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A STUDY OF THE EFFECTIVENESS OF VISUAL MEDIA IN THE PROMOTION OF CHILD IMMUNISATION IN KAKAMEGA DISTRICT, KENYA

by

Sophia Inziani Kaane

A Doctoral Thesis

Submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy of Loughborough University of Technology

July, 1995

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ABSTRACT

The health of children is very important in Kenya, given that more than half of its population is under twenty years of age. Despite continued efforts, Kenya has not achieved the Universal Child Immunisation (UCI) target of full immunisation for 75 per cent of all children. It is argued here that two of the factors contributing to this situation are the lack of information and of effective media of communication.

Providers of health information were interviewed about their views on the production, distribution and use of visual media and their expectations. In-depth interviews and field observations were employed in gathering data from sample of a rural community population. Their abilities to realise messages through visual means were examined, their perceptions of use of posters, their information-seeking patterns and knowledge on the awareness of immunisation were sought.

Communication through visual media was ineffective. There were problems at the production and distribution levels. Messages were not fully realised by the target sample population. Awareness of immunisation was generated through mass communication, inter-personal communication and the actual vaccination campaigns. Informal sources were more influential than mass communication sources. The study concludes that the processes and problems of communicating health information through visual means have not been fully understood. Therefore, those involved in the design and all those who undertake the dissemination of the information must be encouraged to adopt new policies and procedures based on an awareness of the nature of the target communities as receivers and interpreters of information.
DEDICATION

To the loving memory of my dear father,

Timona Inyanya Akaranga,

for his love for knowledge
ACKNOWLEDGEMENT

Many thanks go to all those individuals and organisations who contributed information and time to this study. Their assistance is greatly appreciated.

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I am grateful to ODA, through British Council, for financial support; and to Moi University for granting me study leave.

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<td>AMREF</td>
<td>African Medical and Research Foundation</td>
</tr>
<tr>
<td>ARIP</td>
<td>Acute Respiratory Infection Programme</td>
</tr>
<tr>
<td>BIG</td>
<td>Breastfeeding Information Group</td>
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<tr>
<td>CARE</td>
<td>Council of American Relief Everywhere</td>
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<tr>
<td>CBHC</td>
<td>Community Based Health Care</td>
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<td>CBS</td>
<td>Central Bureau of Statistics</td>
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<tr>
<td>CHAK</td>
<td>Christian Health Association of Kenya</td>
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<td>CHW</td>
<td>Community Health Worker</td>
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<tr>
<td>DHEO</td>
<td>District Health Education Officer</td>
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<tr>
<td>DHMT</td>
<td>District Health Management Team</td>
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<tr>
<td>ECHA</td>
<td>Education for Community Health Action Programme</td>
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<tr>
<td>EPI</td>
<td>Expanded Programme on Immunisation</td>
</tr>
<tr>
<td>FPAK</td>
<td>Family Planning Association of Kenya</td>
</tr>
<tr>
<td>FPPS</td>
<td>Family Planning Private Sector</td>
</tr>
<tr>
<td>GOK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>IBEA</td>
<td>Imperial British East Africa</td>
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<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
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<tr>
<td>IEH</td>
<td>Information and Education for Health</td>
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<tr>
<td>KEMRI</td>
<td>Kenya Medical and Research Institute</td>
</tr>
<tr>
<td>KEPI</td>
<td>Kenya Expanded Programme on Immunisation</td>
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<tr>
<td>KMA</td>
<td>Kenya Medical Association</td>
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<tr>
<td>MCH/FP</td>
<td>Maternal Child Health and Family Planning Programme</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>NACP</td>
<td>National Aids Control Programme</td>
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<tr>
<td>NCDDP</td>
<td>National Control of Diarrhoeal Diseases Programme</td>
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<tr>
<td>NCPD</td>
<td>National Council for Population Development</td>
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INTRODUCTION

1.1 Background to the Research

Recent years have seen the recognition of the vital role of information. As we strive to live healthier lives, information is becoming more vital, indeed crucial, component of life in this century. This ever increasing need for information has created a demand for effective means of communication. Health information disseminators in Kenya have been motivated by the changes arising from the World Health Organisation (WHO) Declaration of 'Health for All by the Year 2000' at Alma Ata in 1978 which led to a number of health developmental programmes. The declaration emphasised the involvement of the individual in their own health care stating that improvements in health can only come about through effective and concrete public participation (WHO/UNICEF 1978). The key to participation is the use of effective media to communicate information and education to the public to enable individuals to make healthy choices.

Various visual media are used in Kenya, of which posters are the most common. Visual media are extensively used in primary health care (PHC) education programmes to inform and educate the people about health issues. Nearly all health facilities use at least one form of visual medium and we are continually exposed to the visual image by choice and chance. These media are considered to be effective in reinforcing field activities and creating awareness in health promotion (Kenya Ministry of Health 1991). Furthermore, information presented in a combined verbal and pictorial form is a fundamental feature of the consumer environment (Childers and Houston 1984). Of significance to this life, however, is sharing information and meaning with others. This calls for visual literacy skills. Only the visually literate can benefit from and make meaningful use of visual technology. Hence there is need for research studies that will devote attention to issues concerning the visual expertise of target
The concern for this study was prompted by various factors. First, an accelerated immunisation programme was launched in 1988 in Kenya in which people were urged to "tell their friends, wives and husbands and even older children to make sure all children receive immunisation against the six killer diseases" (Otula 1988, p. 12) namely:

- Tuberculosis (TB), which is prevented by a vaccine called BCG;
- Polio, which is prevented by polio vaccine;
- Diphtheria
  Tetanus
  Whooping Cough.
  These three diseases are prevented by a combined vaccine known as DPT.
- Measles, which is prevented by measles vaccine.

Immunisation delivery service points have increased in number from 600 in 1981 to almost 1,600 in 1992. Of these, 1,200 are administered by the government (see Table 1.1).
Despite such continued efforts by the Ministry of Health through the Kenya Expanded Programme on Immunisation (KEPI) which was established in June 1988 after the launching of the WHO Expanded Programme on Immunisation (EPI) in 1977, immunisation programmes in many parts of the country have shown very little success. "Immunisation levels have not yet achieved the Universal Child Immunisation (UCI) target of full immunisation for 75 per cent of all children" (GOK/UNICEF 1992, p. 61). For example, Kakamega district has shown only 71.7 per cent coverage for children aged 12-23 months according to the 1992 National Immunisation Coverage Survey (KEPI 1993). Western Province has an average of 50 per cent. Although these figures show some positive progress in immunisation uptake in the country as a whole, some districts show very little uptake. In Kabras Division, for instance, during the period January to June 1994 only 4 per cent of the 6307 infants of less than 1 year old had completed their immunisation schedule (District Public Health Office. Immunisation coverage report, 1994: unpublished). During the launching of the fight against polio in Kabras in February, 1994, Mr Vincent
Figure 1.1 Early Childhood (under two) Mortality Rate


KENYA
EARLY CHILDHOOD MORTALITY RATES

Number of children dying in the first two years of life per 1000:
- < 55
- 55 - 85
- 86 - 124
- 125 - 159
- 160 - 194
- > 195

Source: Based on 1979 Census Estimates by M. Ribet; Population Studies Research Institute, University of Nairobi.
O'Reilly, UNICEF's country representative, described these figures as "very pathetic" and challenging to both health professionals and the general public (Owuor 1994). Two of the factors contributing to this situation are the lack of information and of effective media of communication, the results of which cause "up to 50,000 Kenyan children to die of immunisable diseases" (Otula 1988, p. 12). Figure 1 shows the early childhood (under two) mortality rate. Given that 59 per cent of the Kenyan population is under twenty years (see Table 4.1 in Chapter 4) child health is very important. Child health is important because healthier children would enable parents to direct their energy and time to other activities which would be needed for national development.

Second, in relation to the above proposition, questions have been asked about whether or not the formats used in communicating this information give parents the opportunities to develop a capability for consuming the intended information. This question derives from the common belief that the ability to draw meaning from a visual medium is an important information skill. McBean (1989) and other researchers in visual literacy have suggested that we learn how to see and therefore not everybody is able to see and interpret information in visual formats in the same way.

Third, due to the researcher's involvement in teaching courses in Media Studies and Repackaging Information to BSc students at Moi University, further motivation was gained as the concern for repackaging of information to the rural communities was discussed during tutorial and seminar sessions. The consequences of the immunisation coverage are closely associated with the existing communication infra-structure. The issue of information communication in the rural areas is becoming more and more acute if one first considers the current wave of development which is focused on rural community development.
The 1984-88 National Development Plan period marked the official launching of the concept of District Focus Strategy for Rural Development (DFSRD). The government is convinced that:

appropriate, effective and sustainable rural development cannot be successfully planned and implemented at the national level alone. .... Kenya would henceforth allocate its resources for rural development on a decentralised basis in order to be more responsible to the needs and aspirations of wananchi.


Second, the health care delivery system in Kenya, having been inherited from the colonial era, tends to suit the upper socio-economic classes. We felt that rural people have something special to offer to national development. Health information consumers in the rural areas are 'free agents'; that is, they have their own needs and aspirations. The visual media produced, therefore, must meet these needs and concerns. Like any other person in Kenya, they need relevant and timely information to cater for their health needs. This information must be repackaged in comprehensible, attractive and acceptable formats. Colle and Glass argued that:

making visuals may be an art, but applying them meaningfully and wisely requires a generous amount of social science

(Colle and Glass 1986, p. 162).

Therefore, this study was conducted to examine the perceptions and information seeking behaviour of health information consumers who have experience of immunisation promotion in the Kabras Division of Kakamega District in Kenya.
1.2 Objectives of the Study
The overall aim was to understand the interaction between the health information consumer in the rural areas in Kenya and the educational materials provided with special reference to posters, and at the same time to develop general statements about effective visual information use.

Specifically, the study was set out to accomplish the following:

(i) To construct a profile of the community under study;

(ii) To determine the nature and extent to which posters used to convey information on immunisation to the rural population are effective;

(iii) To assess the acceptability, attractiveness, clarity and simplicity of the posters used;

(iv) To assess the relevance of the immunisation messages;

(v) To assess the comprehension of the messages.

1.3 Research Questions
The key research questions were:

- What role is currently played by posters in promoting child immunisation to the rural communities?

- Can visual media be used effectively in communicating information?
Figure 1.2 A Model of the Research Plan

Main objectives

Empirical investigations and analysis

- Library research
  - Assessment
  - Information communication infrastructure

- Visits and interviews with providers of health information to relate communication practice to the main issues of research

Conceptual analysis

- Assessment of concepts and their relevance to current visual communication practice in the literature

- Assessment of health care delivery system

- Field research interviews to answer research questions relating to visual media communication, information seeking patterns and immunisation awareness

- Assessment of the implications of visual media use on health information communication
• Does visual communication have any effect on information gain of the rural health information consumers?

• Will different consumers differ in their abilities to receive and interpret information through visual means?

• What are the constraints associated with the use of posters?

1.4 Methods of Investigation in Outline

Figure 1.2 is a model of the research plan which presents the overall methodology used.

In an attempt to achieve the above objectives and answer the questions of this research, the following methods were employed:

1. A literature search was carried out at Loughborough University Library, UNICEF, UK documentation centre and libraries in Kenya, mainly at Moi University, University of Nairobi Library, Kenyatta University Library, Medical Training Centre Library in Nairobi, UNICEF, Kenya, and the District Information Documentation Centre in Kakamega. The aim was, first, to identify previous research efforts on the topic under study. The following areas were consequently reviewed:

   • rural communities research;
   • research into visual media formats;
   • research into visual media use;
   • visual literacy research;

Second, to gather secondary data concerning policies and backgrounds
relating to health information communication activities in Kenya data regarding the vaccination coverage and socio-economic characteristics of the study area.

2. Interviews and discussions were held with providers of health information. The respondents were the Director of Health Education and Audiovisual Aids Unit of the Ministry of Health, health education and communications officers at Kenya Expanded Programme on Immunisation (KEPI) and UNICEF, Kenya. This strategy sought to gather key information regarding the objectives of producing and incorporating visual media into the health information marketing strategy with specific reference to immunisation, their expectations and the efforts which are made to achieve the objectives. Further discussions were held with the District Health Education Communications Office in Kakamega to identify what happens to materials when they are received there. Field health education workers were also interviewed as intermediaries to identify their perceptions as ‘users’ of the materials and the constraints of their use.

3. A community study was carried out. Specifically, interviews with a sample of the Kabras Division population in Kakamega, Kenya, were held and field observation to establish:

- the nature of the community under study;
- the extent to which the target population was exposed to posters;
- the perceptions of this community of posters as sources of information and their understanding of the posters used in the immunisation programme;
- the various sources through which the community studied became aware of the immunisation;

- the extent of awareness of the immunisation message there is by conducting a knowledge test.

1.5 Visual Communication Problems

1.5.1 Acquisition of Visual Media

There is no doubt that the visual communication strategy of Kenya has contributed to the current response to the immunisation programme. Despite some modest achievements, the uneven impacts of the use of visual media such as posters in disseminating information on immunisation in Kenya's rural areas appear, however, to outweigh the positive contributions. This is evident when one considers a number of pressing practical issues. One of the strategies that Kenya has adopted in acquiring posters, for instance, is to adapt those produced in the developed countries. This attempt assumes that the target groups are culturally the same with respect to information acquisition and retrieval. It also presupposes that the two different target groups consume information under similar social, economic and cultural conditions. Such assumptions are critical, particularly for the rural communities who are, in many respects, quite different. To apply the above assumptions to visual information provision and use makes the visual media, therefore, less meaningful to the target population who in addition do not share time, place and perspective with the message creator.

Some of the differences between materials with other cultural orientations can be related to the local health culture of the target groups. Every target group maintains an image of the behaviours, beliefs, values and norms of the culture appropriate to the ethnic group(s) to which they belong. Varying health attitudes and behaviour of the target groups are bound to affect the way in which the
materials are effectively used. The effectiveness of such media can furthermore be related to the context in which they are used, and the way they are distributed, and to the problems encountered during their use.

1.5.2 Lack of Visual Literacy Skills

The lack of comprehension and interpretation of messages by the target groups is providing a serious bottle-neck. The process of rapid change in Kenyan society is generating many gaps. Therefore, proper understanding of visual literacy skills is indispensable if rapid and planned change towards better health is to be introduced. The nature of the state-of-the-art in this area is such that there is ample scope for research studies that will help the Kenya Government to achieve its goals of Health for All by the Year 2000.

1.5.3 Lack of Research

Kenya, like many other developing countries, needs a variety of research studies which are devoted to the various fields of national development. In the field of library and information sciences, for example, there is a noticeable lack of research studies that deal with repackaging and communication of health information to the rural communities who form 80.5 per cent of the population.

The significance of research cannot be overlooked because:

we are in a process of continual and continuing change and that without effective research and the effective application of research results, we shall not be able to control effective change.

(Perry 1988, p. 7)
1.5.3.1 Pictorial Information Research

A review of previous research in Kenya and contacts at the Ministry of Health, Division of Health Education and Audiovisual Aids Centre, AMREF, UNICEF and KEPI, among others, located no published studies evaluating the posters that are used in the immunisation programme. Yet, in order to cope with and use this prevailing visual technology, it is necessary to understand its nature and effects. This is of paramount importance for improving the quality of the media and organisational effectiveness. It has, nevertheless, been observed that the media’s failure to realise their potential to change behaviour and attitudes is due to:

... the lack of research and evaluation of communication messages and media content; and inadequate audience segmentation during information dissemination.

(GOK/UNICEF 1992, p. 34)

Although some studies were located (e.g. Holmes 1962 and Shaw 1969) that addressed the issue of visual literacy, these studies are limited in scope as the researchers have examined the problem from the perspective of symbol identification. These studies were also carried out among the suburban groups whose information seeking behaviours may be different from those in rural areas.

The studies have also not been specific to immunisation messages although posters play a central role in their communication. Hence, it has been observed that one of the causes of conflicting and confusing results into pictorial research is the failure of many studies to make clear distinctions concerning the content of the visual stimuli and the purpose that the picture is to serve (Sitz 1990). Other studies such as Kamanja-wa-Gathua (1986); Kalsa (1974) and Wainaina
(1973) have produced little empirical data on the subject. These studies have, however, provided useful insights into the general visual communication scene in Kenya, although, in some cases, a long time ago.

1.5.3.2 Rural Communities Research

The peculiar problem of communication through visual means is yet to be located and analysed in a rural setting in Kenya. From the social, cultural and economic perspectives, the importance of the study of visual communication in a rural area in Kenya at the present time is great. In the GOK/UNICEF (1992) situation analysis report, it was observed that the rural communities are geographically disadvantaged as they are located in the countryside where they are typically served by very poor transport and communication systems. They are faced with many problems. The problem of poverty still remains central. They suffer particularly from malnutrition and lack safe drinking water, and adequate housing. They have extremely limited health facilities and have low incomes (if any). They have many children and death rates are very high. Many of them cannot read or write.

There is a paucity of research studies on the information need of rural communities. The few researchers who have worked with these communities in Africa (e.g., Mchombu 1993; Uta 1993 and Aboyade 1984) showed the varying needs of these communities. Rosenberg summarised the general premises of these studies. In her words, she noted that:

- rural communities do have information needs which are largely unmet at present;
- these unmet needs have an overall common content, e.g., information support for health, income generation, farming practices;
• needs will differ between communities and over time, arising out of the socio-economic conditions and struggles of a given community;

• information must be relevant to a community it must fill the gap between what people already know and what they require to know to solve a particular problem.

(Rosenberg 1995, p. 51)

On the information transfer process based on previous research findings, Rosenberg further reported that:

• Ways of linking the existing knowledge systems in rural communities are essential;

• Transfer modes and media work best if they use or mirror the existing indigenous modes or media;

• External communication support to rural communities is fragmented with the responsibility shared between several government ministries, parastatals and NGOs.

• Gaps or failures in the information transfer system is retarding rural development.

(Rosenberg 1995, p. 51)

1.5.3.3 Methodological Issues in Educational Media Research

Broadly speaking, the literature on evaluation studies of educational media in the past shows a predominance of psychometric, experimental research models (Bates 1981). This prevailing characteristic Prosser noted has:

often not made as substantial a contribution to decisions about the use of and improvement to educational media as may have been hoped.

(Prosser 1984, p. 33)
Bates argued that it was not surprising that the majority of findings were of no significant differences because:

- important variables such as quality are usually overlooked;
- differences in quality between the experimental and control media are not controlled;
- individual differences in response to different media are not considered;
- organisational and structural variables, that is, how the media are to be integrated into and relate to other teaching methods, are often not considered.

(Bates 1981, p. 23)

He further argued that, although the findings of such research were normally used in decision-making processes, they were not adequate for decisions about the continued use of, and improvement of, such media. In his view, what is needed for decision-making processes about the use of educational media is evaluative research which systematically searches for and reflects accurate and reliable information "to supplement the personal observation and hunches of those making the decisions" (Bates 1981, p. 23). He suggested that the information needs to be about the actual effects of the media and the conditions under which the media are educationally effective. Such information would presumably include qualitative and quantitative information and that carefully collected and analysed judgement of the participants in the use of the media should play a large role in judging its educational value.

Brody, in support of the same concern, observed:

it is difficult to apply the results of this research because the conditions
under which the research has been conducted are too far removed from the realities of the typical instructional setting to be very meaningful. emulating the practices of physical scientists may be inappropriate for social scientists who are primarily concerned with human beings and their problems.

(Brody 1984a, p. 46)

Prosser concluded that meaningful research studies for evaluating the effectiveness of educational media are those which must be:

formative in focus, eclectic in research methodology and take account of the context in which the media is being developed and used. Such studies need to recognise that the development and improvement of educational media is a complex process which does not follow well defined steps, and that the way the media are used and integrated into a particular teaching context is likely to be as important to its success as the quality of the media itself.

(Prosser 1984, p. 42)

1.5.4 Implications of the Identified Problems
Many of the identified problems seem so obvious and yet there are no monitoring processes for assessing the impact of visual media on the communication of health information. The question of providing for development through provision of health information in appropriate ways is a crucial matter. A lot of effort has been put in (see Chapter 5) and, despite some achievements in this direction, the results have been less than expected. This has been, for example, voiced in the current National Development Plan which states that:

Although the Government of Kenya and other information organs in Kenya have put commendable efforts in trying to disseminate vital
information to members of the public, a lot of extra effort is still needed in appropriate message design, development, and effective dissemination to target groups.

(Kenya National Development Plan 1994, p. 252)

In order to influence policies and strategies on effective visual communication an understanding of the consumers' experiences and the context in which the information is communicated must be gained. Since consumers do not usually participate in the planning of health information programmes, feedback is not available. National Health Plans, therefore, rely on reports from the sectors concerned with health which in many cases do not reflect the real situation and needs of the community. Decision makers responsible for implementing communication strategies still lack reliable sources of research and data on which to base their decisions regarding effective communication of visual information. There seems to be a need for research studies that will provide data on the impact of posters used in the immunisation programme, the characteristics of effective visual information communication and the information seeking behaviour of the target population so that appropriate information media can be provided.

1.5.4.1 The Nature of Visual Media Communication for Kenya
The success of the use of visual media in the communication of health information can best be understood in the context of the aims and objectives integrating these media in the communication strategy. If the primary aim of the Kenya Expanded Programme on Immunisation (KEPI), for example, was to reduce morbidity and mortality rates by providing immunisations against the six killer diseases, then an effective communication strategy was essential. Visual communication would help to equip the people with the facts, ideas and
attitudes they need to make decisions about immunisation of their children. According to the UNICEF All for Health resources book for Facts for Life an "effective health communication involves the transformation of health knowledge into messages which can be readily understood, accepted and put into action by the intended audience" (Williams et al. 1989, p. ix). This is the type of communication that is needed by KEPI - a strategy that calls for increased participation by creating awareness through provision of information in appropriate formats, developing comprehension and conviction and affecting action.

This study approached the research strategy with a view that "several channels may act synergistically to bring about the effective transmission of a message" (Menzel 1987, p. 426). There are consumers in the rural areas who receive information on immunisation through informal, unplanned channels, and others through formal channels such as health facilities. The information carriers involved include people, radio, newspapers, films, video recordings, among others.

Also of importance is the fact that visual media cannot make individuals take decisions to suit their health needs, they must indirectly work through beliefs and attitudes. Becker et al. (1974) asserted that individuals maintain certain perceptions about their susceptibility to a particular disease and about the potential seriousness of that disease. Their decision to take some action to prevent the disease depends upon the degree to which they perceive that disease as directly threatening them. Their response is as a result of weighing the benefits of the preventive action against the barriers to that action. Visual media can, therefore, only increase the people's knowledge about the seriousness of a disease and susceptibility to it, offer new information about the additional benefits of preventive action or ways of removing barriers to such action, or provide models of how to perform the preventive health behaviour. The
effectiveness of visual media can only be realised if these materials are comprehensible, acceptable and self-involving. Accordingly visual media play a complementary role and are not a means to an end. Planners and decision makers have to develop communication strategies with the end users of the information. This would increase the likelihood of developing the best ways of communicating with the targeted population.

1.5.4.2 The Nature of the Information

Most researchers agree that the level of acceptance can be understood by the degree of personal relevance or importance. When target groups find information personally relevant or important, they tend to attend to the message and process that information at a deeper level than when they do not find the information relevant (Greenwald and Leavitt 1984). Akong’a, in his survey paper on family planning extension services in Kenya, suggested that a communication strategy should be one whose aim is:

...not simply to provide information to the target groups but to communicate, and if possible, to make the appropriate services available to them as efficiently and conveniently as possible for sustained rate of adoption ... the target groups should become convinced of the relevance of the technical message in their lives so that when they adopt the recommended package of behaviours and practices related to the new ideas, they view them as advantageous and for their own good rather than as, a way of pleasing the change agents.

(Akong’a 1988, p. 88)

Becker thought it likely that:

successful information use is increased if the change effort is guided by strategies collectively referred to as ‘knowledge utilisation’. These strategies emphasise coping effectively with the human dynamics of
change, (the 'not invented here' phenomenon, etc.) and with the use of management sciences approaches such as strategic planning to direct the change process.

(Becker 1993, p. 217)

Clearly, this research was concerned primarily with information that is functional to the consumers' health needs. It adopted the view that visual media have information value to the target population only to the extent that these media can be interpreted, understood, and used by the receivers to their own time, place and perspective. People are individuals and make sense out of information to fit their own time and place. Since time passes and things change the sense made by one person today does not necessarily fit tomorrow (Dervin and Greenberg 1972).

1.6 Scope and Limitations

This research covered visual media communication with particular reference to posters. Other visual media, such as films, video, slides, were excluded. This was the case because of the size of the task. To have attempted to include the other media would have greatly widened the scope and size of the research beyond the time and resources available for the research. The study used a few selected posters on immunisation for the testing strategy.

Ideally, a study of this nature would have included several rural zones in Kenya. Financial and time limits similarly limited such a scope. We then decided to use Kabras Division of Kakamega District in Kenya as a case study. Moreover, we felt that one rural zone covering one community would facilitate an in-depth study which would form a base for further research.
1.7 A Definition of Terms

In this thesis, reference is made to a number of key terms and concepts which are important components of analysis. These need to be defined at this stage. At later stages, some of these definitions are further refined. Some other definitions are discussed whenever they appear.

**Communication:** the means to create a shared meaning with another individual, through exchange of opinions, ideas or information (Haaland 1984). In the context of this study, the Ministry of Health attempts to exchange information on immunisation with target population (the rural communities).

**Visual media:** are devices through which information is carried and communicated to the target population through the sense of sight. Hence, the usage of the term visual communication which refers to exchange of information through visual means. In the present, research the terms visual information and visual communication are used interchangeably. Engel *et al.* (1987) defined promotion as a controlled integrated programme of communication methods and materials designed to present an organisation and its products to prospective customers; to communicate need-satisfying attributes of products to facilitate sales and thus contribute to long-run profit performance. In this context, visual media have the purpose of communicating information to the rural communities to enable them to satisfy their health needs. That is, have their children immunised; and thus change in morbidity and mortality.

**Effectiveness:** the extent to which visual media and their messages have achieved their promotional goal.

**Community:** According to the United Nations (1971), a community is defined as an organic and physical entity. Members share common values and objectives and share a basic harmony of interest and aspirations. The spatial
and social organisation of society in Kabras Division, Kakamega District is such that the concept of community can be used synonymously with the concept of village. This is because the rural village provides a defined geographical area within which social interaction occurs while village members share common tribal, language and cultural characteristics. These villages are clustered into locations and sub-locations for administrative purposes.

**Developing country:** In using this term reference is made to the majority of Latin American, African and Asian countries. Fundamentally, these are the poor, non-industrialised post-colonial societies. They are equally referred to as Third World, less-developed, under-developed or just poor nations in the literature. With the rise of more economically prosperous nations within this broad category, new methods of differentiation, have, however, emerged. The World Bank, for example, differentiates between low, medium and high income countries, while a special category of Newly Industrialised Countries has been adopted to refer to the rapidly expanding economies of countries such as South Korea.

### 1.8 Organisation of the Thesis

This thesis is organised into seven chapters. Figure 1.3 summarises the logistic organisation of the research. Chapter One is an introductory one. It develops the context for the study by providing a background and overview to the research problem. The chapter ends by presenting the scope and limitations and organisation of the thesis. A core element in the chapter are both the probing key research questions and the research objectives which have been raised. These form the basis for the emerging issues.

Chapter Two presents the methodology used in gathering data for the research.
Chapter Three explores the various concepts of visual media. It focuses on elements of visual media, visual literacy, and the role they play in the visual communication process. It shows how previous research has contributed to the development of visual communication research.

In order to develop the study of this topic it was felt necessary first to establish a historical base to show how, when and in what form the present structure of health services had developed. Also of significance was the context within which information providers work. Chapter Four covers these. It begins with some brief basic information about Kenya for ready reference. After giving the history of health care services in Kenya, it goes on to provide the present health service infrastructure and the primary health care concept as practised in Kenya.

Chapter Five provides the findings of the preliminary research and discusses these results.

Chapter Six presents the results of the field research and discusses them.

Chapter Seven is the conclusion to the study. It summarises the findings of the study, conclusions drawn from them, and their implications.

1.9 Summary
This chapter has covered the background to the research, the aims and objectives of the research and the key research questions raised. Visual communication problems have been highlighted. A discussion of possible approaches to the research methodology, details of the methods chosen and the sample population are given in the next chapter.
Figure 1.3 A Model of Organisation of the Research

Overview of research programme

Aims & Objectives

Plan of investigation

Research methodology

Chapter 2

Library research findings

Chapter 4

Preliminary research findings

Chapter 5

Research Concepts

Chapter 3

Criteria for analysis

Chapter 6

Literature evidence

Field evidence

Attraction

Acceptability

Comprehension

Awareness

Visual communication effectiveness

broad role

Visual effectiveness in a specific locality

Summary, conclusions & implications

Chapter 7
CHAPTER TWO

2 RESEARCH METHODOLOGY

2.1 Introduction
This chapter describes the methodology used in gathering the data for this research. It provides a justification for the choice of the geographical area for study, the rationale for selecting data collecting methods, and the procedure for selecting the sample for the research. The chapter also discusses some of the organisational and logistical experiences and the problems experienced during the research period. The methods used for analysing data have also been presented.

2.2 Rationale for the Research Methods
Various methods were considered as appropriate for data gathering for this research. These methods were questionnaires, interviews, observation and document analysis. The choice of the methods eventually employed in this research was judged by the type of information which was required. The methods had also been pre-tested and found suitable for answering the research questions.

Data collection using mail questionnaires was considered. These have the advantage of being cheap to administer and can be used with a large sample. Nevertheless, standard questions, prepared before hand, mean different things to different people; they are sometimes appropriate, sometimes inappropriate. By themselves it was felt they would not provide an adequate means of thoroughly investigating respondents as complex as those in this study.

As Chambers cautions:
Unless careful appraisal precedes drawing up a questionnaire, the survey will embody the concepts and categories of outsiders rather than those of rural people, and thus impose meanings on the social reality... Nor are questionnaire surveys on their own good ways of identifying causal relationships - a correlation alone tells us nothing definite about cause - or of exploring social relationships such as reciprocity, dependence, exploitation and so on. Their penetration is usually shallow, concentrating on what is measureable, answerable and acceptable as a question, rather than probing less tangible and more qualitative aspects of society. For many reasons - fear, prudence, ignorance, exhaustion, hostility, hope of benefit - poor people give information which is slanted or false.

(Chambers 1983, p. 51)

Before one can apply or interpret the reliability of answers to questions, one needs a fair idea of the most important activities, and characteristics of each person approached. Too many of the significant features of social life might otherwise be left out or misrepresented. To this end, Hartmann et al. in their experience observed that:

Surveys, on their own, by their nature, tend to yield a rather abstract picture of social process with very little ‘feel’ for the human realities of the situation being studied.

(Hartmann et al. 1989, p. 33)

Survey methods, according to most researchers (e.g., Peil 1982 and Oppenheim 1966), are convenient when the population is large, well-educated, has a recognisable address which is approachable to the interviewer, has an efficient postal service and when potential interviewees are used to completing and returning questionnaires.
Survey methods would have, therefore, created a lot of problems in the administration of the data collection instruments for the present research because of similar features described by Peil among the respondents of this research. She points out that:

many people have little or no education and use of the post often presents many problems. Questionnaires sent to various parts of the country may take several weeks to arrive. Many people do not have a postal address, .... Many others use as their postal address a local church, school or office where a relative works. Letters sent to this address may be collected rarely or not at all, and will probably not be forwarded if the addressee has moved away. Thus, it is likely that many questionnaires will not reach the person they are sent to and that others will suffer long delays .... However, even if they are received, questionnaires often suffer from a low response rate and inadequate answers ... sometimes more than half of the questionnaires sent out are not returned and many that do not come back have missing, illegible or ambiguous answers. Many people cannot fill in a questionnaire without help and many who could do not want to bother. Therefore, a carefully planned sample is often biased.

(Peil 1982, p. 111)

To have used mail questionnaires would have, therefore, been an "indiscriminate imposition of the survey methods on situations that can be better studied using other methodologies" (Aboyade 1984, p. 245).

Another disadvantage of using questionnaires is that responses to questions have to be considered final for all practical purposes. As compared to interviews, the researcher has no opportunity to probe further to the responses given, or even make judgements from the behaviour of the respondents. The questions have to be sufficiently simple and straightforward in order to be understood with limited assistance from given printed instructions. Since the aim of the present research was to get fuller responses that allowed for probing in order to gain
insight into the lives and conditions of the poorer, illiterate or semi-illiterate rural people, a combination of interviews, observations and document analysis were adopted as methods for gathering data.

At the same time, since we envisaged to interview as large a number of the population as possible in order to make valid generalisations from a representative sample, it was important to keep good records of the quantitative aspects of this. The records of the semi-structured interviews were collected so as to allow for comparisons between different groups and situations. Hence, it has been observed in the literature that qualitative and quantitative aspects are both legitimate for specific enquiries. They may be used in support of each other in an enquiry rather than being mutually exclusive because each aspect can be "strengthened by using intrinsic qualities of the other" (Madey 1988, p. 227; Slater 1990 and Patton 1990). Stenhouse admitted the worth of quantitative aspects in enhancing judgement and recognised that even in the illuminative research there was:

"a lot of room for a quantitative ingredient which is at present too much neglected .... The issue is not qualitative versus quantitative but ... results versus judgements."

(Stenhouse 1979, p. 32)

By making sure that the numerical records of the research were reasonably precise, it was thus possible to give the analysis of the qualitative results a useful quantitative structure which would provide illumination and, at the same time, assist interpretation.
2.3 Data Collection Techniques
Based on the above observations, the questionnaire method was eliminated as a data-gathering technique for the present research. This section describes the methods used and their applicability.

2.3.1 Document and Library Research
A thorough literature search and review was undertaken in order to ensure integrity of the study and to strengthen its reliability. Previous research related to the study was sought from the literature and reviewed. The purpose of the review was to draw together the threads of research work and ideas that were developing within this area. More specifically, it was done to identify current practice and ideas in the areas of rural communities and visual communication. A comprehensive library search was undertaken. The review became a source of background information which provided a starting point for the design of the study.

Document sources were also used to gather data about policies and backgrounds, and processes of the health information communication activities in Kenya. This was necessary for providing ideas about important issues to pursue through more direct observations and interviews. The method was used to assess official records like Ministry of Health annual reports, National and District Development Plans, District Population annual reports, District Social Development annual reports, UNICEF and WHO reports; research reports in journals, and theses, newspapers, among others. This was necessary for identifying specific statements about the information, education and communication activities in Kenya and the use of visual media in addition to background information on the health care delivery system. These statements related to aims, content and methods. It was also used to obtain information on the range of visual media, their production, distribution and the extent to which
the media are used.

Personal contacts in various places also formed another useful instrument for data collection of this research. Visits were made to various offices in Nairobi and discussions carried out with some staff in Nairobi from the Kenya Expanded Programme on Immunisation (KEPI), UNICEF (Kenya), REACH, and from the Division of Health Education and Audiovisual Aids Production team at the Ministry of Health). These were approached for initial consultations. The purpose of such preliminaries was to provide the grounding for thought based on the practical realities of the way visual media fit in the health information marketing strategy in Kenya. These discussions provided information on methods of health information communication in Kenya, how posters are developed and produced, how they are distributed, who actually produces them, their expectations of what the materials can achieve, who uses the materials and how they do so and what efforts (if any) have been made to evaluate these posters. Further discussions were held with health information promoters in the office of the District Medical Officer in Kakamega to identify what happens to the posters when they received them, their expectations of what the materials can achieve, who uses them and how they do so. Essential baseline information needed for objectively assessing the perceptions of the target population to visual media was collected. This background provided the starting point for the critical field work which was to follow.

The actual interview/discussion sessions were guided by a list of pre-prepared questions (see Appendix 1) but the procedure was kept as informal and in dialogue form as far as possible. The questions were unstructured and altered to suit the respondent’s area of expertise. For example, if the respondent was an administrator then the focus of the interview immediately shifted to discussion of general concepts and practice and how these fit in the contemporary communication infrastructure and so on. Appendix 1.1 gives an
Visits to such agencies were through direct contacts and recommendations. Having visited one agency and held a discussion further contacts were developed through recommendation from the agency visited. Above all, these were the major agencies that are directly involved in promotion of immunisation.

The purpose of the visits was also to identify and select posters that were to be used in the research. Two posters on immunisation were collected from the Health Education and Audiovisual Aids Division, two from KEPI and one from the Kenya-Finland Primary Health Care Programme (KFPHCP) in Kakamega. These were posters which are in current use. We expected that the respondents would have had access to them and that their perceptions and opinions would provide baseline measurement against which constraints of their effectiveness can be identified. Out of the five posters, four of them which we had spotted displayed at the health facilities in the district were selected and used in the research. Each poster was laminated in its original size and state for protection. On the next few pages is a brief description of each poster and its contents.

**Poster 1 (Figure 2.1):** A coloured poster produced by KFPHCP. It had printed information in Kiswahili language. It was entitled: *Hakikisha mama mja mzito na mtoto wanapata chanjo wanapofika umri...* (Ensure that an expectant mother and the baby are vaccinated at the ages ...). This poster presented the different courses of vaccines which should be given to an expectant mother, at what age, how many and where administered (i.e., orally, in the case of polio or injected, and where injected). The target population is also informed to go to the nearest health facility for the vaccinations. The objects are a pregnant woman and baby.
HAKIKISHA MAMA MJA MZITO NA MTOTO WANAPATA CHANJO WANAPOFIKA UMRI:

MAMA MJA MZITO
1 PEPO PUNDA
SINDANO 3
MIMBA YA KWANZA
2 HALAFU SINDANO
MOJA KILA MIMBA
IFUATAYO

MTOTO ANAPOZALIWA
1 KIFUA KIKUU
(BCG)
SINDANO KATI YA
MIZORO WA KIKUETO
2 KUPOOZA 0
(POLIO)
DAWA MDOMONI

WIKI 6 AU
BAADAYE
1 KOO
KIFADURO
3 PEPO PUNDAJ
SINDANO PAJANI
4 KUPOOZA 1
(POLIO)
DAWA MDOMONI

WIKI 10 AU
BAADAYE
1 KOO
KIFADURO
3 PEPO PUNDAJ
SINDANO PAJANI
4 KUPOOZA 2
(POLIO)
DAWA MDOMONI

WIKI 14 AU
BAADAYE
1 KOO
KIFADURO
3 PEPO PUNDAJ
SINDANO PAJANI
4 KUPOOZA 3
(POLIO)
DAWA MDOMONI

MIEZI 9
AU BAADAYE
1 UKAMBI
SINDANO PAJANI

HUPATIKANA KATIKA KITUO CHA AFYA KILICHO KARIBU NAWE

PRODUCED BY:
KPPNC2

33
**Measles**

**Tetanus**

**Tuberculosis**

**Diphtheria**

**Poliomyelitis**

**Whooping cough**

**These diseases can be prevented**

**IMMUNIZE** pregnant women against **tetanus**. Two doses given at least 4 weeks apart will protect the baby when it is born. Use clean methods at delivery, cutting the cord with a sterile knife or razor blade.

**IMMUNIZE** infants in their first year of life against **diphtheria**, **tetanus** and **whooping cough** (pertussis), giving DPT vaccine, spacing doses at least 4 weeks apart.

**IMMUNIZE** infants in their first year of life against **poliomyelitis**. Three doses spaced at least 4 weeks apart are needed.

**IMMUNIZE** infants against **measles** as soon as possible after they are 9 months old.

**IMMUNIZE** against **tuberculosis** with BCG vaccine, giving one dose soon after birth and another dose at 5-6 years of age.

**EXPANDED PROGRAMME ON IMMUNIZATION**
MTOTO WAKO ASIPOPATA CHANJO ZA KUZUIA MAGONJWA HAYA SITA AFYA YAKE IKO HATARINI

1. NDUI
2. UKAMBI
3. KUPOOZA (POLIO)
4. PEPO PUNDA (TETANUS)
5. KIFADURO (WHOOPING COUGH)
6. KIFUA KIKUU

Chanjo za kuzuia magonjwa haya zitapatikana kliniki yoyote iliyoko karibu nawe.

Peleka mtoto wako kliniki kabla hajaambukizwa.
NATIONAL IMMUNIZATION SCHEDULE

PRIMARY VACCINATIONS

EFFECTIVE FROM NOVEMBER 1989

Age of child

at birth

or soon after

6 weeks

(11/2 months)
or soon after

10 weeks

(21/2 months)or soon after

14 weeks

(31/2 months)or soon after

9 months

or soon after

B.C.G.

B.C.G.

Oral

Polio

POLIO birth

POLIO (OPV 1)

POLIO (OPV 2)

POLIO (OPV 3)

D.P.T.

D.P.T. 1

D.P.T. 2

D.P.T. 3

Measles

Measles

ALL PRIMARY VACCINATIONS SHOULD BE COMPLETED BEFORE THE FIRST YEAR OF LIFE

OTHER VACCINATIONS

TETANUS TOXOID

during pregnancy

Two doses 4 weeks apart given as early in pregnancy as possible. One booster dose at every subsequent pregnancy

people with open wounds

Two doses of TETANUS TOXOID at least 4 weeks apart. Only one dose to be given if immunized during last 3 years

Others like TYPHOID and Plague

Specific groups and those at risk

International Travel

Travellers requiring vaccinations as specified by the International Health Regulations

IMMUNIZE FOR HEALTH

Produced by KEPI with the assistance of UNICEF, Kenya
Poster 2 (Figure 2.2): was a poster which had been adapted. Entitled: these diseases can be prevented. The poster portrayed pictorially the six immunisable diseases and their names. Also printed was information on the intervals at which the different vaccines should be administered. Its theme, as the title depicts, is that the diseases shown can be prevented through immunisation. We also located tape/slide presentation with the same pictures and message in a health facility in the district.

Poster 3 (Figure 2.3): was a black and white poster in Kiswahili language, entitled: Mtoto wako asipopata chanjo za kuzuia magonjwa haya sita afya yake iko hatarini (If your child is not immunised against these six diseases, his/her health is put at risk). The poster presented the six immunisable diseases with some translation in English of some of the diseases. Target population are informed to take their babies to the nearest clinic before they are infected. The object on the poster shows a picture of an unhealthy child because it had not been immunised. The poster was produced by the Health Education Unit.

Poster 4 (Figure 2.4): was in English and produced by KEPI with the assistance of UNICEF, Kenya. It was the National Immunisation Schedule showing all the vaccinations needed and at what ages. It is an example of a poster which is meant to be used by the health worker to help explain to the information consumer the information presented. It contains a series of pictures and arrow symbols have been used.

In 1992, while in Loughborough, we identified a group of artists (Health Images) who worked freelance for development agencies and others through an exhibition held at the Commonwealth Institute. The exhibition began just after my departure but contact was made with the group, who sent some information on their work. In May, 1993, I went to see one of the artists who lives in Birmingham and has spent time in Botswana, Tanzania, other African countries-
and south-east Asian countries. She explained how she develops an idea in visual form, and how the process of realising her design takes place. She also talked about testing posters and evaluation. This meeting was useful in the design of this research as some of the ideas were assimilated. For example, the suggestion that it would be pointless to mask material which is already in use was considered. She observed that masking would have been relevant only during pretesting stages.

2.3.2 Interview

This tool was used to gather useful and relevant information from health information consumers who participated in the study. In order to justify the interviewing styles and methods which were chosen in this research it is necessary to consider how interviews might be classified. These typologies are by no means exhaustive and would not adequately address the complexity of interviewing as a research technique. They do, however, allow the interviews used in here to be described against some background which provides reference points rather than in vacuum.

There are basically three kinds of face-to-face interview. These are structured, unstructured and semi-structured. A structured interview requires a carefully worded interview schedule and often demands short answers. An unstructured interview is based on a great deal of skill and experience on the part of the interviewer in order to probe in-depth the answers of the interviewee. As it was the aim of the study to encourage a dialogue, questions were directed at obtaining attitudes and personal philosophies. A semi-structured interview was felt to be most suitable. This type of interview allowed both parties to participate in the generation of the agenda. Due to such flexibility and negotiability the interviewer was able to enter the process armed with a number of interests, problems and issues, take a view of the information available and
adjust the line of questioning accordingly.

Interviewing techniques were used to elicit the health information consumer respondents' reactions to visual media, more specifically to posters. This was done since health information consumers could be the best evaluators of what a specific visual medium has meant to them.

2.3.3 Field Observation

Participant observation was used to identify and capture the activities of the community under study. Mullings succinctly states that 'observation studies events as they actually occur and also what people do rather than what they say they do' (Mullings 1984, p. 1). This technique was appropriate as it facilitated derivation of more authentic information from the subjects since they were observed going about their activities in their natural setting. It was a straightforward method which needed little training. It was, however, time consuming since detailed notes had to be made. The notes contained direct quotations, or as near as possible recall of what respondents said as they went about their activities as well as what they said during interviews both formal and informal. Such quotations were necessary for capturing what anthropologists call the 'emic perspective' - which, according to Fetterman (1989, p. 30), 'is at the heart of most ethnographic research'. The field notes also contained the researchers' own feelings, reactions to the experience and reflections about the personal meaning and significance of what had occurred.

Considerable effort was put into describing the environment and context in which activities were taking place. Specifically, the following were observed:

- the way visual media are used to increase the understanding of immunisation messages within the community, for instance, at health
facilities, with field health educators, and others;

• what types of media there were in this community;

• the way visual media were used by the target population;

• which combinations of pictorial attributes were present when respondents believed the visual media were particular helpful;

• the procedures used by respondents to gain meaning from visual media;

• the various routine activities of the community under study.

2.4 Identification of the Geographical Area

Due to the limitations of time and available financial support, it was not practically viable to travel to all the rural areas in Kenya. A suitable sample of a geographical area from which valid generalisations would be made had to be selected. The great linguistic and cultural diversity in the country also made comprehensiveness impractical. Kakamega District was purposively chosen as the district within which data collection would take place (see Appendix 3 for its location). Although the representativeness of purposively selected samples is usually treated with suspicion because it is not guaranteed to be representative in the way a random sample would be. Such subjectivity was taken into account. The choice of the district was done on the basis that the development of health services (see Chapter Four) and the present structure of health care delivery services in the rural areas in Kenya are similar. Despite this consideration, the choice of Kakamega District was further strengthened by the following reasons:
• It was within reasonably easy access to the data collection points;

• Due to the availability of personal acquaintances the author expected a lot of co-operation from the providers of health information in the district;

• Due to the general familiarity of the author with the district, reduction in research time was expected.

• Examination of other regions which might have been used, strengthened the sense that Kakamega was in all the essential features sufficiently typical to justify the choice of it for this purpose.

Kakamega District, which is characterised by a low rate of urbanisation (Kakamega District Development Plan 1994) has eleven administrative divisions with a total of 33 locations and 128 sub-locations. The divisions are Butere, Khwisero, Mumias, Ikolomani, Shinyalu, Municipality, Kabras, Lurambi, Lugari, Navakholo and Matete. The ethnic composition of the population is mainly Luhya.

In order to provide as full a picture as possible of the place of visual communication of health information in the rural area life, an intensive community study was undertaken. Kabras Division was randomly selected for the research. Many of the main socio-economic features in this division are to be found in varying forms in other rural divisions throughout Kakamega District and Bantu agricultural parts of Kenya on the whole. Kenya being a developing country, the rural areas’ characteristics may also be typical in other developing countries, again, in varying forms. Insights gained from documentary sources and from preliminary visits to this division shed light on the key areas of the division and its community. These are represented in the next section.
2.4.1 Profile of the Geographical Area

Kabras Division is one of the eleven divisions of Kakamega District in the Western Province of Kenya. It is on the fertile northern/central plains of the district. The division occupies an area of approximately 363 sq. km. The altitude ranges from approximately 1260-1460 metres. The mean annual rainfall is 2000mm. Temperatures vary between a mean maximum of 26 degrees centigrade and 32 degrees centigrade and a mean minimum of 14 degrees centigrade and 18 degrees centigrade. The area characteristically experiences intense sunshine. It consists of three administrative units known as locations. These locations are further divided into thirteen administrative sub-locations. The sub-locations include a number of villages. These villages are made up of several scattered homesteads, belonging to the people of the same clan. Table 2.1 shows the administrative locations of the division and their respective sub-locations.

The division has a divisional officer (DO) who holds the highest administrative rank in the division, followed by the location chief. At the sub-location level is the assistant chief assisted by the village headman known as the liguru. The liguru maintains direct and frequent contact with the people. He can be seen riding about on his bicycle, visiting the community in their villages, and in general trying to keep informed of the local gossip. He is responsible for collecting harambee money (money for self-help projects), and sometimes informally settles petty disputes arising from thefts, land and so forth. The above administrators are responsible for summoning and holding barazas (open-air meetings) where matters concerning the community are discussed.

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Table 2.1 The Locations and Sub-locations of Kabras Division

<table>
<thead>
<tr>
<th>LOCATIONS</th>
<th>SUB-LOCATIONS</th>
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<tbody>
<tr>
<td>Central Kabras</td>
<td>*Malava</td>
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<tr>
<td></td>
<td>*Matsakha</td>
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<td></td>
<td>Butali</td>
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<td>Surungai</td>
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<td>West Kabras</td>
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<td></td>
<td>Burundu</td>
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<td></td>
<td>*Samitsi</td>
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<td></td>
<td>*Mugai</td>
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<td>South Kabras</td>
<td>Shamberere</td>
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<td></td>
<td>Mahira</td>
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<td>*Shianda</td>
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<td>Chesero</td>
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* Data collection areas

The division has a population of 131,895 with an annual population growth rate of 2.8 per cent (Kakamega District Development Plan 1994). The population is relatively homogeneous with respect to ethnic group. It is inhabited by mainly the Luhya, a Bantu tribe. The Kabras people form the majority of the inhabitants. Isolated pockets of other tribes such as the Luo, Kalenjin and Kikuyu live among this community. The vast majority of the population is Christian. Most people live in compounds consisting of two to five or more huts and a food store. The compounds are scattered throughout the area. There are no villages in the sense of concentrations of a large number of homesteads. Most of the households have temporary dwellings in form of mud huts thatched with grass. A few isolated semi-permanent houses made of mud walls and thatched with iron sheets can be found. Some few people have permanent houses made of bricks or stone and thatched with iron sheets or tiles. There are
20,291 households in the division. Each household has an average farm size hectarage of between 2.5ha. to 5ha. Fields of crops such as sorghum, fingermillet, maize, beans, cassava, sweet potatoes, bananas, various types of vegetables can be seen. Sugar cane plantations are prominent and some sunflower. Traditional methods of farming still persist. Livestock tethering and stall-feeding are widely practised. The animals include sheep, cattle and goats. Traditional stocks of poultry roaming within compounds in the homesteads are conspicuous. Like many other rural parts in Kenya, it lacks amenities such as electricity and tap water. Kerosene lanterns and tin lamps are used for lighting the houses. Pit latrines are found in most homes.

There are a number of small market places in the area such as Lubao, Kuvasali, Malava and Lukume. Malava is the largest market and consists of 10-30 shops on both sides of the main road. Men, women and children can be seen selling goods such as fish, bananas, pineapples, sweet potatoes, cassava, sugarcane, various types of vegetables, soap, cigarettes, sweets and many others in open spaces around these shops and on shop pavements. Very few shop owners actually live in the market area. From Kakamega town a tarmac road runs through the division to the main Webuye/Eldoret road. Bus and small vehicle (commonly referred to as matatu) services are available in both directions on this road. Within the study area are a number of earth roads. Frequent bicycles ply along these roads transporting people and goods from one destination to another.

A variety of voluntary agencies operate in the division. To mention a few these include:

- The Danish volunteer service with its support of the Kabras Jua Kali Project based in Kambi Mwanza Market (Kakunga). The Manyoya womens' group is an example of a party that has benefitted from this
- The Family Planning Association of Kenya which uses the services of community based volunteers in the division.

- The National Spiritual Assembly of the Bahais of Kenya which conducts seminars on health and operates mobile clinics for immunisation in the division.

- The Kenya-Finland Western Rural Water Supply Programme with its rehabilitation of piped water scheme at Malava.

- The Kenya-Finland Primary Health Care Programme (KFPHCP) with its components of Rural Health Services, Environmental Health and Sanitation, Construction and Maintenance.

The division has one health centre, Malava staffed by a clinical officer in-charge, several nurses and other support staff. Kuvasali and Shihome are new dispensaries also in operation. These are each staffed by an enrolled nurse. Other dispensaries have been proposed at Namagala, Manda, Chombeli and Chegulo (see Figure 2.5). Mobile clinic services from the public health department at Malava Health Centre are provided to every location in which immunisation is also carried out. This is done once a month in policy. In practice, according to observation during the field work period of this study, this was not the case. In view of financial constraints, and poor communication infrastructure coupled with wet weather conditions, only those locations which can provide fuel to enable the health officers to travel to their areas are served regularly. Otherwise these officers would have to travel on bicycles to the target areas. This creates a problem of irregular out-reach services being
provided especially during the rainy seasons. There are eight privately owned clinics in the division. These are situated in the market places.

Outside the division within the Kakamega district there are the government run Provincial General Hospital in Kakamega town and Mwihila Hospital in Khwisero, in addition to the other 25 health centres, 22 dispensaries and several mobile clinics from the health centres. The Catholic Church operates two hospitals, St. Mary's Mumias and St. Elizabeth's Mukumu while private practitioners dominate in the operation of the existing nursing and maternity homes. A few private clinics are also operated mainly in the large markets and the municipalities. Traditional health practitioners also practice in their clinics in the municipalities and their environs.

Due to the climate, uncovered drains and stagnant waters, the area is a breeding ground for mosquitoes, malaria is the highest disease incidence in the division. Immunisable diseases such as measles and tuberculosis are a menace. In fact during the period of field work there was an out-break of measles. School children and others had to be mobilised for vaccination as an emergency. A number of polio cases have been reported in the area. This has led to the establishment of a disabled centre in Malava. As this research was in progress UNICEF had seen the need to help accelerate the immunisation coverage in this division with emphasis on the eradication of polio. They launched an immunisation exercise in April 1994 in Malava (Owuor 1994).
Figure 2.5 **SKETCH MAP OF KABRAS DIVISION**

Area: 363,000 sq. km  
Population, 1993: 131,895

Source for area and population figures: Kakamega District Development Plan, 1994 - 1996
2.5 Population and Selection of Respondents

Child immunisation in Kenya begins from the time a mother is expectant as she has to be immunised against tetanus. It is assumed that by the age of one a child must have been fully immunised against the six immunisable diseases. For the purpose of this research, the sample of the respondents was confined to parents who had a baby of one year of age and below and presumably had had experience with immunisation. Due to time and financial constraints, it was impractical to pick a random sample of respondents from all sub-locations and interview them all. It was much more feasible to take a sample from a limited number of sub-locations. Respondents were consequently selected from two randomly chosen sub-locations in every location. Malava, Matsakha, Samitsi, Mugai, Shianda and Chemuche were the six geographical units from where respondents were selected out of thirteen sub-locations (see Figure 2.5 and Table 2.1).

It was decided that the size of the sample would be a total of 180 parents (30 per cent of the total 600 parents who had a child aged one and below by the time the interviews were conducted). The MCP/FP records of all children born in the preceding one year kept at Malava Health Centre served as a basis for selecting the respondents. Using the stratified sampling procedure a proportionate percentage representation of male and female parents was selected. The sample size was:

50 fathers (31 per cent of the 162 eligible fathers at the time of the interviews)

130 mothers (30 per cent of the eligible 438 mothers at the time interviews were carried out)

Once the respondents had been identified, using the knowledge of a field health
an educator with a long service experience in the area, and that of a traditional birth attendant eligible homes were identified. These were mapped out and, using the direction and company of the field health educator, home visits were made.

2.6 Preparation of the Interview Schedule
An interview schedule was prepared and used. This schedule was used in order to make sure that basically the same information was obtained from the individual respondents. It also assisted in planning time limits for each interview which lasted for an average of about one and a half hours.

During the preparation of the interview schedule period, questions were designed and tried out with friends and other researchers. Their comments were invaluable in re-phrasing or re-directing some of the questions. Specifically this was done to:

- Determine whether all issues necessary to achieve the objectives of the study were included.
- Find out whether the responses given actually brought out the suitable responses that best achieve the objectives of the study.
- Gauge the level of the language and finding out whether the questions were consistent with the local cultural usage.
- Gauge potential distortions on the meanings and definitions of the wording of the questions.
- Ascertain as to whether the interview schedule would help in motivating the respondents to participate.
At the same time during the design stage, an opportunity was sought for practising interview procedures. The interviews were timed and comments were collected as to how long the interview should run. Feelings were also sought about use of a tape-recorder which the researcher had initially wanted to use. The idea was eventually deserted following the advice and views of the research associates and friends in view of the rural respondents and their environment. A vital feature in the schedule was to develop appropriate techniques and routines for conducting the interview. These developed after considerable practice and advice had been received from research associates. These research associates were very honest and open in their advice and made a significant contribution to the final interviewing stage.

2.6.1 The Pilot Study

Two groups participated in the pilot of this study. These groups were uniquely instrumental to the development of the direction of this research. They were critical to the focus of the study because their thoughts were taken into account. This was of great value to developing ideas and issues as the research progressed. Specifically, the purpose of the pilot study was to ensure validity of the research and the reliability of the research methods.

In Loughborough, an afternoon was spent with the wives of 20 research students from developing countries such as Ghana, Iran, Asia, etc. This group met regularly to develop their language, gain confidence, and meet other women who accompanied their husbands to Britain and who were also isolated from friends and family. Most were mothers, and therefore interested in my topic. During the afternoon, the research interview was piloted. Four child immunisation posters were used. The researcher masked some of the wording used to explain immunisation. The group was asked to decode the images, and
then, as the wording was revealed, to indicate their understanding of the posters' messages. The responses were tape recorded. It was possible to revise approaches as a result.

The resulting version of the approaches was subsequently subjected to further testing with a sample of typical respondents of the targeted respondents at Malava Health Centre. These were twenty five mothers who had come with their babies for immunisation. Useful experience was gained which was used to inform the structure of the subsequent work in the villages under study. This is reported in the next section.

2.6.2 Changes Resulting from the Pilot Study

Based on the pilot study some experiences were gained and changes were made such as:

- The idea of using a tape recorder was abandoned after unsuccessful attempts. It became evident during interviews that the recorder intimidated the respondents. A notebook was instead adopted.

- Some questions were re-worded to fit in with the expected answers and to avoid lead questions. For example, a question previously worded as "Do you think this/these child/ren is/are healthy?" was re-worded to an open-ended question, thus "What do you see in this picture?".

Individual interviews were preferred to focus group discussions. Despite the explanation to the respondents about the purpose of the research and its benefit to both respondent and researcher, and why the respondents had been chosen to participate in the study; some respondents were still suspicious. They saw the
researcher as a mouth piece for the medical personnel at Malava Health Centre. A decision was taken to make home visits where a freer environment would be created and individual interviews would be conducted. A field health educator who has credibility with the community under study as their opinion leader was identified and accompanied the researcher during home visits.

The researcher learnt and went to the field mentally prepared to expect some unco-operative cases among the respondents. This experience was gained from a mother in the pilot with research students’ wives who totally refused to respond. She claimed that she lived in town and would not know how those in the village would react.

Although the interview schedule was framed in English, it was necessary to interview in the local language because people living in the study area speak only their traditional language. Only a few speak the national language Kiswahili or the official language English. The researcher speaks the local language of the community studied although not the same dialect. The field health educator was used as an interpreter where the researcher was unable to communicate due to minor dialectal differences. This field health educator was also essential for locating the sample and for establishing rapport with the individuals selected for the study.

2.6.3 The Final Version of the Interview Schedule
The final version of the interview schedule (see Appendix 2) was divided into three parts:

- Personal data
- Visual literacy skills
- Knowledge, attitudes and sources of knowledge on immunisation
Personal data
The purpose of this part was to obtain data for understanding the community under study. Data were gathered on sex, age, number of children, educational level, literacy, occupational activities. This data was relevant for constructing a profile of this community. The data on sex, age, educational background and work activities was further used to compare various responses.

Visual literacy skills
The objective of this part was to obtain data about the attractiveness of the posters used in the study. More specifically, it was intended to find out whether the message was interesting enough to attract the attention of the respondents, that is, whether they liked it and which of the four posters they best liked. Further, the questions here were aimed at gathering data on what the target population regarded as offensive or distasteful, that is, the acceptability of the message. The purpose of this part was also to determine the comprehension of the messages. Questions were directed at the ability of the respondents to identify the idea of the message from the poster.

Knowledge, attitudes and sources of knowledge on immunisation
The questions in this part were intended to elicit information on the extent of the respondents' knowledge and attitudes of immunisable diseases. It was further aimed at determining the sources of knowledge on immunisation and the decision-making patterns of the respondents.

2.7 Gaining Access
Obtaining access to the respondents is a significant research process because
without access to the respondents in a setting data cannot be collected. For this research this process was quite stressful because of the long procedures and the delays that were experienced in going through the procedures necessary to do research in the country.

As it is procedural in Kenya prior to undertaking research in the country, permission was sought to carry out this research from the Office of the President using the research proposal. An application for such clearance was made at the time of planning for the preliminary research. The research permit from this office was used to seek clearance from the District Commissioner and health administration.

Gaining access to health facilities and documents involved making an initial visit and a letter written to the Medical Health Officer (MOH) of Kakamega District. After a detailed explanation of the purpose of the research, and its requirements, the medical authorities allowed access verbally and in writing. This enabled the author to refer to the relevant personnel and resources for the study. The visit was also fruitful as it enabled me to gain valuable information from the expertise of the personnel that were met such as the District Public Health Nurse and District Health Information Communication Officer. Those in charge of health facilities were contacted through casual visits and dates for the extended visits were fixed.

2.8 Rapport

The research design took into account the fact that the division administrators being members of health committees are the link between the community and the Ministry of Health. That is, they were viewed as the interface of government's information, education and communication efforts and the community. For example, they pass information to communities about the
importance of immunisation and also work out methods of involving communities in any health interventions. Interaction and involvement with the local administrative staff was therefore undertaken before the field research. Close links with chiefs, their assistants and magurus (village elders) in the villages of Kabras Division were established through visits to their offices and homes where necessary. This interaction was important because it facilitated access to the respondents. These groups also provided useful contacts, and supplied local information and activities of the community. This information was to do with the administrative structure, utilities, facilities, transport and communication, land use, and nature of activities this community is engaged in. This provided background knowledge on the study area which was essential in planning of the research.

The author also established field relations with this community through visits to health facilities in the division and chatting with the staff there. Some of the activities in the area were also attended. For example, the author accompanied the Malava health staff to a mobile clinic services on two occasions: one at Kakunga Primary School in Mahira sub-location, South Kabras which was carried out following an outbreak of measles in the area and another one at Shihome Community Dispensary. Also the researcher attended a seminar for community based distributors in Shihome at Marko Mulanda's home for three days as an observer. The participants were area representatives in various villages who disseminate information on family health such as immunisation, family planning, environmental health, among others and also distribute family planning gadgets to the community. At the beginning of the field research a Training of Trainers (TOT) seminar for the Village Development Committee of Mugai sub-location at Malava school for the disabled was attended, again, as an observer. This committee is made up of community leaders such as chiefs, assistant chiefs, womens' group leaders, village health workers and many others. This seminar was organised and run by the Malava Health Centre staff. These
forums provided the opportunity to familiarise with some members of the community. This was most useful in developing confidence and trust during the data-gathering period. We strongly believe that we were successful in gathering data from this community in part as a result of the personal relations created hereafter.

2.9 Interview Procedures

Interviews were carried out between the months of November, 1993 and February, 1994. This period is characterised by low rainfalls. It was possible to carry on with interviews for longer periods of the day except for one odd day when the rains were heavy.

Respondents were shown and asked questions on selected posters currently in use in the immunisation programme. This stimulated the respondents to talk about their experiences and feelings. Questions were drawn from the broad themes of the concern of the study. The areas included were: whether they have seen the particular posters before and where, what they can see on the posters, what it means to them, what aspects of the posters they think indicate what they can see, whether there are any special parts that made them say what they have said, what they do and have been able to do with the information from what they can see, what aspects of the posters they like and why, what aspects of the posters they dislike and why, among the posters shown to them which ones they prefer and why, what they feel should be done to improve the posters, the way they feel they should be taught and exposed to posters, what they think the words on the posters say, whether they think that posters should have words on them and why, etc. Most respondents were remarkably generous and indulgent and went to great lengths to provide answers to questions. Some were visited a second time to secure additional information whenever there was need to.
As rapport had already been established with the community, the introduction was a fairly relaxed, welcoming conversation. The field health educator displayed the posters one at a time and the researcher did the interviewing following as closely as possible the interview schedule and took brief notes. At the end of each home visit a quiet place was found and more notes were immediately written. This consistent immediate effort of writing notes after an occurrence of a field experience, was in the experience of the researcher the best assurance of reducing error in narrating what occurred. Additional field notes were, however, written after returning from the day’s interview and observation session. The field notes consisted of an account of what the researcher heard, saw, experienced, and thought in the course of collecting and reflecting on the data. Care was taken not to allow the field health educator to take over the discussions. After rapport and interest had been established through greetings and general talk (e.g. the current news in the village, anything striking in the homestead, etc.) the researcher introduced the topic and began the interviewing procedure. See Appendix 2.1 for an illustration of how the interview process progressed.

2.10 Problems and Difficulties

The most important elements for successful interviewing are the extent to which one is able to access accurate information from the interviewee, the interviewee’s understanding of what is required and his/her motivation to answer questions accurately. These elements are significant as they could affect the validity and reliability of the interview data. As already indicated, the instrument of interviewing in this study was pre-tested.

Although this was a successful technique of collecting data for this research, it also carried various problems with it. The aim of this section is to share with other researchers some of the problems and difficulties they might expect.
These researchers "can learn from both our successes and failures" (Whyte and Alberti 1983, p. 301).

Few isolated instances of misinformation during the interviewing phase did occur. For example, a respondent claimed that he had been to school up to Form Two yet he was unable to read the words on the posters. Such errors resulted from, perhaps, intentional lying on the part of the interviewees because they may have wanted to impress the interviewer, they may have been embarrassed to tell the truth or they may have been afraid of the interviewer (perhaps because of the social gap?). The researcher was therefore very careful in questioning. Problems of misinformation were detected (where there was suspicion) by asking the same question in a slightly different form later in the interview. Further, the respondents were visited without prior arrangement and most were interviewed on the spot in their homes in the villages. It was possible to see many of them going about their daily affairs in their home surroundings, preparing meals for the family, fetching water from the wells, looking after children, fetching firewood, digging and being visited by relatives and friends, selling goods at the markets, working in their gardens, attending church services and other meetings, etc. As the interviews were spread over a period of four months and took place in the morning, afternoon and evening and sometimes on Saturday or Sunday, many responses of fact could be substantiated by direct observation. Also by talking to some of the relatives who may have been present during the interview after or before the interview provided another means of cross-checking factual statements. Some of these relatives were living in the same household or home but many were just visiting.

The researcher also dispelled the respondents' fear and put them at ease so that questions were answered as completely and honestly as possible. Respondents were given an explanation of the purpose of the research, why they had been
chosen to participate and the significance of the study. The interviews began with questions that were intended to develop confidence in the respondent and were easy to answer. Once the rapport and interest had been established and the pattern of questions had become natural, then the more complex questions were asked.

This research sought to establish each individual's activities in order to provide a context within which it was possible to introduce appropriate questions and evaluate answers. The consistency of much of the information was convincing. However, throughout the research one of the most difficult problems was that of taking proper account of people's diversity in their lives. There was a great temptation at each stage to make life appear more logical, orderly and predictable than it was. The study may have suffered to some extent perhaps of this unintended distortion. People vary and their lives do not always adhere to a fixed order within a social system.

The skill of interviewing was initially stressful although it later on became an enjoyable experience. On reflecting back, this experience can be attributed to inexperience in conducting a rewarding and informative interview. Besides, the researcher was concerned that the respondents would be willing to relate to her if she tried to look like them, for example, in the way of dress (e.g. wear a headscarf for most part, walk barefoot, etc.). Fortunately, establishing rapport with them was not difficult. In fact to have attempted to disguise would have decreased the accuracy of the interview. The respondents were willing and indulgent since they were convinced of the authenticity of the research. But there may have been other reasons as to why some accepted to be interviewed. Some saw the researcher as one with whom they could narrate all their problems to and express their feelings. Indeed, this was common-with high hopes of their problems being solved or perhaps just psychological relief!
There were times when interferences during interviews caused anxiety for the researcher. However, this did not happen very often. For example, while an interview was going on with Rebecca, Robai came to ask if she could pick some vegetable from Rebecca’s garden. I stopped the interview. Rebecca then said that Robai was a very good family friend and neighbour of hers and that the interview could just go on. The interview continued but as it proceeded, Rebecca would want to involve Robai in her responses. For instance, one of the questions asked, 'Is there anything in this poster that you believe is not true?' Rebecca pointed at the belt on the poster and said to Robai ‘this woman is pressing the baby with this belt. She is behaving like Rasoha’s daughter when she was pregnant and wanted to conceal the pregnancy.’ ‘Ma’ Robai responded, 'Us Kabras don’t anyway wear long dresses like ‘vasiraeli.’ Another intrusion usually came from the field health educator who on several occasions would want to throw in a word here and there during the interview. She had to be cautioned diplomatically several times and reminded of her role all the time.

The scattered distribution of the population over the study area also made collection of data an exhausting and time consuming exercise. This was worsened by the poor transportation system. It was normal to walk for long distances. At certain instances, bicycles had to be hired. This was a strange experience for me since it is uncommon in my community for women to ride on bicycles. On two occasions, we were stranded in some homes due to heavy rains. It was quite an experience having had to end up walking in the mud during darkness.

There were major demands on time and financial resources. Analysing the data from interviews was an extremely difficult, slow and straineous task due to the large amounts of data collected. It was time-consuming reading and re-reading recorded notes of up to one or even one and a half hours dialogue. Working
with a rural community demands patience on the part of the researcher. Life in this particular community is very relaxed and hence time was not valued much.

2.11 Ethical Considerations

This study considered the view that "the right to knowledge must be balanced by the rights to personal and community integrity and privacy" (Peil 1982, p. 18). Researchers using techniques such as those used in this study (interviews and observations) are usually treated with suspicion by the respondents and this may affect the pattern and direction of the data provided. Health workers are concerned about their safety, security and privacy as a result of anything they say. They can, for instance, be in danger of victimisation following disclosures, which may result in loss of credibility depending on the circumstances and the use that is made of the results of the research. Likewise, the health information consumers would be suspicious of an outsider and may treat him/her as a spy for the medical personnel.

Collaboration in the research was sought through offering assurance to the respondents that they would not be identified or identifiable in our thesis. Respondents were also assured that the results would not be used for other purposes other than for research. Permission was sought from the respondents prior to interviewing them. The respondents were made to understand that the information being gathered was for understanding visual media in the communication of health information and not as an evaluation of the system of the health facility or the health workers themselves or the health information consumers. It was agreed that no individual names would appear in the report of the research, or would be revealed to fellow respondents. In the illustrations from the interviews fictitious names have been used and details have been altered to prevent identification. Clearance was sought from the relevant authorities and a clear explanation of what the research was about was given to these authorities.
2.12 Validity and Reliability

Controls for validity and reliability were instituted to establish the credibility of the methods employed in this research. Validity refers to the degree to which the researcher has investigated what was set out to be investigated. To eliminate bias, validity was ensured through a variety of steps. As described earlier, the instruments used in the study were tried out with fellow research students, wives of research students from developing countries in Loughborough, and a small sample of the respondents. Suggestions and experiences gained here were used to modify the final data collection instruments. After these steps were taken, and using the criteria of triangulation set forth by Jick 1983; Greene and McClintock 1985 this study appeared to have face validity. Triangulation involved a variety of approaches to investigate specific aspects of the situation. We were continually comparing statements from respondents, and the author’s observations and experience, and rechecking, searching for evidence relevant to visual communication and looking for evidence which challenged the ideas which were emerging. Every evidence was based on several kinds of evidence, for instance, from literature, relatives of the chief informants, personal contacts, personal observation, etc. Problems that were likely to affect the validity of the research were dealt with as indicated earlier. This strategy increased the authenticity of the data collected and the depth of the information collected.

As for statistical validity, statistical tests were found to have a limited but important role to play in research of this kind. Statistical tests help to discipline the analysis, especially in making explicit definitions and taking account of the quantitative element in the findings. However their application cannot be pushed too far. As many statisticians would agree, general comparisons between social groups can often produce significant differences which begin to look very misleading once the constituent parts are examined, or once the definition of categories is altered even slightly. For such reasons statistical tests need to be used with caution and discrimination. This study used descriptive statistics, that
is, frequencies and percentages due to the subjective nature of the data collected.

Reliability is to do with the extent to which a research instrument could be employed repeatedly under constant conditions and produce the same results. The pilot study provided a basis for the reliability of the research instruments.

2.13 Methods for Analysis of Data

The data for this study was in the form of field-notes derived from interview responses, discussions and observations. These data were processed manually. One hundred and eighty interviews were conducted. Each interview was given a number and dated. Throughout the research period the author was always comparing, rechecking and reflecting on the data collected. A line by line analysis was undertaken for every interview after the day's field notes had been written. The purpose of this constant comparative activities was to identify features, or situations that occurred during observation, in interviews or conversations of the respondents. Similar recurring terms were highlighted to mark similar ideas. These features were latter abstracted to develop ideas about the activities of the community studied and the way they interacted with the educational materials provided. Each script was analysed two or three times. General concepts were later formulated from them. The following chapter presents the results of the literature reviewed from which various concepts are related to the topic of the research are discussed.
CHAPTER THREE

3 THE ROLE OF VISUAL MEDIA IN COMMUNICATION

3.1 Introduction

This chapter explores the various concepts related to visual media. It focuses on elements of visual media, visual literacy and the role they play in the visual communication process. The intention is to show how previous research in these areas contributed to the development of visual communication research.

The issues contained here were selected as significant to the present research because of their relevance to the current visual communication problems in Kenya. Moreover, because we aimed at contributing to visual communication research, the focus of this review would provide a base for future research.

Research on the attributes of the visual image and the realism theories were relevant in grasping the concepts of visual media and their formats. This formed a necessary background of the present research.

The actual use of visual media in communication has been an area of extensive research interest among researchers from various perspectives, for example, learning, perception, memory, and so forth. The review here provided a sound foundation to our research.

The provision of visual media has to take place within the context of visual literacy. Inevitably, then, visual literacy plays a major role in the effectiveness of communication through visual media. Previous research in visual literacy formed a firm base for studying visual communication issues in the rural areas in Kenya.

Cross-cultural studies provide some insight into the way rural people see and
think as compared to the western people. This provides ground for this research
in making relevant assumptions about the type of messages rural people can
understand. Their findings also gave an insight into the type of problems that
are associated with pictorial communications. Some of the Kenyan studies
reviewed on visual communications were masters and diploma research
projects. They produced little empirical data on the subject. A review of the
literature of studies conducted in other countries was, therefore, undertaken.

3.2 Attributes of the Visual Image

There appears to be universal agreement that each medium of communication
has unique attributes and inherent advantages and disadvantages in terms of
usefulness. Each visual medium has different input needs which must be
addressed if the intended message is to get through to the target groups. Olson
(1974) and Salomon (1980) argued that the essential difference between media
is their modes of gathering, packaging and presenting information. They
contended that the symbol systems or modes of appearance form the most
essential attributes of visual media.

The outstanding essential attributes of posters, for instance, incorporate visual
combinations of images, lines, colour and words (Heinrich et al. 1989). These
combinations form some sort of language consisting of elements which are
inter-related by syntax such as in verbal language. Within this language are a
"series of cues which people have to know in order to be able to perceive and
interpret the content or message correctly" (Fuglesang 1973, p. 71). Fuglesang
(1973) identified five major cues as:

- the depth cues such as shade cue, relative size and relative height in a
  horizontal plane;
• the perspective cue;

• the superimposition cue;

• the movement cue;

• the identity cue.

Dondis acknowledged the characteristics of visual media and contended that "the character of the visual media accentuates the need for understanding their visual components" (Dondis 1973, p. 19). She believed that the irreducible elements of the visual process are dot, line, shape, direction, tone (present or absence of light), colour, texture, scale or proportion, dimension and motion (Dondis 1973, p. 15-16).

Conceptually, visual media are technological devices through which information is created, selected, processed and communicated to the target population through the sense of sight. They are organised means with the potential of reaching large numbers of diverse kinds of people. The messages may be mass-produced and visual communication may be said to have become public, rapid and transient. Messages can be targeted to one person, for example, a photograph. They have a public format in the sense that, unlike a conversation between two people, the technology of visual media tends to be capable of mass communication. Griffiths (1982) categorised visual media into two groups: projected and non-projected. Included among the former are microfiche, slides, filmstrip, television, overhead projector (OHP) and film. By the non-projected criterion, photographs, posters, wallcharts, flipcharts, boards, models and realia would be categorised as visual media. With technological advancement, however, all of these media are now projectable. In the
literature the terms visual aids, visual materials and visual media have been used interchangeably. For consistency, this study has adopted the usage of the term visual media.

3.3 Realism Theories

Studies that were reported in the early literature dealing with audiovisual instruction suggested that realistic instructional materials are generally more effective than abstract materials. Visual media were considered to have different levels of concreteness, iconicity, fidelity, complexity and realism. Colour photographs were thought to be superior to black and white photographs which in turn, were thought to be superior to simple line drawings. These theoretical orientations could be used to explain how visual media could be classified. Dwyer (1976, p. 8) referred to these theoretical perspectives collectively as ‘realism theories’.

Dale (1946) suggested a classification or arrangement of human experience on the basis of direct and indirect experience with the rich, personal sensory experiences at the bottom (of an imaginary cone which he referred to as "The Cone of Experience" (see Figure 3.1); and the highly abstract, symbolic experiences at the top. Dale’s theory suggested that most learning is based on concrete or direct experience and is later abstracted to more symbolic levels. Thus, the more realistic and concrete a particular experience is, the more permanent will be any resulting learning. Hence the use of visual media such as pictures, real objects visual models or demonstrations, and charts by health educators during their health education sessions. The cone of experience theory does not, however, imply that all learning must advance from the concrete to abstract or that there is any relationship between a learner’s age or development stage and the types of materials used.
Figure 3.1 The Cone of Experience

Morris (1946) the famous semanticist identified the iconicity theory. Morris (1955) suggested that icons can be powerful aids in facilitating any kind of sign process and directing a subject toward a purpose. Iconicity is the "extent to which a visual sign or symbol itself has the properties of its denotate" (Morris 1946, p. 23). For example, a coloured picture of an object has more properties of that object than a black and white picture, and is therefore more iconic than a shaded drawing which is more iconic than an outline drawing of the object. This enables the visuals to be easily interpreted.

The sign-similarity principle developed by Carpenter (1953) uses the iconicity concept. The sign-similarity theory emphasises that visual media must attract the learner's attention if they have to be effective. It further suggests that visual media which are complex would be more effective for most instructional purposes than those with low iconicity.

Gibson (1954) proposed the surrogate fidelity theory. This principle holds that the best pictorials are the more realistic ones which actually duplicate or replicate the degree of realism in pictorials. Keeping in view the significance of learning from visual media, Gibson illustrated how some visual media are more effective for some types of learning. In his view "pictures and models are better than words and symbols or learning about concrete things, tools, mechanisms or organisms, about particular places, scenes, and environment, and about existing events, processes, and sequences" (Gibson 1954, p. 22).

Miller and Allen (1957) hinted that too many irrelevant cues may compete with one another and divert the learner’s attention from the relevant cues in the visual media. According to Broadbent (1958 and 1965) the human brain contains a ‘selective filter’ that can be ‘tuned’ to accept one message or part of it and reject the rest. The filter can also block the undesired inputs and thereby reduce the information processing overload. This filtration process
helps the subject to disregard irrelevant information but sometimes may lead to disregard of relevant information. Hence designers of visual media have to develop media that are simple and display only relevant visual information.

More recently, Beck observed that learners frequently overlook details in complex illustrations unless they are prompted to pay attention; and even with the most well designed visual medium, it cannot be presumed that every reader's attention is given to the illustrations or photograph (Beck 1987, p. 333). Some individuals may benefit from systematically detailed visuals designed to further isolate important content (Goldsmith 1984). This specific manner in which an individual functions in the perceptual process of gathering and handling information from the environment is of interest to both educators and designers of visual media. Attenave (1954) hypothesised that one function of the perceptual machinery was to reduce redundant stimulation and encode incoming information so that only the essentials travel through the central nervous system to the brain. He explained that "lines bordering objects provide the essence of the information to be conveyed" (Attenave, pp. 185-186). This, he believed, accounted for the effectiveness of cartoons and stick drawings as carriers of information.

Thus, it can be concluded that visual media can be classified according to their different levels of concreteness, iconicity, fidelity, complexity and realism, even though these terms may overlap. The closer the visual media are to the object they represent, the more likely they are to prevent breakdown in communication. However, Dwyer (1967) contended that presentation of stimuli that approximate reality is not necessarily the most effective way to facilitate learning. He alleged that "excesses of realism may actually interfere with the transmission of information and certain kinds of stimuli may not be perceived" (Dwyer 1967, p. 253). It is, therefore, essential that designers and educators attempt to identify those characteristics within the visuals that will facilitate
information gain of specific kinds of learning.

3.4 Use of Visual Media

Visual media varying greatly in the qualities of concreteness and abstraction, have value to the user to the extent that they meet his need for understanding. These media appear to have as their sole purpose the ability to stimulate interest, simplify, clarify, or increase understanding, and motivate the user to learning and desirable health practice (Schneider 1964; Duchastel 1983). Lerner (1958) argued that media, whether audio or visual, present new objects and ideas which engage and activate the capacity and stimulate development. The media relate the multitudes to the "infinite vicarious universe" and hence they function as a "multiplier". Schramm (1964) saw the mass media serve three functions in society: as "watchman", as "an aid to social decision-making" and as a "teacher".

Research on the role of images suggested that images may have a negative effect on recall (Gunter 1980; Furnham and Williams 1987). Other researchers (Boeckmann et al. 1988 and Golden 1990) hinted that correct images may enhance recall, and that it should be possible to develop principles of image use which improve comprehension.

The nucleus of research has stressed that visuals can be effective in communication and permanent learning is more adequately assured if the sense of sight is used. While emphasising that "our senses are the gateways to knowledge", [and also noting that] "of all the senses that we use, the sense of sight is the most vivid and provides rich experiences to the individual" (Sampath 1981, p. 15). Dale (1946) further observed that a student retains 10 per cent of the information he hears and is able to see but will retain 90 per cent of the information he hears, sees and is able to manipulate.
3.4.1 Learning and Memory

Research findings have been consistent in showing that pictures are superior to words as cues for eliciting specific responses. Studies of pictures in psychological investigations into recall have shown that pictures are remembered better than words in the case of concrete concepts (Paivio and Csapo 1973; Wicker 1970 and Alesandrini 1982). Paivio (1978 and 1971) with his dual-coding hypothesis suggested that this is because visual images provide 'conceptual pegs' that assist classification in memory and matching in recall. When a learner is asked whether the picture is one that was shown earlier, the picture is 'looked up' in memory by seeking a match between its attributes and those in the images in memory. The more concrete the stimulus, the more reliable it is as a conceptual peg and the better the recall. The Gehring and Toglia (1988) study supported the dual-coding hypothesis. Subjects typically remembered more pictorial information than verbal on the verbal recall test. These researchers argued that "Pictorial learning during the study plus subsequent verbal recoding on an immediate test might establish an especially durable dual code which would help prevent forgetting overtime" (Gehring and Toglia 1988, p. 219). Their finding was consistent with the work of Childers and Houston (1984) who found faster forgetting of words than words plus pictures in an applied setting.

Brody, reviewing the importance of using pictures in the communication of information, acknowledged these research findings when he pointed out that:

... pictures are better remembered than words. They can make complex and abstract ideas more meaningful and concrete. They can affect emotions and attitudes.

(Brody 1984, p. 22)
He cautioned that inclusion of a picture does not automatically improve instruction. Pictorial learning can be achieved "only if the desired learning outcome is appropriate for the picture's capabilities, and if the picture serves the necessary instructional functions" (Brody 1984, p. 21). Reiser and Gagné (1982) in their review suggested that visuals can help the learner acquire and retain visual images which aid in the acquisition of intellectual skills and retention of verbal information. These images enhance competitive processing strategies (Olson 1976) or activate mental skills (Salomon 1974 and 1979).

3.4.2 Recognition and Memory

In pictorial recognition memory research, there is a striking tendency of a high degree of accuracy exhibited by subjects in recognising pictures they have seen before. Researchers including Standing, Conezio and Haber (1970), Jenkins, Neale and Deno (1967) and Shephard (1967) demonstrated that a human memory has a surprisingly larger capacity for pictorial recognition than verbal stimuli. Standing, Conezio and Haber (1979) presented subjects with 2560 pictures for 10 seconds each over several days and reported recognition rates ranging from 85 to 95 per cent. Shephard (1967) presented a series of 612 pictures taken primarily from advertisement and found superior recognition of pictures to the recognition of the verbal content presented in a similar environment. Jenkins, Neale and Deno (1967) compared performance on four conditions: picture-picture, word-word, picture-word and word-picture. The picture-picture condition was superior to the word-word and the picture-word conditions, which in turn were both superior to the word-picture condition. According to Haber and Myers (1982), memory for picture-word combination was superior to memory for words alone or pictures alone. Paivio (1983) showed that our memory for pictures is superior to our memory for words. These studies showed that it is possible we may never really forget anything that we see to which we pay attention (Debes 1974, p. 3). This 'pictorial
superiority effect' became the conventional wisdom despite studies that eliminated, and in some instances reversed picture superiority effects by increasing their 'schematic similarity' (Sitz 1990). Although picture superiority findings have proved consistent across all research circumstances, still lacking is a clarification under what conditions visual stimuli will effect superior recognition or recall. However, it can safely be assumed that, the fact that there was a high degree of retention of information even after a brief exposure, visual media can be effectively used in practical areas such as in teaching, training and advertising. Hence the use of such media as pictures, real objects, models or demonstrations by health educators during their health education sessions such as immunisation, nutrition, family planning, among others.

3.5 Visual Literacy

Research perspectives in the field of visual literacy are both interesting and eclectic. One remarkable characteristic is the interdisciplinary nature of research orientations. The area has been conceptually discussed by all the propounders of different approaches. It is an area of active interest to researchers in the areas of advertising and information design, art education, media research, instructional technology, aesthetics and semiotics. When integrated with the wide variety of studies in psychology on perception, memory, learning, visual information processing, among others, the number of research studies becomes voluminous.

The literature on visual literacy further presents a problem as it has been difficult to compare results of various studies. This difficulty could be attributed to different causes. Miller, in his review, justifiably observed that hypotheses in previous studies "remain speculative in nature as there is no evidence to support any of them conclusively" (Miller 1973, p. 148). There is also lack of raw data in the literature and lack of known formulas for
determining or predicting visual difficulty for pictures.

The theoretical arena in visual literacy has been dominated by the fundamental problem of definition. Visual literacy has been defined according to the particular interests and expertise of various authors, thus making it a complex and perplexing concept. Debes points out that an understanding of the term "is based on the confluence of knowledge, theory and technology in many areas" (Debes 1968, p. 963). Fransecky and Debes (1972) felt that "the lack of a research model has required researchers to cite research from related fields such as perception, psycholinguistics, and semantics... in order to gain a better understanding of the concept" (Fransecky and Debes 1972, p. 20). Debes brought into prominence the concept of visual literacy when he proposed a tentative definition at the first conference of the International Visual Literacy Association in Rochester in 1969 when he stated:

Visual literacy refers to a group of visual competencies a human being can develop by seeing at the same time he has and integrates other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed they enable a visually literate person to discriminate and interpret the visible actions, objects, and/or symbols, natural or man made, that he encounters in his environment. Through the creative use of these competencies he is able to communicate with others. Through the appreciative use of these competencies he is able to comprehend and enjoy the masterworks of visual communication.

(Debes 1970, p. 14)

Debes succeeded in condensing a somewhat diverse domain into a manageable sized concept. However, his definition stresses a sensory modality rather than a symbolic one. The main concern in the visual literacy movement is the "symbolic behaviour, not sensory behaviours" (Levie 1978, p. 26). The study
of visual literacy deals mainly with pictures as the central stimuli since pictures are symbols.

At the same conference Debes also presented visual literacy skills which he thought to be representative of visual literacy competency goals. As he carried on to clarify his 1969 concept of visual literacy, Debes (1979) went further and stressed that a visually literate person must be able to read visuals with skill; to write with visuals, expressing one self effectively; know the grammar and syntaxes of visual language and apply them; be familiar with the tools of visual literacy and their use; be able to appreciate the masterworks of visual literacy and be able to translate from visual language to verbal language and vice-versa.

Hortin (1980) gave further impetus to theoretical analysis, viewing the study of visual literacy to be emerging as a new academic discipline in its own right, although organisation boundaries and destinies would be decided. Hortin attempted to bring together the various viewpoints and proposed a more comprehensible and coherent definition: "visual literacy is the ability to understand (read) and use (write) images...and to think and learn in terms of images" (Hortin 1980, p. 13). His work builds on the theories discussed in the works of Ausburn and Ausburn (1978), Arnheim (1969) and Debes (1969), Clark and Clark (1976), among others.

Whichever terms are used to describe the concept of visual literacy, it would appear that it is a learned phenomenon (Kilbride 1970 and McBean 1989) resulting from cultural conventions (Mangan 1978; Sigel 1978; Fuglesang 1973; Segall Campbell and Herskovits 1966 and Court 1989). Fransecky and Debes (1972) believed that every culture has basic visual symbols that are generally understood by members of that culture to stand for particular objects and events. They further generalised Debe’s 1969 visual literacy skills by stating that the basic structure of visual language is a set of relationships
between visual thinking, reading, and writing. They contended that a visually literate student should be able to read, plan, create and combine visuals for intentional communication.

Dondis (1973, p. 10) observed that the purposes of visual literacy are the same as those of verbal literacy. She viewed visual literacy as the construction of a "basic system for learning, recognising, making and understanding visual messages that are negotiable by all people". Dondis predicted that "visual literacy will be one of the fundamental measures of education in the last third of our century" (Dondis 1973, p. 19). According to Sigel, comprehension of pictures and written language involves "the knowledge that objects and/or events can be represented by the picture or by a word" (Sigel 1978, p. 95). Accordingly every user of a particular medium must learn how a given symbol represents an object in such a way that they can comprehend and recognise the message.

Paivio (1978) insisted on the logic of approaching visual learning, language and communication as a dual process which assumes that the structure and functional properties of verbal and non verbal systems are interconnected. He explained: "Each system presumably is specialised for different functions and either can initiate activity in the other given appropriate contextual stimuli so that co-operation action is possible" (Paivio 1978, p. 115). He believed that processing of visual imagery is often prompted by verbal cues when he stated:

Developmentally, much of our knowledge about objects and events is acquired in a linguistic context of descriptions and comments by parents and other members of the linguistic community. The result is an association between words and things that gives language a compelling and pervasive psychological prominence.

(Paivio 1978, p. 118)
Visual literacy may finally be said to have something to do with see-able stimuli. To be visually literate, one should be able to make sense out of what one sees and to comprehend the meaning behind visual experiences. Visual literacy skills are relative to the visual technologies of any specific culture at a specific time. The goal of a visual literacy programme would, therefore, be to develop in users the ability to understand and express themselves using the symbolic mode of their culture.

3.5.1 Factors Affecting Visual Literacy
While researchers have neglected to investigate whether the visual media used in development communications such as health attract or influence the target groups, there has been a considerable volume of research on pictorial recognition.

3.5.1.1 Attraction
Drawing the attention of visual media users may be enhanced by using different design variables such as colour, tone and varying the size of a particular subject. Pettersson, tracing the work of Vogel et al. (1986) noted that "visual presentations support is persuasive. Presentations using visual aids were 43 per cent more persuasive than unaided presentations" (Pettersson 1989, p. 73).

Although research findings on colour as an instructional variable are inconclusive, a few generalisations have been offered in the literature. Peterson (1976) concluded from her review of the literature that colour was most effective when it was used to highlight information. Weitzman (1985) suggested that colour may be useful when it is used to emphasise learning cues and the meanings of the colours are consistent with associations that the users
have previously learned. According to Heinich et al. (1989), the use of colour frequently did not contribute to learning except where colour was an essential part of the component to be learned. Colour can serve as a distraction from other important cues when used indiscriminately (Rudwick et al. 1973).

3.5.1.2 Acceptability

Courtejoie and Herman (1965) conducted an experiment over a period of four years in Mayumbe in the province of Central Congo in Central Africa. They used illustrations that "tell the story of a village whose happiness was destroyed by the malaria vector" (Courtejoie and Herman 1965, p. 174) and were produced in Nigeria by the Health Education Unit of the World Health Organisation. Twelve groups of fifteen women attending mother-and-child health centres and similar number of pupils from schools participated in the study. Data were gathered through discussion and observation by auxiliary nurses.

Their findings revealed that there was difficulty in both comprehension and identification of the stylised materials. The subjects who had not had sufficient schooling were unable to grasp the general concepts depicted in the illustrations and could not see the logical sequence of the whole. The participants did not also identify themselves with the people represented: "we don't like that in our village" (Courtejoie and Herman 1965, p. 175) they would reply. Consequently, these researchers suggested that although it takes time, pretesting with local groups is of vital importance when effectiveness of educational activities is the goal. They conjectured that no multi-purpose aids should ever be introduced in a region before they have been thoroughly tested.

Courtejoie and Herman's study suffered from various limitations. They did not substantiate their arguments by revealing how the intervening variables had
played a role in bringing about the inability to comprehend and identify the stylised materials. Moreover, they tested two groups of subjects and they did not find out whether there was any difference in these groups.

Jelliffe's (1974) work was based on interviews and discussions with mothers, paediatricians and particularly Maternal Child Health (MCH) staff, together with personal observations at rural and urban MCH centres. He challenged the value of using posters which "because of their complexity often appeared to serve no other purpose than the useful one of brightening the walls of the centre and could certainly have no meaning to local mothers" (Jelliffe 1974, p. 235). Jelliffe stressed the need for credibility of the content of messages.

Tentori (1963) investigated the levels of comprehension of the various rural communities and their reactions to visual symbols and text used in posters produced for the rural latrine construction project by the Mexican Health and Welfare authorities. His subjects were both illiterate and literate adults in Mexico. His results indicate that the pictures were not correctly interpreted and that the posters had confusing words. The findings revealed the impact of tests of the effectiveness of audiovisual materials in any public health educational programme. Pretesting would go a long way to justify the "time, money and energy often wasted because the material does not motivate the people, much less create an interest in the problem we are trying to solve" (Tentori 1963, p. 180). Visuals were modified on the basis of the Tentori evaluation and latrines were built within a few weeks of the experiment and seventeen others requested assistance of the co-ordinated services for the installation of latrines in their homes. Tentori's study also suffered from limitations. His sample was limited to the male section of the community, mainly heads of families. Tentori, perhaps realised that the flow of information in the community he was studying was one-sided. Without empirical studies on this aspect, however, this assumption remains speculation.
The Kwansa and three health educators (1972) study sought to determine what features of a visual aid and its style of presentation enhance its effectiveness in communicating a message. A sample of 1,060 subjects who lived in fifteen rural villages in Ghana participated in the study. Materials used were pictures chosen from a collection of posters that were currently being used in Ghana. Three categories of health problems were represented in the posters, namely: nutrition and feeding practices; environmental sanitation and personal hygiene; and communicable disease control and prevention. Colour symbolism and colour preference were also included in the study. The respondents, all between the ages of 8-64 years were interviewed with the help of an interview schedule. The researchers analysed the effect of age, sex and literacy on comprehension and perception of the pictures. They reported that there was no significant relationship between correct interpretation score and sex. Also the relationship of age to correct response was found to be of no significance. One of the important findings was that the relationship of adult literacy was found to be very significant. As for picture preference, photographs were found to be most liked. Although the respondents were not randomly selected, the study did confirm that the self-explanatory nature of any visual aid must never be assumed, especially when used with illiterate or semi-illiterate audiences.

3.5.1.3 Perception

The research literature of cross-cultural studies has provided the major insights into perceptual competence. Among the early investigators Hudson (1960) forcefully documented results of his benchmark studies on pictorial depth perception among a sample of subjects in South Africa using composite pictures. His subjects varied in age, education, ethnic origins and occupation. He substantiated his observations by showing how exposure to visual media influenced the ability to perceive depth.
He used outline drawings and one photograph which he constructed so as to depend upon the cues of size, superimposition and perspective. One of these sets included a hunter and an antelope in the foreground with an elephant and a tree in the background. The elephant was drawn smaller than the antelope to give the impression of distance and was placed between the hunter and antelope in the drawing in an elevated position. These figures were contrasted with one another by means of the outline drawing of a hill, a larger mountain and perspective lines representing a road leading off into the distance and disappearing on the horizon. The hunter was equipped with a spear and aimed at the antelope. The same set of pictures was rearranged but their relationship to one another remained the same and the subject was expected to recognise this relationship. This set emphasised horizontal pictorial space. In these pictures, the observer was more or less at ground level, looking toward the horizon, and the objects depicted in the picture were also shown as being at ground level. The photograph was a realistic reconstruction of the objects drawn in the first set of pictures and also represented horizontal pictorial space. The second set of pictures emphasised vertical pictorial space. In this experiment, he replaced the hunter and the antelope (in the foreground) with a large flying bird. In a series of picture cards, the bird's relationship to the elephant was varied only slightly but the background of the hill and road was continuously altered. The intention of this set was to give the observer the impression that he was at a point above the depicted objects, looking down upon them. Criteria for perception of depth involved subjects' responses to several questions about pictures. For example, responses to questions about whether the elephant or antelope was nearer the hunter were taken to be "self-evident indications of two dimensional or three dimensional pictorial perceptions" (Hudson 1967, p. 94).

Hudson's findings showed that white pupils at the beginning of primary school had difficulty seeing the drawings in depth, but nearly three quarters of this
group saw the photographs of the same scene three dimensionally. At the end of primary school nearly all white pupils were seeing the drawings in depth. The acquisition of competence in pictorial depth perception did not occur in the case of the black groups tested. Even the depth perception performance of black graduates was not better than that of white pupils in the upper classes of primary schools. Since all these graduates had attended multi-racial universities, Hudson concluded that formal education plays a role but not a decisive role in the development of depth perception and was subordinate to other cultural factors in the environment. This conclusion was supported by Hudson’s (1962) results. Black school children perceived depth more frequently in the test material than did illiterate black workers and both black and white workers who had terminated their school education after the primary stage and lived in isolation from the urban culture. School children perceived three dimensions in the photograph more readily than in an outline drawing, but this did not apply to illiterates. None of the illiterate subjects saw the photograph three dimensionally. Nor did they see depth in foreshortening. For example, a drawing of an elephant without its legs and trunk visible was seen by illiterates as a dead elephant, since it had no legs.

Hudson saw the differences among the groups as resulting from an interaction between formal schooling and informal training. The black workers came from cultures devoid of pictures or graphic representations of objects. Even those who attended primary and high schools generally attended poor schools with an inadequate amount of pictorial experience. The school children were not only attending better schools, where pictorial materials were used but also were often from families where pictorial materials were mainly in the form of magazines, newspapers, paintings, etc. Their experience made it easier for them to perceive depth.

Hudson (1962) also compared European, Bantu, Coloured and Indian students
and adults using pictures he developed for the 1960 study. He found that as the educational level of the Europeans increased so did their depth perception. Bantu students, on the other hand, did not show this trend. His findings revealed that the ability to perceive depth was related, not to formal educational experience, but rather to experience with the conventions used to depict depth. He also found that Indian students did no better than the Bantu students, although supposedly the Indians had more experience with pictures. Hudson suggested that while Indian students do have more experience with pictures, the pictures they have seen have been Asian pictorial art which depicts depth in a manner different from Western art. However, Hudson perhaps realised that such an assumption was questionable in a white dominated South Africa when he noted that data supporting such an assumption were sparse.

Hudson's studies attracted criticisms from other researchers. Du Toit (1966) suggested a linguistic explanation for Hudson's (1960) results. He argued that the unacculturated black person's ability to perceive pictorial depth might be the result of his language not suggesting or requiring him to think about depth. He pointed out that South African blacks from a traditional culture do not have words for background and foreground. He doubted whether tests of the kind used by Hudson were applicable to these people. Du Toit did not, however, consider the possibility that perception influences language rather than vice versa, or that there is interaction between the two.

Accusations criticising Hudson's sample and testing conditions were made. Specifically, Hagen justifiably felt that Hudson needed a wider sampling of stimuli and testing conditions to:

check the validity of the task as an index of the ability to see depth in outline drawings ... Six depictions of three depths cues simply cannot analyse which components or combinations under what conditions will act as sources of depth information.
Dismissing the cues as culture-bound conventions does little to further understanding.

(Hagen 1974, pp. 481-482)

Hudson's studies stimulated further research. Mundy-Castle (1966) conducted a study among children from primary schools in Ghana. His subjects came from homes and environments that were devoid of pictures. He observed that some of the children, especially those in the first five years of school (Grades 1-5), had difficulty in recognising some of the objects depicted in the pictures. There were many misidentifications of objects like road, horizon, hill and elephant. His findings supported Hudson's (1960) conclusion that in the acquisition of the ability to use depth cues, formal schooling is less important than informal experience.

Deregowski (1968) replicated Hudson's and also used his materials in a series of studies among Zambian subjects (mainly Bantus). His findings revealed that the Zambian pupils perceived three dimensionally more frequently than the adult domestic servants. Considering that domestic servants presumably had day to day experience with pictures, this finding is interesting. Deregowski suggested that the reason for this may be that the domestic servants' experience was passive, and such experience may not be sufficient to learn to use the necessary cues to perceive depth. Furthermore, the domestic servants may have not found the pictures of personal relevance to them in addition to not having had enough experience with pictorial material. Deregowski found little difference between the responses of Hudson's South African black pupils and the Zambian pupils on Hudson's test.

Deregowski (1970a) noted that previous research had shown that some subjects, when using an elephant as a stimulus, seemed to be divided in their preference
for chain type and conventional drawings as representations of that stimuli. He thought it likely that the lack of a definite preference might have been due to the fact that the drawings he and Hudson used were unfamiliar aerial views of the elephant. He tested this preference using more familiar ground view drawings of the elephant. His findings showed that illiterate Zambian women preferred a chain-type drawing to a conventional front view drawing. This was not true for the conventional side-viewing drawing.

3.5.1.4 Amount of Realistic Detail

In an extensive series of experiments over several years, Dwyer (1978) developed a realism-abstraction continuum for pictures consisting of eight steps from black and white line drawings to realistic colour pictures. He developed a series of illustrations of the human heart for each step of the continuum. These he used in the instruction of the heart's function and properties. It was found that the stimuli characteristics had differential effects on the achievement level of students (Dwyer 1972). Line drawings were found to be significantly more effective than colour or black and white photographs. He suggested that some variables should be taken into account; for example, learners' differences, realism levels, modes of presentation, tasks, educational objectives and cueing techniques. His theory did not, however, propose or assign superiority to any kind of visuals in relation to any specific variables.

Writers such as Fuglesang (1973) have taken issue with the viewpoint that an absence of confusing background detail is important in increasing visual understanding. Fuglesang conducted a study among Zambian subjects. He compared four different varieties of image: the line drawing, portraying only an outline of the subject; the ordinary black and white photograph, with background; a silhouette of the subject, excluding background; and an ordinary black and white photograph from which all extraneous background had been
cut away. Fuglesang tested these types of image by presenting them side by side at eye level to viewers, then asking these viewers which picture they 'saw first'. As an additional check, another person was stationed behind the array of pictures to watch the eye movements of the viewers.

Fuglesang's findings showed that line drawings were most infrequently pointed out by the viewers, probably because they do not convey enough detail. Ordinary photographs of the same subject matter with background, had a stronger impact on the viewers than the line drawing. Silhouettes devoid of background also scored more strongly than the line drawings, probably because they provided more contrast than the other images in the array. Photographs from which unnecessary background had been cut away scored most strongly. He then concluded that details of no importance to the central message of the image can interfere with that message, and removal of that extraneous detail enhances visual impact. Similar studies with consistent results have been conducted in Brazil by Fonseca and Kearl (1960) and in Papua New Guinea by Cook (1981).

Gustafson (1986) confirmed the conclusions of studies of picture complexity by Holmes (1964); Jelliffe (1974) and Kwansa et al. (1972). Her study questioned the notion that pictorial messages were accurately recognised and self-explanatory to non-literate Haitian village women. A flip-chart containing nine health education pictures was used to elicit responses from the 100 village women who participated in the study. Three characteristics were used in the study: simplicity, familiarity and reality. Verbatim responses to the pictures for accuracy were rated by an investigator. Her results confirmed the assertion that picture recognition is indeed traceable to the complexity of the picture.

Moynihan and Mukherjee, in agreement with Fuglesang (1973) observed, after reviewing the current literature about visual communication with non-literate,
that what is needed for the non-literate visual information consumer is "an expressive, more informative style, which conforms with his natural way of perceiving, identifying and interpreting objects and actions in reality" (Moynihan and Mukherjee 1981, p. 261). The findings of their survey in northern India were consistent with those of other studies such as Holmes (1964) and Kwansa et al. (1974). Their study tested the recognisability of some pictures intended for use in health education programmes directed at residents originating from Bangladesh and living in Tower Hamlets in the United Kingdom. The researchers also wondered whether the findings of Fussell, et al. (1975) in Nepal were applicable to their 133 respondents. Fourteen photographs and two drawings were used in the study. Their results were not strictly comparable to the Nepalese study. Their findings suggested that if a picture is simple and clear and of a familiar object, it is recognisable whether presented as a photograph or drawing. Pictures with too much detail are not easily recognised. The study found colour to be helpful in the identification (e.g. lemon versus orange). The researchers also contended that the use of pictures in providing ‘messages’ cannot be relied on without verbal reinforcement.

3.5.1.5 Exposure

Psychologists and anthropologists have sought to discover object perception of individuals and have suggested that some people existed who did not perceive anything in pictures. Individuals give meaning to a visual perception by interpreting it in light of what they have learned (experienced) before hand. Otherwise, the eye registers an image but the brain fails to attribute significance to it (Segall, Campbell and Herskovits 1966). However, other studies seem to question the credibility of the experience hypothesis.

Hochberg and Brooks (1962) reported that a child kept away from pictures
until the age of 19 months had no difficulty identifying simple and complex line drawings and photographs of familiar objects when shown them for the first time. This contradicted the assumption made by Segall et al. that some African natives have not yet learned the language of pictures when they pointed that "we cannot assert that it is simply a matter of having not yet learned the languages of pictures" (Segall et al. 1966, p. 628). However, Hochberg and Brooks' sample was limited to one. Moreover, these researchers themselves indicated that their subject was not completely free of experience with pictorial representations (accidental encounters with television, simple illustrations on objects), experiences which may have been enough to provide the necessary experience for recognising objects in pictures. Bower (1971) (as cited by Sigel 1978) supported Hochberg and Brook's contention when he showed that infants recognise pictures of their mothers at very early ages. Loftus (1972) found that the number of fixations determines the proficiency in recalling pictures. His findings showed that pictures which subjects studied several times were recalled more readily than pictures which were studied less extensively.

The Deregowski (1968) study offered evidence that little experience is required for an individual to perceive objects in photographs. Deregowski's subjects were children and adults of the Bisa tribe from rural Zambia who had no graphic arts in their culture other than some rudimentary and purely geometrical wall decorations. However, there was a six-grade primary school where illustrated text books were used. His experiment utilised models of animals, some of which were familiar subjects (e.g. elephant, lion) and some of which were unfamiliar (e.g. penguin, walrus, camel). He photographed each of these models and then presented the photographs, one at a time, to his subjects and asked them to choose the animal depicted in each photograph from the array of models that were presented before them. His findings showed that both adults and children recognised the objects at a level that was
significantly above chance; there was no overall difference between the adults and children in the ability to perform the task, both groups had significantly more difficulty with unfamiliar animals, although children were better than adults in recognising the unfamiliar objects. His data suggested that even though these subjects came from a relatively pictureless environment, they obviously did recognise the objects represented in the photographs. Deregowski suggested that the adults’ inability to recognise unfamiliar materials might have been due to some sort of defect in their strategy for searching the array of models for the appropriate objects.

In similar vein, Mundy-Castle (1966) in Ghana and Kilbride and Robbins (1968) in Uganda found many misidentifications of outline drawings of animals and a road but no failures to perceive the outline drawings as representations of three dimensional objects and surfaces. The observations made by these researchers suggest that it is possible to see that a picture represents some object without recognising just exactly what that object is.

The McBean (1989) study used shaded line drawings to test and teach visual literacy skills in Nepal and sought to find out how quickly pre-literates learn to interpret pictures, both through increased exposure and through picture-teaching methods of recognition. He reported an overall performance that showed a significant increase in visual literacy skills, but sex differences were evident. Males, who had a greater role in decision making and education than the females whose role is limited to the household and farm, had higher performance ratios than did their counterparts. Younger age groups performed better than older age groups. Those living in more remote hill areas improved their understanding at a slower rate than the others. His findings are consistent with those of other researchers concerning the importance of exposure as a factor in determining understanding.
3.6 Summary

The literature concerned with the role of visual communication is quite diverse. In the developed countries, studies were concerned with visual media formats and use. A widespread concern for visual literacy began to be recognised in the 1960s. Many cross-cultural studies have been conducted since then in the developing countries. These studies have been, in the main, experimental in nature. They lack contextual approaches which describe and explain the social world and the way visual media are integrated within this world. The next chapter presents the results of desk research.
CHAPTER FOUR

4 HEALTH CARE DELIVERY SERVICES IN KENYA

4.1 Introduction

It is significant that the context within which information disseminators operate is well grasped since these professionals do not serve their users in vacuum. Besides, knowledge of the character of the information communication environment is a necessary concomitant for the planning of an information service. This chapter consequently provides some brief basic information about Kenya, describes the health service infrastructure, the health goals and Kenya’s approach to the primary health care (PHC) concept. It also gives an outline of the characteristics of the geographical area of the research.

4.2 General Description

Kenya is a predominantly rural society that is situated in the east coast of Africa and covers a total land area of 56.9 million hectares (Appendix 3 shows its administrative boundaries). 90 per cent of this land is devoted to crop and livestock production, as well as being the habitat of wild game. The rest of the land is either arid or semi-arid. Cash crops such as tea, coffee, pyrethrum, wheat, sisal, sunflower and horticultural products are grown mainly for export. Other crops are for subsistence and these include maize, beans, potatoes, cassava, sorghum, millet and a large variety of vegetables just to mention a few.

In 1992, the population was estimated to be 23.7 million and it was growing at the rate of 3.6 per cent per annum. If this trend continues, Kenya’s population will grow to about 33.2 million by the year 2000 (GOK/UNICEF 1992, p.11). The preliminary findings of the 1993 Kenya Demographic and
Health Survey indicate that the total fertility rate stood at 5.4 in 1991.

Table 4.1 Kenya National Age Structure

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20 years</td>
<td>59</td>
</tr>
<tr>
<td>20-59</td>
<td>49.3</td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>18</td>
</tr>
<tr>
<td>Women of child-bearing age</td>
<td>20</td>
</tr>
</tbody>
</table>


The population living in the urban areas is 19.5 per cent. The remaining 80.5 per cent live in the rural areas. Table 4.1 shows that 59 per cent of the population is less than 20 years old. The health of children in Kenya at the present time is therefore an important aspect.

According to the Central Bureau of Statistics (CBS) 1988 basic report of the Kenya Rural Literacy Level Survey (RLS), Kenya has a rural literacy level of 54.3 per cent. Kurian (1988) documents the national literacy level of Kenya as 59.2 per cent. See Table 4/2 for national literacy levels by gender.

Table 4.2 Kenya National Literacy Levels by Gender

<table>
<thead>
<tr>
<th>NATIONAL DEVELOPMENT PLAN, 1994</th>
<th>KURIAN, 1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>63</td>
</tr>
<tr>
<td>Female</td>
<td>47</td>
</tr>
</tbody>
</table>
English forms the official medium of communication and Kiswahili is the national language. Kiswahili is the mother tongue of a small group of people at the coast notably the Swahili-Shirazi, Kenyan Arabs, some Mijikenda and the Pokomo. There are over 41 indigenous ethnic groups, constituting about 99 per cent of the population. Every indigenous Kenyan speaks their mother tongue. Most educated people in Kenya are able to speak and write to some extent in the national language and in the official language. Many of them live in the urban areas. English is used in big business transactions, education and government. In the urban areas English is used as a medium of instruction at all levels in schools. On the other hand, the vernacular is used in teaching children in the lower primary schools in the rural areas, the majority of the rural people being semi-literate or illiterate mainly communicate in their vernacular language. The national radio service is in Kiswahili, English and various Kenyan dialects. Television broadcasts are in English with a half-hour news broadcast in Kiswahili. Print media such as the five daily newspapers are in English and Kiswahili.

The general economic and social development is guided by the national policy articulated in Sessional Paper no. 10 of 1965, the Kenyan Constitution and the successive National Development Plans since independence in 1963. The long term goals are based on political equality, religious freedom, social justice, freedom from disease, equal opportunities for all citizens, and a high, growing per capita income equally distributed among the people. In the current National Development Plan the Kenya Government intends to continue with the process of structural adjustment begun with Sessional Paper no. 1 of 1986 on Economic Management for Renewed Growth. The health sector is an important one in the economy because a healthy society will enable the Government to attain its national goals and objectives.
4.3 Historical Overview of Health Services
The history of health services in Kenya is important as it provides an essential background to understanding the present health care delivery infrastructure.

4.3.1 Introduction of Scientific Medicine
The history of health services in Kenya dates back to the establishment of religious missions in the latter half of the nineteenth century and the arrival of the Imperial British East Africa Company (IBEA) officials. Prior to this the people of Kenya lived in small ethnic communities which had developed simple methods of dealing with their health problems. These comprised the use of traditional medicine. The traditional medicine practice continued alongside the introduction of scientific medicine.

During the early years, the IBEA company directed its health services to the employees of the company. The Christian missionaries, in wishing to spread the gospel, concentrated their health services to their evangelists. Later these missionaries used health care as a tool in converting the Africans into Christianity (Adalja 1962).

In 1895, the medical staff of the IBEA company was taken over by the British Government but the missionaries were left to continue. In 1901, Sir Charles Elliot, Commissioner of Kenya, set up the Medical Department as one of eight departments with a staff of seven doctors, three nurses and seven hospital attendants. The year 1901 marked the beginning of a more or less clear health policy from the medical department with the replacement of temporary health facilities by permanent services. The Foreign Office in London instructed the newly created Medical Department to fulfil the following objectives:

- to preserve the health of the European community;
• to keep the African and Asian labour force in reasonable working conditions;
• to prevent the spread of epidemics;

This policy introduced a stratified health care system in the country. The Europeans received the best, the Asians and Africans of working class followed, while the majority had minimal or no medical services offered to them. The missionaries could only reach a handful of the rural population. The policy also propagated an unbalanced distribution of health services in favour of the urban areas where the Europeans and the working Asian and African community were found. Despite the prevailing efforts to systematise and organise health services, medical emergencies marked the activities of health services during this period. For instance, there was an outbreak of an epidemic of plague in Nairobi in 1902 which led to the starting of rat and malaria control programmes.

4.3.2 The Effects of the World Wars
Until World War I, the Kenya Government was not directly concerned with the health and medical problems of the African population. There were no government hospitals in the African Reserves before 1920, nor were any Africans being trained for any medical staff positions. This was changed after the war experiences demonstrated the really poor state of health of the African population.

The Kenya Government became gradually more active in health-promoting after World War I. In 1920 Kenya officially became a British Colony. During the same year, a policy introducing dispensaries into the rural areas was adopted. This marked the first government involvement with the delivery of health care services in the rural areas. In 1921 a Public Health Ordinance was
passed which made the medical department legally responsible for the preservation and promotion of public health, and created Local Authorities to deal with health matters at the local level. In 1924 African Native Councils were given the responsibility of administering health centres. The first formal training opportunities for Africans in the modern medical services were opened in 1927. Those Africans who were able to read and write Kiswahili were trained in simple health care skills and deployed in the dispensaries. The first medical doctor was assigned to an African reserve in Kakamega during this period. In 1936, the British Medical Association was appointed to define a strategy for health centre development.

The Troughton Report of 1946 clearly spelled out the policy on health centres and the strategies for its implementation. The 1950s represented the years of rapid development of health services in Kenya. In pursuit of the medical expansion policy adopted in 1920, rural health centres with a few beds were introduced in 1950. A wide range of para-medical training programmes were also started at Kenyatta National Hospital (then King George VI Hospital). In 1952 private family planning services were started in Mombasa. In 1954 the Family Planning Associations of Mombasa and Nairobi were established. However, these developments suffered a set-back within a short while of introduction due to the declaration of a state of emergency in the country in 1952. This was as a result of an unstable prevailing political situation. The involvement of Africans in the World War II exposed them to various world political situations which created an awareness of their own oppression. They started to demand for their own independence and formed freedom fighters movements. This brought political unrest in the country. As a punitive measure the colonial government withheld financial assistance for medical services. This retarded the health centre expansion, and the health service expansion as a whole which only began to slowly recover in the 1960s. The year 1960 saw the formation for the first time of a Ministry of Health which
was renamed Ministry of Health and Housing in 1962.

4.3.3 The Last Years of Colonialism

During the last years of colonialism, there existed social and geographical inequality. The quality of health services also differed with the providers. The rural areas were served by the government and the missions who established dispensaries. The government subsidised the missionary services while it levied a minimum charge for its own. The health institutions were inadequate and scattered. In the emerging urban centres where the Asian and African workers were concentrated, the colonial government established native hospitals which were aimed at the labour force. Further discrimination existed between the Africans and the Asians. The Asians (mainly wealthy individuals or groups) sponsored Asian wards at both government and mission hospitals, and eventually separate hospitals such as H. H. The Aga Khan Platinum Jubilee Memorial Hospital in Nairobi, and the Pandya Clinic in Mombasa (Adalja 1962). These had better facilities than the native hospitals. Towards independence, these hospitals were made accessible to the general population, first to the families of the workers and then to the general rural population through a referral system. Patients were referred from the dispensaries and health centres. High class hospitals had been established for the European community.

As the country progressed towards independence, the few elite Africans and Asians demanded high quality treatment. Those who could afford it made use of the expensive private services. With time, the Asians and Africans started their own private fee-for-service clinics. These catered for the middle class.
4.3.4 Health Services in the Post-Independence Era

In 1963, Kenya gained independence from Great Britain. This did not lead to dramatic changes in the organisation and nature of the country’s health-promoting facilities, although some changes were immediately evident. The new Kenya African National Union (KANU) government’s approach to the health problems of the republic was based on four main principles:

- the goal is free basic medical treatment for all;
- there will be no discrimination concerning the provision of health services on grounds of race, religion or politics;
- Kenyanization of the public services will be actively promoted;
- the self-help concept (exemplified by the Harambee (self-help) motto) will be applied in raising the standard of medical services available to the population.

(Hartwig 1979, p. 122)

To remove health services discrimination, the goal of free basic medical treatment was met after five years of independence. Government health services were free for all with only a minimal charge to the adult in-patient services. The sponsored Asian wards were converted to amenity wards for everyone who was able to pay. The Kenyanization objective was rapidly implemented in the administrative ranks of the Ministry of Health. The self-help (harambee) method of attaining health facilities has been promoted so much that many health centre facilities have been built from harambee funds. Other developments since independence in the medical/health areas have included a general expansion of major facilities such as hospitals, training schools and the like. The new government did not intervene with the private facilities, they continued to run as before. The church also continued with its services. The relationship between the government, the church and the private
health sub-sector as existed was not clearly defined. The church and the private sub-sectors provided their services independently without much regard to regional distribution in the country.

In the year 1970 a major change in the responsibility for rural health services came as a result of the passage in the National Assembly of the October 1969 Local Government Transfer of Functions Bill. The central government took over the running of most health services from county councils. The then eleven municipal councils continued to provide health services on their own, although only the four largest (Nairobi, Mombasa, Nakuru and Kisumu) had separate health departments. In 1971-72 a Joint Government of Kenya/World Health Organisation mission formulated the ‘Proposal for the Improvement of Rural Health Training Centre’ (Bunnet and Maneno 1986, p. 3). One of the aims of the MCH/FP services is to reduce the maternal and child morbidity and mortality. The Maternal Child Health and Family Planning (MCH/FP) Programme was launched in 1974. In 1982 the integrated Rural Health and Family Planning Project was launched. A community-based Health Care Unit was subsequently set up within this project in 1984.

4.3.5 Present Organisation of Health Services

The health sector is an essential and significant sector in the national development of Kenya. A wide variety of health care providers exist. These include government, mission, private practitioners and traditional practitioners and collaborate with the government in the promotion of health. Non-government organisations (NGOs) and the private sector provide about 40 per cent of the health services, and 33 per cent of in-patient care (Kenya National Development Plan 1994). The NGOs are both international and local-based. Some of the NGO agencies which contribute to the health care delivery infrastructure include the National Christian Council of Kenya (NCCK),
Catholic Secretariat, Protestant Churches Medical Association, African Medical and Research Foundation (AMREF), UNICEF, World Health Organisation (WHO), Red Cross Society of Kenya, Family Planning Association of Kenya (FPAK), Aga Khan Foundation, Council for American Relief (CARE) International (Kenya), Programme for Appropriate Technology in Health (PATH), Maendeleo ya Wanawake, St. John’s Ambulance, and International Planned Parenthood Federation (IPPF). A variety of Rotary clubs make financial and equipment donations to the health service. The scope of the activities of these NGOs vary. The activities range from family planning, immunisation, and emergency flying doctor services to first aid and ambulance services. They are also involved in communicating health information, producing and distributing learning material in some instances.

In 1984, there were 1,665 health institutions in Kenya (see Table 1.1). By 1989, these had gone up to 2,131. If Nairobi and Mombasa, the largest towns, are excluded from consideration, in 1989, there was one health facility for every 12,500 persons, with the ratio varying from a very high 1:22,496 in Western Province to a relatively low 1:7,985 in Rift Valley Province (GOK/UNICEF 1992, p. 67).

4.3.5.1 Government Health Services

Government health services form the largest part of the health care delivery system through the Ministry of Health, Defence and Prisons and the local authorities - especially the municipalities and city council. The Ministry of Health is charged with the responsibility of administration, planning and coordination of all health activities in the country. Government health care services are organised according to levels of care namely: dispensaries which are the lowest level, followed by health centres, district and provincial hospitals and the national referral hospital. Provincial, district and the national referral
hospitals have more specialised personnel and equipment. Geographically these are located in the towns and cities. The district and provincial hospitals act as referral systems for the health centres and dispensaries. Kenyatta National Hospital is the only national referral hospital. Most district hospitals were initially constructed with an average of 200 bed capacity, one medical officer (a doctor), an operating theatre and some minimal radiological and laboratory services. Currently there is more than one medical officer on average in district hospitals. The medical officer supervises health care programmes and services in the district and provides guidance to medical personnel as well. Facilities in most rural districts with a population of 20,000-500,000 are approximately:

- One 100-200 beds hospital
- Five health centres
- Ten dispensaries

(Ministry of Health. *Health Information System*, 1984)

Dispensaries and health centres constitute the first points of contact with the formal health system for a majority of the people. A typical dispensary is staffed by one enrolled community nurse and one or two ungraded staff. A health centre is larger than a dispensary. It usually has up to twelve beds for in-patients, and provides a broad range of outpatient services and mobile outreach clinics to the outlying communities. At the service delivery points, Maternal Child Health and Family Planning services are offered on a daily basis. It is headed by a paramedical personnel (a clinical officer) who is trained in the diagnosis and treatment of diseases at a basic level.

Health services in the government institutions were free until 1989 when the government introduced user fees although some services such as the sexually transmitted diseases, preventive and promotive health services still remain free
of charge. The fees is, however, minimal as compared to that of private and voluntary agencies.

4.3.5.2 Voluntary Agency Health Services

These services are provided by the NGOs such as the church and mission organisations. Most of these organisations charge user fees but at a much lower rate than the private health providers. Most of the health facilities provided by these agencies are situated in the rural areas and, therefore, play a crucial role in serving the rural population. Very often they also provide medical training schools in the immediate area mainly for nurse and nurse-midwife training. A notable observation is that the distribution of both government and church health facilities, in a number of instances are found to be duplicated. This situation might perhaps be explained by two reasons. Firstly, different religious denominations tended to locate health facilities in their areas of influence irrespective of whether other facilities already existed. Secondly, the failure of the government in its physical planning policy.

Church hospitals play a significant role in curative as well as preventive services. Preventive services have largely expanded due to external assistance via bodies like UNICEF or Family Planning associations for things such as well-baby clinics. It would be safe to speculate that with declining financial and professional personnel assistance from overseas churches and the constant increase in the cost of medicines, equipment, transportation and other costs, the future of the church health services to some extent seems threatened. Most churches still maintain their medical facilities as a matter of pride as they tighten their belts and continue to reduce some of their services.
4.3.5.3 Private Sector Health Services

Private hospitals, nursing and maternity homes provide those willing and able to pay for medical consultation and drug purchase. Many health care workers go into private practice and are available for consultation after hours at home or their clinics. A majority of the private clinics are located in the urban areas where people can afford to pay for the medical services received. Also urban workers carry more political weight, are generally better educated and more well-to-do than the rural workers. Thus, private health services being motivated by profits find urban areas provide a better environment than the rural areas. Mobile medical services are also provided by this sector through, for instance, the Flying Doctor service. The private sector contributes heavily to both curative and preventive health although there is some tendency to be biased to health services of a curative nature. Still it is common to find a lot of health learning materials such as posters, leaflets and magazines displayed in the private clinics and hospitals for health promotion purposes.

4.3.5.4 Traditional Health Services

Traditional medicine played a significant role in the pre-colonial health sector in Kenya. Traditional medical practices were culturally accepted and were used either to protect their health or keep discipline among the communities. Some of these practices were positive and others were negative in nature. These practices were suppressed by the colonial powers who regarded such practices as dirty and useless. Recently it has been realised even by the advocates of modern civilisation that some traditional practices were very useful and positive in that they raised the standards of living and thus contributed to development. It is against this background that the Kenya Government is committed to encourage the traditional medical practices that enhance the well being of Kenyans and discourage those which damage the health of her people. The Kenya Government Policy attributes the scepticism
"to lack of information on its effectiveness, drug quality and safety" (Kenya National Development Plan 1989, p. 244). Some of the practices which are encouraged are, for example, the services offered by traditional birth attendants (TBAs), traditional healers, and breast-feeding practices.

Traditional healers of the various types continue to cater to the great majority of the medical needs of the Kenyan populace. The majority of traditional healers (waganga) have a practice which consists both of consultation with the spirits, in their role as a medium, and in the use of medicinal herbs. The technique of healing differs from community to community. These healers are trusted and to the present day are consulted by both the educated and the uneducated. The consultation, however, tends to be done secretly depending on the type of traditional healer consulted. Many people in the rural areas still heavily rely on these healers. This is partly out of necessity, since a large proportion of the rural population live far from other health facilities and partly because of their health beliefs about some diseases. Traditional healers prescribe cures and treat a whole range of illnesses for which hospital treatment is shunned, especially conditions that are attributed to personal attack by spirits and witches. Many individual healers supposedly have special powers and reputations which attract patients from near and far.

The Kenya Government Policy is committed to:

encourage the formation of professional associations for traditional medicine practitioners. Such associations will facilitate the gathering of necessary information for the use, development and appropriate adaptation of traditional diagnostic, therapeutic and rehabilitative control technologies that will become part and parcel of formal medical research and of the Primary Health Care Programme.

(Kenia National Development Plan 1989, p. 244)
National herbalists' associations have consequently been formed. These associations act as pressure groups on behalf of the healers. These associations also help to improve the professional image of the traditional healers. Traditional healers and medicine sellers are becoming more and more visible today. It is nowadays normal to find small clusters of herbal medicine sellers in market places and small kiosks.

The practice of traditional medicine in Kenya is thus acknowledged by the government which issues licences for the practice. Some traditional healers operate clinics and advertise their services in the local press and on radio. These healers are preparing and promoting traditional medicines which are in the form of roots, tree bucks, solutions from roots and leaves, ash, etc. The Traditional Medicines and Research Centre is at the moment making initiatives to scientifically study and analyse the herbs for medicinal properties. This centre is also trying to seek ways of improving communication and cooperation between Western and traditional practitioners.

4.4 Health Objectives
The main objectives for the development of health services since independence in 1963, according to Bunnet and Maneno, have been to:

- strengthen and carry out measures for the eradication, prevention and control of diseases;
- provide adequate and effective diagnostic, therapeutic and rehabilitative services for the whole population;
- carry out biomedical and health services research as a means of identifying more efficient and cost-effective methods for delivery of services;

(Bunnet and Maneno 1986, p. 5)
Using these objectives and past experiences the major health policies guiding strategies for the achievement of Health for All by the Year 2000 are:

- increasing coverage and accessibility of health services with active community participation;
- consolidating maternal child health and family planning services in order to reduce morbidity, mortality and fertility;
- increasing inter-sector collaboration with other ministries involved in the improvement of health status;
- encouraging the non government organisations to take a greater role in the delivery and financing of health care services.

(Kenya National Development Plan 1994, p. 229)

4.5 **Provision of Primary Health Care (PHC)**

The Kenya National Policy of the attainment of Health for All by the Year 2000 is through the Primary Health Care (PHC) strategy. The concept of Primary Health Care is community-based. Emphasis is being placed on improving family health with particular focus on mothers and children, increasing coverage and accessibility and improving the quality of the essential health services pursuing an integrated, intersector and multi-disciplinary approach with community participation (Bunnet and Maneno 1986). By 1986 community-based health care projects had been started in fourteen districts in Kenya. A community-based health care unit has been established within the Ministry of Health to co-ordinate all the community-based health care activities in the country. Many community-based health care projects have also been established by NGOs. It is envisaged that through community based health schemes the standard top-down approach of conventional health care delivery would be replaced by an approach in which the organisation and activities for health care within the community are determined by local needs and conditions.
The community participates in its own health. This process, it is anticipated, creates in the individual a positive attitude toward his/her own health as well as his/her community's well-being and the ability to become development conscious. Bunnet and Maneno state that:

Community participation and involvement thus contribute to attainment of community responsibility and accountability over all development programmes and therefore preventing a community from alienating itself from such programmes. Participation and involvement leads to development of self-reliance and helps a community to develop social control over its own infrastructure.

(Bunnet and Maneno 1986, p. 69)

Through this approach, Kenya's Primary Health Care strategies include the following:

- promotion of food supply and proper nutrition
- maternal and child health care, including family planning
- immunisation against major childhood diseases
- prevention and control of endemic diseases
- appropriate treatment of common diseases and injuries and provision of essential drugs

(Kenya National Development Plan 1994, p. 231)

The aim of community-based health care is that it should be acceptable to the community, that is, the community should be informed, motivated and involved (Kenya National Development Plan 1994, p. 18). To achieve these aims development committees have been formed at various levels. It is administered
in line with the Kenya Government Policy of District Focus for Rural Development (Kenya National Development Plan 1979) through the integrated Maternal Child Health and Family Planning Programme (MCH/FP) of the Ministry of Health. The district as seen by the government is the best level at which planning, administration and communication of information can be done. District Health Management Teams (DHMTs) have been created. These teams formulate relevant strategies and propose a limited number of projects and programmes for implementing the PHC strategy. Below them Health Committees have been established at village and sub-location levels. The Village Health Committees (VHCs) membership consists of community leaders, opinion leaders, chiefs, headmen, members of women’s groups, church leaders, teachers and active wananchi (citizens). These committees are responsible for introducing Community-Based Health Care (CBHC) concepts to the communities. Community Health Workers (CHW) at village level (usually referred to as Village Health Workers (VHWs) are recruited from each village in consultation with Village Health Committees.

In practice, CHWs and VHWs are mainly women volunteers who are well regarded in their villages. They are permanent residents in the community, mature responsible individuals who are able to relate and communicate well to others. They usually receive training in basic health facts with strong emphasis on public health facts and prevention. Priorities include increasing immunisation levels, bilharzia (schistosomiasis) prevention, school health, environmental sanitation and mental health. They are not paid for their services. They spend a few hours each week visiting their neighbours, discussing a variety of health related topics. Normally they have no curative tasks although they are being used to distribute contraceptives to the communities in recent years. They participate in the follow-up of clinic referrals and defaulters of clinic appointments. They work in close cooperation with the traditional birth attendants (TBAs) and Family Health
Educators (FHE) on maternal and child health. They are also charged with the responsibility of recording all births and deaths in the community, and so many other tasks. Their role as motivators through education and communication is, therefore, a distinct one.

This model of community-based health care is operated by local communities with varying degrees of assistance from the government and NGOs. The policy is clear and well laid out, but whether in practice this is effectively being implemented is another matter. Without follow up evaluations it can only be assumed that this is the ideal strategy.

A discussion of the findings of the discussions with providers of information and document analysis follows in the next chapter.
CHAPTER FIVE

5 THE PRELIMINARY RESEARCH

5.1 Introduction
The purpose of the preliminary research was to collect data about the practical realities of the way visual communication fits in the health information communication infrastructure in Kenya; with specific emphasis on posters used in the immunisation programme. This chapter presents the results of the preliminary research which involved discussions with health information providers (Part B) and document analysis (Part A).

These results formed the foundation for the field research. Specifically, the data sought were on:

- Who the promoters of health information were;
- How educational materials were developed and produced;
- The range of educational materials produced and methods of health information communication;
- How the educational materials were distributed;
- Use and expectations of what the educational materials can achieve;
- What efforts (if any) have been made to evaluate the educational materials produced.
5.2 Promoters of Health Information

The Government through the Ministry of Health uses the Health Education and Audiovisual Aids Division, established in 1953, as the main vehicle for disseminating health information to the communities. The factors which necessitated the creation of this division were poor sanitary conditions, outbreaks of disease and high mortality rates. It was recognised that health education would be an essential component of preventive and promotive health care. The major goal of health education in Kenya is to:

inform and educate the community on matters pertaining to health so that on the basis of that knowledge, the community at large would practice good health habits. By so doing they protect and promote their health.


In order to accomplish this goal, the Health Education and Audiovisual Aids Division is involved in a host of activities for various programmes and projects. The division plays a major role in the information, education and communication (IEC) activities which support the National AIDS Control Programme (NACP), Kenya Expanded Programme on Immunisation (KEPI), National Malarial Control Programme (NMCP), National Control of Diarrhoea Diseases Programme (NCDDP), Education for Community Health Action Programme (ECHA), Child Health and Family Planning (MCH/FP), Primary Health Care (PHC) and Acute Respiratory Infection (ARI) programmes, among others. The activities of the division include selecting of target groups for information, choosing appropriate areas and situations to send the information,
identifying teaching methods, and establishing the appropriate messages for the particular target groups. It is also instrumental in the training of various categories of personnel at Medical Training Centres with a view to facilitating communication of information in acceptable formats which are understood by the target groups.

A number of non-government organisations is involved in the information, education and communication of health information. Some of these organisations are Kenya Catholic Secretariat, National Christian Council of Kenya (NCCK), Christian Health Association of Kenya (CHAK), Kenya Red Cross Society, AMREF, Action Aid (Kenya), Family Planning Private Sector (FPPS), World Vision, UNICEF, World Health Organisation (WHO), Breastfeeding Information Group (BIG), CARE International (Kenya), Child Welfare Society of Kenya, Maendeleo ya Wanawake Organisation, Family Planning Association of Kenya (FPAK), The Programme for Appropriate Technology in Health (PATH), Kenya Medical Association (KMA), Pathfinders Fund, The Aga Khan Foundation, among others. The Provider and Client Information, Education Communication Project, which was launched in 1991, co-ordinates NGO information, education and communication activities in Maternal Child and Family Planning. The National Council for Population and Development (NCPD) is the government co-ordinating agency. This council assists organisations to collaborate in planning and implementing projects which are viable and at the same time making sure that there is no duplication or unnecessary overlap.

Kenya subscribes to the WHO decision that information for health and education for health should be integrated thus bringing into focus a broader perspective inherent in the meaning of primary health care (Mahler 1982). Kenya has adopted this approach in which other social and economic sectors support the Ministry of Health in the education and dissemination of
information. The policy states that:

the belief that responsibility rests purely with the Ministry of Health is untenable. It is clear that the achievement of sound physical and mental health must also rely on the integration of basic services such as education, training, water, and sanitation, distribution of basic foodstuffs and a feeling of mental, social and spiritual well-being for which other ministries and agencies are largely responsible.

(Kenya National Development 1989, p. 237)

These sectors include, for example, the Ministry of Information and Broadcasting through the Kenya Broadcasting Corporation, the Ministry of Local Government through Municipality and City health departments, the Ministry of Agriculture through extension services such as nutrition, the Ministry of Social and Cultural Services through women’s groups and the Child Welfare department, Ministry of Water Development through promotions on adequate supply of safe water and sanitation. The library can also play a role through its information services.

5.3 Production of Educational Materials

The Division of Health Education is also responsible for the production of educational materials and distributes these materials in large numbers in the country since the "demand for audiovisual materials has increased greatly from health workers and especially those who work in the field" (Kenya Ministry of Health. Division of Health Education and Audiovisual Aids 1991, p. 21). Also, other agencies - government and non-government - have been coming for these educational materials.

The objectives for mass media activities in 1991 were:
• To create awareness to the members of the community on matters pertaining to health;

• To reinforce and support information given out by other health workers;

• To motivate the members of the public so that they could change their attitudes and behaviour towards good health;

(Kenya. MOH. Division of Health Education and Audiovisual Aids 1992, p.20)

The production section has the capacity to produce printing materials, photographic materials, radio and television materials and carpentry for the production of health materials for exhibiting and other relevant activities.

The Division has, however, not been able to meet all of the requirements for mass media production and dissemination of health information. This has led to proposals for the establishment of a separate mass media production unit under Kenya Population III by the National Council on Population and Development and its non-government organisation’s clients. In a World Bank Project study, Ogutu (1988) assessed and identified the reasons for the under-development of the centre as follows:

• Poor image due to the reason that materials produced at the centre were labelled as second-rate material;

• Lukewarm relationship between the Ministry of Health headquarters and the Division of Health Education and Audiovisual Aids;
• Conditions above have led to under-advertising and filling of vital senior positions in the Division;

• Lack of sensitivity to personnel training development has led to high turnover of experienced staff and as a result, the shortage of essential manpower necessary for quality and quantity production;

• Uncompleted work on the construction of television and radio studios and the installation of obsolete and sub-standard machines which lack spare parts and good maintenance;

• Unemployment of technically skilled staff to maintain and operate the machines. None of the existing staff was trained on how to run the machines either.

The need for production of appropriate learning materials and use of communication media to communicate health information to the communities still continues to be recognised. The Kenya Government is committed to the expansion of the Health Education Division. The current National Development Plan stresses that:

for the Government to provide the necessary information to the public, various communication avenues will be fully exploited. The Department of Health Education will be expanded to produce adequate and appropriate health learning materials.

(Kenya National Development Plan 1994, p. 231)

Some of these NGO agencies such as UNICEF, WHO, Pathfinders Fund, World Vision and many others to a large extent are the main sources of funding.
These agencies do not involve themselves directly in the information, education and communication activities. Rather they also contribute through production (sometimes) and distribution of education materials such as posters, flipcharts, leaflets, booklets, manuals, tapes, slides and so many others. For instance, WHO through the Health Learning Materials Project develops, promotes the use, accessibility and distribution of health learning materials in Kenya. Similarly UNICEF produces and distributes materials through different programmes such as KEPI and Control of Diarrhoea Diseases (CDD). UNICEF and WHO sometimes bring ready made learning materials from their headquarters. The mission related NGOs are mainly instrumental in the information, education and communication strategy through out-reach programmes. Through such programmes various learning materials are distributed. National NGOs such as Kenya Medical Association, Maendeleo ya Wanawake Organisation, and Family Life Association of Kenya operate their own health information services with funds provided by mainly donor agencies.

Part B Interviews/Discussions

Visits were made, as described in Chapter Two, and appointments were fixed for interviews with providers of information (see Table 5.1 for those interviewed).
Table 5.1 Number of Interviews for the Preliminary Research

<table>
<thead>
<tr>
<th>PLACE</th>
<th>HEALTH EDUCATION/COMMUNICATION OFFICERS</th>
<th>ADMINISTRATION</th>
<th>GRAPHIC ARTISTS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOH (Kakamega)</td>
<td>5</td>
<td>1</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>MOH (Nairobi)</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>KFPHCP (Kakamega)</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>UNICEF (Nairobi)</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

5.3.1 Range of Educational Materials

The materials developed include posters, flip charts, flash cards, stickers, pamphlets, booklets, manuals, slides, tapes, films, videos, among others.

The providers of health information observed that these educational materials were pre-tested with a small group of the target population before they were distributed for use. The Director of the Division of Health Education and Audiovisual Aids Division reflected that pre-testing was a necessity and was done as such and as a matter of policy and added:

Without pre-testing, you cannot know if the message is reaching the target population. There is no need in producing a poster, for example, if the message is not understood by most people it is aimed for. We take pre-testing seriously although the exercise is an expensive one in terms of time and money.
The importance of pre-testing was acknowledged by the experiences of the work of Health Images. An artist from here, in giving similar views, further noted:

- Most development and educational campaigns are designed by men in urban areas and aimed at women in rural areas.

- Most projects think about pre-testing the material, but, when it comes to it, no adequate time or money is set aside to do so. Time must be allowed for pre-testing.

5.3.2 Target Population

Educational materials are targeted at three main target populations. These are the community at large in the village setting, the school-going youth and out of school youth, the patients who attend hospitals and other health institutions. Most of these materials are addressed to women. There were, however, no indications that the target population participate in any form in the design of the materials or messages to make them more appealing, acceptable and in general more communicative in a language that is understood by the target populations.

5.3.3 Distribution

Once the materials have been produced, they are sent to the various district health education officers who are responsible for distribution to the health centres and dispensaries where they are expected to be accessed by the target population. Some of these materials, such as posters, are pinned on the walls at the health facilities, and even on tree trunks. The author saw some slides and posters which had been left in cupboards and shelves in the offices at the Health Education and Audiovisual Aids Division, at the district offices and even at some health facilities. These had been there for so long that they had
collected dust.

The distribution was haphazard. Those health education officers who had the means to collect materials did so from Nairobi. Likewise the health facility personnel who happened to go to the district offices and request the materials got them.

Health information providers interviewed observed that the present nature of the distribution mechanism was mainly due to various problems. Transport was the major problem, both at the production point in Nairobi and at the district levels. They noted that they could not effectively distribute educational materials produced because of lack of transport. Vehicles broke down from time to time and were not repaired in time because sometimes funds were not available. Funds for petrol ran out too early in the year, bringing the distribution of produced materials to a standstill.

The health education workers in the villages complained that they were left in the dark about any new posters or other materials developed. Due to their being isolated in the rural areas, very often they came across educational materials long after they had been in use. In most cases, some of them discovered materials by chance at other health facilities or during some seminars if they were lucky enough to attend.

The materials produced and distributed to the target population are in various languages including some local languages. We noted that, although Kenya has realised the need for producing and using health information learning materials in local languages, materials in English and Kiswahili still formed the largest proportion of these media.
5.3.4 Use and Expectations

Educational materials are expected to be used by health workers to reinforce health messages. These health workers include, for example, vaccinators, field health educators, those providing treatment to specific patients, etc. Generally, it is envisaged that by producing the learning materials the majority of Kenyans could adopt the recommended health practices such as immunisation against communicable diseases, good eating habits, environmental sanitation, child spacing and giving birth to the number of children which they could comfortably bring up, and so forth.

The providers of health information believed that the purposes of incorporating educational media such as posters in the child immunisation promotion strategy were as summarised in Figure 5.1. They observed that visual media, such as posters were used with the following expectations:

- These media being information carriers were intended to draw the attention of the target population and direct them towards reducing death rates of children.

- That, although posters may be limited in their ability to persuade the target population to have children immunised, they could, nevertheless, bring to their attention the facts about immunisation such as the types of immunisable diseases, what courses of immunisation vaccinations, where to get the vaccinations and so on. One of those interviewed remarked:

  I believe that posters are very effective in providing those who use them with what to think about. The facts are all there ... it is up to these people to take advantage of the information in them and use it for their own good.
Figure 5.1 Health Information Providers' Expectations of Use of Educational Materials

Educational materials
e. g. posters, flipcharts, films, etc.

- Information
- Attention
- Comprehension
- Acceptance

- Exposure
- Awareness
- Knowledge
- Immunisation

Healthy Nation
Healthy Children
• Posters consequently played the role of informing the target population. It was envisaged that the target population would become aware of the immunisation message when exposed to information on the subject.

• Posters reinforced other methods of communication of information on health matters (see section 5.4). By comprehending the messages on the posters, the knowledge gained would lead to changes to acceptance of immunisation.

• Hence, the child mortality and morbidity rates would drop. Kenya would remain a healthy nation, free from unnecessary deaths caused by immunisable diseases.

Aware of the expanding role of visual communication, the providers of information anonymously saw posters playing an ever-greater role in the future. They observed that posters will continue to be used particularly among the rural communities because they are cheaper to produce and easier to use than other visual media such as video and films. One of them remarked:

Much as we see a remarkable growth in newer forms of visual technology today ... we see videos on the market, films, etc., posters are here to stay. I don’t foresee better success in the use of the newer media than posters. For one, posters are cheaper, easily transported and can be used anywhere at any time. In the villages where there is no power, for instance, the only support medium is the poster. Perhaps with the rural electrification plan under way, if in the next ten years as you asked most people in the villages will have electricity then there will be a chance that we could venture into other forms of visual media ... Having said that, I do not mean that at the moment we are not using other visual media in the rural areas. We sometimes show films to those in the rural areas where there is electricity already. But these are really limited.
An artist commented:

There is no way that we can do away with posters. Whatever visual technology is developed, the rationale behind it is the image and its accompanying components. Even on television, posters may be projected. Really, the poster is basic and it will continue to serve everybody, whether accidentally or intentionally. I can see posters continuing to be produced and distributed even more with time.

5.4 Methods of Health Information Communication
Many methods were mentioned through which health information is communicated to the rural communities in Kenya. The effectiveness the various methods is quite another matter. This needs to be established through research which is important for planning and improving on the existing strategy. The following sections describe some of these methods.

5.4.1 Films, Video and Tape Recordings
Many different kinds of films were alleged to used in the promotion of health to the rural communities. Films and video recordings were reported as popular media in the information transfer process in Kenya particularly in those parts of the rural areas where there is electricity. These are provided by voluntary agencies and some companies. Mobile vans go to schools or social places such as markets to show films and videos about various health issues. Some of these media provide mainly information. Some demonstrate skills. Others are like plays, and show real-life situations.

Messages have been recorded on cassette tapes that are meant to be played to the consumers at health facilities or schools to provide information and reinforce
health messages. These are played on small portable machines that use batteries, solar energy or electricity. Some of them have been translated into local languages to facilitate the understanding of the messages.

5.4.2 Posters, Flipcharts and Flannelgraphs

Posters are the most common visual media that are found in every health facility. Posters contain words and symbols that put across a message. They are expected to reinforce health messages that are delivered by other media. They provide information and advice, directions and instructions and announce important events and programmes. Most posters appear in English or Kiswahili languages although in recent years efforts have been made to use local languages as well. The posters are either in colour or in black and white. They are pinned on walls in health facilities, on tree trunks, on walls of buildings in public places such as markets, etc. for self-instruction. Some are used by community health workers during talks. These posters as pointed out earlier are produced by the Ministry of Health and some NGOs; some are provided ready-made by voluntary agencies and private companies.

Flipcharts are used to provide information and instructions to the consumers. Flipcharts are made up of a number of posters that are meant to be shown one after the other. This allows for several steps to be presented such as ‘prevention of diarrhoea’ or ‘how to dress a small wound.’ NGO agencies and the Ministry of Health have ready-made flipcharts which are used to transfer health information to the target population. Some health educators make their own to suit their needs at hand. Usually these workers use the materials during seminars and workshops with community-based health workers.

Flannelgraphs are learning materials which help people to see more clearly what an educator is saying during a talk. They are used with small groups at health
facilities and during seminars with community-based health educators, or individuals who come for advice in the health facility.

5.4.3 Radio

Radio may be, perhaps, the most popular means for reaching a wider audience because many people possess radios and some even carry them to the shambas (gardens). Radios provide songs, stories and dramatised stories about health issues. Other messages are informational in nature. Special educational programmes on health topics are broadcast. These are in the form of talks, interviews, or discussion programmes. Radios transmit messages in the official, national or local languages. NGOs such as UNICEF, KMA, NCCK, FPAK and AMREF are particularly notable for their family life programmes on radio, such as "A Healthy Nation". "Kwa Akina Mama". "A Healthy Nation" is an example of a collaborative health education communication project involving UNICEF, Kenya Broadcasting Corporation (KBC) and the Kenya Medical Association (KMA) which disseminates a wide range of health information focused on preventive (rather than curative) care. Professional doctors from KMA write scripts and present programmes while KBC provides studio facilities, production personnel and free airtime for broadcasting the programmes.

Although a significant portion of the Kenyan population own radios the timing of the radio broadcasts may be a hindrance in the information transfer process. Broadcasts may be on air at times that are not compatible with the peoples' daily schedules, and some people may want to listen only to news and/or musical programmes.
5.4.4 Health Talks, Demonstrations and Discussions

These are given by field health educators. A health talk is the most natural way of information transfer. A health talk may be addressed to one person or to a group. It is normally combined with other methods, especially visual media such as posters, slides where there is electricity, and flannelgraphs. Health talks take place at health facilities or at barazas (open air meetings). Usually health talks are given first thing in the morning in the Maternal, Child Health and Family Planning (MCH/FP) clinics. Such talks last for about 15-20 minutes. Talks are also given during home visits by field health educators.

Demonstrations involve a mix of theoretical teaching and practical work. They are aimed at helping the community learn new health skills. Real objects and models are used during demonstrations. Photographs and posters are also sometimes shown. Demonstrations are realistic and must fit in the local culture. Hence the materials and objects used should be familiar to the community.

*Barazas* contribute to the transfer of health information in the rural areas in Kenya. The *baraza* is a local medium which is controlled by the community. Members of a *baraza* participate freely in discussions. It is a medium which is popularly used. Elders commonly known as the *wazees* hold vital roles within their communities. These are older men who are very powerful in land matters and traditional related affairs. The government has taken advantage of these meetings and uses them to transfer health information to the communities through field health educators. Various voluntary organisations also use these *barazas* for passing community-based health information.

This community-based strategy through the *wazees* ensures that these *wazees* have accepted the package before being briefed on the technicalities of implementation. The other advantage is that since what is agreed on in a group at a *baraza* is binding, there is bound to be greater motivation and acceptance.
Health talks are also used in schools. The Child to Child project by KEPI, in collaboration with UNICEF and REACH is an example where health talks have been successfully used in primary schools in Kenya. In this project pupils in standard 6 and 7 in primary schools were taught about immunisation, after which they were asked to look in their homes and neighbourhoods for all children of 0-2 years who were not fully immunised. Once found, the pupils were to tell the mothers about the importance of complete immunisation and then encourage the mothers to take their children to the nearest health facility.

5.4.5 Drama, Stories, and Songs (Folk Media)
The use of drama to put across health messages to the rural people is also common. Programmes have been dramatised and presented mainly through the radio. School children are active in passing health information to the people through drama, songs, dance and poem recitals (mashairi). It is popular to find schools doing this through participation in important events like the Aids Day. These methods are very well developed in some parts of the country where youth groups and local community groups are very active in disseminating information through such means. For example, in Kisumu, there is a voluntary community group which performs drama at the market and in other public places.

5.4.6 Newspapers, Booklets, Comics, etc.
National newspapers usually have health columns in them. These columns have information ranging from announcements of important events to answering of questions from the readers, to general information about given health topics. Rural newspapers are also produced in local languages for use by those who can read and pass the messages to the others. Many newsletters such as the Community-Based Health Care (COBASHECA) newsletter have been viewed
as media for exchanging views, experiences and news about programmes carried out by AMREF in Kenya. The field health educators read them and pass the necessary messages to the communities. Some rural newspapers are targeted at the community.

Health messages have also been presented in the form of comic strips. These are mainly targeted at school children. CARE - Kenya, is particularly active in repackaging information in this format. It produces the popular magazine *The Pied Crow*. School children are expected to read this magazine and pass the information they get from it to their parents, relatives, friends and everyone they can. Kenya has, therefore, adopted a system of using the formal school system as a channel for passing health information to the community. *Facts for Life*, a WHO/UNICEF/UNESCO booklet is an example of a handbook targeted at adults which has essential information which parents and communities need in order to care for their children. The impact of these media is questionable given the low literacy levels in the rural areas.

5.4.7 Women's Groups and Other Agencies

Women's groups are small, self-help groups who contribute to health information transfer. Members of such groups influence each other in attitudes and behaviour change process. The group members could also act as intermediate target group. Health education officers visit such groups and lecture to them on health issues. Through them health information is passed to their peers. Some of them are so active that they have even opened small private health facilities where health care activities such as curative and preventive treatment are provided. Some have gone further and opened small chemists in the villages.

Churches are also active in the promotion of health in the rural areas. Apart
from providing health facility services in the rural areas, village priests inform
the community of the latest health issues. This is done during meetings with
church committees. The committee members in turn pass the information to
their fellow members.

Immediate family members and village health workers are also instrumental in
the transfer of health information through interpersonal channels. Seminars are
also organised for leaders such as those on development committees. Information is transferred at funeral gatherings through the administration in
most cases the chiefs, assistant chiefs or the village elders.

Youth-oriented NGOs such as the Boy Scouts and Girl Guides also play a
significant role in mobilising mothers to get their children fully immunised.

5.5 Evaluation Efforts
We found out that there were no evaluation efforts that had been undertaken to
find out the effectiveness of the masses of educational materials which were
being produced. At the beginning of the present research, we were informed
by contacts at UNICEF that a study was being planned by the Ministry of
Health to carry out a study on effectiveness of visual media used in the
communication of diarrhoeal diseases. But, up to the time of writing this thesis,
a source from the Ministry of Health confirmed that the exercise had not taken
off due to non-availability of funds. The issue of lack of funds was noted by
all those interviewed as the major set-back to any research efforts.

5.6 Summary
The data of the preliminary research suggest that a lot of effort has been put
into providing health information to the target population through various
methods. The information, education and communication responsibility is upon the Ministry of Health which uses the Health Education and Audiovisual Aids Division to achieve its objectives and projections. This Division is assisted by many non-government organisations. The National Council for Population and Development acts as the government co-ordinating agency. Thus, the policy is clear.

Inefficiencies were found in the production of educational materials and distribution. Producers of materials faced problems due to, for example, lack of appropriate production equipment, including proper production studios, lack of technically-skilled manpower to maintain and operate machines.

Problems related to distribution of materials were noted. Educational materials were not accessed by the target population because they did not reach the isolated rural areas, or even the district health educators. Transport-related problems were cited as the major hindrances to the haphazard distribution characteristic.

There was unanimous agreement among the health information providers that the role of posters will continue to grow in the future.

There have been no efforts made to evaluate educational materials produced. The library was not mentioned at all as an information-dissemination agent.
6. THE FIELD RESEARCH

6.1 Introduction
This chapter contains the findings of the field research. The research uses interviews to construct a narrative based on analysis of perceptions of respondents. This approach was made in order to provide a more illuminative and up-to-date picture of how provision of visual information fits within this rural community. For validity reasons, the interpretation heavily relied on the comments of the respondents, since semi-structured interviews were employed for data collection. Wherever appropriate, tables and figures showing collective observations about prevailing facts are provided. Comparison of results with other studies has been made wherever possible. The comparison, however, cannot always be direct because of the variations in the different studies in data collection terminology used, variables considered and methodologies used in data analysis.

6.2 Profile of the Sample Population
Since part of the purpose of this study was to gather relevant descriptive information on the community with a view to constructing a detailed picture of this community, the characteristics of the respondents was an important aspect of the study. Furthermore, a description of the characteristics of the sample population would show whether the respondents were drawn from a specific background or from diverse strata. Most importantly, however, the nature of the respondents would facilitate the understanding and interpretation of the findings of the research. A description of the environment within which the study
population lives was provided in Chapter Two; first, in its local context and, second, in its regional context in Chapter Four. Gender, age and education levels are used for comparison in the research where possible.

6.2.1 General Characteristics

As indicated earlier, the target population for this research was all parents who had a child aged one year and below in the sampled sub-locations in the Kabras Division. Interviews were carried out among a sample of eligible 180 respondents. These included 130 mothers and 50 fathers. Figure 6.1 gives an impression that fathers were under-represented in the sample population. This was not the case. There were more mothers present in the households than were fathers. As is characteristic of most rural areas in Kenya, it was reported that most fathers had migrated to the urban areas in search of employment or were already employed there. This feature was also noted in other studies among rural communities such as the Kenya Central Bureau of Statistics (1988) Rural Literacy Survey; Mchombu (1993) and Hartmann et al. (1989).

This gender difference, however, does not seem so important as to affect the validity of the research because the stratified random sampling process produced a representative population from which valid generalisations and comparisons can be made without bias. Besides, the mothers are the main target of health messages because they are the ones who take children for immunisation. 16 (9 per cent) respondents were single and 164 (91 per cent) were married. 2 (13 per cent) of the single respondents were widowed. Large families were still a normal feature of this community. 92 (51 per cent) had more than eight
Figure 6.1 Distribution of the Sample Population by Gender

- 72% Male
- 28% Female
children, despite the continuous efforts of the family planning information services in the country. To reveal information on the numbers of children in a family in many African societies tends to be avoided because of fear of tempting fate. The precision of the emerging picture may have suffered from this notion, though marginally. We were conscious of this aspect and, whenever necessary, information was sought from other sources, for instance, from relatives, neighbours, knowledge of the field health educator.

6.2.2 Age Distribution

To determine the age structure of the respondents, a question was asked: ‘Do you mind if I ask you what age you are? ... How old are you?’ Age is another sensitive aspect in many African societies. Great care was also taken in finding out this information. In most cases, it had to be repeated in a different manner later on to counter-check the figure provided. It was decided to ask for the age rather than the date of birth because, as Uta (1993, p. 58) and many other studies point out, "people who are illiterate (mainly in Africa) tend to remember their age rather than their date of birth".

Another difficulty was that, in the rural areas, some people do not know their birth dates/ages. This called for probing to get correct dates/ages. 8 per cent of the respondents’ ages were not ascertained despite such probing efforts. One of those whose age could not be determined was a mother who may have been in her twenties. At first, we did not believe that she was being sincere. We later learned that this respondent had been raised by her illiterate great grandparents, who could not tell her age as they did not also know. The respondent did not even know the whereabouts of her mother or father. This was an interesting observation which led to the disclosure that quite a number
of children in this community are cared for, and raised by, grandparents. These are children of young girls who prematurely drop out of school.

To facilitate the handling of the data collected, data were grouped into categories as depicted in Figure 6.2. These categories take on a similar pattern of Central Bureaux of Statistics in the Ministry of Planning and National Development, Kenya. Such a pattern would yield more authentic findings from any comparisons made.

There was great age variation among the respondents between the youngest respondents, a mother aged 15 years, and the oldest respondent, a father aged 59 years. The data displayed in Figure 6.2 show that more than half (65 per cent) of the respondents were aged between 15 and 34 years; 37 per cent of whom belonged to age group 15-24 years and 28 per cent in age group 24-34. We have a big age range and this is useful, but the important thing is that we have a big and representative range in the really relevant age bands. That is, the child bearing age groups who are actually the main targets for communication messages. Their opinions are bound to yield more relevant results which would be useful in improving communication. The high percentage of the respondents among these age groups may be explained by the fact that most of the respondents were either school drop-outs or too young to migrate to the urban areas to look for employment. The age structure of the present research is consistent with that of the Rural Literacy Survey, 1988 whose sample showed a representation of more than half belonging to age group 10 and 29 years; 16.4 per cent was in age group 15-19 years.
Figure 6.2  Age and Gender Structure of Parents Interviewed

Age Groups

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>20-24</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>25-29</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>30-34</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>35-39</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>40-44</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>45-49</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>50 and above</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Undetermined</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>
6.2.3 **Levels of Education**

Education is an important element of a literate society which, in turn, plays a key role in the communication patterns of that society. Literacy may thus be an indicator of the effectiveness of visual communication (Lerner 1958 and Schramm 1964).

Every respondent was asked to state the highest level of education attained. These were later collapsed to fit in with the education system structure in Kenya (that is, primary (standard (std) 1-8); secondary (form 1-4); and further education (others, e.g., college, university, etc.). Those respondents who have never been to school and/or were attending adult literacy classes at the time interviews were carried out were classified as illiterate. These formed 24 per cent of the sample population. Figure 6.3 presents detailed information on the highest level of education obtained. Majority of the population indicated that their highest level of education was standard 1-8. This feature was also characteristic of the population of the Rural Literacy Survey (RLS), 1988. The RLS, 1988, showed a larger proportion; 31 per cent of those without any education at all compared to that of this study (24 per cent). This difference is not surprising given the time lapse between the two studies (1988 vs 1995).

Analysis of data by age group as displayed in Figure 6.4 shows that most of the respondents with primary education were found to be in age group 15-19; and those with secondary education were in age group 20-29. Majority with none were from age group 45 and above. This is quite an expected feature since education system has expanded greatly in Kenya and has allowed for most of the young generation to attend school.
Figure 6.3 Highest Level of Education of Parents Interviewed
Those with at least one to eight years of education were categorised as semi-illiterate. These formed 52.22 per cent of the total sample population. Researchers from other developing countries in Africa (e.g., Aboyade 1984; Mchombu 1992 and 1993 and Uta 1993) worked with populations that showed varying levels of the low literacy which is normally expected in rural areas. However, the literature reported that the majority were semi-literate rather than totally illiterate. Overall, the education level of the present study was similar to that of other studies. Mchombu (1992), for example, reported that 52 per cent of his study population in Malawi was semi-literate. This pattern is pretty well understood already if we consider that rural people are still disadvantaged in many ways, despite many governments efforts towards focus for rural development.
Figure 6.4 Age and Highest Level of Education Structure
6.2.4 Work Patterns
In order to find out the work patterns of the respondents, they were asked to say which tasks they normally performed. The results showed a diversity of tasks which were put into three categories as shown in Figures 6.5 and 6.6 for ease of analysis. These ranged from farming, 86 (48 per cent) to non-farming, 79 (44 per cent) tasks. 15 (8 per cent) did not disclose or just gave the answer nothing. 56 (71 per cent) of those engaged in non-farming tasks were mothers whose activities were mostly to do with housework which included, washing, cooking, looking after children, fetching water and firewood; and also petty trading, such as selling fish, pots, potatoes, cassava, vegetables, sugar cane, second-hand clothing, commonly referred to as mitumba, and so forth. Other non-farming work activities ranged from carpentry, teaching, laboratory work at schools, casual work in the sugar factory, building, selling local beer, cigarettes, sweets, soap, preaching, cleaning at health facilities, waiting-on at a team shop, among others. Some of these work activities were the source of income for the households. Some income was also sought from older working sons and daughters.

6.3 Summary
This section has presented the nature of the sample population of this study. These data form the background to the subsequent presentation of this chapter. Altogether, there was a certain amount of diversity of the socio-demographic structure of the community studied. More than half of the respondents were under 35 years of age. Half of the population was semi-literate (52 per cent). Large families were characteristic of this community which was also, in the mainly polygamous. Work patterns were diverse, with
Figure 6.5 Work Patterns of Parents Interviewed

- 44% Farming
- 8% Non-farming
- 48% Not Working
Figure 6.6 Work Patterns Structure of Parents Interviewed by Gender

<table>
<thead>
<tr>
<th>Work Activity</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>61</td>
<td>25</td>
</tr>
<tr>
<td>Non-farming</td>
<td>56</td>
<td>23</td>
</tr>
<tr>
<td>Not working</td>
<td>13</td>
<td>2</td>
</tr>
</tbody>
</table>

Numbers
farming activities forming nearly half of the work activities. Mothers were mainly engaged in housework activities. The various work activities formed the main source of income.

6.4 Realisation of Messages

The purpose was to determine whether the messages were being understood and also to find out the extent of exposure to posters. Do rural people realise the messages provided through support educational media such as posters? How much exposure is there? and will different consumers differ in their ability to receive and grasp information through posters? In attempting to answer these questions, data were drawn from questions such as 'Just by looking at this poster, what do you see? What do you think it is trying to say?' and other subsidiary probe questions. These questions brought forth a range of responses as regards the grasp of the theme of the posters used in the study.

The method of testing was described in Chapter Two. The respondents’ opinions of what they thought each poster was trying to say was compared with the message which the poster was meant to convey. The respondents’ grasp of the theme was recorded and the latter classified as correct if the theme was fully provided by the answer given in concrete descriptive terms of the poster; or as partially correct if only some aspects of the poster were mentioned or if only part of the themes was stated; or as incorrect if a mistaken idea was given or the respondent gave the answer did not know.

As the posters were used in the study in their original form without any alteration, those who could read had no problem in identifying the idea that all
the posters were about immunisation.

The response 'immunisation', however, was a partial grasp as there were other aspects of the posters which had to be realised. As the results displayed in Figures 6.7, 6.9, 6.11 and 6.13 show, the majority of the respondents had partial grasp of the messages on all the four posters. There were more completely correct responses than incorrect responses for all the posters except for poster 2.

6.4.1 Realisation of Messages Poster 1

Responses to poster 1 showed that 40 (22 per cent) of the respondents incorrectly grasped the message on the poster. Descriptions from the field notes are typical of the range of responses which were forthcoming. A forty-two year old female respondent, for example, said:

This poster is about a mother who is expectant and yet has many children who were born closely.

When asked to state the aspect of the poster which led to her interpretation, the respondent stated

You can obviously see the mother of these children is pregnant yet her children are very young. The first child is the only one walking now. The others have not started walking because they did not breast-feed enough milk. This mother has not listened to the nurse. This picture is telling people (pointing at the poster) like this mother the dangers of getting babies that are not well spaced.
Figure 6.7 Respondents Message Realisation of Poster 1
A male respondent who thought it was about the developmental stages of a baby described his understanding of the poster as follows:

I can see a pregnant woman and a growing baby .... I mean, the picture shows how a baby begins to grow from the time the mother is expecting up to the time it starts to walk.

One eighteen years old female respondent said it was about the way they should take care of their children. She went on to say how they should feed their babies on a balanced diet to make them healthy:

This poster is showing a mother who has not fed her children well. The children are weak, they are sick and this is why they have not been able to walk. We should give our children good food ... food that can give them strength. Food such as eggs, vegetables, meat, milk, fish, etc., to enable them to grow into healthy children.

Other respondents were just confused by the idea on the poster. For instance, a twenty-two years old male respondent reflected:

I see a pregnant woman with five babies. But what it is about, I haven’t got a clue. I don’t know whether this is supposed to mean this baby growing in different stages or ... visually I haven’t a clue what this is about. Is it clear to you? Only after reading I know it is about immunisation.

Another one observed:

I can see a pregnant woman who looks at her five babies. It shows developmental stages, perhaps?
A twenty-three years old female respondent who was classified in the complete
category, responded thus:

I see a pregnant woman and five pictures of a baby, at birth, 6
weeks, 10 weeks, 14 weeks and at 9 months old. The picture is
trying to remind us that an expectant mother and the baby must
be given these vaccinations (pointing at the columns on the
poster) at these ages. These vaccinations are available at the
nearest health centres.

Table 6.1  Distribution of Incorrect Responses for Poster 1 by Gender
(N=40)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental stages</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(12.5%)</td>
</tr>
<tr>
<td>Family planning</td>
<td>2</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(75%)</td>
</tr>
<tr>
<td>Care for children</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.5%)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(10%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(100%)</td>
</tr>
</tbody>
</table>
The data analysis (Table 6.1) shows that 75 per cent of the incorrect responses were to the effect that the message was about family planning. That 75 per cent breaks down so that 70 per cent were female and 5 per cent were male. What calls the analyst’s attention is this high frequency of this incorrect response. This pre-eminence suggests two things. First, health educators might be putting so much emphasis on passing family planning information that other messages on health have been over-shadowed. This reflection is consistent with observations made by Uta (1993) in Malawi. He noted that there was over-emphasis on Aids to the extent that other serious diseases such as malaria, measles, pneumonia, diarrhoea, bilharzia and others were hardly heard about on the radio or covered adequately by health talks or the print media.

Second, the only posters which these respondents might have been exposed to where on family planning. Naturally, they made a link with that message of the previous posters. The fact that female responses prominently gave the response 'family planning' is also noteworthy. it is an indicator and also confirms the observations that health messages were in the main targeted at women.

Data were further analysed to discover the pattern of message comprehension by levels of education. The data in Figure 6.8 show that no correct response was given by those with no education. Similarly, no incorrect response was forthcoming from respondents with education levels of Form 1-4 and further education. Majority of the incorrect responses (19 per cent) came from those with no education. Overall, the highest partially correct responses were from the Std 1-8 level of education respondents; that is, the semi-illiterate respondents.
Figure 6.8 Distribution of Realisation of the Messages by Levels of Education for Poster 1

- None: 8
- Std 1-8: 30
- Form 1-4: 25
- Further Education: 2

Correct  □  Partially Correct □  Incorrect □
This finding confirms the importance of literacy in visual communication process. In our study, probably the ability to read the words on the posters contributed to the ability to realise messages on these posters. However, other studies, where only images were used as stimuli, literacy was found to be very significant in correct interpretation of messages. Kwansa et al., in their Ghanaian study, found a similar pattern.

6.4.2 Realisation of Messages to Poster 2

The data for the analysis of responses to poster 2 (Figure 6.9) show that 24 per cent of the population correctly realised the message, 48 per cent partially grasped the message and 26 per cent incorrectly got the theme of the poster. The following were typical responses:

A forty-two year old mother remarked:

I can see Indian children. Indians have very many children. Why do they tell us lies when even Indians have very many children? There are very many Indians in Kakamega. I see them with many children at the shops.

A thirty-four year old mother responded thus:

These are sick children. I can see this one (pointing at the Tuberculosis picture) is suffering from Ishila. You can see that is why the child’s neck is infirm. I wonder how Indians treat this disease? In Kabras here we have special herbs which we give and it goes ...

A sixteen year old mother saw:
children, some of whom are crying ... they are unhappy - maybe their maid is not there!

Another respondent commented:

I did not know that even Indians are poor. I can see unhappy Indian children who are poor, because they cannot afford clothes. I thought white people were all rich!

A twenty year old father said:

European children who seem sick. This one (pointing at the whooping cough picture) has a bad cold and malaria. The child is coughing so much.

Generally, there were those respondents who were confused and had no clue as to what the poster was about, and there were those who recognised some aspect of sickness portrayed.
Figure 6.9  Respondents Message Realisation of Poster 2

- 24% Partially Correct
- 48% Correct
- 49% Incorrect
Table 6.2 Distribution of Incorrect Responses for Poster 2 by Gender (N=48)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family planning (e.g. Indians with many children)</td>
<td>0</td>
<td>8</td>
<td>8 (16.67%)</td>
</tr>
<tr>
<td>Crying, unhappy children without specific reasons</td>
<td>3</td>
<td>1</td>
<td>4 (8.33%)</td>
</tr>
<tr>
<td>Unhappy children because of poverty</td>
<td>0</td>
<td>2</td>
<td>2 (4.17%)</td>
</tr>
<tr>
<td>Sick European children</td>
<td>10</td>
<td>20</td>
<td>30 (62.50%)</td>
</tr>
<tr>
<td>Don't know</td>
<td>3</td>
<td>1</td>
<td>4 (8.33%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>16</td>
<td>32</td>
<td>48 (100%)</td>
</tr>
</tbody>
</table>

The results in Table 6.2 show that 62 per cent of the 48 respondents who gave incorrect responses gave the response "sick European children". 16.67 per cent thought the message was about family planning again here implying the dominance of messages on family planning among this community. The response "sick European children" suggests that these respondents saw this poster as a representation of 'objects'. They did not get the idea that the poster was teaching them something. Rather, the message was probably aimed at the European people and not them.
Figure 6.10  Distribution of Realisation of the Messages by Levels of Education for Poster 2
Realisation of messages by levels of education for poster 2 (Figure 6.10) displays a similar pattern shown on poster 1 responses. None of the incorrect responses were forthcoming from those categorised as literate (Form 1-4 and further education). On the other hand, none of the respondents with no education had a correct response. The semi-literate group of respondents gave partially correct responses (32 per cent). Here, again, the data suggest a pattern which shows that literacy plays an important role in realisation of messages.

6.4.3 Realisation of Messages Poster 3

Figure 6.11 displays data which show that majority of the respondents partially (40 per cent) realised the messages from poster 3. 23 per cent had incorrect grasp. Quite a noteworthy feature is that 66 (37 per cent) of the population correctly grasped the message. This poster had words in Kiswahili. Perhaps this better realisation of messages on this poster as compared to the other three might be because of the language. Kiswahili being a national language is spoken by most people. As already noted (Chapter 4), it is taught in schools right from the primary school education and is nationally examined at the end of the eighth year of schooling. We expected that there would be more correct responses than partially correct ones. This was not, though, the case.

Again, poster 3 brought forth a variety of responses, with Swahili print literate respondents grasping the message fully. Some respondents in this sample seemed to believe that the image in the poster was that of a healthy child who is annoyed about something. "Maybe he has been quarrelled for wrong-doing or has been abandoned by his parents", a thirty-one year old mother stated. To this category of respondents, the child was healthy because it has fat cheeks and a big stomach. A negligible proportion saw the poster as that of a miserable
child because it has no legs and one arm. Remarks such as these were brought forth.

An eighteen year old father said:

I see a child who is sitting down and looking at someone coming towards him/her.

Another forty year old mother commented:

... Poor child! He has troubles. What happened to his legs and arm? Was it born like that? These days Madam... The things you are asking us to take to plan our families - some of them are bad. You know this child may have been born like this because the mother was using pills. Although you people insist on 'family', it is not the best! If the mother had not gone in for 'family' this boy may not be suffering like this!

Another male respondent, aged forty-seven, observed:

This child is unhappy. I can see that. He had an accident or what happened? ..... accidents are really finishing many people these days. People have many problems in this world. Matatus on these roads of ours just fly. There is always an accident announced on the radio every other day. Drivers do not think of the damage they cause to the passengers. This child is now suffering - look where are his legs, his arm? They are gone! I don't know what we can do to stop this dangerous type of driving!

Some respondents saw an unhealthy child. To these respondents, the child's fat cheeks and large stomach implied sickness. The child had "Kwashiokor" they would day. Some did not identify the type of illness the child had, definitely
Figure 6.11 Respondents Message Realisation of Poster 3

- Correct: 37%
- Partially Correct: 40%
- Incorrect: 23%
"not Kwashiokor because the child’s hair would not be as long", they would state. Other responses took the form of "this child has been chased by his parents because he has been naughty"; "he is lonely"; "is looking away because he does not want to be photographed whilst half dressed"; "is annoyed".

We noted that even though those who could read were able to grasp the message of the poster, there were some who did not associate the image with the text. That is, most of them did not say anything as regards the unhealthy nature of the child in the poster and related it to the words.

Table 6.3 Distribution of Incorrect Responses for Poster 3 by Sex (N=42)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy child but annoyed</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Miserable child because it has no legs and an arm</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Unhealthy, malnourished child</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Lovely child and naughty</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>A child who does not want to be photographed</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13</td>
<td>29</td>
<td>42</td>
</tr>
</tbody>
</table>
Figure 6.12 Distribution of Realisation of the Messages by Levels of Education for Poster 3
The above descriptive data of incorrect responses were grouped into frequencies and displayed in the above table (Table 6.3). Analysis of these data the response "miserable child because it has "no legs and an arm" occurred with most frequency (47.62 per cent), followed by 26 per cent response rate "unhealthy malnourished child". On the whole, the nature of the responses given suggest these respondents interpreted this poster in a rigidly literate way. This response showed lack of depth perception. This result confirms that of Hudson (1962) the psychologist who was the pioneer of cross-cultural research on perception. His illiterate subjects in South Africa typically did not see depth in foreshortening. His drawings of an elephant without its legs and trunk visible was seen as a dead elephant, since "it had no legs".

Further analysis of the data by highest levels of education (Figure 6.12) attained confirmed the same pattern portrayed in posters 1 and 2. Typically respondents who had education ranging between Form 1 and further education gave no incorrect responses. The semi-literate respondents grasped the message partially correct (33 per cent) with the highest frequency. The illiterate respondents did not correctly realise the message at all. Like in the previous cases literacy played a major role in message realisation of these respondents.

6.4.4 Realisation of Messages Poster 4
Observations from respondents showed a majority of these respondents correctly realised the message from poster 4 (Figure 6.13). Those who understood the message were the English readers and others incorrectly understood it. The aspects which were pointed out as being important in the identification of the message were the images. The arrow symbols, on the other hand, did not seem to have any impact on the respondents. Examples of responses were:
Figure 6.13  Respondents Message Realisation of Poster 4

- 21% Correct
- 49% Partially Correct
- 29% Incorrect
A nineteen year old mother stated:

I can see the nurse injecting a baby. Another nurse is giving medicine to a child by mouth. Other babies are being injected on their thighs. These pictures are telling us to go to the centre for injections whenever we are sick. These mothers have taken their babies to the centre to receive treatment.

Another mother excitedly pointed out:

Oh! there is the nurse. She is injecting the baby. I can see what the nurse does to my babies when I take them for vaccinations.

Another female illiterate respondent recognised the words for the names of diseases and pointed out that she knew the poster was about taking babies for immunisation because those words also appear on her baby’s immunisation card. She associated the words and the pictures. This helped her identify the message. We noted that respondents took a long time to respond to this poster.

The arrows were referred to as "roads".
Table 6.4 Distribution of Incorrect Responses for Poster 4 by Gender (N=38)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many roads (the arrows)</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(10.5%)</td>
</tr>
<tr>
<td>Signposts showing where to find the nurse</td>
<td>6</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(63.16%)</td>
</tr>
<tr>
<td>Many people with children</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(15.79%)</td>
</tr>
<tr>
<td>Don't know</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(10.52%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(100%)</td>
</tr>
</tbody>
</table>

The data showing the distribution of incorrect responses by gender (Table 6.4) show that 24 (63 per cent) of those who incorrectly realised the message gave the response "signposts showing where to find the nurse" 16 per cent of these were male and the remaining 47 per cent were female. Most of the respondents who gave this response stated that the "objects" (arrows symbol) were the aspects which led to that response.

The responses on poster 4 point to a number of things. First, the mother's response "I can see what the nurse does to my baby", for example, suggests the importance of familiarity with things. This mother saw something with which she had experience. This gave her a clue in realisation of the message. Also, the illiterate respondent who recognised the familiar words on her clinic card. Although this respondent was illiterate, she was able to associate familiar words
on her card and the message. This aspect of familiarity supports findings of other researchers. These researchers argued that individuals gave meaning to a visual perception by interpreting it in the light of what they have learned (experienced) beforehand. Otherwise, the eye registers an image but the brain fails to attribute significance to it (Segall, Campbell and Herskovits 1966; Loftus 1972; McBean 1989 and Gustafson 1986). In his experiments in Nepal, McBean (1989) showed that subjects improved in the realisation of unfamiliar objects over time. Other studies seem to question the credibility of the familiarity (experience) hypothesis. Hochberg and Brooks (1962) argued that a child kept away from pictures until the age of 19 months had no problem in identifying simple and complex line drawings and photographs of familiar objects when shown them for the first time. This discrepancy might be due to differences in samples. Hochberg and Brooks’s sample was only one. Moreover, these researchers admitted that their subject was not completely free of experience with pictorial representations (accidental encounters with television, simple illustrations on objects) experiences which may have been enough to provide the necessary experience for recognising objects in pictures. Second, the reference made to the symbol of an arrow as "roads" again shows that the respondents interpreted messages in a very literal manner.
Figure 6.14 Distribution of Realisation of the Messages by Levels of Education for Poster 4
Further analysis of the data for poster 4 shown in Table 6.14 portray a pattern consistent to that in the other posters. There is a clear indication that schooling does make the difference in people’s visual literacy.

These data provide that people who are illiterate would obviously not understand posters which have words on them. If the respondents go by the pictures, these, too, also proved confusing to them. All that some respondents saw were pictures without any message to them.

The above misinterpretations of the posters’ intentions reflect various weaknesses. First, these posters seem to have not been pre-tested to ensure that they were understood by the target population.

Pre-testing, as suggested in Chapter Five, is important. There is no point in producing materials with words or without words when they do not meet your objectives. To produce posters, for instance, needs drawings to be done, photographs taken, typsetting, printing, and so on. All this costs money and time. There is no need to attempt to produce or use such media if you do not even know if the particular target population understood the message you want to pass on.

As shown in Chapter Five, information, education and communication materials in Kenya are produced by various different organisations and some are adapted. These media are developed by urban, educated people who are exposed to visual media all the time. These media are aimed at these rural people who do not, in this case, automatically assume immunisation. They are meant to educate them. They are people in the remote areas whose lifestyle activities are different and are less educated than the developers of the media. They also
have limited exposure to posters, pictures or other visual stimuli. For example, in Mr Shidioli's house, we saw on the walls of his house an old photograph of a European who Mr Shidioli had worked with at a sisal factory in Central Province, three photographs of his family members and very old calendars hanging all around the room. Mr Shidioli's pictorial inventory is typical of the visual media exposure in this community. These circumstances may result in communication gaps between the developers of the learning media and the target population in these remote areas.

6.5 The Role of Culture in the Interpretation of Images

In order to discover whether the materials were culturally acceptable to the target population, a question was asked: "Is there anything in this poster that you believe is not true? Acceptability was based on believability of the respondents as regards offensiveness or distastefulness. We considered the role of culture as an important aspect of communication through visual means. This is because, in real life situations in the developing countries, rural people tend to pay much more attention to traditional values than urban people. To communities which interpret messages in a literal manner, as the data for this research suggests, it was necessary to find out what would offend them in their cultural milieu. Even though acceptability may not appear to directly affect realisation of messages, if the target population are offended or distressed, they are likely to be less receptive to ideas or messages intended for them. More than half of the respondents suggested that the diseases shown in Poster 2 were for Indians or Europeans who were in the posters. In reflecting on this aspect, a forty seven year old mother remarked:

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I did not know that even Indians are attacked by *bisheno* (a disease believed to be caused by evil spirits of dead people). This child (pointing at the picture of a child suffering from tetanus) has *bisheno*. Look at his neck! The child will die if it is not saved quickly. I saw Difina’s child with a similar disease. The child died and my neighbour said that the child would have not died if the parents had sought medication from *Mwahi* who has very good traditional medicines for such a disease ..... I wonder how these Indians treat it?

What the respondents saw as the right to being provided with acceptable materials was frequently linked with observations that showed the feeling that they (the respondents) were being treated as inferior to others. It was not surprising that this feeling featured as a recurring concern, considering that the communities through extension services are frequently provided with information which originated from elsewhere in various fields, including agriculture, environment, health, etc. In the words of two male respondents:

> The government looks down upon us. It regards Europeans as more superior than us. They never think of us, particularly in the villages here. Why haven’t they shown us on these posters? We also like to be seen in pictures like these ones.

(42 year old)

> Everyone is free to be photographed and be seen by other people elsewhere. Why do we always see Indians in pictures?

(48 year old)

Female respondents’ thoughts along acceptability lines observed that it was distasteful to wear belts during pregnancy. The mother on Poster 1 was seen
pregnant and wore a belt. The belt was 'pressing' the unborn baby. They concluded:

Here (in Kabras) when we see an expectant mother with a belt like this one, we know she is trying to conceal pregnancy. Usually young girls do this. Why should a mature mother like this one do this .... This woman is not a Kabras! Other mothers would really tell her off if one miraculously happened to tie a belt to press the baby. I cannot imagine and I am annoyed with her.

These examples and the analysis displayed in Table 6.5 confirm the evidence in the literature that culture does influence message realisation. In Nepal, Fussell et al. (1978) found that an object that was intended to mean "bad" was interpreted as an evil spirit among a rural community that was very strong in its religion. The pattern of responses in Table 6.5 shows that 80 per cent of the male respondents were offended by the foreign objects in the posters whereas the female displayed a distressful concern over the mode of dress. This relationship does not imply any significant aspect as regards targeting acceptable materials. Materials must, overall, not distress any audience, male or female, literate or illiterate.
Table 6.5 Distribution of Responses on Acceptability of Materials by Gender

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male N=50 (%)</th>
<th>Female N=130 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pictures of Europeans/Indians</td>
<td>40 (80%)</td>
<td>22 (17%)</td>
</tr>
<tr>
<td>Mode of dress</td>
<td>6 (12%)</td>
<td>102 (78%)</td>
</tr>
<tr>
<td>Nothing offensive</td>
<td>4 (8%)</td>
<td>6 (5%)</td>
</tr>
</tbody>
</table>

6.6 Attraction

One of the expectations of the providers of health information was to use posters as a means to draw the attention of the target population. In order to find out whether the message drew the attention of the respondents, that is, whether they liked it and which of the four posters they liked best, a question was asked "Is there anything you particularly like about this poster and which one do you prefer?"

The data in Figure 6.15 show that more than half the sample population preferred Poster 4 and only 2 per cent of the population preferred Poster 3. Various reasons were forthcoming for preference of different posters.

For example, a twenty-seven year old mother who preferred Poster 4 mentioned:
Figure 6.15  Respondents Poster Preference

- Poster 1: 25%
- Poster 2: 2%
- Poster 3: 68%
- Poster 4: 5%

☐ Poster 1  ☑ Poster 2  ☑ Poster 3  ☐ Poster 4
I just saw it and the colours struck me. These colours are very nice. I like to see things with beautiful bright colours.

Another thirty-five year old mother also observed that her primary reasons for looking at pictures is their beauty:

I like pictures because they are beautiful. Because of this, I collect pictures and put them on my walls in the house. They make them more beautiful. Why can’t you give me some of these ones you have? I don’t have some as nice as this one (pointing at Poster 4). I really like it.

Examples provided by those who preferred Poster 2 were: "I like it because I can clearly see the children are sick"; "it has nice colours which show real things". Respondents who preferred Poster 3 shared the following reasons: "it’s only one figure in the picture"; "all the words are big enough for me to read them"; "it has a real child"; "all the words are large and are in Kiswahili". The above responses suggest the main reason for least preference for Poster 3 was because it was in black and white. This poster was described as "dull"; "not beautiful" by a majority of the respondents.

The reasons for not liking the various posters were also interesting. Comments by those who least liked Poster 4, the most preferred poster, were, as one thirty year old female respondent declared:

I like the pictures on this poster. They are really good because I can see what the nurse does when I take my baby to the clinic. But the pictures are too tiny. I wish they were bigger. One needs to move very close to recognise the nurses. These orange things and blue ‘roads’ Where are they heading to?
Another twenty-five year old father, who is a school teacher, noted:

One can hardly read some of the text on this poster. The letters are too small. This poster is incredibly cluttered. It puts one off. Look at all these arrows! What are they for? I do not like it, Madam .... If you intend to give such posters to us in the villages, then you are wasting your time!

Other comments were: "too complicated"; "there are so many things. I don't know which is which"; "I hate anything with red on it".

Table 6.6 Respondents' Suggested Reasons for Poster Preference

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>108</td>
<td>60</td>
</tr>
<tr>
<td>Size of words</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Real things/child</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Language</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Size of images</td>
<td>19</td>
<td>11</td>
</tr>
</tbody>
</table>

Data were analysed and summarised as shown in Table 6.6. From the examples given from field notes and the data in Table 6.6, colour was mentioned with the most frequency (60 per cent) followed by language in which the words were presented (23 per cent) and the response real things/child (20 per cent) in that
descending order. These data show that the attention of the respondents was also described as "complicated" because of its colours. This response is consistent with assertions made in the literature regarding the attentional use of colour. Weitzman (1985) suggested that colour contributed to a better learning because the interest for the pictures increased. Ramaiah confirmed this finding when his subjects felt that "colours were pleasing from an aesthetical point of view, but colour did not help them in retrieving information from hypertext databases (Ramaiah 1993, p. 219). Although these two researchers worked with samples who were by far more literate than the sample of the present study, their findings are comparable to those of this research. Both findings show clearly that colour does have an attentional value to both literate and illiterate people.

The response that the objects are "real things/child" is also important because this result is supported by the work of earlier researchers who argued that, for effective communication, the images must be as real as possible. Dale (1946) suggested that more learning is based on concrete or direct experience. Dwyer (1976), with his series of experiments of drawings of the heart, confirmed Dale’s argument, when he concluded that the more realistic and concrete a particular experience is, the more permanent will be any resulting learning. Although we did not subject our sample population to experiments, we can, from their perceptions, still make judgements which are comparable to other studies by allowing them to freely give their views without necessarily giving them pre-determined response categories.

6.7 Knowledge of Immunisation
The purpose of asking questions related to data about the levels of awareness
of immunisation, to identify the specific problems associated with the dissemination of information on immunisation, and the impact of posters as sources of information on immunisation.

Generally, awareness of immunisation was widespread among 173 (96 per cent) of the sample population. Respondents' knowledge, however, varied between individuals.

Further analysis (Figure 6.16) of the data showed that knowledge about immunisation was higher among the mothers, 105 (61 per cent) than the fathers, 68 (39 per cent). When analysis was carried out to reflect the pattern of immunisation awareness by levels of education, the data showed no significant differences among the different groups (Table 6.7). Awareness was similarly evenly spread out among all age groups.

Table 6.7 Respondents' Immunisation Awareness by Levels of Education

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (N=43)</td>
<td>39</td>
<td>91</td>
</tr>
<tr>
<td>Std 1-8 (N-94)</td>
<td>91</td>
<td>97</td>
</tr>
<tr>
<td>Form 1-4 (N=38)</td>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td>Further education (N=5)</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>
Figure 6.16 Awareness of Immunisation by Gender

39% Male

61% Female
Figure 6.17  Distribution of Correct Responses of Diseases Prevented by Courses of DTP, BCG, Anti-polio and Measles
138 (80 per cent) of the respondents who had heard about immunisation reported that they knew it as a procedure through which injections are given to "prevent your child from falling sick" and the remaining 35 (20 per cent) had heard about as injections which "make your baby healthier". It was therefore important to have their babies immunised.

Responses to a question which sought to examine the extent of respondents' knowledge in regard to which diseases diptheria, tetanus and whooping cough (DPT), Bacillus Calmette Guerin (BCG), anti-polio and measles were intended to protect against showed a general lack of detailed understanding about their functions (see Table 6.8). For example, only 23 of the respondents were able to mention all three correct diseases about DPT. BCG was frequently referred to as the injection which leaves a scar. For polio, the disease was defined as 'polio' or the 'disease that makes children lame'.

Measles was associated with a disease of wind (muye\text{k}a) which usually attacks children in epidemics and normally strikes during dry weather.
Table 6.8 Respondents’ Suggested Functions for Various Courses of Vaccinations

<table>
<thead>
<tr>
<th>DISEASES PREVENTED BY ...</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DPT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin disease</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Tuberculosis (TB)</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Fever</td>
<td>71</td>
<td>45</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Kwashiokor</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>All diseases</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Vomiting</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>157</td>
<td>99</td>
</tr>
<tr>
<td><strong>BCG</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>90</td>
<td>56</td>
</tr>
<tr>
<td>Malaria</td>
<td>30</td>
<td>19</td>
</tr>
<tr>
<td>Measles</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Tetanus</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>All diseases</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Skin diseases</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>162</td>
<td>101</td>
</tr>
<tr>
<td><strong>ANTI-POLIO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sore throat</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Vomiting</td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>

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The data displayed in Table 6.8 show that, although the awareness of immunisation is overwhelmingly high, these respondents lacked information on the diseases prevented by the vaccinations administered to their babies. Further analysis of the data showed that knowledge about the awareness of the diseases prevented by various courses of vaccinations was higher among the mothers (75 per cent) than fathers (25 per cent).

Although respondents’ knowledge of the functions of the various courses of the vaccinations was high among mothers, the various courses were associated with either the ‘first injection’, ‘second injection’, ‘third injection’ and ‘last injection’: or the vaccines administered to the upper arm, lower arm injection,
by mouth and on the thigh. Most fathers over forty-five years old had no idea at all about the vaccinations and the diseases they prevented and insisted that they did not know because it was not their responsibility to take a child to the clinic. This feeling was, for example, reflected in the statement from one of the respondents, thus:

I have seven children but all did not finish their immunisations. The mother did not put an effort to take them back to the clinic.

These respondents also reported that they did not discuss anything to do with what happens at the clinics or any related issues with their wives even after attending clinics. A forty-seven years old respondent, for instance, remarked:

I don’t know about tetanus or whatever. I just give her fare to Mukumu but she never tells me anything about these diseases or injections. I heard they get three injections there.

Respondents’ awareness of immunisation, yet poor information about functions of the courses of immunisation, may be partly explained by their sources of knowledge. For example, parents obtained their information mainly from family and friends and radio, which are non-medical sources. This may account for much of their uncertainty but it also reflects the failure of health professionals to explain to the target population the functions of courses of vaccinations which their children were being given.

Even though knowledge of the functions of the various courses of immunisation may not necessarily be an indicator of immunisation uptake, parents need to be
informed about what is being done with their children. They need to know which courses their children were getting, when, and side effects, if any, to avoid misconceptions in addition to their right to information.

The lack of specific information on immunisation is comparable to findings of other researchers on dissemination of health information to the rural communities. Uta (1993), for example, found that although there was generally high rates of AIDS and bilharzia awareness among his sample in Malawi, there was low knowledge of specific aspects of these diseases.

6.7.1 The Relevance of the Immunisation Message
To determine the relevance of the immunisation message, a question was asked: Might you have any worries about immunisation? This issue was, of necessity, because it is one thing to be aware of immunisation and the other to accept its concept. As earlier shown in Chapter One, the relevance of information provided is important if the people are to accommodate for any change (Akong’a 1988; Becker et al. 1974 and Becker 1993). Four major worries were brought to light.

6.7.1.1 Reactions to Vaccines
Problems stemmed from the way children reacted to immunisation. Many parents were discouraged because some of the immunisation courses caused fever. These respondents believed that fever was a serious symptom which could turn into pneumonia, a dangerous disease. This would cost them a lot in terms of treatment and time lost for other busy schedules.
To illustrate this view, a respondent stated:

Some of those injections are very bad. The baby cries throughout the night thereafter, and even develops fever. As you know, it costs money to be treated; if you don't have it, then your baby will get pneumonia which kills. Dembede's child died from pneumonia. The baby had bad fever which then attacked his chest and it affected his breathing. We buried that baby just a few months ago. Besides, when you have a sick child, you will keep on going to the health facility whilst others are preparing their farms.

Another example to support the same point was:

I remember once when mama Febe took Lidende to be given those injections. We hardly slept! Lidende was crying and her body was hot. We were scared. Fortunately, we gave her Panadol and she settled down. They say that once fever persists, it is a sign of a severe illness which may attack the chest of the baby and could even kill. We decided not to bother taking her back although mama Febe had said the nurse had said she takes her back later.

6.7.1.2 Unnecessary Injections

There were also respondents who did not just see the need to subject their children to ‘unnecessary injections’. These respondents felt that they could do without immunisation and yet have healthy children. A statement by one of the respondents was:

My children are just healthy and stay with their grandmother without many complications. Why should they be injected when
they are not sick?

Another one added:

After all, I am a strong man. I never had all these injections they are always singing about. They are just hurting the babies for no good reason.

On the same thought, a respondent observed:

My parents did not know about immunisation. They were never immunised yet they lived long. We too were not and have never had any problems. I do not think it is fair to disturb these young people with useless foreign injections. In fact, those who go for the injections are the ones who are sickly.

Other respondents talked of older children who had been immunised, yet had still been attacked by measles, for instance. It was therefore pointless to struggle to have their children immunised. A respondent to this effect pointed out:

I know they say we must have the children taken to the health centre for injections. But I cannot walk all the way when my child is well for the injection. After all, our big son still got measles even after mama had foregone taking her fish to the market on that day.

The same respondent noted:

If the child contracts any of these diseases, they tell us we still
have to take the child for the same treatment with those whose children were injected. God will take care anyway.

6.7.1.3 Religious Prohibition

There were also a few instances where children had not been immunised due to religious beliefs. These respondents belonged to a sect known as Dini ya Musalaba. This sect does not believe in medicine. It is only through the Holy Spirit that diseases are cured or prevented. In the event of an attack, they would normally pray for the patient, whose faith is expected to facilitate a cure.

6.7.1.4 Health Beliefs and Practices

Measles is a disease which attacks all children, normally in outbreaks. It is a disease which is associated with the dry weather. It is a disease which must, at one time or the other, attack a child during its development in life. A child who does not suffer from measles in childhood must do so later on. It is believed to be more dangerous to adults, mainly because their parents cannot control what they eat and drink. Certain foods, such as meat, for instance, are not supposed to be consumed by the patient and the parents are not even allowed to cook it at all during the illness. It is a disease which is not treated by Western medicine. Some of the beliefs and practices were summarised by a respondent, thus:

When a child is having measles, the child can die if you take him/her to hospital. Neither can parents cook meat in that house, wash the child, nor cross a river. We give the child some herbs which hasten the coming out of the rashes. Rashes show a positive progress to recovery. It is after this that the child can be bathed with some herbs to clear the disease off completely. My
question is - how come you people now tell us to take children to hospital when they have measles?

Respondents were unanimous in their belief that a disease such as tetanus, referred to as ishila, is caused by the mother’s unfaithfulness during pregnancy or the father’s unfaithfulness whilst the baby is in its infancy. It is believed that ishila can cause death to the child. To show this, a respondent gave her views, as follows:

I am a Kikuyu but married in Kabras here. I do not know much about the tetanus belief in my place (in Kikuyu land). But Jamboo, my co-wife from here, was telling me that, if you give birth to a child and your husband becomes unfaithful, comes back to hold the baby, that child dies from ishila. The child’s neck, arms and legs become weak and, eventually, it dies.

A second illustration was given by a respondent, thus:

Tetanus (ishila) is a very dangerous disease. We have to be very careful because your child can die. For example, a mother who was unfaithful during pregnancy can give birth to a child whose neck, arms and legs are frail.

When asked what they do in such circumstances, it was reported that this disease of infidelity can only be cured through traditional medicine. For example, a child is given herbal treatment immediately it is born. Tetanus is perceived as a disease which is dangerous but cannot be cured by Western
Poliomyelitis, another of the childhood diseases, was perceived as a disease caused by witchcraft. Someone, out of jealousy, may bewitch a healthy child and it becomes lame. This is cured through traditional healer consultation.

We noted that the Kabras culture has a set of beliefs and practices concerning causes of disease, diagnosis and treatment. Many of them are still common today as many respondents reported. For example, in the event of a measles attack, they still withhold cooking meat and not bathing the child. Also, herbal treatment, either by parents themselves, mothers-in-law, or herbalists, is still a common feature, as reported by the respondents. Such beliefs and practices cause some respondents not to take their children for immunisation, as pointed out by one respondent, who asked, "How come you people now tell us to take our children to hospital when they have measles?". This might explain why Kabras Division has one of the lowest immunisation uptakes in the country, in spite of the awareness which has been created through KEPI. However, there were those respondents who still practised both traditional and Western medicine during the same illness episodes. For example, a child with fever would be given herbal medication and, at the same time, something to reduce the high temperatures, such as aspirin or Panadol, bought from the shops.

These results are consistent with those of Bonilla et al. (1985) in Honduras and those of the KEPI (1993) survey.
6.8 Sources of Information on Immunisation

This section documents the findings regarding other sources of information used by the respondents in addition to posters. The aim was to discover the extent of sources of information about immunisation. Knowledge of sources of information would provide data on the awareness of sources of information other than posters. Such data would be useful in facilitating planning on how best to integrate posters and support learning media in the information, education and communication (IEC) process.

To elicit information on the extent of sources, a question was asked: ‘How did you first hear about immunisation?’ According to our observations, therefore, the various sources of information, direct exposure to posters was least popular (Table 6.9). Of the various sources of information, neighbours, friends, school children, traditional birth attendants, vaccinators at the health clinics were the most frequently mentioned sources. The knowledge about immunisation was passed on in the community through a two-step process. Our observations confirmed that inter-personal and informal communication sources play a significant role in the diffusion of information on immunisation in this community. Information from vaccinators at the health clinics would, for example, be passed on to other members of the community informally through friends at various places such as funerals, whilst drawing water from the wells, at market places. Information was also transferred at church meetings, barazas, informally through magurus (headmen). Informal sources appeared to be more potent as compared to exposure to radio and other mass communication media.

The comments below from the respondents demonstrate the diversity of their use of personal and mass media sources for information on immunisation.
Table 6.9 Sources of Information on Immunisation

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health workers</td>
<td>58</td>
<td>32</td>
</tr>
<tr>
<td>Radio</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>Baraza</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Women’s group</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Posters</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>School</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Friends and family</td>
<td>47</td>
<td>26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100</td>
</tr>
</tbody>
</table>

An example of a respondent who used school as a source said:

We were at school one day. Suddenly, the bell rang and the teachers asked us all to assemble in the hall. As we went to the hall we saw a Land Rover packed outside the headmaster’s office. In the hall the headmaster came in with four other people, three women and one man. They were introduced to us by the head who said they had come from Nairobi and wanted to talk to us. They spoke to us about immunisation. The various diseases that one should be immunised against, their symptoms, and seriousness of these diseases, when and where to be immunised. They asked us by a show of hands those people who had younger brothers and sisters ... Then they told us to go and tell our parents about what we had heard from them and ask them to have our sisters and brothers immunised.
Another respondent said she received the information through her friend:

When I was expecting my daughter, Maria, and was five months' pregnant, as we were going to the market at Lubao with *mama boyi* a friend of mine, she asked me whether I had started going to clinic and whether I had been vaccinated. She told me that I needed to be given an injection on my arm. And, when I get the baby, the baby will also need to be taken to the clinic for vaccinations *tsi sindani*. These will prevent me and the baby from falling sick.

Respondents who used other sources also commented about how they first heard about immunisation. One, for example, who used the *baraza*, commented:

We were at the chief's *baraza*. That day, Mulimi had accused Malova of having refused to pay the balance of the piece of land he had bought from him ... As we were discussing this, the District Officer (DO) came with some people from Kakamega. Lijembe, the nurse at Malava, was also with them. Lijembe introduced them after the DO had addressed the *baraza* ... One of them, a stout woman, stood up and spoke of taking babies for clinic for vaccinations and many other things related to *afya* (health). I told my wife about it when I went home.

Other respondents shared the following: 'heard on the radio'; 'the nurse at the clinic told me'; 'the traditional birth attendant (TBA) said I go to clinic after she had helped me deliver my baby'; 'my mother-in-law said so'; 'our women's group (*shama sha vashere*) leader said they had learnt many things from the seminar she had just attended in Kakamega including family planning, immunisation and AIDS (*ukimwi*).
We noted that none of the respondents, including the literate ones, mentioned sources such as films, slides, booklets, videos, slides, posters, pamphlets or libraries. This raised the question of source creditibility and exposure. An analysis of the concepts of exposure and credibility of various media may have significant policy implications. Exposure here refers to the reception of information on immunisation through these media. A person may be more exposed to a particular poster but this may not necessarily be the most trusted medium.

Communication researchers conceptualise that source credibility is a predictor of media use. They argue that the more believable are the media the more those media would be used. Respondents were asked to state what was the most credible source of health information. Most respondents believed in information which derived from first-hand experience. In support of this observation, a respondent reported:

I believe people, especially old people. They say the truth. When they say something they really know what they are talking about without ‘adding salt’ (censoring it). It’s not second-hand.

As noted by this respondent, they partly believed the information source because the person sharing the information was known to them. In the same context, another respondent thought that her most trusted sources were her friends because:

My friends would tell me the truth from their own experiences. They would normally know what is happening to me, and would therefore give me information that is of use to that situation. My
friends would really be interested in helping me. One day after my baby had been vaccinated, he cried a lot later in the day and had a fever. When I told my friend that my baby was sick and that I intended to take him to the dispensary, she told me that some of the vaccinations cause that kind of reaction to a baby. Her own children used to behave like that after vaccination.

Other respondents shared the views that, since their friends "have been around with them" and "know what life is like" and they "knew the source", the information received was conceived as being credible. Few others felt that they themselves were the most believable sources because "you can never trust anybody".

The above data suggest that there are two reasons why respondents would believe information from experience. First, respondents were convinced that the providers of the new information were in a position to know what they were talking about. For example, the respondent whose baby had fever and cried after vaccination took a friend's advice because she had experienced the same. Second, because the respondents had trust in the source. For example, old people 'tell the truth' without 'adding salt' (censorship).

Table 6.10 Most Credible Source of Health Information

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health workers</td>
<td>137</td>
<td>76</td>
</tr>
<tr>
<td>Radio</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Friends and family</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Local leaders</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100</td>
</tr>
</tbody>
</table>

194
6.8.1 Exposure to Posters

Table 6.11 Respondents’ Exposure to Posters

<table>
<thead>
<tr>
<th>Poster</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>122</td>
<td>68</td>
</tr>
</tbody>
</table>

To determine the extent of exposure to posters, respondents were shown the posters individually and asked to say whether they had seen them before and whether they had been explained if the answer to the former was positive. The responses showed that less than half the respondents had seen at least one or more of the posters before. The posters seen had been sighted at various health facilities and by chance. They had been stuck on the walls and had not been explained.

I saw Poster 4 at Malava on the wall at the waiting area outside

(Female, aged 30)

I saw Poster 2 at the Provincial Hospital in Kakamega when I had gone to see my aunt who had been admitted there. It was on one of the walls there.

(Female, aged 42)
A notable feature in the responses was that, of the posters seen before, a proportion of 60 per cent had been seen in health facilities outside the study area, mainly in the towns. Poster number 4 had been seen by 122 of the respondents. It is an interesting observation that, whereas Poster 1 was developed by Kenya Finland Primary Health Care Project (KFPHCP) based within Kakamega, the district of the study area, the poster had been seen by only 9 respondents.

From the author's observations, posters and other audio-visual media were under-utilised. There was normally a general talk by a health educator which took place for fifteen minutes at the beginning of each day, covering a wide range of health issues at the MCH/FP clinic at health centres, but no form of audio-visual media was used in support of these talks. Likewise, when mothers took their babies for immunisation, the communication between the mothers and the health worker was purely verbal.

Also, from our observation and health education workers' responses, health information consumers did not pay attention to any form of poster displayed on the walls of health facilities. Instead, if they needed to find out anything, they asked another mother in the queue or asked a health worker.

We also noted that there was only one vehicle serving the whole division stationed at Malava Health Centre. This vehicle was nearly grounded because of lack of fuel. Health information facilitators observed that lack of fuel was one of the hinderances to collecting posters and other audio-visual media from the collection point in Kakamega. These workers also stated that, even when they got to Kakamega, there was no guarantee that these media would be supplied to them because those in Kakamega may not have collected the
6.8.2 Use of Posters as Sources of Information
In order to find out the perceptions of the respondents about the use of posters as sources of information, they were asked, 'Do you think posters should be explained (see Table 6.12).

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should be explained</td>
<td>169</td>
<td>94</td>
</tr>
<tr>
<td>Should not be explained</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Some saw them as mere decorations. Various reasons were forthcoming as to why posters should be explained. These varied. An illiterate respondent reflected:

I do not know how to read, but if the nurse could read for me what is on the picture then I would know what the message is.

Another respondent who thought that if posters were explained he would remember the message said:
These pictures are very beautiful. If the nurse explains to me what message they contain, I would visualise the beautiful pictures all the time. This would help me remember to take my child for clinic. I have now seen the seriousness of the immunisable diseases from these pictures.

Finally, a respondent who saw posters as useful sources of information and foresaw the challenge the message would have on him commented:

These pictures are interesting. I am more positive about immunisations now. I now know what diseases my children are usually vaccinated against. These pictures now on my mind have given me something to ponder over! The diseases are serious. Look at what has happened to this child's legs. Truly, seeing is believing.

Those who did not think posters should be explained saw posters as self-explanatory "since you can see the image and, at the same time, read what is there. This promotes your understanding".

In support of the few respondents who observed that posters were for decoration, a respondent stated:

I like seeing colourful things such as these pictures. In my house, I have some pictures which I removed from old calendars and pinned on my sitting room walls. It adds beauty to the room. It breaks the monotony of having only family pictures in the room.

Although previous exposure to posters was rather low, the respondents were enthusiastic about our posters, and stressed the need for the use of posters. One
respondent, for example, who felt that even the target population needed to be part of the education, information and communication group said:

Give us these posters so that we can also be teachers of others. Health people should get us posters like these ones so that we can use them all the time during our elder meetings to tell and remind people about many health issues. The people do not have to always wait for the health personnel to come and show them posters. We can just teach them ourselves using such posters.

Another one, holding the same viewpoint, pointed out thus:

The government should give posters to all church leaders, women's group leaders, elders and administrators in the villages. Also, health workers should hold seminars with the communities.

Another respondent remarked:

If the government can supply even schools with posters, we can learn much from them. Our children can understand better about immunisation because they can see what the diseases are, they can read when the baby should be immunised and so many other things.

Another one, expressing his eagerness, commented:

We need these posters to be given to us. The nurses at the health centres do not teach patients with these posters. I can now see the diseases that can kill children the nurses always talk about on this poster (pointing at Poster 2) with my eyes. I just hear of diphtheria but I have never known what it is. So, it is the disease of the throat! When I see pictures like these ones the images
stick in my mind. I do not forget. Why don't you give me some posters if you have any?

The respondents are intelligent enough as to point out the value of posters when they share views such as "our children can understand better, the images stick in mind, images can remind people, I do not forget".
CHAPTER SEVEN

7 CONCLUSIONS

7.1 The Research

The chief finding of this study is that health communication through visual means as practised in Kenya is ineffective. Reasons for the ineffectiveness in the context of the experiences of a rural community in Kenya emerged from the study.

Visual media are much used in Kenya for disseminating knowledge about immunisation. A proper understanding of the current health communication process which uses these means is therefore indispensable.

The objectives and expectations of the providers of health information (administrators, health communication officers, artists and health information facilitators) when producing, disseminating, or adapting visual media to support a health information promotion strategy were examined. This provided baseline information underlying the practice of health communication which was necessary for linking visual communication concepts with the set of objectives and expectations as seen by the providers of health information. The investigations were guided by the following research questions:

- What role is currently played by posters in promoting child immunisation to the rural communities?

- Can visual media be used effectively in communicating information?

- Does visual communication have any effect on information gain of the rural health information consumers in Kenya?
Will different consumers differ in their abilities to receive and interpret information through visual means?

What are the constraints associated with the use of posters?

Four sources were used for developing and answering the research questions. First, the study assessed the relevant literature on visual communication concepts in journal articles and reviews. Second, extensive desk research analysis was undertaken which identified the health information communication pattern and health care delivery structure in Kenya. Third, visits and interviews were held with providers of health information. Fourth, through field research, field observation and interviews were held with consumers of health information in a rural area in Kenya.

Kabras Division, in Kakamega District, was examined primarily as one typical rural area in Kenya. It was chosen for the research basically because it had all the essential characteristics sufficiently typical for examining the effectiveness of visual communication in the immunisation programme. Like many other rural areas, the Division is isolated, lacks the main amenities and is occupied by one main ethnic group (see Section 2.4.1) and, hence, very strong in its cultural health beliefs (Chapter 6). The population surveyed for the field research comprised 180 parents from two randomly selected sub-locations in every location. While selecting the sample, the population was stratified according to sex. The sample drawn for the research represented 30 per cent of the total eligible parents. The data were collected by using interviews and field observation. The analysis of the data was done manually. Descriptive data were grouped by frequency distributions and percentages, and displayed through tables and figures, where necessary.
7.2 The Population Studied

When the sample population from Kabras Division is re-examined in the light of the present findings, it is seen that the socio-demographic features of the sample are diverse. More than half of the sample was under 35 years. The age structure was similar to the national Rural Literacy Survey 1988. This is significant in that the opinions and perceptions of the respondents came mainly from the active child-bearing group. The results of this study are therefore of relevance in decision-making in so far as communication of health information is concerned.

In terms of education, the majority of the population studied had attended school up to the primary level (standard 1-8). 24 per cent were without any education at all. This was lower than the 31 per cent representation in the RLS, 1988. In both studies, most of these respondents were in the 45 and above-years category. The majority of the respondents were semi-illiterate. This corresponds to the pattern in other studies. As many as 44 per cent were engaged in non-farming activities such as petty trade, carpentry, pottery, teaching and domestic work. The other work patterns were to do with farming.

7.3 The Research Summary Findings

The data show that much effort has been invested in providing information on health through various methods. The Health Education and Audiovisual Aids Division is, in the main, responsible for health education and communication activities. Non-Government agencies are also involved in the process, both at funding levels, production and actual dissemination. Thus, health communication is fragmented among various bodies. The National Council for Population and Development is the government co-ordinating agency.

Inefficiencies were found in the production of educational materials and their
distribution. Producers of materials faced problems due to lack of appropriate production equipment, including proper production studios, lack of technically-skilled manpower to maintain and operate machines. Educational materials were not accessed by the target population because they did not reach the isolated rural areas or even the district health education and communication officers. Transport-related problems were the main barriers to the haphazard distribution characteristic.

Clear findings emerged from the field work. Message realisation was poor among the sample population. Realisation of messages was influenced by the levels of education. There was a direct correlation between imperfect grasp of messages and educational levels: semi-literate respondents consistently failed to grasp the messages. Colour was the main force in poster preference (60 per cent), the presentation of material in a realistic manner (11 per cent) and language (11 per cent).

Whilst only a small proportion of our respondents had been previously exposed to the immunisation posters. An overwhelming majority (96 per cent) of them were, in general, aware of immunisation. This awareness was generated through the combined effect of mass communication, inter-personal communication, and the actual vaccination campaigns through health workers, barazas, etc. However, these respondents had little detailed knowledge about which diseases were prevented by the different courses of vaccinations (Table 6.8). These respondents were aware that they needed to have their children immunised and that immunisable diseases put their children at risk.

The results of the research show that posters had no influence on the immunisation practice; inter-personal sources of information were more important (Table 6.9): neither were they mentioned as a credible source (Table 6.10).
The major sources of awareness and information were oral media. Most of the respondents learned about immunisation from health workers (such as the traditional birth attendants, vaccinators at health clinics), neighbours, friends, school children. Many mothers learned about it when attending clinics whilst they were expectant. Later, this information diffused in the community through clinic attenders, neighbours and family members, children and friends. Thus, the knowledge about immunisation was disseminated in the community through:

- direct exposure to radio and face-to-face interaction with the health workers (e.g., vaccinators, TBAs) at the clinics;
- informal sources of communication.

Informal sources were more strongly influential as compared to exposure to mass communication such as radio and visual media.

Respondents were positive about the use of posters as information sources and were enthusiastic about them. Verbal communication formed the major mode of information transfer between the health workers and the information consumers. These observations lead us to suggest that the low exposure to posters may be due to inefficient use and inappropriate design of the posters. Whereas the health information disseminators had their own constraints (Chapter Five), they did not make full use of the few resources they had. For example, they did not even draw the attention of the information consumers to the few posters they had.

7.4 Main Conclusions
The people of the community studied feel positively about the use of visual media in their environment. From a background of minimal exposure to visual
media, limited literacy, isolation and strong in beliefs and values, respondents have, nevertheless, come up with useful ideas which have implications for developing and disseminating information through visual means. The general conclusion of this research is, therefore, that the processes and problems of communicating health information through visual means have not been fully understood. Therefore, those involved in design and all those who undertake the dissemination of the information must be encouraged to adopt new policies and procedures based on an awareness of the nature of the target communities as receivers and interpreters of information. The consumers, whether in the rural areas or elsewhere are rational people, and whether or not they are treated as such, the effectiveness of the planned communication effort is heavily determined by them. The visual communication strategy in Kenya to the rural population does not take account of this opinion and, as such, its objectives and projections have not been achieved.

7.4.1 Lack of Grasp of the Role of Visual Communication.

The visual communication method used for the transfer of health information is limited by lack of a feedback mechanism. The agencies concerned are only concerned with producing and adapting educational materials. They then send them out to be used regardless of whether these media were comprehended or acted upon. The research shows clearly that the model applied is essentially one-way communication. It is acknowledged by those involved in the visual communication process in Kenya that this method is one way only. Their policy is to retain the use visual communication. Indeed, communication through visual means is rapidly becoming more prominent than before as one of the support methods of information transfer in today's society. The advantages of these media are well documented (see section 3.4) Previous research appears to support this trend of the importance of visual communicaiton from the cognitive perspective.
Therefore, it becomes imperative to make sure that the use of visual communication of health information in Kenya is done effectively in future. The positive attitude towards visual media of providers of health information is not borne out by the evidence, yet many agencies were actively involved in the promotion of production of these media and their distribution. The conclusion reached from these findings is that there is a trend towards expanding visual communication in Kenya, the need for visual communication skills training to make for more effective messages becomes ever stronger.

7.4.2 Monitoring
The findings of this research (see Chapter Five) have shown that much effort has been made to put everything in place within the health information marketing strategy in Kenya. In practice, some of the efforts were not effective. In particular, the monitoring mechanism for ensuring the application of the visual communication activities was non-existent. This research showed that the community studied did not have adequate exposure to visual media. What is needed is for the Ministry of Health to monitor exposure to ascertain the reach (the number of people reached with at least one message on a particular poster) frequency, that is, the number of times a person is exposed to a message) and so on. Monitoring in this case should encourage increased reach and frequency. It could further help explain why there was lack of exposure or explain the success of a particular medium or poster, etc. The monitoring mechanism should be a combined effort among medical personnel, information workers and mass communication experts. Within it, there should be a means for co-ordinating the findings from each profession. The mechanism could be used to find ways to develop assessment tools, training and conducting collaborative research programmes and disseminating research findings.
7.4.3 Cultural Basis of Reception of Visual Communication

Visual communication is more effective if the cultural values are considered. The data suggest that people are individuals and differ in the way they realise messages. The study examined individuals and observed the way these individuals responded. The findings show that effectiveness of posters in this community is related to the way the community here sees, thinks and feels about posters. The findings throw some light on the role of culture in influencing the way respondents realised messages. If the target population are distressed they are likely to be less receptive to ideas or messages intended for them. It is imperative that the developers and 'users' of visual media avoid anything which would offend receivers of information in their cultural milieu. Cultural influences change by nature. There is, therefore, need for reviewing the usefulness or otherwise of the communication strategy within a given cultural environment. Concern was made towards the mode of dress which was out of the cultural empire of the population studied.

The Kabras community's beliefs, values, attitudes, fears, prejudices and aspirations relating to immunisable diseases and vaccinations were sought. This information forms a foundation for future researchers of this community. In a multi-cultural society such as Kenya, specific health information education and communication strategies need to be directed at different cultural groups. Correct targeting of such programmes is of extreme importance.

7.4.4 Formal Education and Grasp of Messages

The finding that schooling clearly makes the difference in people's visual literacy leads this investigator to the conclusion that the self-explanatory nature of any visual medium must never be assumed especially when used with illiterate or semi-literate target populations. Respondents without any education consistently failed to correctly grasp the messages, the semi-literate partially
realised the messages. The literate respondents were consistent in correctly realising the messages. It is therefore suggested here that health communicators should draw the attention of the information consumers to educational materials. Posters must be explained rather than being just stuck on health facility walls, where they currently appear to serve a decorative purpose rather than an educational one.

7.4.5 Other Health Campaigns
The success of other health campaigns may indirectly make it difficult to get related but different messages through to the people. This conclusion is drawn from the data showing that three-quarters of the sample population who incorrectly realised messages on Poster 1 gave the response, "family planning". It is important that efforts must be made to try and balance messages communicated rather than over-emphasising some.

7.4.6 Representation of Images
Visual images that effectively communicate to one population may prove meaningless to another. People may find images too interesting in their own right and not look for any message they contain. Data here show that the sample population interpreted messages in a rigidly literal manner. All that they saw were images as representation of objects and did not consider that the images were teaching them something. Symbols meant to show direction were insistently referred to as "roads". It should be recognised that abstract symbols which communicate effectively among one community may not necessarily serve the same purpose in another. Use of abstract symbols must be avoided.
7.4.7 Familiarity
Aspects of a visual medium which are familiar are likely to be effective in message realisation. Most of the sample population whether they had prior exposure to the posters used in the research were able to realise messages through familiar objects. An illiterate mother, for example, was able to recognise familiar words as those on her clinic card. This helped her realise the message even though she was illiterate.

7.4.8 Relevance of Materials/Message
Materials/messages which people do not identify themselves with may be ineffective particularly among communities which interpret information in a literal way. If the relevance of the problem to the target population is not acknowledged, there will be less interest in paying attention to and accepting the message. Our data show that some respondents did not see that the materials with images from another country were of relevance to them. The messages were not directed to them (respondents). Similarly, there were some who did not perceive immunisation as a priority on what needed to be done to their babies. "Our children are healthy even without these injections", they would say. There is need for educating people of the relevance of the messages provided to them.

7.4.9 Realism and Complexity of Materials
The more realistic and less complex the education materials are, the more effective they would be. Respondents' preference of materials was influenced by "real things/child", the poster is less "cluttered", and so on.
7.4.10 Language and Colour

Educational materials are likely to be more effective if they are accompanied by words which are simple and in languages that the target population understands. The size of the text should also be large enough to be read without strain. This conclusion is drawn from the respondents who were literate in both English and Kiswahili having had no difficulty in identifying messages. Language clearly did enhance message realisation. Colour had a significant influence on poster preference. Producers of educational materials should be encouraged to produce materials in colour to achieve the attentional objective.

7.4.11 Awareness of Immunisation

There is need to target information provision to all members of the community and not just women. Data for this research showed that there was no significant difference among education levels. However, awareness was higher among the mothers than fathers who (mothers) are currently the main health communication targets.

Rural people are rational and have a right to information. This conclusion is derived from the finding that the sample population lacked information on diseases prevented by various courses of vaccinations. Information must never be taken for granted. Lack of information may cause serious misconceptions which may have fatal consequences, particularly in an area which deals with people’s lives. Health professionals and all other parties involved in the dissemination of information on immunisation must educate the consumers and give them information to enable them to take rational decisions.

7.4.12 Access to Visual Media

There is reason to conclude that posters and other visual media will fare much
better when they are readily accessed by the potential users. Attempts to reach rural people through posters appeared totally unsuccessful among the community studied. Posters were either not accessed by the target population or, if they did, the population did not pay attention to them. The results show that posters had no influence at all on the immunisation practice, inter-personal sources of information were more important. If the providers of health information were to achieve their objectives and aspirations, improvements must be made to allow for more access to these media. Resources must be provided.

Overall, visual media will continue to serve the needs of populations in Kenya whether in the rural or urban areas. Posters will continue to dominate the visual communication scenario because they are cheaper, easier to handle, and also because of the current economic state which does not allow for more expensive and sophisticated equipment and resources. It will take some time to reach the rural folk in other forms of media such as interactive visual media.

7.5 Significance of the Study
The examination of visual media use in the promotion of child immunisation provides a case study for identifying the problems associated with health information communication through visual means. The present research shows to what extent the Kabrasi community has interacted with visual media in order to achieve the objectives set by the Ministry of Health. In examining the experience of visual media used in this community identified the type of constraints which may more generally be encountered in putting into practice the policy prescriptions of the Ministry of Health.

The objectives of health information communication through visual means are frustrated when the communication materials are produced from elsewhere and the information contained in them disseminated in a manner which does not fit
in with the indigenous base of the target population. When designing and producing any communication materials, awareness and sensitivity must be shown towards local circumstances of the target populations.

The approach used in this study, and the conclusions reached, can be of assistance to wider research on graphical communication of information (e.g., in health, agriculture, environment, and other extension service areas) to rural populations. This can provide explanations of the constraints involved in applying general policies in any one rural community. This research reconciles theories of the role of visual media, undertaken in the abstract, with practical evidence from the field, particularly as it affects the study of the effectiveness of educational media (Bates 1981; Prosser 1984; Brody 1984a). The actual effects of the media and context which the media are educationally effective must be understood (Court 1989). The target population and other interested parties must likewise be considered if effective communication is to be achieved through use of visual media. The study builds on previous work and adds to the understanding of the rationale behind the use of visual media in the child immunisation promotion in Kenya. This body of research should be used as a source of ideas for message design and dissemination.

At this point, it might be worth reflecting that, although the process of carrying out this research was demanding, the rewards were many. The author got to know this rural population, shared experiences in their lives and often made friends in the process. This relationship, in the author’s view, forms a base for follow-up research. Most importantly, the greatest strength of the methodological approach used, perhaps, as already stated, is that it increased the likelihood of getting results of more practical value. The methods employed in the present research could also be adopted by information workers, mass communication experts and designers of visual media to explore visual communication issues in their respective professional entities, or in collaboration
with each other.

Visual information is continually overlooked by Library and Information professionals. Whereas most of us in the profession may be aware of the benefits of visual information, very little has appeared in the professional literature about visual means of information communication and rural communities. The results of our search on Library and Information Science Abstracts (LISA) using such terms as visual literacy, visual information and visual communication, rural communities research was disappointing. This research provides a new direction for research in the field of Library and Information Sciences which has prospects for researchers in these areas in Kenya and elsewhere.

In Kenya, communities differ in terms of their heritage, language, forms of artefacts, and dominant mode of economic production (e.g., Bantu agriculturalists, Southern Nilotic fisherfolk and Eastern Nilotic pastoralists). They, however, have major similarities such as:

"a small scale and socio-centric nature of their societies as well as a strongly utilitarian purpose for [visual communication]"

(Court 1989, p. 65.)

The results of this research are therefore evidently generalisable to other Bantu agriculturalists in Kenya. The results are not only useful to Kenya alone, but may also be of significance to other developing countries in Africa, who share similar characteristics of the community studied here. These countries may use the results with alteration to suit their own culture to improve their visual media communication.

A valuable contribution could be made in the marketing of health information
through visual means of communication by the use of one or a combination of approaches of research methods. Its findings could serve as a base for future in-depth studies of the factors affecting the visual literacy skills and information needs and seeking patterns of different population settings in the country. Research which would, for example, provide concrete evidence that the emphasis on other sensory information-seeking patterns of our sample might be responsible for lack of recognition of symbols would be a worthwhile contribution. This could be done through an experimental approach using control groups. This way, it would be possible to determine which group displays a related visual sensory elaboration. On the whole, narrowly-defined operational definitions of rural communities' health information needs and visual literacy might bring common activities into focus.

A study which would identify how the library as an information provider could also contribute to the multi-sectoral approach of the health information, education and communication (IEC) strategy in the rural areas would provide data now not readily available. This would require a combined effort of librarians and other information workers, mass communication experts and health educators. Each respective professional would bring expertise from their areas of concern and thus gather data which would provide a useful framework as to how best learning materials could be integrated in the visual communication strategy of the information, education and communication infrastructure in Kenya.

Studies which focus on one of the themes or combinations of themes for this research in greater detail would sharpen the focus of the next series of studies in this area. Also, studies in other rural parts of Kenya could be conducted to determine the consistency of our findings across similar, yet different, settings. Other studies, dealing with the influence of posters on the learning behaviours and strategies of the information consumers, could also make a valuable contribution to the research base in the area of visual communication.
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APPENDIX 1 INTERVIEW/DISCUSSION QUESTIONS WITH PROVIDERS OF HEALTH INFORMATION

The outline of the discussions examined five areas:

The methods of health information communication in Kenya;

- Aspirations, intentions or expectations of producing and using posters;
- How these were to be arrived at;
- How they were evaluated;
- Future development.

Typical questions were:

1. Would you tell me, briefly, your experiences in ....?

   - How do you develop/acquire educational materials such as posters?

   - What types of visual media are you developing/using?

   - Who are the target population?

   - What do you think/feel about use of posters as communication media?

   - What role do you see posters playing in disseminating health information to the rural populations?

2. What are your hopes for posters? What benefits do you expect the target populations to receive from them?
3. What strategies do you employ to ensure access to posters?

4. How would you assess this?
   - What strikes you as being significant about visual media?
   - How have the target population in the rural areas reacted?
   - How have other people reacted?
   - What constraints are there? Or do you foresee any?

5. What are your hopes for the future.
APPENDIX 1.1 INTERVIEW PROCEDURE WITH PROVIDERS OF HEALTH INFORMATION

As the interviewer had already made contact with the interviewee, the introduction was relaxed. The interviewee was then asked about the background to what they were concerned in - "Would you tell me briefly how you became involved with health information/visual media communication health education?", followed by "what is the background to the target population?". This stage gave the interviewees an opportunity to talk about "known" areas and helped them to relax and feel they were making the major contribution to the interview. After this introduction, the interviewees, if they had not already mentioned it and if it was appropriate, were asked - "Where do you see visual media such as posters fit in the communication process" or "What do you see as the role of posters?". At this level, they were asked for their expectations - "What are your hopes for ...?". Again, throughout this period, interviewees were made to feel safe and not feel threatened or challenged.

The next stage of questioning was aimed at extracting more practical statements and with a view to consolidating what the interviewee had already said. They were asked, "How will these hopes be implemented?" or "How would you envisage posters achieving your expectations in this set up?" These questions were set out to discover the actual health information communication strategy and to gather information about the range of educational materials produced, content, the context and strategies used to ensure access to these materials. If the original question, "How ..." did not extract this information, then prompt questions followed to probe the interviewee a little more.

Interviewees did not, at any time, require the same prompting but it was ensured that the information continued to flow. In particular, information about
the areas of visual information communication already known to the researcher as part of work experience was developed and questions phrased accordingly - "Tell me about your work in ...".

Another level of interview concentrated on assessing the previous stages of the interview. Interviewees were asked - "How do you find out whether you have achieved your objectives?" and in more general terms a selection of questions was asked from:

"What has struck you as being significant in using posters in communicating information on health/immunisation?"

"What constraints have there been/do you see?"

"How have the target populations reacted?"

"Has anyone else reacted?"

The final level of interviewing gave the interviewee an opportunity to express their future expectations and aspirations. They were asked - What lines of development do you foresee?" and, finally, "Where do you see the future of posters ... in, say, the next ten years?". These were open-ended questions which it was felt gave the interview the status of a discussion rather than a cross-examination.

At the end of the discussion, the interview thanked the interviewee for having accepted to participate in the study.
APPENDIX 2 INTERVIEW QUESTIONS FOR THE FIELD RESEARCH

Target: Parents with one year old baby or under

Section A

Personal Data

1. Do you mind if I ask you what age you are? How old are you?

2. How many years of schooling did you complete?

3. What is your current occupation/task?

4. What is your marital status?

Section B

Visual Literacy Skills

5. Now, I would like to show you a poster. Please tell me whether you have seen it before? If yes, where? If seen at health facility, was it explained?

Do you think posters should be explained?

6. Just by looking at this poster, what do you see?

What do you think it is trying to say?

Could you tell me/point at the aspect of the poster that makes you say that?
7. Is there anything in the poster you believe is not true? If yes, what? Probe: is there anything in the poster that you do not like?

8. Of these posters, which do you like best? (The researcher lays out the posters, so that the respondent can see all of them.)

What aspects make you prefer Poster 1 over 2, 3, 4?

Section C

Knowledge and Sources of Knowledge on Immunisation

9. Have you heard of immunisation? Would you mind telling me what it is? How did you first hear about immunisation?

10. Could you tell me what diseases are prevented by DPT, BCG, anti-polio and measles vaccines?

11. Might you be having any worries about immunisation?
APPENDIX 2.1 INTERVIEWING PROCEDURE WITH PARENTS

An example of the way the interviewing progressed.

Good morning (afternoon). (Talk about any news or comment on any aspect in the home - this was mainly introduced by the accompanying community based health worker). She would introduce me or I introduced myself, depending on the circumstances. I am a lecturer from Moi University working on a research project on communication of information through posters. I have some posters with me. Would you be interested in looking at them? I have to ask your opinion about these materials, and to find out how you think they could be more usefully developed so that people here will understand them and like them. All your opinions will be completely confidential. Please feel free to answer the questions that I am going to ask you. It is important that you and other parents here like the materials and understand them. It does not matter whether you can read and write.

Look at the poster and tell us whether you have seen it before. If yes, where did you see it? If seen at the health facility, was it explained. Do you think posters should be explained? (All this time, the respondent is made to feel relaxed and not feel threatened.) Just by looking at this poster, what do you see? What do you think it is trying to say? Could you point at the aspect of the poster that makes you say that? Is there anything in the picture you believe is not true? If yes, what? Of these four posters which one do you like best? Could you tell me why you don’t like it? What aspects make you prefer: poster 1 over poster 2, 3, 4? Now I would like to ask you some questions about immunisation.... Thank you for accepting to participate in this study.