention period. More child caretakers said that they would administer a combination of clinical ORS and sugar/salt solution during the post intervention period, when compared with the pre intervention one. The percentages increased from 2% to 24.6% in Kamirithu, and from 3.2% to 14.1% in Thigio. The other remedies that child caretakers mentioned that they would use were not as commonly mentioned as clinical and sugar/salt solutions, and in fact, traditional medicine was not mentioned at all in Kamirithu during the post intervention period, whilst in Thigio only .5% mentioned it. After intervention, the proportions of those child caretakers who mentioned "other combinations" of remedies was larger than before intervention, in both Kamirithu and Thigio. The increase in Thigio was from 4.9% to 24% and from .8% to 2.2% in Kamirithu.

Items mentioned under "other combinations" ranged from cooked bananas to uji (porridge), but values in each item were so small that they could not have been presented singularly; and hence the reason to combine them.

Section 4.3c: The child caretakers' practices related to diarrhoeal disease

Data on various dimensions of practices related to
diarrhoeal disease was collected from the child caretakers, before and after health education was given. This section deals with the management of a diarrhoeal child, and household waste and faecal disposal.

Practices related to management of a diarrhoeal child

It is essential to note that during the pre and post intervention periods, only a small percentage (in both cases less than 10%) said that they would not normally administer anything to a child under five years of age who was suffering from diarrhoea (refer to Table IV.9). The majority gave a remedy of one form or another. Out of the 741 child caretakers in the study sample during the pre intervention period, 330 agreed to respond to the question as to which specific fluids that they had administered to their children when they suffered from diarrhoea. The non respondents gave the reason for not responding as not having had a child with diarrhoea for as long as they could remember. The 330 child caretakers responding to this question constituted 44.5% of the total pre intervention sample.

During the pre intervention period, the majority of the child caretakers (74% in Kamirithu and 84% in Thigio) said that when children under five years of age under their care had diarrhoea they administered sugar/salt solution. More of them in Kamirithu (22.6%) administered
Table IV.9: Showing the fluids given to children under five years of age with diarrhoea during the Pre- and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>KAMIRITHU</th>
<th>RIRONI</th>
<th>THIGIO</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUIDS DURING DIARRHOEA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3 (3.2%)</td>
<td>3 (2.6%)</td>
<td>15 (12.4%)</td>
<td>21 (6.4%)</td>
</tr>
<tr>
<td>Post</td>
<td>1 (0.8%)</td>
<td>3 (4.5%)</td>
<td>2 (1.3%)</td>
<td>6 (1.7%)</td>
</tr>
<tr>
<td>Sugar/salt solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>69 (74.2%)</td>
<td>89 (76.7%)</td>
<td>102 (84.3%)</td>
<td>260 (78.8%)</td>
</tr>
<tr>
<td>Post</td>
<td>130 (97.7%)</td>
<td>60 (90.9%)</td>
<td>146 (96.7%)</td>
<td>336 (96.0%)</td>
</tr>
<tr>
<td>Other solutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>21 (22.6%)</td>
<td>24 (20.7%)</td>
<td>4 (3.3%)</td>
<td>49 (14.8%)</td>
</tr>
<tr>
<td>Post</td>
<td>2 (1.5%)</td>
<td>3 (4.5%)</td>
<td>3 (2.0%)</td>
<td>8 (2.3%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>93</td>
<td>116</td>
<td>121</td>
<td>330</td>
</tr>
</tbody>
</table>
"other solutions", than in Thigio (3.3%) The picture changed during the post intervention period, where nearly all the child caretakers said that they administered sugar/salt solution to their children when diarrhoea occurred (98% in Kamirithu and 97% in Thigio) (See Table IV.9).

The popularity of clinical solution declined during the post intervention period where only .8% of child caretakers in Kamirithu and 1.3% Thigio administered it when diarrhoea occurred in children under 5 years of age under their care. There was also a decline in those administering "other solutions" from 3.3% to 2% in Thigio, and from 22.6% to 1.5% in Kamirithu, during the pre and post intervention periods respectively. A 21% decrease occurred in Kamirithu in the child caretakers who administered "other solutions" when diarrhoea occurred. In both villages, there was a convergence towards sugar/salt solution during the post-intervention period.

When asked to state the amount of fluids administered and the number of times in a day that they did so, there were increases of 11.4% in Kamirithu and 6.7% in Thigio, in those who said that they administered between 1 teaspoon to less than a glass of fluids per day, during the post intervention period. The majority of the child caretakers gave this response during the two time periods.
On the number of times that the fluids were given, the percentage of child caretakers saying that they gave the fluids to the children with diarrhoea "often" or "many times" increased from 56% to 65% in Kamirithu but decreased from 67% to 31% in Thigio. Those who answered that they administered the fluids to the children "after every bowel movement" increased from 11% to 23% in Kamirithu, and from 5% to 47% in Thigio, during the post intervention period. Those administering 1-3 times a day decreased from 33% to 12% in Kamirithu and from 29% to 22% in Thigio during the same time period.

The child caretakers were asked whether they had had a child under five years of age experiencing a diarrhoea attack in the last two weeks from the day of interview (see Table IV.10). During the time before health education was given, 55% of the child caretakers in Kamirithu and 32% in Thigio, managed children under five years of age under their care; with "clinical solution". Twenty nine percent of the child caretakers in Kamirithu and 13% of them in Thigio, managed children under five years of age under their care and who suffered from diarrhoea on "sugar/salt solution". Nearly 5 times more caretakers in Thigio (16%) than in Kamirithu (3.2%) managed their children using a combination of "sugar/salt solution and others" (see Table IV.10).
Table IV.10: Showing the therapy given to a child experiencing diarrhoea in the last two weeks during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>KAMIRITHU</th>
<th>RIRONI</th>
<th>THIGIO</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TYPE OF THERAPY</strong></td>
<td><strong>INTERVENTION PERIOD</strong></td>
<td><strong>Pre</strong></td>
<td><strong>Post</strong></td>
<td><strong>Pre</strong></td>
</tr>
<tr>
<td>Sugar/salt solution</td>
<td></td>
<td>9 (29.0%)</td>
<td>30 (66.7%)</td>
<td>5 (20.0%)</td>
</tr>
<tr>
<td>Clinical solution</td>
<td></td>
<td>17 (54.8%)</td>
<td>8 (17.8%)</td>
<td>14 (56.0%)</td>
</tr>
<tr>
<td>Sugar/salt solution and others</td>
<td></td>
<td>1 (3.2%)</td>
<td>3 (6.7%)</td>
<td>1 (4.0%)</td>
</tr>
</tbody>
</table>
Table IV.10 continued

<table>
<thead>
<tr>
<th>Clinical solution and others</th>
<th>1 (3.2%)</th>
<th>4 (8.9%)</th>
<th>1 (4.0%)</th>
<th>0</th>
<th>3 (9.7%)</th>
<th>3 (18.8%)</th>
<th>5 (5.7%)</th>
<th>7 (9.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No treatment</td>
<td>2 (6.5%)</td>
<td>0</td>
<td>2 (8.0%)</td>
<td>2</td>
<td>3 (9.7%)</td>
<td>0</td>
<td>7 (8.0%)</td>
<td>2 (2.7%)</td>
</tr>
<tr>
<td>Other treatment</td>
<td>1 (3.2%)</td>
<td>0</td>
<td>2 (8.0%)</td>
<td>0</td>
<td>6 (19.4%)</td>
<td>1 (6.2%)</td>
<td>9 (10.3%)</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>31</td>
<td>45</td>
<td>25</td>
<td>13</td>
<td>31</td>
<td>16</td>
<td>87</td>
<td>74</td>
</tr>
</tbody>
</table>
There was also a higher percentage of child caretakers in Thigio than in Kamirithu using a combination of "clinical solution and others" and "other treatment". The percentage of child caretakers who used "other treatment" in Thigio was in fact about 6 times more than that in Kamirithu. The percentage of those who did not use any type of therapy when their children got sick with diarrhoea was low in all the villages.

During the post intervention period, there was a 38% increase in Kamirithu and 12% in Thigio, in the child caretakers who managed a child with diarrhoea using the sugar/salt solution. There was a decline in those caretakers who used clinical solution during the post intervention period, in both villages. The child caretakers who used combinations of "sugar/salt solution and others" and "clinical solution and others" were almost equal in percentage during the post intervention period. Those using "other treatment" or "no treatment" at all decreased in both villages. In both Kamirithu and Thigio, over 80% of the caretakers either used "sugar/salt solution" or "clinical solution".

Presented in table IV.11 are the responses pertaining to the question on the type of foodstuff that a child suffering from diarrhoea is fed on, during the period before and after health education was given. The foodstuff has been put into the basic food groups that are
universally accepted, namely: proteins, carbohydrates, vitamins and minerals and water.

Seventy percent of the child caretakers responded to this question during the pre intervention period. Twenty percent of the child caretakers in Kamirithu and 24% in Thigio said that they did not feed their children when the children were suffering from diarrhoea. 15% and 39% in Kamirithu and Thigio respectively said that they fed their diarrhoeal children on "carbohydrates" alone, whilst only a small percentage fed them on either "proteins", "vitamins and minerals", "carbohydrates and water"; separately. The majority combined the various food groups, as demonstrated in the combination of "proteins, carbohydrates, vitamins and minerals", with 38% of the child caretakers in Kamirithu and 10% in Thigio feeding this combination. The next most commonly fed combination after "proteins, carbohydrates, vitamins and minerals" was "carbohydrates, vitamins and minerals" (17% in Kamirithu and 14% in Thigio). "Carbohydrates and water" were mentioned by 7% of the child caretakers in Thigio and .6% in the control village whilst none mentioned that food group in Kamirithu; during the pre intervention period (see Table IV.11).

After intervention, the child caretakers who said that they did not feed anything to their children when they
Table IV.11: Showing the feeding patterns of children under five years of age experiencing diarrhoea during the Pre- and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
<th>DURING DIARRHOEA</th>
<th>FEEDS</th>
<th>KAMIRITHU</th>
<th>RIRONI</th>
<th>THIGIO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>INTERVENTION PERIOD</td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Nothing</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>2</td>
<td>50</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(20.3%)</td>
<td>(1.6%)</td>
<td>(28.9%)</td>
<td>(33.0%)</td>
</tr>
<tr>
<td>Proteins</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.8%)</td>
<td>(5.8%)</td>
<td>(2.3%)</td>
<td>(1.0%)</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td></td>
<td></td>
<td></td>
<td>19</td>
<td>38</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(15.4%)</td>
<td>(29.7%)</td>
<td>(16.8%)</td>
<td>(17.0%)</td>
</tr>
<tr>
<td>Vitamins and minerals</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.8%)</td>
<td>(0.6%)</td>
<td>(0.6%)</td>
<td>(0.6%)</td>
</tr>
<tr>
<td>Water</td>
<td>1 (0.8%)</td>
<td>1 (0.8%)</td>
<td>8 (4.6%)</td>
<td>0</td>
<td>0</td>
<td>9 (1.8%)</td>
<td>1 (0.2%)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>---</td>
<td>---</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Proteins, carbohydrates, vitamins and minerals</td>
<td>47 (38.2%)</td>
<td>73 (57.0%)</td>
<td>35 (20.2%)</td>
<td>26 (29.5%)</td>
<td>21 (10.1%)</td>
<td>47 (25.0%)</td>
<td>103 (20.4%)</td>
</tr>
<tr>
<td>Proteins, carbohydrates and water</td>
<td>8 (6.5%)</td>
<td>1 (0.8%)</td>
<td>0</td>
<td>2 (2.3%)</td>
<td>8 (3.8%)</td>
<td>35 (18.7%)</td>
<td>16 (3.2%)</td>
</tr>
<tr>
<td>Carbohydrates, vitamins and minerals</td>
<td>21 (17.1%)</td>
<td>13 (10.1%)</td>
<td>39 (22.5%)</td>
<td>13 (14.8%)</td>
<td>30 (14.4%)</td>
<td>34 (18.2%)</td>
<td>90 (17.8%)</td>
</tr>
<tr>
<td>Carbohydrates and water</td>
<td>0</td>
<td>0</td>
<td>1 (0.6%)</td>
<td>1 (1.0%)</td>
<td>15 (7.2%)</td>
<td>1 (0.5%)</td>
<td>16 (13.2%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>123</td>
<td>128</td>
<td>173</td>
<td>88</td>
<td>208</td>
<td>187</td>
<td>504</td>
</tr>
</tbody>
</table>
developed diarrhoea decreased from 20% to 2% in Kamirithu and from 24% to 5% in Thigio. "Proteins" alone; "vitamins and minerals"; "water" alone; and "carbohydrates and water" were fed to children suffering from diarrhoea by very few of the child caretakers in the two villages, after intervention. The majority of the child caretakers fed the children on a combination of "proteins, carbohydrates, vitamins and minerals" (57% in Kamirithu and 25% in Thigio). "Carbohydrates" alone, and a combination of "carbohydrates, vitamins and minerals" were also frequently fed to the children under five years of age, when they had diarrhoea.

Practices related to management of household waste

Each household visited was observed for methods of household waste (rubbish) disposal. Table IV.12 shows the methods of household waste disposal, before and after intervention. Thirty three percent of the households in Kamirithu and 32% in Thigio did not have any specific place where they dumped their household waste material. It was largely left lying around the compound, whereby the edible vegetable material would be feasted on by livestock.
Table IV.12:  Showing the method of household waste disposal during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>VILLAGE</th>
<th>KAMIRITHU</th>
<th>RIRONI</th>
<th>THIGIO</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Methods of Waste Disposal</td>
<td>INTERVENTION PERIOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Non-specific indiscriminate</td>
<td></td>
<td>82</td>
<td>32</td>
<td>115</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(33.1%)</td>
<td>(23.9%)</td>
<td>(46.5%)</td>
<td>(59.3%)</td>
</tr>
<tr>
<td>Cowshed</td>
<td></td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.4%)</td>
<td>(6.0%)</td>
<td>(2.0%)</td>
<td>(2.2%)</td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td>70</td>
<td>63</td>
<td>56</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(28.3%)</td>
<td>(47.0%)</td>
<td>(22.7%)</td>
<td>(17.6%)</td>
</tr>
<tr>
<td>Compost Pit</td>
<td></td>
<td>89</td>
<td>31</td>
<td>71</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(36.0%)</td>
<td>(23.1%)</td>
<td>(28.7%)</td>
<td>(20.9%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>247</td>
<td>134</td>
<td>247</td>
<td>91</td>
</tr>
</tbody>
</table>

* P < 0.025
Out of 741 households, 265 (35.8%), 28% in Kamirithu and 56% in Thigio threw their rubbish into the "garden". The households were all surrounded by small gardens on which a variety of crops ranging from sweet potatoes to maize, were grown. The compost pit was not an entirely new idea in this community because 36% of the households in Kamirithu and 9% in Thigio, had compost pits before health education was instituted (see Table IV.12).

The "cowsheds" were, like the "gardens", located within the compounds, short distances away from the houses. Two percent of the households in Kamirithu and 3% of those in Thigio dumped their household waste into the cowsheds. The fresh vegetable material was thrown into the cowsheds as food for the livestock, whilst the rest of the rubbish was meant for mixing with dung to make manure.

After intervention, there was a 9% decrease in Kamirithu and 6% in Thigio of households which disposed of their household waste indiscriminately. A sizeable percentage of households continued to dispose of their household waste in the garden, and in fact there was a 19% increase in Kamirithu and 4% in Thigio. Surprisingly, the percentage of households which had compost pits during the pre intervention period in Kamirithu decreased to 23% during the post intervention one. In Thigio, they
increased from 9% to 14%.

Practices related to faecal disposal

One hundred and ninety five households out of 247 and 224 out of 247 had children aged under five years of age who were too young to use the latrine in Kamirithu and Thigio respectively; during the pre intervention period (see Table IV.13).

Over 80% of the child caretakers in both Kamirithu (88%) and Thigio (82%) deposited the under fives' faecal matter into the latrines, during the pre intervention period. They did this by either making the children to defaecate on leaves or newspapers and then depositing the faecal matter into the latrine, or by picking it up from the ground where the children deposited it; and then throwing it into the latrine. Twelve percent of the child caretakers in Kamirithu and 18% in Thigio did not pay any particular attention to the way that they disposed of the children's faecal matter, before intervention.

Faecal matter that had been deposited on the ground by the children would be left there and in fact would eventually be eaten up by the dogs and chickens. In the case of those children who defaecated in wrappers or napkins, the washed off faecal material would be thrown
Table IV.13: Showing the child caretakers' method of disposal of latrine non-users' faecal matter during the Pre and Post intervention periods

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>METHODS OF</td>
<td>KAMIRITHU</td>
<td>RIRONI</td>
<td>THIGIO</td>
<td>TOTALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAECAL DISPOSAL</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Deposited into latrine</td>
<td>172 (88.2%)</td>
<td>127 (94.7%)</td>
<td>165 (86.4%)</td>
<td>52 (75.3%)</td>
<td>183 (81.6%)</td>
<td>148 (89.1%)</td>
</tr>
<tr>
<td>Indiscriminate</td>
<td>23 (11.9%)</td>
<td>7 (5.2%)</td>
<td>26 (13.6%)</td>
<td>17 (24.6%)</td>
<td>41 (18.2%)</td>
<td>18 (10.8%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>195</td>
<td>134</td>
<td>191</td>
<td>69</td>
<td>224</td>
<td>166</td>
</tr>
</tbody>
</table>

(Pre and Post intervention periods)
out into the compound indiscriminately. On the contrary those who deposited faecal matter into the latrine, would wash it off the wrappers or napkins, and then they would pour the entire contents of the washing basin, into the latrine.

During the post intervention period, those depositing faecal matter into the latrine, increased from 88% to 95% in Kamirithu, and from 82% to 89% in Thigio. Those child caretakers who disposed of the children's faecal matter indiscriminately decreased from 12% to 5% in Kamirithu, and from 18% to 11% in Thigio, during the post intervention period.

The observations that have been presented in this chapter are interpreted and discussed in the following chapter.
The data that was presented in Chapter 4 are interpreted and discussed in this chapter. Each subsection on knowledge, attitudes and practices related to diarrhoea are discussed separately, in the order in which they appear in the observations chapter. The discussions highlight those changes that occurred in the two villages, during the post intervention period. Those that were found to be statistically significant in the two villages, have been summarised and presented in table V.1 next page. A discussion follows the tabular presentation.

The observations that were made on each of the aspects pertaining to diarrhoeal disease are discussed separately, as follows:

1. Signs of diarrhoea

There were statistically significant changes in the percentage of child caretakers who mentioned "watery stool" as a sign of diarrhoea in both Kamirithu and Thigio (82.2% to 48.5% and 72.1% to 48.4% respectively). Other significant changes were observed in those who mentioned "watery stool" and "others" in Kamirithu,
Table V.1: Showing the changes in the child caretakers' knowledge, attitudes and practices which were found to be statistically significant at the 0.025 level

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>VILLAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KAMIRITHU</td>
</tr>
<tr>
<td><strong>DIARRHOEA SIGNS</strong></td>
<td></td>
</tr>
<tr>
<td>1. Watery stool</td>
<td>decrease</td>
</tr>
<tr>
<td>2. Watery stool + others</td>
<td>increase</td>
</tr>
<tr>
<td>3. Other signs</td>
<td>increase</td>
</tr>
<tr>
<td><strong>DIARRHOEA CAUSES</strong></td>
<td></td>
</tr>
<tr>
<td>4. Don't know</td>
<td>decrease</td>
</tr>
<tr>
<td>5. Teething</td>
<td>increase</td>
</tr>
<tr>
<td>6. Unsuitable food</td>
<td>decrease</td>
</tr>
<tr>
<td>7. Uncleanliness</td>
<td>increase</td>
</tr>
<tr>
<td>8. Unclean + unsuitable food</td>
<td>increase</td>
</tr>
<tr>
<td>9. Unclean + teething + infection</td>
<td>increase</td>
</tr>
<tr>
<td>10. Other diseases</td>
<td>decrease</td>
</tr>
<tr>
<td><strong>DIARRHOEA PREVENTION</strong></td>
<td></td>
</tr>
<tr>
<td>11. Don't know</td>
<td>decrease</td>
</tr>
<tr>
<td>12. Incorrect methods</td>
<td></td>
</tr>
<tr>
<td><strong>KNOWLEDGE OF ORT</strong></td>
<td></td>
</tr>
<tr>
<td>13. Don't know</td>
<td>decrease</td>
</tr>
<tr>
<td>14. Fluids by mouth</td>
<td>increase</td>
</tr>
<tr>
<td>15. Fluids by veins</td>
<td>increase</td>
</tr>
<tr>
<td>16. Other responses</td>
<td></td>
</tr>
</tbody>
</table>
### SOURCE OF ORT KNOWLEDGE

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>Not heard</td>
<td>decrease</td>
</tr>
<tr>
<td>18.</td>
<td>At health facility</td>
<td>decrease</td>
</tr>
<tr>
<td>19.</td>
<td>At home</td>
<td>increase</td>
</tr>
</tbody>
</table>

### DIARRHOEA AS ILLNESS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### TYPE OF MEDICAL CARE

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>Clinical solution</td>
<td>decrease</td>
</tr>
<tr>
<td>22.</td>
<td>Sugar/salt solution</td>
<td>increase</td>
</tr>
<tr>
<td>23.</td>
<td>Clinical solution + S.S.S.</td>
<td>increase</td>
</tr>
<tr>
<td>24.</td>
<td>Other combinations</td>
<td>increase</td>
</tr>
</tbody>
</table>

### FLUIDS CONSUMED

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<thead>
<tr>
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<tbody>
<tr>
<td>25.</td>
<td>Clinical solution</td>
</tr>
<tr>
<td>26.</td>
<td>Other solutions</td>
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### AMOUNT OF FLUIDS GIVEN

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<tbody>
<tr>
<td>27.</td>
<td>1 tsp. - &lt; 1 glass</td>
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### NO. TIMES FLUIDS GIVEN

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<tbody>
<tr>
<td>28.</td>
<td>Often</td>
<td>increase</td>
</tr>
<tr>
<td>29.</td>
<td>After every bowel movement</td>
<td>increase</td>
</tr>
<tr>
<td>30.</td>
<td>1-3 times a day</td>
<td>decrease</td>
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### TREATMENT LAST TWO WEEKS

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<tbody>
<tr>
<td>31.</td>
<td>Sugar/salt solution</td>
<td>increase</td>
</tr>
<tr>
<td>32.</td>
<td>Clinical solutions</td>
<td>decrease</td>
</tr>
</tbody>
</table>
FEEDING DURING DIARRHOEA

33. Nothing  decrease  decrease
34. Balanced diet  increase

HOUSEHOLD WASTE DISPOSAL

35. Garden  increase
and also in those who mentioned "other signs" in both Kamirithu and Thigio. More child caretakers mentioned a wider range of signs during the post intervention period than during the pre intervention one, and in fact this increased by tenfold in Kamirithu and by threefold in Thigio.

In terms of the relationship between the signs stated by the child caretakers as demonstrating the presence of diarrhoea and classical signs of diarrhoea as described in the text books, the signs mentioned by the caretakers were all correct signs. There was marked decrease in those who did not know any diarrhoea signs during the post intervention period in all the villages, although this decrease was not statistically significant, at the 0.025 level. There was increased knowledge of the signs that indicated to the child caretakers that diarrhoea has occurred in children under their care and who are aged less than five years in both Kamirithu and Thigio: after the two groups had been given health education. The caretakers in Kamirithu however, had more knowledge of the signs, as indicated by the significantly higher percentage of those who mentioned "watery stool" in combination with "other signs".
2. Causes of diarrhoea

There was a significant decrease in those who did not know the causes of diarrhoea in both Kamirithu and Thigio. "Teething", "uncleanliness", a combination of "uncleanliness, teething and infection", a combination of "uncleanliness and unsuitable food", were all mentioned by more child caretakers in Kamirithu after health education. This was statistically significant for all the above mentioned items. More child caretakers in Thigio mentioned "unsuitable food, "uncleanliness" and a combination of "uncleanliness and unsuitable food" during the post intervention period than in the pre intervention one. Statistically significant decreases were recorded in Thigio in those who mentioned "teething", a combination of "uncleanliness, teething and infection", and in Kamirithu, "unsuitable food", and "other diseases". Further, those who mentioned "other diseases" as a cause for diarrhoea decreased in all the villages during the post intervention period, with none giving that response in Kamirithu.

"Unsuitable food" represents food that is contaminated, or food that is generally considered as "not proper" either in terms of type or composition. In other words, food that is seen to bring about ailments to a child, when consumed by that child. The Kamirithu child caretakers mentioned more items and in more precise combi-
nations than in Thigio. In fact they mentioned a bigger range of possible ways that diarrhoea can be caused, with all of them implicating contamination and infection in diarrhoea causation. The Thigio child caretakers focused their responses on "unsuitable food" and uncleanliness" as the major cause of diarrhoea.

Causes associated with the supernatural were completely absent in this community, as compared to studies conducted elsewhere. In Machakos district of Kenya, diarrhoea was largely associated with "God" (Maina-Alberg, 1977). In Uganda, it was associated with witchcraft, ancestral spirits, curses and breast feeding whilst the woman is pregnant (Lwanga et al, 1988). In Zimbabwe it was associated with worms (Choto et al, 1988). In Ghana, diarrhoea was believed to be caused by contaminated food and water, germs, flies and evil spirits (Arthur, 1986).

3. Mode of prevention of diarrhoea

The percentage of child caretakers who said that they did not know whether or not diarrhoea can be prevented decreased in all the villages. This was however not statistically significant. Although not statistically significant, the percentage of caretakers mentioning correct methods of preventing diarrhoea in Thigio increased by 20%, whilst those caretakers mentioning
incorrect methods in Kamirithu increased by 26%. The 2% increase in those who mentioned incorrect methods of preventing diarrhoea in Thigio during the post intervention period was statistically significant at the 0.025 level. The percentage of child caretakers who said that diarrhoea was not preventable remained more or less the same during the two time periods in all the villages. Kamirithu child caretakers gave more focussed responses to the question on how diarrhoea could be prevented. The Thigio child caretakers did not understand the topic on mode of prevention of diarrhoea as demonstrated by the incorrect methods that a significant percentage mentioned.

4. Knowledge of Oral Rehydration Therapy

Statistically significant changes at 0.025 level occurred in most of the responses in all the villages. There was a decrease in those who did not know what Oral Rehydration Therapy was, by 68.3% in Kamirithu and by 27% in Thigio, during the post intervention period. There was an increase in those who correctly described it as addition of fluids into the body through the mouth, by 47.2% in Kamirithu and by 30.7% in Thigio. These changes in the two responses were statistically significant at the 0.025 level. In Kamirithu, those who described Oral Rehydration Therapy as addition of fluids into the body through veins increased by 23.5% whilst the same decreased
in Thigio, by 13.2%. Both changes were statistically significant. No significant changes were observed in those who gave other unrelated descriptions of Oral Rehydration Therapy, in all the villages; during the two time periods. "Other responses" which are not related or true of Oral Rehydration Therapy (ORT) were mentioned more often in Thigio after health education, than in Kamirithu.

5. Source of knowledge on Oral Rehydration Therapy

The child caretakers who said that they had never heard of Oral Rehydration Therapy during the pre intervention period decreased by 69% in Kamirithu and 29% in Thigio; during the post intervention one. This decrease was statistically significant at the 0.025 level. Also significant was the decrease in those child caretakers who had heard about ORT at the health facilities in Thigio, which was from 58.3% before intervention to 7.8% after intervention. There was a 33% increase in Kamirithu and a 21% one in Thigio in those reporting that they had heard about ORT at home. This occurrence was statistically significant. Alot more child caretakers heard about Oral Rehydration Therapy at home in Thigio, than in Kamirithu and infact the percentage of those who heard about it at the health facility in Thigio decreased significantly. It does appear from the results therefore that the message about the Oral Rehydration
Therapy did actually reach the child caretakers through the educators' home visits, in both villages. Further, the exposure seems to have been given in similar intensity, in the two villages.

6. Child caretakers' attitude towards diarrhoea as an illness

When compared with the pre intervention period, there was a decrease in the percentage of child caretakers who were of the opinion that diarrhoea was not an illness, in the two villages. This corresponded with an increase in those who said that it was an illness during the post intervention period. This increase was statistically significant for Kamirithu at the 0.025 level, but not for Thigio. This suggests that the message about the importance of diarrhoea as an illness and/or one that can be severe was better received in Kamirithu.

7. The type of medical care sought

After intervention, although not statistically significant at 0.025 level, there was a decrease in those who said that they do not seek any medical care when a child under five years of age develops diarrhoea; in all the villages. Significant changes were observed in both Kamirithu and Thigio in those caretakers who would administer clinical oral rehydration solution,
as demonstrated by the decrease in percentages from 87% to 34% in Kamirithu, and from 76% to 34% in Thigio. Those who would administer sugar/salt solution increased from 1% to 35% in Kamirithu and from 2% to 11% in Thigio. This was statistically significant for Kamirithu. More child caretakers said that they would administer a combination of clinical ORS and sugar/salt solution during the post intervention period, when compared with the pre intervention one. The percentages increased from 2% to 24.6% in Kamirithu, and from 3.2% to 14.1% in Thigio. Whilst this was statistically significant for Kamirithu, it was not significant for Thigio. It is pointed out here that because there was no home distribution of satchet Oral Rehydration Salts and they were not on sale either at the local shops, the caretakers must have gotten the salts from the health facilities.

May be the higher level of awareness of the various aspects of diarrhoea in the child caretakers from Kamirithu could be influencing this behaviour, by motivating the child caretakers to use all the alternatives that they had been exposed to through health education. Notable also, is the better defined pattern showing the majority of caretakers preferring "clinical", "sugar/salt", and a combination of "clinical and sugar/salt solutions" in Kamirithu. In this group, the diversity of responses was less. The responses from the Thigio child
caretakers display a wider diversity and this could be linked with the significantly higher percentage of child caretakers who had described Oral Rehydration Therapy incorrectly. Further, those caretakers saying that they would combine a variety of remedies increased significantly after health education had been given, suggesting that health education served to reinforce what they considered as appropriate remedy for diarrhoea, and not necessarily what was taught to them. The two remedies that were taught were "Sugar/Salt" and the "Clinical ORS".

The picture from elsewhere in Africa is somewhat similar and somewhat different to this Kenyan one. Ghanaians prefer health facility based health care for diarrhoea and they actually recommend it for launching home based care in terms of training and supervising community health workers (Arthur, 1986). Visits to health facilities by children with diarrhoea in Tanzania is low and home visits by the health personnel are recommended (Dahoma, 1986). Health facility workers would need strengthening through further training in diarrhoeal disease and specifically how to dispense ORS since child caretakers would still need to go to them as shown by the results of this present study. In Tanzania, the hospital dispensers deliver all the ORS used, to caretakers (Diseko, 1986). In Kenya, correct knowledge of ORS of health workers was assessed by
questionnaire and practice by observation and it was found to be 40% correct knowledge and 39% correct practices as taught to caretakers (WHO/CDD/89.31). As illustrated by the literature cited above, clearly this area needs strengthening through training.

8. The type of fluids/substances given to a child with diarrhoea

Consumption of "Clinical solution" and "other solutions" in Thigio decreased significantly, whilst that of "Sugar/Salt solution" increased significantly in Kamirithu. Sugar/Salt solution was the solution of choice for nearly all the child caretakers in both Kamirithu and Thigio. The responses given by the Thigio child caretakers when asked about the type of medical care that they would seek when diarrhoea occurs does not tally with the responses that those same caretakers gave when asked about what they administered to their children when diarrhoea occurred. Generally both Kamirithu and Thigio had good practice as far as rehydration was concerned.

9. Amounts of fluids administered per day

The total amount of fluids administered per day by most of the child caretakers in both Thigio and Kamirithu was between one (1) teaspoonful and less than one glass. This was statistically significant for Thigio. The
little amounts of fluids given to children when they have diarrhoea is indicative of the small magnitude of the diarrhoeal problem in this part of Kenya. This is supported by reported incidence rate of between .8 and 1.5 episodes of diarrhoea per child per year (Kinoti et al, 1988), which is very low by the developing countries' standards.

10. How often the fluids are administered

The percentage of child caretakers who said that they administered fluids often or many times increased in Kamirithu but decreased in Thigio. Both these changes were statistically significant at the 0.025 level. The decrease in Thigio corresponded with a significant increase in the percentage of child caretakers who said that they administered oral rehydration solution after every bowel movement. Those saying that they administered oral rehydration solution one to three times a day also decreased significantly in Thigio.

Administering Oral Rehydration Therapy often, many times, or after every bowel movement as was answered by most of the caretakers in both Kamirithu and Thigio carried equal weight, but those of Thigio were more knowledgeable on the frequency of administering fluids to a child who had diarrhoea.
11. How a diarrhoeal child was managed in the last two weeks

The percentage of child caretakers who did not use any type of therapy when their children got sick with diarrhoea was low in all the villages. Those child caretakers managing children with diarrhoea on "Sugar/Salt solution" increased significantly in Kamirithu. Those managing on "Clinical solution" decreased significantly in both Kamirithu and Thigio. While Kamirithu showed a clearer pattern of decreased use of "Clinical solution", Thigio showed decreased use of "Clinical oral rehydration solution" but a wider distribution of the rest of responses over the other combinations. This was a repeat of the picture that they portrayed when asked about the type of medical care that they would choose when a child under their care suffered from diarrhoea. Perhaps this is what they truely believed given the fact that it was repeated twice, despite other related questions being asked in between and which would have served to confuse the issue. Preference for a wider selection of combinations over just a few could also be related to their associating occurrence of diarrhoeal disease with "unsuitable food" among other causes.
12. Feeding patterns of children under five years of age who experience diarrhoea

Those child caretakers who said that they fed their children on nothing when the children had diarrhoea decreased significantly in both Kamirithu and Thigio. Those feeding a combination of "proteins, carbohydrates, vitamins and minerals" increased significantly in Kamirithu. Thigio child caretakers also displayed greater variability of the foods that they would give to their children when compared with Kamirithu. Apart from "proteins" alone and "carbohydrates and water", the rest of the response categories are well represented in Thigio, meaning that the responses were widely distributed over most of the categories. After education, Kamirithu displayed a better defined trend of the foods that are fed to children who are experiencing diarrhoea. Their child feeding practices were better.

Continuation of normal feeding was also reported in Botswana (Diseko, 1986); Sierra Leone (Winston-Webber, 1986); and Ethiopia (Ketsela, 1988). By coincidence, (because this was not covered in the lessons given), child caretakers' preference for feeding the children on carbohydrates either on their own or mixed with other items from the other food groups tallies very well with the feeding recommendations given by the Kenya Control of Diarrhoeal Disease programme which
discourages fluids based on green leafy vegetables, tea and fizzy or mineral drinks (Alwar, 1988).

13. Household waste disposal

Those disposing of their household waste in the "garden" increased significantly in Kamirithu, during the post intervention period. This was not surprising because this practice had been encouraged and in fact reinforced during the health education lessons, because it was deemed as useful in producing manure for the gardens. Overall, little change in the pattern of household waste disposal was observed, with the majority disposing of it either "indiscriminately", in the "garden" or into "compost pits".

14. Method of faecal disposal

During the post intervention period, those child caretakers disposing of the childrens' faecal matter in the "latrines" increased from 88% to 95% in Kamirithu and from 82% to 89% in Thigio. Those disposing of the faecal matter "indiscriminately" decreased in all the villages. However, these changes were not statistically significant at the 0.025 level. It is worth noting that the faecal disposal practices were good in the two villages.
CONCLUSIONS AND RECOMMENDATIONS

In making conclusions about the various issues that were addressed by this work, a recapitulation of the main concerns which are the very essence of this thesis is necessary. The issue at hand is that the processes by which people acquire knowledge, pass it on, change their behaviour and factors influencing or inhibiting such changes are little understood.

In an effort to tackle this issue, this study attempted to marry the old and modern teaching methods in the delivery of health education to a rural community in Kenya, by exploring from persons aged over 55 years of age; the methodology used in passing on the various life processes before modern educational methods were introduced through colonization, and then adapting some of those methods into the conventional teaching methodology.

Health educational messages on diarrhoeal disease were then taught to a group of child caretakers using both conventional and the modified teaching methods, and their effect on the knowledge, attitudes and practices of child caretakers related to diarrhoeal disease was measured. As observed and discussed in the previous
chapters, the following conclusions can be made regarding the manner in which the two teaching methods affected the various aspects related to diarrhoeal disease, as observed in the child caretakers. Conclusion about each aspect will be made in the order in which they are presented and discussed in both chapters 4 and 5.

1. Signs of diarrhoea

The child caretakers who were educated through the conventional teaching methodology had better knowledge of diarrhoea signs.

2. Causes of diarrhoea

Those child caretakers educated through the conventional teaching methodology mentioned more ways in which diarrhoea can be caused and in more precise combinations than those taught using the modified teaching methodology.

3. Mode of prevention of diarrhoea

The conventional teaching methodology yielded more focussed and correct responses to the question on how diarrhoea can be prevented. The modified teaching methodology on the other hand, yielded more incorrect responses.
4. Knowledge of Oral Rehydration Therapy (ORT)

There were more child caretakers in Thigio where the modified teaching methods were used giving responses which are not related to the correct description of ORT, than in Kamirithu where conventional teaching methods were used.

5. Source of knowledge of ORT

The child caretakers said that they had heard about the Oral Rehydration Therapy at home in both villages where the modified teaching methodology and the alternative one were utilized. In the village where the modified teaching methodology was implemented, less caretakers mentioned a health facility as their source of knowledge of ORT when compared with the village where the conventional teaching methodology was utilized.) This indicates that the child caretakers in this village utilizing the conventional teaching methodology, show a preference for a combination of home based and facility based health care for diarrhoeal disease.
6. Child caretakers' attitude towards diarrhoea as an illness

The message about diarrhoea being an illness in terms of its potential severe consequences was better received through the conventional teaching methods.

7. Type of medical care sought

Preference for a combination of home based Sugar/Salt solution and health facility based clinical ORS was again evident in the group of child caretakers who were given health education through the conventional method of teaching. In the village where the modified teaching methodology was used, the child caretakers displayed a wider diversity in the type of therapy that they would choose. Given the fact that only two remedies namely; Sugar/salt solution and Clinical Oral Rehydration Salts were advocated in the lessons, it can be concluded that the education did not convince the child caretakers to abandon what they believed in before education was given, in preference for the two solutions.
8. Types of fluids/substances given to a child with diarrhoea

The responses given by the child caretakers in the village where modified teaching method was used related to the type of fluids or substances of choice when diarrhoea occurred, had a clear cut pattern and therefore tend to contradict those given earlier on regarding the type of medical care that those same caretakers would choose. In the former case the responses were focussed largely on the Sugar/Salt solution. On the whole, the knowledge of child caretakers regarding rehydrants was equally good in the two experimental villages.

9. Amounts of fluids administered per day and the frequency of administration

Little amounts of fluids were administered per day in both the experimental villages and this was not surprising because the occurrence of diarrhoea in this part of Kenya was very low. The Thigio caretakers who had been educated through the modified teaching method however, had better knowledge of the frequency of administering the fluids to a child who was suffering from diarrhoea, than those caretakers who had
been educated using the conventional teaching method.

10. How a diarrhoeal child was managed in the last two weeks

There was a clear pattern of decreased use of clinical solution and increased use of Sugar/Salt solution in the village where the conventional teaching method was used. This is consistent with observations made earlier, related to the therapy of choice when diarrhoea occurred.

In Thigio where the modified teaching methodology was utilized however, whereas there was decreased use of the clinical oral rehydration solution, there was an increase in the number and variety of combinations of substances which the child caretakers used, to manage diarrhoea in the last two weeks. This is consistent with the responses given for the type of medical care that the caretakers would choose when diarrhoea occurred in a child aged less than five years. This can be concluded to mean that the education that the child caretakers received through the modified teaching methods did little to change their original practices as they related to choice of therapy when diarrhoea occurred.
11. Feeding patterns of children under five years who experience diarrhoea

The conventional teaching method yielded better defined and correct child feeding practices than the modified one. Those child caretakers who were educated using the modified teaching methodology displayed a greater variability of the foods which they would feed their children on, when diarrhoea occurred. This shows that information on child feeding was inadequately understood by caretakers who were taught through the modified teaching method.

12. Household waste and faecal disposal

There were no notable changes in those two practices in both villages, and therefore no definite conclusions can be made regarding the effect of the two types of teaching methodologies, on the household waste and faecal disposal practices of the child caretakers.

In summary, the following conclusions can be derived from the study.

1. The conventional teaching methodology yielded:
a) better defined and more focussed responses

b) more correct answers

c) more use of combined home based and health facility based therapy

d) health education that reached the child caretakers at home

2. The modified teaching methodology had the following results:-

a) messages about diarrhoeal disease reached the child caretakers at home

b) messages were distorted as evidenced by the unfocussed and "wild" responses given by most of the child caretakers.

c) great diversity in the responses given

d) more incorrect responses

Based on these conclusions, the following recommendations can be made:-

1. Use of the existing cadre of Family Health Field
Educators should be continued. However, they need strengthening through training, provision of equipment and supervision.

2. Use of Audio-Visual aids that have been adapted to the local situation should be encouraged and intensified.

3. Teaching adults in groups as opposed to individually, achieves better results.

4. Emphasis should be placed on the place of educational methodologies in the context of modern socio-economic-political environment, rather than on traditional forms of education.
BIBLIOGRAPHY


Amref Second Annual Progress Report, Health Behaviour and Education Department, April, 1980.


Bennet, F.J. Community diagnosis and health action

Bennet, F.J. 


Black, R.E. 


Boltros, F.Z. 

Brydene, A., Trawford, E. 
Grassroots approach to education about ORT (SSS) and diarrhoeal disease control in the Mashonaland East and West province of Zimbabwe. Abstract of the 2nd African Conference on Diarrhoeal Diseases, 1986, Harare, Zimbabwe.

Central Bureau of Statistics 
Infant mortality in Kenya: trends and levels. Social
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Health Professions</td>
<td>Curriculum for the diploma in public health education, 1985.</td>
</tr>
<tr>
<td>Dahoma, A.V.</td>
<td>Diarrhoeal disease morbidity in</td>
</tr>
</tbody>
</table>

Dewey, John


de Haes, W.F.M., Schuurman, J.H.


Diseko, R.


Division of Health Education


Education Commission in India, in Majumdar, S.M.M.


Elzoobi, A.M.


International Centre for Diarrhoeal Diseases Research in Bangladesh (ICDDRBD) Annual Report, 1987

Jarmul, D. Plain talk, clear communication for international development. Mt. Rainier, Maryland, Volunteers in technical assistance, 1980.


Kenya, CDD Programme


Kenyatta, J.


Ketsela, M.A.T.


Kickbusch, I.


Kinoti, S.N., Ondolo, H.O., Kok, P., Waiyaki, P., Nagelkerke, N., Muttunga, J.N., Mwobobia, I., Katsivo, M.


Kornitzer, M.G., de Backer, M., Dramaix, F., Kittel, C., Thilly, M., Graffar Vuyesteele, K.


La Paz, T. de


Lutwama, J.S.W. in Bennet, F.J. (ed)

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<tr>
<th>Author(s)</th>
<th>Title/Description</th>
</tr>
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<tbody>
<tr>
<td>Medical Research Centre</td>
<td>Proposal on evaluation study on a health education method, involving schools and barazas. Internal document of the J.P.M. Supervisory Staff, 1979.</td>
</tr>
<tr>
<td>Ndlova, C.Z.</td>
<td>Case study: to investigate environmental risk factors</td>
</tr>
</tbody>
</table>


Parikh, R.


Pertet, A.M.

A report of a seminar for traditional birth attendants on "food for the child", Medical Research Centre, Internal Report, 1983.

Puska, P., Vienola, P., Kottke, T.E., Salonen, J.T., Neitaanniaki, L.


Richards, D.N.


Singano, R.J., Juma, G.


Social Cultural profiles


Tolsma, D.

<table>
<thead>
<tr>
<th><strong>Unicef Special Report</strong></th>
<th><strong>A simple solution, 1987.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verma, D.</strong></td>
<td>Applying the principles of educational planning to adult health education, Hygie., Vol. IV, 1985/1.</td>
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APPENDIX A

STUDY OF CHILDHOOD DIARRHOEA IN KIAMBU DISTRICT
KNOWLEDGE, ATTITUDES, PRACTICES SEMI-STRUCTURED
INTERVIEW SCHEDULE

AREA ----------------- DATE ------------

HOUSEHOLD NO.: Namba ya Nyumba:
NAME OF CHILD CARETAKER: Ritwa ria uria ureraga mwana:
EDUCATIONAL LEVEL ATTAINED (OF CHILD CARETAKER):

Haria uria ureraga mwana akinyitie githomo

1. What signs tell you that your child has diarrhoea? 
   Ni ma undu mariku makuonagia ati mwana waku niara-
   haruo?

2. In your opinion, is diarrhoea an illness? 
   Kuringana na woni waku, kuharuo ni murimu?

3. What are the dangers of a child having diarrhoea? 
   Ni mogwati mariku mangiumana na mwana uraharuo?

4. What are the causes of diarrhoea? 
   Ruharo rurehagwo niki?
5. How would you prevent diarrhoea?
Ungigiririria ruharo atia?

6. What kind of medical care do you seek?
Ni kihonia kia muthemba uriku ucaragia?

7. Have you heard of Oral Rehydration Therapy?
Niuri waigua uhoro was urigiti wa kuongerera mai mwiriini na njira ya kanua?

8. If yes to above question, where did you hear about it?
Akoruo ni ii ri, waiguiriiire ku?

9. What is Oral Rehydration Therapy (caretaker's own words)?
Urigiti was kuongererwo mai mwiriini na njira ya kanua niki?

10. Do you prepare anything for your child when he/she has diarrhoea?
Niueaga mwana waku kindu kia mwanya riria araharwo?

11. If yes to above question, specify type of fluids/substances given.
Akoruo ni ii ri, tariria umuheaga kindu muthemba uriku?
12. Specify amounts given per day.
Umuheaga githimo kiigana atia oro muthenya?

13. Specify number of times amounts given per day.
Umuheaga maita maigana oro muthenya?

14. Do you have a child who has had more than 3 loose stools a day any time during the previous two weeks?
Wina mwana okoretwo agithii kioro gitweku makeria ma maita matatu oro muthenya ihinda-ini ria ciumia icio igiri irathirire?

15. If yes, how did you treat this?
Akoruo ni ii ri, wamurigitire atia?

PRACTICES RELATED TO SANITATION - MIKIRE NA MIHUTHI-RIRE YA CIORO

16. Presence of latrine (observe)?
Nikuri kioro?

17. If yes, condition and usage of the latrine (observe).
Miigire na muhuthirire wa kioro.
a) Used latrine
   i) Smelly
      Kioro ni kirununga
   ii) Path leading to latrine looking used
      Gacira ga gu:thie kioro nikahuthire

b) Not used
   i) Not smelly
      Gitiranunga
   ii) Path leading to latrine covered with grass
      Gacira ga guthie kioro kena ria

c) Condition
   i) Roof - does it have a roof?
      Nikigite?
   ii) Walls - are they standing?
      Kina thingo?
   iii) Floor - is the pit covered?
      Irima nirikunike?
   iv) Pit - is it full?
      Irima niriiuru?
v) Is it clean?
Nigitheru?

18. Does everyone in your household use the latrine?
Andu other a mucii uyu nimahuthagira kioro?

19. If no, which people do not use the latrine?
Akoruo ni aca ri. niariku acio matahuthagira?

20. What is done about faecal disposal for them?
Kioro kiao gikaguo atia?

PRACTICES RELATED TO HOUSEHOLD WASTE DISPOSAL

Nikuri kiara (roro).

22. If yes, specify.
Akorwo ni ii, tariria.

FEEDING PRACTICES

23. Do you feed a child when he/she has diarrhoea?
Niuheaga mwana irio riria araharwo?

24. If yes, what do you give?
Akorwo ni ii, umuheaga kii?
APPENDIX B

UNSTRUCTURED INTERVIEW SCHEDULE FOR PERSONS AGED 55 YEARS AND OVER

AREA:

DATE:

H/H NO.:

YEAR OF BIRTH OF INTERVIEWEE

GUIDELINES FOR THE INTERVIEW

1. How were the various aspects of life processes passed on from generation to generation in terms of methodology? For example, taboos, dances, songs, food practices, expected behaviour, motherhood, fatherhood and so on?

2. Did you have special teachers for teaching the various processes to the various age groups of your community? Who handled the actual passing on of information?

3. Did you have special times for handling the teaching of different materials and would all the people of different age groups be given the lessons whilst sitting together in one group? How was the learning environment organized?
4. What other information would you like to give me regarding this subject?