A COMPARATIVE STUDY OF THE USE OF TEACHERS AND PARENTS AS SOURCES OF HEALTH INFORMATION TO PRIMARY FIVE PUPILS IN ONITSHA

BY

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D E D I C A T I O N

This work is gratefully dedicated to

my beloved wife Nkiruka Ogbalu

my children Ikechukwu, Ndidiamaka, Chinweoke

and

my mother Rosaline

MENS SANA IN CORPORE SANO:
"A healthy mind in a healthy body".
This is a quotation from Juvenal and expresses what the Romans considered worth striving for.

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A B S T R A C T

The family (parents) and the School (teachers) are two major sources of health information to primary school children. The health information so received by school children are meant to increase their health knowledge. But unfortunately, the health knowledge of school children was still found to be inadequate by various authors (Karangwa, 1977; Osujih, 1979). The purpose of this study was to find out the effectiveness of using teachers and/or parents as main sources of health information to primary five school pupils in Onitsha. The study has in addition examined situations under which the teachers and parents could be used as health educators.

The effectiveness of teachers and parents as sources of health information to primary five pupils were examined under four different approaches. In the first approach, teachers (alone), who received special preparation in health education, were used as a source of health information to primary five pupils. For the second approach, parents (alone), who received special preparation in health education, were used as a source of health information to primary five pupils.

In the third approach, teachers and parents (combined), who received special preparation in health education, were used as another source of health information to primary five pupils. And in the forth approach, teachers and parents, who did not receive special preparation in health education, were used as sources of health information to primary five pupils (control).

The effect of using these teachers and/or parents as sources of health information to the primary five pupils was evaluated by testing the pupils at two stages. For this purpose, a Health Knowledge Test Questionnaire (HKTQ) was developed and used for the pre-intervention and post-intervention tests of the pupils. The data were analysed with the computer and a one way analysis of variance (Anova) was the statistical tool used to test the hypotheses.

On the whole, teachers and parents (separately or combined) who received special preparation in health education were found to be effective as sources of health information to primary five pupils. But in all the three socio-economic group areas studied, pupils whose teachers received special preparation in health education performed significantly better than pupils whose parents received the same special preparation

in health education. Also, among teachers, pupils whose teachers received the special preparation in health education performed significantly better than pupils whose teachers did not receive the special preparation. Among parents, pupils whose parents received the special preparation in health education performed significantly better than pupils whose parents did not receive such special preparation.

The primary five pupils whose teachers and parents (combined) received special preparation in health education did not perform significantly better than pupils whose teachers (alone) received the special preparation. Educational level of parents was found to be an important factor in their ability to give health information to the pupils. Educated parents performed better than the illiterate parents as source of health information to the pupils.

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C E R T I F I C A T I O N

We certify that this work was carried out by Mr. Anthony Ikechukwu Ogbalu of the African Regional Health Education Centre, Department of Preventive and Social Medicine, University of Ibadan.

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TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

FIGURES PAGE

TABLES

TABLES PAGE

TABLES

TABLES PAGE

DEFINITION OF TERMS

> ... the use of a word with so many meanings gives rise to some confusion, both in attempting to communicate - unambiguously with each other and in attempting to think clearly ourselves (Abercombie, 1974).

> If our thought is to be clear and we are to succeed in communicating it to other people, we must have some method of fixing the meaning of words we use (Thouless, 1971).

In this study therefore, the following terms were operationally defined as follows:

Primary five pupils

Children who were at their penultimate class and had one more year before they would take their First School Leaving Certificate Examination.

Family

This was meant to be parents (Natural parents or guardian with whom the pupils live).

Teachers

Primary five classroom teachers with grade two certificate as their minimum qualification.

Teachers with special preparation in health education

Teachers were said to be with special preparation in health education if they received health lessons from the researcher.

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eachers and parents without special preparation in ealth education

Teachers and parents were without special preparation in health education if they did not receive health lessons from the researcher.

High socio-economic group area

In this area, there were basic facilities like good housing, pipe-borne water, electricity, recreational facilities. For a three-bed room flat, the rentage was from N150 to N200 per month depending on the type of house and the location. Those located in the Government Reserved Area (G.R.A.) cost more.

Middle socio-economic group area

In this area, the houses were not as good as those in the high socio-economic group area. Facilities like pipe-borne water and electricity were present. The taps were off most of the time and very few recreational facilities were present. For a three-bed room flat, the rentage ranges from N100 to N150 per month.

Low socio-economic group area

In this area, basic facilities like good housing, pipe-borne water were lacking. Electricity was present though not in all houses. Recreational facilities were completely lacking. For a three-bed room flat the rentage ranges from N60 to N80. In most cases because the people could not afford to pay for flats, they occupied one or two rooms only, paying between N20 to N25 per room per month.

State owned schools

These were schools owned by the Anambra State Government.

Research Assistant

A person trained by the researcher to assist him.

Health Information

Information on health topics as contained in primary five health education syllabus.

Pre-test

The test administered on the pupils to determine their health knowledge prior to intervention.

Post-test

The test administered on the pupils to determine their health knowledge after intervention.

Quasi-experimental

The subjects (pupils) were not assigned to the control or experimental groups on a random basis.

CHAPTER ONE

1. INTRODUCTION

There has been a growing need for approaches towards improving the level of health knowledge of primary school pupils, which has been found to be inadequate. Today, increasing numbers of children are attending school. The school is in a position to exert a beneficial influence on children at the early stage of their life (Owen, 1967).

Although it is now universally accepted that the health of school children deserves special attention, the formal recognition of this fact has developed in relatively recent times. France, in 1833, became a pioneer in the field by setting up a school health programme and making school authorities legally responsible for sanitation in schools. Following the French lead, other European nations set up regulations for the protection of the health of school children: Finland in 1859, Sweden in 1863, Germany in 1866, Russia in 1871, Great Britain in 1872, Austria in 1873 and Norway in 1965 (Otolorin et al., 1968). Modern concepts about school health have evolved from these early beginnings.

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Lucas (1968), observed that it is important to safeguard the health of children in order to ensure that they grow into healthy adults. While Clarke (1968), argued that

by educating a child we are putting into his hands the tools by means of which he can at a future date provide a comfortable livelihood for himself and his family.

According to Akinbola (1968), health influences one's way of life; it improves personal efficiency; it facilitates the attainment of personal goals. He further observed that if there were properly trained teachers, environment conducive for learning and adequate facilities, health education would greatly influence the pupils' development.

The primary school period is an important period in the life of a child. This is because health habits acquired during this period are difficult to change in adult stage. Efforts should therefore be made to enable children acquire adequate health knowledge which will help them develop positive attitude to health. Killick (1968) emphasized the need for the improvement of science and health knowledge in schools. The role of parents in the health education of primary school children was highlighted by Uka (1968). According to him, parents must be interested in the programme of health education if health habits were to be formed in the habit-forming years of the primary school pupils.

Primary school pupils receive health information from various sources which include: Teachers, Parents, Radio,

Television, Textbooks, Posters, Drug advertisers and peer groups. But, perhaps, the greater part of their health information is received from teachers and parents. The researcher therefore decided to throw more light on the use of teachers and parents as sources of health information to primary school pupils, with particular reference to primary five pupils.

1.1 Background of the study

Both parents and teachers serve as sources of health information to pupils. Primary responsibility for the health of a child belongs to the family with the parents playing the major role (Baric, 1978). While parents play a vital role with the informal health education which occurs within the family, the teachers are mainly responsible for the formal health education that takes place in schools. Sound beginnings in health education can be made through the primary school by co-ordinating the training received in the school with that of parents and the community.

Rabinowitz and Zimmerli (1974) showed that the most effective prevention of a health problem is initiated when people are young and attitudes malleable. The study of Iammarino and Heit (1980) demonstrated that educational efforts should be made during the elementary school years

to assist children in developing healthy attitudes and behaviour.

Studies on health knowledge among the teachers and pupils in both primary and post-primary institutions in Nigeria showed lack of adequate health knowledge among the two groups. The study of Karangwa (1977) showed that the level of health knowledge among primary school pupils in Ibadan was low and inadequate. And, Fabiyi (1980) while examining the current status of health education in secondary schools in Oyo State, showed that the students' health knowledge was inadequate. Osuji (1979) in his own study revealed lack of adequate health knowledge among the teachers in primary schools and teacher training colleges in Ibadan. Similar findings were reported by Ogunsakin (1981) and Umeh (1981) in Lagos and Anambra States respectively.

From the above studies, it is not certain whether inadequate health knowledge of the teachers was responsible for inadequate health knowledge of primary school pupils. Also information on the effectiveness of using teachers and parents who have been properly prepared in health education as sources of health information to primary school pupils is lacking and studies are needed to gain some insight on the issue.

2. STATEMENT OF THE PROBLEM

In Nigeria, both the teachers and parents share responsibility for the health education of the children. The teachers and parents are therefore the major sources of health information to school children.

In the family, the parents act as health educators and usually the health education carried out by parents is the informal type. In this type, there is no definite period for health education and no supervision of parents by any authority to know how the health information is being given to the children. Health information could be given at any time and place and the type of health information varies depending on the occasion. For example, information about types of foods and their values to the body could be given by mothers in the kitchen while cooking food. Also, information about insects that transmit disease to man when they bite could be given in the room especially when a mosquito bites a child. This is also true for other health information such as personal hygiene, sanitation and first aids.

In the school, the teachers serve as the source of health information to the children by giving them health education. The type of health education done in the school is regarded as formal in the sense that there is a definite

period for teaching health education and the teachers are supervised and paid for their teaching.

In Onitsha, the teachers and parents act as formal and informal health educators respectively to school children. They serve as the major sources of health information to the children. In all cases, the health information given by the teachers and parents is meant to improve the health knowledge of the children for their healthful living.

But unfortunately the health knowledge of the primary school pupils in general and primary five pupils in particular was found to be inadequate by various studies (Karangwa, Osuji, op cit.).

Furthermore, not only have these studies highlighted this problem of inadequate health knowledge among primary school pupils, there was also lack of a consensus among previous authors on the effectiveness of teachers and parents as sources of health information to the pupils; and the effect of such health information on the health knowledge of the pupils. (Gallagher, 1979; Sroka, 1979). This study was therefore designed to throw more light on the subject.

3. PURPOSE OF THE STUDY

The study was designed to throw more light on the effectiveness of using teachers and parents as sources of health information to primary school pupils, using primary five pupils as a target. Specifically, the objectives of the study were to determine the effect on primary five pupils' health knowledge:

1. of using teachers (alone) with special preparation in health education as a source of health information to the pupils;
2. of using parents (alone) with special preparation in health education as a source of health information to the pupils;
3. of using teachers and parents (combined) with special preparation in health education as sources of health information to the pupils.

Other objectives were:

4. to determine situations under which teachers and parents could be effectively used as sources of health information to pupils;
5. to offer suggestions based on the findings for the improvement of the health knowledge of primary school pupils.

4. STATEMENT OF HYPOTHESES

As was mentioned earlier, teachers and parents are the two main sources of health information to primary school pupils. And various authors (Ademuwagun 1975A, Vavra 1958, and Zolie 1964) indicated the need for teachers and parents to be well prepared for their health education responsibilities to primary school pupils. However, data on the effectiveness of using such well-prepared teachers and parents as sources of health information to primary school pupils is lacking. The study was therefore, designed to test the effectiveness of using teachers and parents who were specially prepared in health education, as sources of health information to primary five pupils. For this purpose eleven hypotheses were tested as follows:

Hypothesis one (HO1)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from parents (alone) with special preparation in health education.

Hypothesis two (Ho2)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from parents (alone) with special preparation in health education who taught the pupils.

Hypothesis three (HO3)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary

five school pupils who received their health information from teachers (alone) with special preparation in health education.

Hypothesis four (HO4)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils who received their health information from teachers (alone) with special preparation in health education.

Hypothesis five (HO5)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary five school pupils that received health information from parents (alone) with special preparation in health education.

Hypothesis six (HO6)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from parents (alone) with special preparation in health education (parents taught the pupils).

Hypothesis seven (HO7)

There would be no significant difference between the level of health knowledge of the primary five pupils who received health information from the teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from teachers without special preparation in health education (control).

Hypothesis eight (HO8)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from parents (alone) with special preparation in health

education and those of the primary five school pupils that received health information from parents without special preparation in health education (contol).

Hypothesis nine (HO9)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from parents (alone) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from parents without special preparation in health education (contol).

Hypothesis ten (HO10)

There would be no significant difference between the level of health knowledge of primary school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary five school pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control).

Hypothesis eleven (HO_{11}).

There would be no significant difference between the level of health knowledge of primary school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

1. THE NEED FOR HEALTH EDUCATION IN SCHOOLS

Children have often been described as "The Wealth of a Nation" (Demehin, 1985). As any other national resource, our young population is a potential capital that should be carefully developed and preserved and this necessitates both a good educational background and good health. With good health, our population will be more productive and with good education, it will be more skilled.

Demehin (op cit) indicated that Health Education is not an academic subject which is carried on to the high school or University and as such, primary school teachers should make sure that the Health Education syllabus given to them is well implemented. Teachers should realize that a greater emphasis on Health Education would not be detrimental to the teaching of more academic subjects since it would contribute to the better health of the pupils and, therefore, improve their academic performance.

Arthur Bryant (1940) in the last chapter ('Way of Redemption') of his book titled English Saga, mentioned a number of things that would enable a nation to have enduring value. He maintained that:

> "neither wealth nor power nor comfort, whether for class or individual are ends in themselves, that wealth of a nation consists in nothing but the virtue of her children and her children's children. That no profit, education, law, custom, or institution that does not contribute to their health and goodness is of any enduring value."

Ademuwagun (1969) observed that the future of the health of a nation depends largely upon what is done to promote, improve, and preserve the health of the youngsters in its schools and colleges. Positive health he said is a vital pre-requisite for a happy and productive person or nation. He argued that the health-educated school children will, all things being equal, turn out to be health-educated mothers and fathers of tomorrow.

The need for the improvement of health education in both our primary and post primary institutions cannot be over-emphasized. In the United States of America, the teaching of health education in schools was reintroduced when it was realized that there was a growing increase in the use of narcotics, tobacco, alcohol and other drugs among the youth (Vancer, 1974). In 1946, an International Conference on public health was organized by the International Bureau of Education in Geneva. According to Kilander (1967) a strong recommendation was made during the conference that all

ministries of education should ensure that practical instructions in hygiene and health education be made compulsory in all primary schools. The International Bureau of Education (1967) observed that the above recommendation was accepted by various countries including Nigeria. But, as was observed by Larour (1971), what most of the African countries including Nigeria did was merely to insert health education into their school syllabus, without providing schools with environments conducive to good healthful living.

In a report on the school health seminar held at Kualalumpur (1968), developing countries were called upon to plan school health instructions basing them on the needs and interests of school children as well as the local conditions. A similar call was made by (Turner 1966, Brieger, Ramakrishna, Adeniyi and Lekwa, 1985). They emphasised the need to make Health Education teaching relevant to local health needs. Mackintosh (1965) reported that in an effort to improve the health of school children, Britain set up a commission (in 1902) to look into the opportunities of making schools conducive to good healthful living. The introduction of school health education in schools and need for children to have medical examination were among the recommendations made by the commission. The importance of proper school health

education programme was highlighted by Gilles and Prasad (1967). According to them, adequate health education in schools would help to reduce most of the health problems of school children. Also, Haikel (1969) reported that pre-school children, when properly taught the art of healthful living, internalized those concepts. In Anambra State, health education is included in the primary school curriculum, and is being taught as a separate subject by the teachers.

A pilot study was conducted by Nwana (1976) to determine the level of health knowledge possessed by Secondary school pupils in Nsukka area, in relation to some selected aspects of some communicable diseases common in the area. Among the aspects studied were awareness of the existence, causes, transmission, and prevention of those diseases considered common and familiar to the students. Four Secondary schools in Nsukka constituted the sample. In each school, one class of Form three and one class of Form five were randomly selected to fill out the two forms of the questionnaire used for the study.

The results of the study showed that:

(a) The students were very much aware of the occurrence of five of the diseases studied, namely: malaria, madness, smallpox, tuberculosis and measles in their decreasing order of magnitude. But they were moderately aware of hepatitis and gonorrhoea.

(b) The students did not possess adequate knowledge about the causes of the diseases studied.

(c) They did not possess adequate knowledge about the mode of transmission of these diseases.

(d) They did not possess adequate knowledge about the prevention of these diseases.

These results showed the need to educate pupils on the causes and prevention of various diseases.

In a paper titled "How to protect your child" from the Nigeria top ten diseases, Kaine (1980) gave a list of ten diseases that afflict Nigerian children. They are as follows:

1. Malaria
2. Diarrhoea
3. Catarrh and Cough
4. Anaemia (lack of blood)
5. Malnutrition (lack of adequate feeding)
6. Infectious diseases (Measles, Tuberculosis, etc.)
7. Worms
8. Dysentery
9. Pneumonia
10. Skin diseases (ringworm, craw-craw).

According to Kaine, all these diseases that were listed above could be prevented if the children were to be provided with adequate knowledge about them. Also, Oduntan (1971) noted

in her study on children of school age, 6 - 15 years, that the pathological conditions from which the children were suffering and to which some of them succumbed were potentially preventable and remediable. She pointed out that the diseases were those due to ignorance, poverty, low standard of public and personal action. The need to provide adequate health knowledge to children could therefore, not be over-emphasized.

International organizations such as the World Health Organization, (WHO) and the United Nations Educational, Scientific and Cultural Organization, UNESCO (Turner, 1966) emphasized the importance of adequate health knowledge for the prevention of certain diseases and the maintenance of good health.

2. HEALTH EDUCATION FOR TEACHERS

2.1 Teacher Preparation for Health Education

According to the World Health Organization Expert Committee Report (1958), school teachers must be considered as the health workers' principal collaborators; it is they who will present to the school children the elementary ideas of hygiene and prophylaxis; thus, creating health consciousness in the children from their early days. It is important, therefore, to provide teachers with health education. Well-prepared teachers are essential to producing well-informed,

productive, and happy citizens. Ademuwagun 1969 (op cit) indicated that the quality of citizens who pass through our schools reflects the quality of the schools and teachers. The pre-service preparation of teachers in health education and their further in-service training, as needed, are recognized as of great importance to the quality of health education in schools (Turner op cit). The overwhelming role of the teachers in nation building is particularly exemplified by what they are able to achieve in the field of health education. The basic relationship of the health of the child to his growth, development and education makes it imperative that the teachers be prepared for the responsibility which they must assume for the health protection, guidance, and education of children.

Okafor (1978) conducted a study to establish the level of health knowledge possessed by senior student teachers in Anambra State of Nigeria. The aim of the study was to use its findings in making recommendations for strenghtening the health education curriculum in the teacher preparatory colleges in Anambra State. A total of 400 senior student teachers were sampled from some selected Teacher Training Colleges and these were served with the questionnaire used in the study.

The results of the survey revealed that:

(a) Only 88 (22%) of them knew that hookworm was acquired through walking barefoot on contaminated soil. The rest checked that hookworm was transmitted through oral route.

(b) Only 30% of the sample knew that Diptheria was a communicable disease, and most quickly transmitted by personal contact.

(c) Only 128 (32%) of the respondents knew it was more dangerous than helpful for someone with malaria fever to take laxatives.

Okafor concluded that since these student teachers had inadequate health knowledge regarding the aspects of health education studied, the knowledge they would impart to the pupils after their graduation would be inaccurate.

Preparation of teachers for health education will enable them acquire adequate health knowledge, skill and interest necessary for them to carry out the required health education to the children. This fact was also highlighted by Vavra (<u>op cit</u>). According to her:

> "The importance of well-prepared classroom teachers who can help children live healthfully and understand the reasons for good health practices cannot be minimized."

The World Health Organization (WHO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) took jointly a concrete step towards helping teachers prepare for their health education responsibilities. They developed jointly the Study Guide on Teacher preparation for Health Education.

Kiyimba (1984) reported that in several African Countries, especially those in East Africa and Uganda, malnutrition was due not so much to lack of food as to lack of knowledge about food. Malnutrition he said was found more in rural people than urban dwellers. The main reason, according to him, was that rural people lack knowledge about food. Among other reasons given were poor nutrition teaching in the schools and lack of integration between schools and community. He emphasized that teachers need to have training in nutrition education so that they can teach the children adequately and also spread such knowledge of nutrition throughout the rural community.

The importance of preparing primary school teachers to teach nutrition in a world in which the majority of children receive no secondary education can hardly be over-estimated. This observation was made by Turner and Ingle (1995).

According to them, the provision of inservice training courses in nutrition education is of vital importance. Such inservice courses, they argued, would enable teachers to incre and update their knowledge about nutrition and to extend their professional skills.

In (1973) Fullerton reported efforts which were made by the Liberian government to improve the quality of life in rural areas. According to his report, the government realised that improvement of primary education in the rural areas was necessary for rural development. One of the programmes undertaken by the government was the organization of in-service training and refresher courses for elementary school supervisors, teacher educators, school principals and teachers already teaching in schools. The aim was to increase their knowledge not only in the teaching field but, also, in rural development techniques. Schmidbauer (1975) also recommended in-service training for teachers as a way of improving their health knowledge. According to him, the new quality of the teacher's role implies that he has comprehensive knowledge about new developments in educational technology and their applications as well as new lines of thought in his particular subject areas.

According to them, the provision of inservice training courses in nutrition education is of vital importance. Such inservice courses, they argued, would enable teachers to increas and update their knowledge about nutrition and to extend their professional skills.

In (1973) Fullerton reported efforts which were made by the Liberian government to improve the quality of life in rural areas. According to his report, the government realised that improvement of primary education in the rural areas was necessary for rural development. One of the programmes undertaken by the government was the organization of in-service training and refresher courses for elementary school supervisors, teacher educators, school principals and teachers already teaching in schools. The aim was to increase their knowledge not only in the teaching field but, also, in rural development techniques. Schmidbauer (1975) also recommended in-service training for teachers as a way of improving their health knowledge. According to him, the new quality of the teacher's role implies that he has comprehensive knowledge about new developments in educational technology and their applications as well as new lines of thought in his particular subject areas.

The strength of an educational system largely depends on the quality of its teachers. It is therefore, important to secure a sufficient supply of the right kind of people to the profession, providing them with the best possible training and ensuring to them status and esteem commensurate with the importance and responsibilities of their work. Kamara (1983) noted that national health education goals are usually stated broadly; and, to ensure the attainment of these goals, health education teachers must possess the skills and competencies necessary to translate the goals suggested in the syllabus into actual instructional activities. These skills should be acquired during training.

Zolie and Maynard (op cit) indicated that only adequately-prepared teachers could teach school health education effectively to children. Also, Anderson (1978), viewed in-service training for teachers in health education as a means of increasing pupils' health knowledge. The role of teachers in school health was highlighted by Oduntan (1976); she argued that the most important professional group capable of disseminating health knowledge to a greater proportion of the community was the teachers.

However, despite the agreed need by various authors and organizations mentioned above to prepare teachers adequately for health education of children, the teachers are still to receive adequate health education preparation. Research studies have consistently identified inadequate academic preparation and a general lack of interest in teaching health as problem areas in health instruction (Sinacore, 1956; Eck, 1967; Dorsch, 1971; and Huntsinger, 1971).

It was observed that health education was frequently taught by marginally-qualified and marginally-interested teachers. This observation was made by Langley (1978). The study of Faulken-berry (1980) showed that majority of the responding teachers were found to be academically unqualified to teach health education. In a state-wide survey of health education in South Carolina, Mayshark (1972) showed that the lack of trainod teachers was a major reason for poor quality school health programmes. Furthermore, Moss (1958) and Ademuwagun (1975A) noted that, so far in schools, health education was and is still run by teachers poorly prepared to handle such an important subject.

2.2 Inclusion of health education in school curriculum:

Ango (1976) showed that Nigerian children even at the primary school level like science and are interested in

science topics, although they showed preferential likeness for certain aspects of their primary science topics to others. Several authors have reported the non-inclusion of health education as a teaching subject in the secondary school curriculum (Ademuwagun, 1975B, Oluwande, 1978 and Ajala, 1981). But surprisingly, in the study of Ajala (1984) and Fabiyi (op cit) the students, health educators and school administrators strongly agreed that health education as a teaching subject should be included in the Nigerian secondary school curriculum. A similar view was expressed by Adeniyi (1980). He indicated the need for curriculum planning in health education in primary schools.

The study by Udoh (1984) showed that school administrators and the teachers should be involved in planning curriculum to be used in their school health education. The reason for their involvement according to him, is that they are in a position to know the health needs of the pupils and their families. Knowledge of health needs and interests of school children is very important for curriculum planning. Young (1969), reviewed some research and studies concerned with knowing the health needs and interests of school children. He maintained that the knowledge of such health needs and

interests would provide psychological basis for planning and implementing health instruction programmes at all levels of education.

The health needs and interests of Philippine children in grades 4, 5, and 6 were studied by Tejero (1963). Also studied were the teachers' perceptions of their students' health needs and interests. The student checklist contained 130 items and was administered to 1,692 pupils from 16 randomly selected schools. The teachers' checklist consisted of 25 equivalency items and was administered to the teachers of the pupils surveyed. School health records and studies on the growth and development of Philippine children were used also in determining health needs. It was found out that children in each grade expressed a core of specific health interests that can serve as guides in educational planning; boys' interests differ from girls; and teachers estimates of pupils' interests vary somewhat from those expressed by their pupils. The author concluded that health needs and interests have educational implications that can serve as scientific bases for curriculum development.

A survey was carried out in schools in Uganda to know what Ugandan school children wanted to know about health, Lutwama (1964). The purpose of his survey was to find out felt needs of the pupils in Ugandan schools and to obtain opinions from teachers about their health training as a prelude to the development of a comprehensive school health education programme. Data were obtained through the use of spontaneous questions rather than from multi-choice checklist items.

Questions were received from 517 pupils of both sexes and all levels in the schools (these were urban, rural, day and boarding schools in different parts of Uganda). In all, 1,480 different questions were asked for a total of 2,622 times. These were classified under nine headings: Common infections and diseases; anatomy and physiology; school health services; sex problems and reproduction; personal and environmental hygiene; nutrition; concern for community health; and miscellaneous. Differences between the questions asked by boys and girls were minimal, with the only major difference in anatomy and physiology. Differences between the questions asked by urban and rural children were mainly related to environmental problems. Primary school children

asked more questions on the average than did older pupils.

The teachers are regarded as the implementers of school curriculum and infact Onwuka (1981) in his book on curriculum development for Africa, stated that the teachers are the "Chief implementers of the curriculum."

2.3 Relationship between Teacher's Health Knowledge And Pupils' Health Knowledge:

Studies on school health education have shown that there may or may not be any relationship between the teacher's health knowledge level and that of his pupils. The study done in Ohio by Beougher (op cit), among selected primary two grades, showed a greater increase in knowledge among the pupils after a health education programme on nutrition. The classroom teachers in the experimental group received talks and guide on nutrition while the teachers in the control did not.

Similar findings were reported by Cleaver (1978) and Jones (1981) in West Virginia and Varmount respectively. And in Australia, Homel, Daniels, Thomas and James, (1981) showed in their study among secondary school students that those students whose teachers received guide and health education instruction (the experimental group) performed better than those whose teachers did not receive such guide and instruction (the control group). This was also true in

ne study of Nowack (1976) on the effect of a health ducation programme on the knowledge and attitudes of eighth-rade students in selected schools in Prince George's ounty, Maryland.

The relationship of curriculum guidance and teacher ffectiveness in primary school Social Studies was studied y Ayanaba (1975). The teachers were randomly assigned to xperimental and control groups. Experimental group teachers eceived a specific set of instruction; control group eachers had non-specific instructions. In the study, pupil's chievement was used as the measure of teacher effectiveness; nd, the measure of teacher effectiveness was the scores f pupils on the criterion test. The results of the study howed that the experimental group pupils scored significantly igher than the control group pupils at the 0.01 level. eacher variables of age, sex, and experience had no signifi-ant effect on pupil performance.

An evaluation study of Mid-West (Bendel State) Primary School Science project was made in 1975 by the International Centre for Educational Evaluation (ICEE), University of Ibadan, to find out answers to the following questions:

1. To what extent is the project plan being implemented?

2. What are the reactions of the users (teachers and pupils) to the various science units?

3. What impact has the programme made on the pupils in terms of acquisition of knowledge of scientific facts and the application of these facts to solving problems and the development of scientific attitude?

4. What impact has the in-service training programme made on the teachers in terms of their teaching behaviour?

In the ICEE study, pupils were grouped into two categories:

(a) Pupils in pilot schools.

(b) Pupils in non-pilot schools.

Pilot schools were the schools used by the Primary Science Curriculum developers for the trials of project text materials. The teachers were also divided into two categories: those who attended the 3-month In-Service and those who did not.

The investigators (Falayajo, Wole, Bajah, Tunde, Yoloye and Ayotunde) found no significant difference between the mean scores of the pilot schools and those of the non-pilot schools in an achievement test. The lack of significant differences between the pilot and non-pilot schools was attributed by the investigators to the presence of 3-month In-service trained teachers in the non-pilot schools, and the probability that the presence of the In-service teachers might

have nullified the differences that would have existed between the performance of pupils in the pilot and non-pilot schools. The possibility of a diffusion of professional information might minimize the effect of the In-service training.

Also, a study was carried out by Emina (1979) to determine the relationship between pupils' cognitive and effective growth in science and the teachers' participation or non-participation in an In-service training programme. The study sample was drawn from the population by stratified random selection. The stratification was based on Urban/Rural location of schools.

Eight schools per zone were selected by balloting. Fifty pupils were drawn from primary six class in each of the selected schools by balloting. In respect of the test of science knowledge, there was no significant difference between the performance of pupils taught by In-service trained teachers and those taught by non-In-service trained teachers. The reason given for the non-significant difference was that the knowledge acquired in science by the in-service teachers might not have been sufficient to have significant effect on the achievement of pupils in science or be reflected in the classroom teaching.

In the study carried out by Sroka (op cit) on the relationship of teachers' health knowledge to their ninth grade students' health knowledge, he found lack of relationship between the two. He observed that teachers' health knowledge was not a significant predictor of students' health knowledge. In fact, he argued that in some cases, teachers' health knowledge was a significant negative predictor of students' health knowledge. This study of Sroka's was carried out using classroom teachers and their students in selected primary schools in Case Western Reserve. Another study was also carried out in Australia by (Homel, Daniels, Thomas and James) (op cit) in which they found no significant change in the level of health knowledge in the experimental schools that received health education programme administered by the teachers and the control group that did not receive such a programme in primary schools.

Igwe (1985) in his study investigated:

1. the effect of mathematics teachers' attitudes on students' mathematical achievement;
2. the effect of mathematics teachers' attitudes to mathematics on students' attitudes to mathematics;
3. the effect of students' attitudes to mathematics on their mathematical achievement.

Three sets of instruments were used to collect data for the study:

1. Achievement test for students.
2. A student attitude questionnaire.
3. A teacher attitude questionnaire.

On analysis, it was found that the performance of students in mathematics was poor. The teachers' attitudes to mathematics affected the students' mathematical achievement; and, the students attitudes to mathematics affected their mathematical achievement.

In the study by Pope (1977), he showed that the quality of health education programme was not dependent on the size of the school. The study of Fabiyi (op cit) showed a significant difference between the level of health knowledge of students from urban towns and those from the rural areas, the students from the urban towns scored more than those from the rural areas.

3. HEALTH EDUCATION FOR PARENTS

3.1 Need for Health Education of the parents:

Parents have a natural role in the education of their children with regard to knowledge, behaviour and attitudes concerning health. It is important therefore, for parents to be well-prepared in health education to enable them carry out this important task. Health educated parents who are endowed

with the scientific knowledge and understanding will no doubt contribute to the health knowledge of their children.

The family (parents) is an agent of informal health education and, as such, will play a vital role in primary prevention of diseases. Within the family, children would acquire good health habits and practices if only parents could take interest in inculcating such health habits in them. Health habits acquired by children might be internalised. The internalisation of positive attitude to health is essential for a child because, as the child grows into an adult, inculcation of new behavioural patterns and modification of those existing become increasingly more difficult to achieve and especially to maintain. As was observed by Harland (1975), organising schools for parents would be a fundamental approach to the health problem of children.

3.2 Family Environment And Academic Performance of Children:

Environment could also influence the level of health knowledge possessed by some school children. A study to find out the relationship between home background and the health knowledge among some school children was carried out by Holt (1968) in Akropong area of Ghana. In the study he:

(a) tested the health knowledge of the children in the schools;

b) interviewed both parents of the children;

c) observed the condition of the sanitary facilities of houses during their visit and awarded household sanitation scores to each home.

These scores were interpreted as indications of the health practices followed by the families;

(d) observed and recorded other health facilities and practices;

(e) correlated the variables indicating the kind of home background from which the children came, with the health knowledge score of the children.

The findings showed that:

(a) women's occupation level correlated positively (0.14) with the children's knowledge;

(b) those children with showers and bathrooms in their homes tended to score higher than those who used shelter in the county yard or wash basins or pails; and

(c) the sanitation scores of the home however were more highly correlated to the children's health knowledge test (0.16).

A study was carried out by Osafehinti (1984) on the level of achievement in Mathematics at the end of secondary education in Oyo State of Nigeria. In the study, socio-economic factors

of the home background of students were related to mathematics achievement and other variables which were believed could influence achievement. These variables included students educational and occupational plans. Socio-economic status in the study was measured by the levels of father's and mother's education and occupation. Father's education correlated positively and significantly with achievement in mathematics and its associated varisbles. The results indicated that the higher the father's educational level, the greater were students educational, occupational plans and aspirations. It was also found that those highly-educated fathers took interest in their children's mathematics education.

The family constitutes a learning situation for the child. This observation was made by Worsley (1977), and in the study of Hess, Block and Marianne,(1971) on early childhood, they noted that the family environment influences the educationally relevant capability of the child. The importance of the family or home environment to children's academic performance is well documented in numerous studies (Henderson and Merritt, 1968). Their studies showed that a large proportion of children who fail in school were from disadvantaged families. Fortheringham and Creal (1971) in their study observed a significant relationship between ratings of family characteristics and academic achievement at different grade levels.

In the study carried out by Ogunlade (1973) on the :tent to which the education or lack of education of :rents affects the educational attainments of children in ountries without universal education and high rate of illiterac s examplified by Nigeria, he reported that children from iterate homes (one in which one of the parents had at least :en years education) performed better than those from illiterate nomes on the educational attainment tests. In the study done by Oduntan (op cit), the intellectual performance of 421 children aged 8 - 12 years was examined. The instrument used was a standardized intelligence scale. The children were drawn from:

(a) free primary schools in Ibadan city who for the purpose of the study were referred to as "Urban primary school children."

(b) free primary schools in the rural areas of the Western State of Nigeria ("rural children").

(c) free primary schools in Abadina ("Abadina children").

(d) fee paying primary schools in Ibadan city ("elite children").

It was found that the mean score for the "elite" children was significantly higher than the mean scores for the other groups of children, with $p < 0.001$; whilst no significant differences were demonstrated between the mean

scores of the other groups. The difference observed could be due to factors such as hereditary and environmental factors

Comber and Keeves (1973) in their cross sectional studies of between-school differences in science achievement identified six predictor measure:

1. Father's occupation
2. Father's education
3. Mother's education
4. Use of dictionary
5. Number of books in the home, and
6. Family size

They found that the first five variables positively correlated with achievement in science and that the sixth, family size, negatively correlated with achievement in science. The larger the family size, the lower the level of performance of the student.

The extent to which parents contribute to the health knowledge of their children is not yet well known and studies are needed to elucidate this fact. This is important since most of the drop-outs in both primary and post primary institutions will depend on their parents and few other sources (T.V., Radio, peer groups and books) for their health information.

In the study carried out by Douglas, Ross and Simpson (1968) 5,362 children born in Great Britain in the first week of March, 1946 were involved. The authors followed the educational careers of these children through primary and secondary school and for some, to University, uptil 1962. They found that nearly 50 per cent of children of high ahility from lower manual working class homes had left school by the time they were sixteen-and-a half; in contrast, only 10 percent and 22 per cent respectively of the upper and lower middle class pupils of the same ability levels had left school. In addition to these social class differences, they found that other factors in the home environment also influenced educational careers. These factors included the extent of the parents' interest in education, their own educational histories, their occupational aspirations for their children, the degree of insecurity in the family (whether deriving from poverty, illness or the absence of a parent), size of family, and the child's position in the birth order. Yoloye (1975) in his study on the pattern of drop-outs in Ibadan primary schools, found that more than 50% of all children who started primary school dropped out even before they reached secondary schools because of various reasons. Also it has been shown that there

Has an average annual drop-out rate of over 13% in primary schools in the then Western Region of Nigeria, ill-health was one of the main factors (ILO, 1967).

4. HEALTH EDUCATION BY TEACHERS AND PARENTS (COMBINED)

The family and school are the two main institutions in any society or community which have their major focus on children. This observation was made by Brieger (1978). According to him, both institutions share common responsibilities for the health and welfare of young children. Also, Hornung, Stricker and Jeaneret (1979) showed that the family and school are the most important fields of activity for school children. Children require specific skills, knowledge and attitude from their parents long before they enter school, and because of the nature of parent/child interaction his learning tends to persist over time. Health knowledge is acquired as a result of informal health education by parents. As children go to school, they already had at the back of their mind all those beliefs, knowledge and behaviour acquired from parents at home. In the school, the children are subjected to formal teaching of health education by teachers.

In some cases, the health information given by parents to the children at home were different from the information

given by teachers at school. For example, there were parents who still believed that malaria could be caused by witchcraft, eating too much palm oil and exposing one's self to sunlight for long periods of time (Ogbalu, 1979). Children of such parents would undoubtedly acquire such false information from their parents. Such children would therefore, find it difficult to understand why their teacher should say that malaria is caused by the bite of female anopheles mosquito infected with malaria parasite plasmodium.

Lack of adequate health knowledge by parents could contribute to wrong health information given by them to their children. Combined efforts of teachers and parents as sources of health information to primary school pupils would be more effective if the teachers and parents were to be well prepared in health education. The conflicts which do arise as a result of the health information given by parents not being the same as that given by teachers would be minimized in this way. The co-operation of teachers and parents is of utmost importance for children to acquire adequate health knowledge necessary for their healthy living. That health education in school and in the home and community should go forward together was the recommendation made by Turner(op cit); this would help to minimize conflict between

the health practices recommended at school and at home. Comments from developing countries, as was observed by Turner, showed that the above recommendation would be of great importance in those areas where current concepts and practices relating to communicable diseases, nutrition and other health problems are sharply at variance with the dictates of modern science.

In the anti-smoking campaign study carried out by Aaro, Edvard, Bruland, Hauknes and Lochsen (1983), the teachers and parents of school children were involved in the education of the children. The study group was school children aged 12 - 15, in both urban and rural areas. The results of the study showed, among other things, that the participation of both teachers and parents contributed significantly in the reduction of cigarette consumption among the school children. Active participation of parents in the health education of their children was recommended by the authors.

CHAPTER THREE

METHODOLOGY

1.1 The Study Area, Onitsha Urban:

Onitsha is one of the commercial towns in Nigeria. It is situated on the Eastern side of the River Niger (Fig. 1). The inhabitants are pre-dominantly Ibos and have a projected population of 454,200 (Anambra State population estimates, 1984). The inhabitants speak Igbo language as their natural language while English language is regarded as a second language.

The occupation of the people include, professionals, skilled, semi-skilled and unskilled group of people.

Functionally, Onitsha can be said to be an Educational Centre, Commercial Centre, Ecclessiastical headquarters, Industrial Centre as well as Administrative Centre. In Onitsha there are 68 Primary Schools being attended by more than 65,000 children, 25 Commercial and Secondary schools with about 15,000 students (L.G. SD/ON/088, 1985).

1.2 The Scope of the Study:

The study was limited to Primary Five pupils in a randomly selected number of schools in Onitsha Anambra State.

FIGURE I

ANAMBRA STATE SHOWING LOCAL GOVERNMENT AREAS

The rationale for using primary five pupils were firstly, the primary five syllabus in health education covered what had already been taught in primary one to four classes and the topics were to be taught in greater details. This was also true for primary six syllabus which in addition covered part of primary five syllabus. However, since the study was designed to last till the end of the school year, primary six pupils were not considered suitable; the reason being that in most cases they would have taken their final examination before the end of the school year and therefore would not be available by the end of the school year.

Secondly, the questionnaire was written in English and was to be self administered, a higher class was needed to be able to understand the questionnaire.

The choice of Onitsha for the study was based on the evidence that it has a typical urban population which includes High, Middle and Low socio-economic groups. Secondly, Onitsha has the greatest number of primary schools in Anambra State. Thirdly, the researcher is familiar with the area, the people and the location of schools. Last but not the least, the researcher can speak the native language (Igbo) of the town and therefore can communicate easily with the people.

1.3 Collection of preliminary information

A preliminary study was carried out in the month of July 1984 to determine the feasibility of carrying out the study. Onitsha which would be used for the study was visited by the researcher and relevant information collected. Among the information collected were:

a. The areas to be stratified as High, Middle and Low socio-economic group areas.
b. The list of state-owned primary schools in Onitsha.
c. Whether health education was being taught as a separate subject or not.
d. Qualification of primary five teachers.
e. Practicability of giving health lessons to teachers and parents.

The high socio-economic group area was found to include Inland town, Odoakpu, Government reserved area (G.R.A.) and Water side area. Fegge constitutes the Middle socio-economic group area while Okpoko was regarded as Low socio-economic group area (Fig. 2). The number of state-owned primary schools in each area was found to be 39 in the high, 22 in the middle and seven in the Low socio-economic group area. Health education was being taught in all the primary schools as a separate subject. All the primary five teachers were grade two teachers.

In each of the three socio-economic group areas two head teachers, two primary five teachers and ten parents were interviewed to know the practicability of giving health lessons to teachers and parents. Both the teachers and parents indicated their willingness to attend the health lessons. Following the preliminary study which showed that the study would be feasible, a formal request was made to the Permanent Secretary Ministry of Local Government, Anambra State, for permission to use the primary schools in Onitsha for the study.

1.4 Request to use primary schools

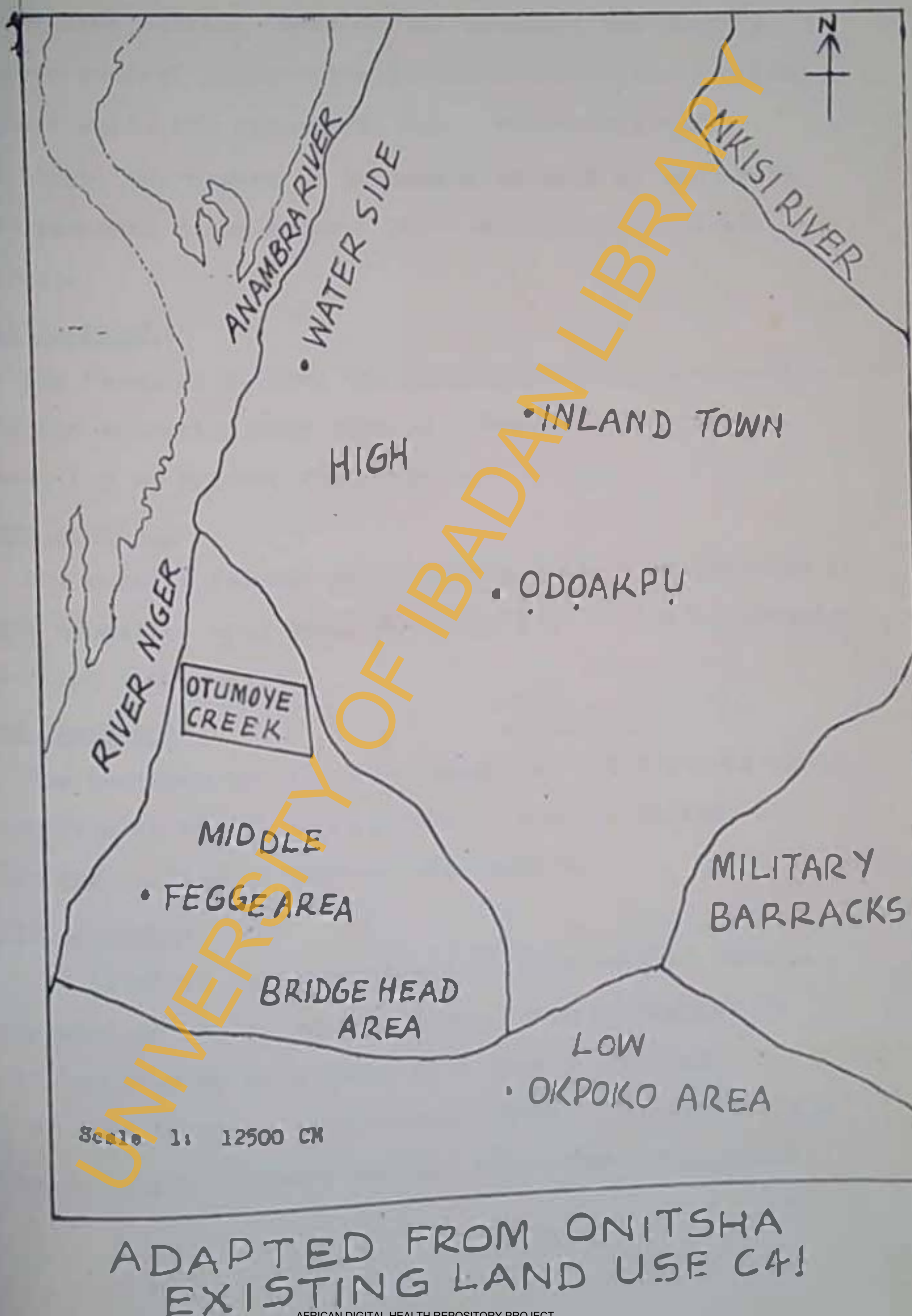
A letter was sent to the Permanent Secretary, Ministry of Local Government, Anambra State, requesting for permission to use the primary schools in Onitsha for the study. (Appendix 1). Permission was also sought from the Chief Education Officer in charge of Onitsha Local Government. The reply from the Permanent Secretary Ministry of Local Government and that from the Chief Education Officer Onitsha Local Government were that the researcher should be given adequate co-operation. (Appendices 2 and 3).

1.5 Research Design

The study was designed in such a way that teachers and parents were used as sources of health information to

SOCIO-ECONOMIC GROUP AREAS IN ONITSHA

FIGURE 2



ADAPTED FROM ONITSHA EXISTING LAND USE C41

primary five pupils. Some of the teachers and parents received special preparation in health education (health lessons) while the others did not. There were four educational approaches to be tested in each of the three socio-economic group areas. These approaches were as follows:-

First Approach:

The teachers (alone) who received special preparation in health education were used as a source of health information to primary five pupils.

Second Approach:

The parents (alone) who received special preparation in health education were used as a source of health information to primary five pupils.

Third Approach:

The teachers and parents (combined) who received special preparation in health education were used as sources of health information to primary five pupils.

Fourth Approach:

The teachers and parents who did not receive special preparation in health education were used as sources of health information to primary five pupils (control).

To test the four approaches, primary five pupils from randomly-selected primary schools were used. Those pupils

whose teachers and/or parents received special preparation in health education formed the experimental groups, while those pupils whose teachers and parents did not receive special preparation formed the control groups.

1.6 Stratification of Schools:

Jones (1954) noted that although social class is most often used as a child's background variable in Western European societies and North America, it is rather difficult, if not impossible, at this stage to use the social class variable in the developing countries of Asia and Africa in the same way. The reason were suggested for this. Firstly, there has not been any attempt to classify occupations in these developing countries. Secondly, and perhaps the most important reason, is that the social system of the extended family in these developing countries would make social class based on occupation meaningless. For instance, he argued that in a developing country, a man on a good job with a very high salary per annum may not afford to live like a middle class family probably because a lot of people depend on his single salary for their existence.

Nevertheless, the stratification of schools by social classes in this study was based on their geographical location. This was because in Onitsha as well as many African urban centres, it has been possible to use

residential areas as an index of the social class of the inhabitants based on the presence or absence of facilities available (pipe-borne water, electricity, type of houses, recreational facilities, population density). The schools in Onitsha were therefore, grouped into three namely: those located in the high socio-economic group area, those located in the middle socio-economic group area and those in the low socio-economic group area.

To ensure that the schools were similar in every respect relevant to the study, selection of schools for the study was based on the following criteria:

1. The schools were randomly selected.
2. There would be at least two classes of primary five in the school.
3. The qualification of the teachers should be the same (Grade two certificate).
4. The schools in each of the three socio-economic group areas were grouped separately.
5. The schools were State owned.
6. Lastly, the schools were those that had very co-operative parents and teachers associations; this will help in the organisation of parents for the health lessons.

The list of all the primary schools in the three socio-economic group areas being studied was obtained by the

researcher from the Chief Education Officer for Onitsha Local Government. The schools in each of the three areas were grouped into two: those that met the study requirements and those that did not meet the requirements. The schools that were used for the study were selected randomly from those schools that met the study requirements in each of the three socio-economic group areas.

1.7 Sampling of Schools:

The stratified sampling method was used. The schools were stratified according to their location (High, Middle and Low) and from each stratum, the required number of schools was randomly selected from the schools that met the study requirements. A table of random numbers was used for the sampling exercise, Hill (1977). (Appendix 4).

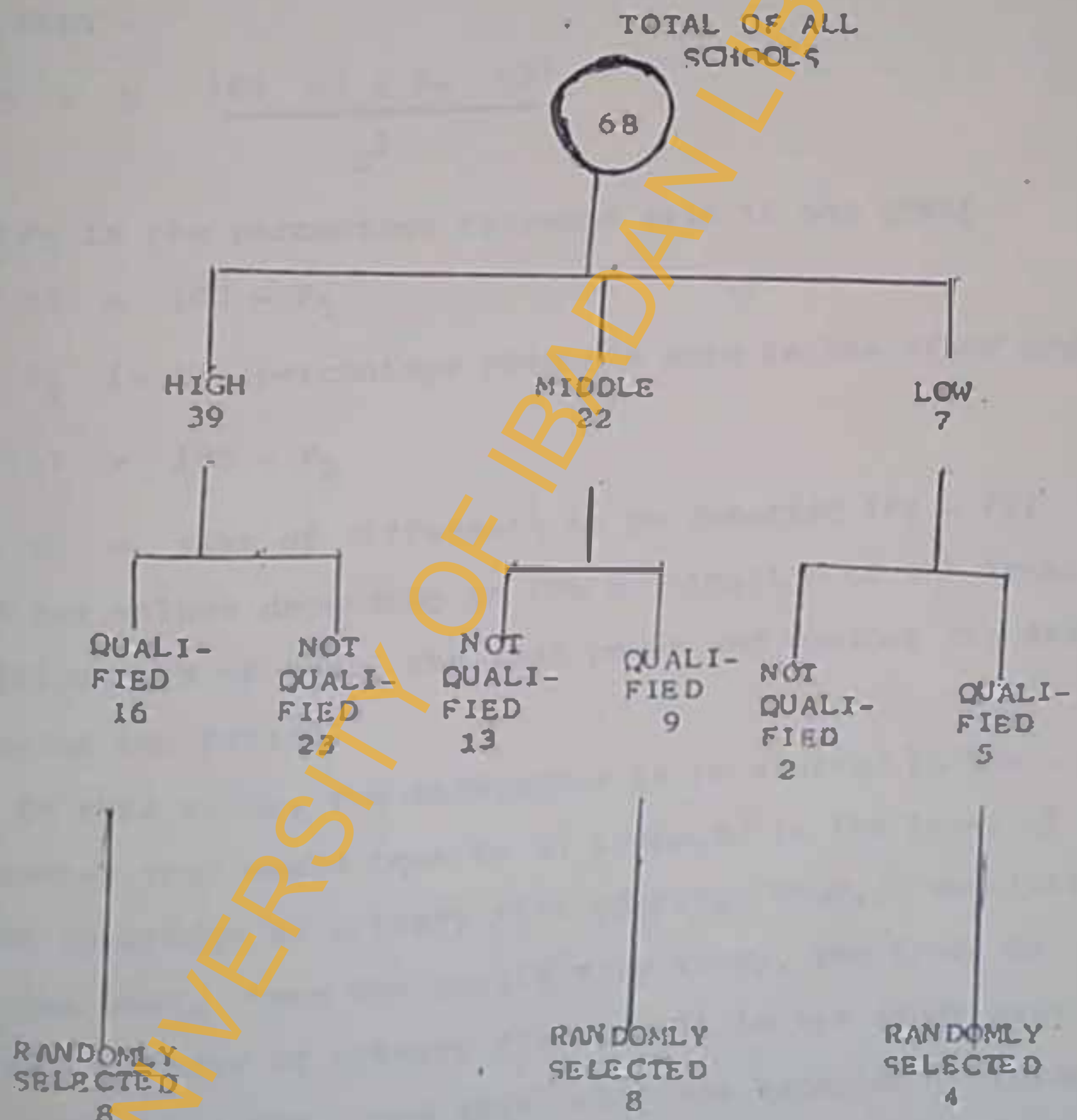
The schools that met the study requirements were 10 in the high, 9 in the Middle and 5 in the Low socio-economic group areas (Fig. 3). Two schools were to be used to test each approach, and there were four approaches to be tested, so eight schools were randomly selected from the high and eight from the middle socio-economic group areas. Because there were not enough schools in the low socio-economic group area, one

school was used to test each approach, so four schools were randomly selected. Thus a total of 20 schools were used for the study.

Because the pupils were not assigned to the control or experimental groups on a random basis, the design was quasi-experimental (Nachmias and Nachmias 1982). The schools were randomly selected and the pupils in the selected schools were used for the study. After the selection, a letter indicating the approach to be tested was sent to each school to inform the head teacher (Appendix 5). Each approach was tested with all the primary five pupils in the particular school selected for the approach. This method eliminated the problem of ethical issue, since all the primary five pupils' parents were involved. The design also removed the possibility of contamination since the schools were not close with respect to their locations. Also, it was easier to organise the parents for the special preparation in health education.

FIGURE 3

DISTRIBUTION OF SCHOOLS ACCORDING TO HIGH, MIDDLE AND LOW SOCIO-ECONOMIC GROUP AREAS



2. Sample size

For the calculation of the sample size, the formula for the determination of sample sizes for comparing two percentages was used (Yates, 1981). According to this formula, if n is the minimum sample size required in each group then -

$$n = k \frac{(P1\ q1 + P_2\ q2)}{d^2}$$

Where P_1 is the percentage response rate in one group

$q1 = 100 - P_1$

P_2 is the percentage response rate in the other group

$q2 = 100 - P_2$

d = size of difference to be detected (P1 - P2)

and K has values depending on the combination of the level of significance % of test, the test power and whether the test is one or two tailed.

In this study, the researcher is interested in the approaches that would lead to an increase in the level of health knowledge of primary five pupils. Thus, a one-tailed test was used. From the preliminary study, the level of health knowledge of primary five pupils in the study area was found to be 40%. And this study was expected to raise the pupils health knowledge to at least 60% in the experimental groups.

Using the formula quoted above the sample size for each group would be given by:

$$n = k \frac{(P_1 q1 + P_2 q_2)}{d^2}, \text{ and at}$$

5% level of significance with a power of test 90%

$$n = 8.6 \frac{(40 \times 60 + 60 \times 40)}{20 \times 20} = 103.2$$

Therefore, each approach would be tested with at least 103 pupils.

Acceptance or rejection of null hypothesis

For this study, null hypothesis would be accepted if the probability (P) value was greater than 0.05 (P>0.05).

Similarly, null hypothesis would be rejected if the probability (p) value was 0.05 or less (p≤0.05).

2.1 DEVELOPMENT OF RESEARCH INSTRUMENT:

The primary five health education syllabus was used to develop the lesson note used for the special preparation of teachers and parents. The syllabus was also used to develop the health knowledge test questionnaire used for the evaluation of the pupils' performance. The syllabus was used because it was the health education guide approved by the Ministry of Education and teachers were supposed to use it for their teaching. Besides, the contents were

examined and found adequate for the study.

Extensive review of literature on health knowledge test was carried out (Thorndike and Hagen, 1977; Omishakin 1979; Ogunsakin op cit, and Adams, 1981). From the literature review, questionnaire containing multiple choice items was found to be appropriate for the study. Well-constructed multiple choice items are known to be efficient and yield scores that are more dependable than those from free response questions and they are easier to analyse statistically. A questionnaire containing 68 multiple choice questions was therefore, developed from the primary five health education syllabus. (Appendix 6). Relevant text books were also consulted (Daniel, 1968; Davies, 1952; Warin et al, and Beat, 1982). The questionnaire was subjected to validity and reliability tests.

Validity:

The questionnaire containing 68 items was sent to two primary five teachers in the study area with a letter. The teachers had been teaching primary five for more than three years. They were requested to examine the questions, not only for the face and content validity, but also to certify that the language was appropriate and the syllabus covered (Appedix 7).

The teachers went through the questionnaire and two

questions were corrected, one on nutrition and the other one on dentition. There were eight words which they suggested should be translated into Igbo, the native language during the test period. This was to ensure that all the pupils understood their meanings. These words were translated into Igbo as follows:-

WORDS	IGBO TRANSLATION
Faeces	Nsi
Refuse	Ahihia
Raw	Ihe ndu (Nke e sighi esi)
Stagnant Water	Mmiri dọ a dọ
Measles	Arubala
Tuberculosis	Ukwaranta
Vaccination	Igba ntutu

2.3 Item Analysis:

The 68 items in the questionnaire were subjected to item analysis to select the questions that would be used for the study. The reason for carrying out the item analysis was to remove questions that were either too easy or too difficult for the pupils; such questions would not be

suitable for the study as they would not discriminate between the performance of the pupils (Thorndike and Hagen, op cit). Initially, the researcher had wanted to use primary five pupils in one of the schools in the study area to carry out the item analysis, but their teachers explained that the school session had just started and that the primary five pupils were just starting their scheme of work. They said that to know whether the questions were too difficult or too easy, the primary five pupils would not be appropriate since they had not covered their syllabus. Based on this information, the questionnaire was administered to two classes of primary five pupils who had just been promoted to primary six. Answer sheets bearing the item numbers were provided to the pupils for their answers.

Method used for the item analysis:

There were 60 pupils in the two classes used for the item analysis. Their test papers were arranged in order of total score starting with the highest score at the top and the least at the bottom. The pupils whose papers were towards the top were regarded as the higher group while the pupils whose papers were towards the bottom were regarded as the lower group. From the literature (Thorndike and Hagen op cit) 27% of the pupils tested would be adequate for each group for the item analysis. So, 27% of 60 was calculated and was found to be 16.2. From the top, 16 papers

were counted downwards in an orderly manner. These 16 papers represented the higher group. From the bottom, 16 papers were counted upwards in an orderly manner. These last 16 papers represented the lower group.

Frequency count was made for those that got the correct answers to each item. This was done for the two groups (Higher and Lower groups). The frequencies for the two groups were tallied and the percentage difficulty for a particular item was calculated by adding the total number of people who got the item correct in both the higher and lower groups and dividing the result by the total number of people in the two groups in this case 32 and multiplying by 100.

The percentage difficulty for each of the 68 items was thus calculated. The items were ranked according to their percentage difficulty. The item with the highest score was ranked one (1) and the next item score after the highest score was ranked two (2). The ranking was continued down to the item with the least percentage difficulty score. The items with percentage difficulty 70 and above were regarded as being too easy and would not be used, while items with percentage difficulty less than 30 were regarded as being too difficult and would not be appropriate. Only items with percentage difficulty 30 to 69 were considered appropriate to be included in the test questionnaire (Appendix B).

Eventually, 50 items were accepted to be included in the test questionnaire, together with other questions on demographic factors. The questionnaire was subjected to further validation. For this purpose, the test scores of primary six pupils in one of the schools used for the reliability test were correlated with their promotion examination scores in health education using Pearson's Product Moment correlation co-efficient formula (Anastasi, 1976, Appendix 9). This formula is given as follows:

$$rxy = \frac{\Sigma xy}{N \sigma x \sigma y} \quad \text{where}$$

r = correlation coefficient

X = Difference of individual promotion exam. score from the mean

y = Difference of individual test score from the mean

N = Total number of pupils

σ = Standard deviation.

The correlation co-efficient was found to be r = 0.85. This high correlation co-efficient confirmed that the test questionnaire was valid.

2.4 Reliability:

The reliability of the test questionnaire was tested using Test-Retest Method. Primary six pupils in three primary schools in the study area not involved in the

actual study were used for this purpose. The total number of pupils used in the three schools was 202. The test questionnaire was administered to the pupils by the researcher on the same day during the morning period. A week after the first test, the pupils were retested during the same period. The correlation co-efficient (r) was calculated. This was done by correlating the pupils' first test scores with their retest scores using the Pearson's Product Moment correlation co-efficient formula quoted above. The correlation co-efficient (r) was found to be 0.89. This showed that the test questionnaire was reliable (Appendix 10).

The test questionnaire having been validated and tested for reliability was used for the pre-test and post test of primary five pupils used for the study (Appendix 11). The pupils were provided with answer sheets (Appendix 12). The pre-test was done in December, 1984, and the health lessons to the teachers and parents started in January, 1985.

3. Teachers and Parents special preparation in health education:

From the literature reviewed, lack of adequate health knowledge among teachers in primary schools was reported (Osujih, Umeh, and Okafor op cit). This study was therefore, designed in such a way that some groups of teachers and parents would receive health lessons from the researcher. This was to ensure that both the teachers and the parents had adequate health knowledge which would enable them to give correct health information to the pupils.

The researcher was assisted by a research assistant who was trained by him. The training which lasted for one week was on the contents of primary five health education syllabus and how to teach them to the parents. He had West African School Certificate (W.A.S.C), two years of teaching experience, and speaks the native language (Igbo) very well. After his training, he was tested and was found fit to give the lesson, and so assisted the researcher during the special preparation of parents.

The parents were given the lessons in the afternoon and in the schools which their children attended. The teachers received their own lessons during the recreation period (Long - break) and during the moral instruction period when they were free. During the latter period, a personnel from

3. Teachers and Parents special preparation in health education:

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The parents were given the lessons in the afternoon and in the schools which their children attended. The teachers received their own lessons during the recreation period (Long - break) and during the moral instruction period when they were free. During the latter period, a personnel from

the church used to give moral instructions to the pupils. In order to overcome the language communication problem with the illiterate parents, the lessons were given in both English and Igbo languages. Teaching aids like posters and charts were used for the lessons. Both the teachers and parents received equal number of lessons.

At the end of the lessons, the teachers and the parents were tested to know how far they have understood the lessons. (Appendices 13 and 14). The mean score for the teachers was 91.69. The parents in the high socio-economic group area had a mean score of 87, those from the middle had 85, while those from the low had 78 as their mean scores. These mean scores were considered high enough for them to give adequate health information to the pupils under study. During the period of the study, some parents were visited and interviewed in their houses to know whether they were teaching the pupils or not. Also, some schools were visited and the teachers interviewed.

The effectiveness of teachers and parents as sources of health information to the pupils was measured by the performance of the primary five pupils in the health knowledge test. The post-test of the pupils was done in June, 1985, (six months from the time the teachers and parents started receiving health lessons). At this time, the teachers had

covered the health education syllabus for the year and the parents had enough time to give health information to the pupils at home. Before the post-test of the pupils, a questionnaire was given to the parents who attended the health lessons to fill (Appendix 15). The questionnaire sought to know, amongst other things, whether the parents were able to give health information to the pupils or not. The performance of the pupils in the health knowledge test was later analysed.

4. DATA ANALYSIS

The data was analysed by means of the computer (Epson Model 86 e). For the analysis, only the scores of the pupils who did both the pre-test and the post-test were used. There were pupils who due to illness or non payment of school fees were not present in the school during the post-test; such pupils were not included in the analysis. A record of attendance by parents and teachers during the health lessons was kept by the researcher. As such, it was possible to know pupils whose parents were present or absent.

In the case of pupils whose teachers alone were supposed to receive health lessons, all the teachers attended the health lessons and 501 out of 513 pupils who did the pre- and post-test were used for the analysis (Table 1). Where the parents were supposed to receive health lessons, only the scores of pupils whose parents attended the health lessons and also did the post-test were used for the analysis (Table 1). Similarly, pupils whose teachers or parents who were expected to attend health lessons but did not do so were excluded from the analysis as well as those who did not do the post-test (Table 2). In the control group, where teachers and parents were not supposed to receive health lessons, all the pupils (469 out of 480) who completed both the pre- and post-test were used for the analysis (Table 2).

TABLE

1

NUMBER OF PUPILS WHO DID PRE-TEST, POST-TEST AND WHOSE PARENTS AND TEACHERS EITHER ATTENDED OR DID NOT ATTEND THE HEALTH LESSONS

Socio-economic group area	No of pupils whose teachers alone were supposed to receive health lessons (Approach 1)				No of pupils whose parents alone were supposed to receive health lessons (Approach 2)			
	Number who did pre-test	Number who did not do post-test	No whose teachers did not receive health lesson	No who did both pre-test and post-test	No who did pre-test	No who did not do post-test	No whose parents did not attend health lessons	No who did pre-test post-test and whose parents attended health lessons
High	180	3	0	177	228	5	80	143
Middle	181	2	0	179	155	3	55	97
Low	152	7	0	145	113	9	50	54
Total	513	12	0	501	496	17	185	294

TABLE 2

NUMBER OF PUPILS WHO DID PRE-TEST, POST-TEST AND WHOSE PARENTS AND TEACHERS EITHER ATTENDED OR DID NOT ATTEND THE HEALTH LESSONS PLUS THE CONTROL GROUP

Socio-economic group exer.	No of pupils whose teachers and parents were supposed to receive health lessons (Approach 3)					No of pupils whose teachers and parents did not receive health lessons (Approach :., control)		
	No who did pre-test	No who did not do post-test	No whose teachers did not attend health lesson	No whose parents did not attend the health lessons	No who did pre-test whose parents and teachers attended the hlth. lessons	No who did pre-test	No who did not do post-test	No who did both the pre-test and the post-test
High	220	2	0	91	127	177	4	173
Middle	140	1	0	59	80	174	2	172
Low	110	6	0	44	60	129	5	124
Total	470	9	0	194	267	480	11	469

TABLE 3

THE HEALTH KNOWLEDGE MEAN SCORES FOR THE PRE-TEST AND POST-TEST OF PUPILS IN THE THREE SOCIO-ECONOMIC GROUP AREAS

socio economic group area	Pupils health knowledge mean scores							
	Teachers alone with health lessons		Parents alone with health lessons		Both teachers and parents with health lessons		Both teachers and parents without health lessons (control)	
	pre-test mean scores	post-test mean scores	pre-test mean scores	post-test mean scores	pre-test mean scores	post-test mean scores	pre-test mean scores	post-test mean scores
High	43.69 n= 177	71.36 n= 177	51.84 n= 143	62.99 n= 143	42.92 n= 127	67.66 n= 121	40.84 n= 173	49.87 n= 173
Middle	34.93 n= 179	61.59 n= 179	36.37 n = 97	50.29 n = 97	35.70 n = 80	61.90 n = 80	37.12 n= 172	41.56 n= 172
Low	35.85 n= 145	61.45 n= 145	35.62 n = 54	43.89 n = 54	52.7 n = 60	58.90 n = 60	42.20 n= 124	47.75 n= 124

Because the result of the pre-test health knowledge mean scores for the groups of pupils being used for the study were found not to be equal (Table 3), an adjustment was made which took into account the differences observed in the pre-test health knowledge mean scores. This adjustment was done by subtracting the individual pre-test score from the post-test score and finding the mean score difference for the group. This gave the actual increase in health knowledge mean score for each group within the period of the study. The resulting mean scores were then used for comparisons (Table 4).

The statistical tool used for the comparison was the analysis of variance (Anova). This statistical tool is known to be a powerful measure of variation in the samples, and required the calculation of total scores for each subject and mean of all the scores.

A one-way analysis of variance was done for each of the three socio-economic group areas using the adjusted pupils' health knowledge mean scores for the four approaches being tested. This was followed by a pair-wise comparison of the mean scores to test the stated hypotheses.

Further analysis was done to find out the health knowledge mean scores for only the pupils who were taught by their parents (parents attended health lessons and taught the pupils).

For this purpose, the questions in the pupils' and parents' questionnaires which sought to know whether the pupils were taught by their parents or not were used. Pupils were said to have been taught by their parents if their parents said that they had taught them and the pupils also said that they had been taught by their parents. Where there was disagreement between the pupils and their parents as to whether the pupils had been taught or not, such pupils' scores were not included in the analysis (Table 5).

A pair-wise comparison was again carried out using the resulting mean scores from the pupils who were taught by their parents. The third stage of the analysis involved finding out the health topics which were either taught or were not taught by the pupils' parents. This was done to know whether those parents who taught the pupils taught all the health topics which they were supposed to teach the pupils. Also, this would help to know if the parents liked to teach some health topics more than others.

Out of the 1,959 primary five school pupils who took the pre-test, 1,532 (78%) were used for the analysis; the others 428 (22%) did not satisfy the required conditions at various stages of the analysis. Table four contained the mean scores of pupils whose parents attended health lessons (whether parents taught or not); but Table five contained the mean scores of pupils whose parents taught after health lessons.

TABLE 4

THE MEAN SCORES OF PUPILS HEALTH KNOWLEDGE FOR THE FOUR DIFFERENT APPROACHES IN EACH SOCIO-ECONOMIC GROUP AREA (AFTER THE ADJUSTMENT)

Socio-economic group area	Approach 1			Approach 2			Approach 3			Approach 4		
	Teachers alone with health lessons			Parents alone with health lessons			Both teachers and parents with health lessons			Both teachers and parents without health lessons (control		
	mean scores $\bar{X}_1$	S.D	n	mean scores $\bar{X}_2$	S.D.	n	mean scores $\bar{X}_3$	S.D.	n	mean scores $\bar{X}_4$	S.D.	n
High	27.64	15.55	177	11.15	11.72	143	24.72	14.69	127	9.24	16.42	173
Middle	26.88	14.13	179	13.96	14.95	97	26.23	15.94	80	4.61	14.41	172
Low	25.39	14.09	145	8.30	11.54	54	6.30	14.17	60	5.76	13.24	124

TABLE 5

HEALTH KNOWLEDGE MEAN SCORES OF THOSE PUPILS WHO WERE TAUGHT BY THEIR PARENTS AND TEACHERS AFTER HEALTH LESSONS AND THE CONTROL GROUP

Socio-economic Group area	Pupils taught by teachers alone with health lessons (Approach 1)		Pupils taught by parents alone with health lessons (Approach 2)		Pupils taught by both teachers and parents with health lessons (Approach 3)		Pupils whose teachers and parents had no health lessons (Approach 4, control)	
	mean score	n	mean score	n	mean score	n	mean score	n
High	27.64	177 (177)	11.75	95 (143)	24.85	99(127)	9.24	173
Middle	26.88	179 (179)	13.11	63 (97)	26.43	65(80)	1.61	172
Low	25.39	145 (145)	10.82	34 (54)	6.78	38(60)	5.76	124
Total	79.91	501	35.68	192	58.06	202	19.61	469

( ) = Original number of pupils who were expected to have been taught.

5. DEMOGRAPHIC INFORMATION

In the high socio-economic group area, a total of 441 parents were to receive health lessons but 270 (61%) turned out for the lesson while 171 (39%) did not. Also, in the middle socio-economic group area, out of 291 parents who were to receive health lessons, 177 (61%) attended while 114 (39%) did not. In the low socio-economic group area, 208 were supposed to attend the lessons but 114 (55%) attended while 94 (45%) did not. In order to ascertain that those parents who turned out for the health lessons were not self selected, their demographic characteristics were compared with those of the parents who did not attend (defaulters). For each socio-economic group area, there was no significant difference in the two groups (Tables 6 - 14); thus suggesting that those who participated in the lessons were no different from those who did not participate and that the sample was still representative.

The level of education, the occupational as well as the economic status of the parents in the three socio-economic group areas were compared. These variables were correlated with the performance of the pupils in the health knowledge test. The occupation of the parents was classified according to the classification used by Adeloye, Oyewole and Adeyokunnu (1985).

Five Classes of occupation were recognised:

1. Professionals. Included here are Doctors, Lawyers, Engineers, Senior Management.
2. Intermediate professions. Included here are teachers, nurses technicians.
3. Non-manual (semi-skilled). In this group are typists, clerks.
4. Manual (Skilled). In this group are the artisans (Carpenters, drivers, plumbers, Motor Mechanics, traders, they acquired their skill through apprenticeship and are often self employed.
5. Unskilled. In this group are petty traders, labourers, watchmen.

The scores of the pupils in the health knowledge test were related to their promotion examination scores. There were parents who attend the health lectures, but did not teach their children; the reasons given by such parents were considered. The reasons were related to the educational and occupational status of the parents.

ABSENTEEISM: Pupils attendance during the period of study was looked into. Their average attendance for each term was compared for the three socio-economic group areas.

The question in the pupils questionnaire which sought to know whether the pupils received any health information from any other source apart from their teachers and parents was also considered.

TABLE 6

COMPARISON OF THE LEVEL OF EDUCATION OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS), IN THE HIGH SOCIO-ECONOMIC GROUP AREA.

Level of education of the parents	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
Illiterate	27(82%)	6(18%)	33(100%)
Primary School Level	124(57%)	95(43%)	219(100%)
Secondary School Level	68(62%)	42(38%)	110(100%)
University Level	51(65%)	28(35%)	79(100%)
Total	270(61%)	171(39%)	441(100%)

χ^2 = 7.46, d.f. 3, $p > 0.05$ (Not significant)

TABLE 7

COMPARISON OF THE LEVEL OF EDUCATION OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS), IN THE MIDDLE SOCIO-ECONOMIC GROUP AREA.

Level of education of the parents	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
Illitorate	24(63%)	14(37%)	38(100%)
Primary School Level	85(57%)	65(43%)	150(100%)
Secondary School Level	38(61%)	24(39%)	62(100%)
University Level	30(73%)	11(27%)	41(100%)
Total	177(61%)	114(39%)	291(100%)

$X^2 = 3.6$, d.f. 3, $p > 0.25$ (Not significant)

TABLE 8

COMPARISON OF THE LEVEL OF EDUCATION OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE LESSONS (DEFAULTERS), IN THE LOW SOCIO-ECONOMIC GROUP AREA.

Level of education of the parents	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
Illiterate	53(53%)	47(47%)	100(100%)
Primary School Level	46(56%)	36(44%)	82(100%)
Secondary School Level	15(58%)	11(42%)	26(100%)
University Level	-	-	-
Total	114(55%)	94(45%)	208(100%)

$\chi^2 = 0.34$, d.f. 3, $p > 0.9$ (Not significant).

TABLE 9

COMPARISON OF THE OCCUPATIONAL STATUS OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS), IN THE HIGH SOCIO-ECONOMIC GROUP AREA.

Occupational status	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
High status professionals	49(63%)	29(37%)	78(100%)
Intermediate status professionals	46(65%)	25(35%)	71(100%)
Non-manual (Semi-skilled)	30(71%)	12(29%)	42(100%)
Manual (Skilled)	119(57%)	91(43%)	210(100%)
Unskilled)	26(65%)	14(35%)	40(100%)
Total	270(61%)	171(39%)	441(100%)

$)(^2$ = 3.85, d.f. 4, $p > 0.25$ (Not significant)

TABLE 10

COMPARISON OF THE OCCUPATIONAL STATUS OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE MIDDLE SOCIO-ECONOMIC GROUP AREA.

Occupational Status	Parents who received health lessons	Parents who did not come for the health lessons (Defaulters)	Total
High status professionals	22(69%)	10(31%)	32(100%)
Intermediate status professionals	34(65%)	18(35%)	52(100%)
Non-manual (Semi-skilled)	29(63%)	17(37%)	46(100%)
Manual (Skilled)	69(57%)	53(43%)	122(100%)
Unskilled	23(59%)	16(41%)	39(100%)
Total	177(61%)	114(39%)	291(100%)

$\chi^2 = 1.88$, d.f. 4, $p > 0.75$ (Not significant)

TABLE 11

COMPARISON OF THE OCCUPATIONAL STATUS OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE LOW SOCIO-ECONOMIC GROUP AREA.

Occupational Status	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
High status professionals	-	-	-
Intermediate Status professionals	9(56%)	7(44%)	16(100%)
Non-manual (Semi-skilled)	18(53%)	16(47%)	34(100%)
Manual (Skilled)	30(55%)	25(45%)	55(100%)
Unskilled	57(55%)	46(45%)	103(100%)
Total	114(55%)	94(45%)	208(100%)

$\chi^2 = 0.28$, d.f. 4, $p > 0.97$.

TABLE 12

COMPARISON OF THE AGE GROUPS OF PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE HIGH SOCIO-ECONOMIC GROUP AREA.

Age group in years	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
15 - 24	19(70%)	8(30%)	27(100%)
25 - 34	69(62%)	43(38%)	112(100%)
35 - 44	107(59%)	74(41%)	181(100%)
45 and above	75(62%)	46(38%)	121(100%)
Total	270(61%)	171(39%)	441(100%)

χ^2 = 1.32, d.f. 3, p > 0.5 (Not significant)

TABLE 12

COMPARISON OF THE AGE GROUPS OF PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE HIGH SOCIO-ECONOMIC GROUP AREA.

Age group in years	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
15 - 24	19(70%)	8(30%)	27(100%)
25 - 34	69(62%)	43(38%)	112(100%)
35 - 44	107(59%)	74(41%)	181(100%)
45 and above	75(62%)	46(38%)	121(100%)
Total	270(61%)	171(39%)	441(100%)

χ^2 = 1.32, d.f. 3, $p > 0.5$ (Not significant)

TABLE 13

COMPARISON OF THE AGE GROUPS OF PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE MIDDLE SOCIO-ECONOMIC GROUP AREA.

Age group in years	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
15 - 24	7(78%)	2(22%)	9(100%)
25 - 34	48(62%)	30(38%)	78(100%)
35 - 44	66(58%)	47(42%)	113(100%)
45 and above	56(62%)	35(38%)	91(100%)
Total	177(61%)	114(39%)	291(100%)

$X^2 = 1.45$, d. f. 3 $p > 0.5$ (Not significant)

TABLE 14

COMPARISON OF THE AGE GROUPS OF PARENTS WHO RECEIVED HEALTH LESSONS AND PARENTS WHO DID NOT COME FOR THE HEALTH LESSONS (DEFAULTERS) IN THE LOW SOCIO-ECONOMIC GROUP AREA.

Age group in years	Parents who received health lessons	Parents who did not come for health lessons (Defaulters)	Total
15 - 24	3(60%)	2(40%)	5(100%)
25 - 34	28(54%)	24(46%)	52(100%)
35 - 44	44(54%)	37(46%)	81(100%)
45 and above	39(56%)	31(44%)	70(100%)
Total	114(55%)	94(45%)	208(100%)

$X^2 = 0.69$, d. f. 3, $P > 0.75$ (Not significant)

TABLE 15

THE HOUSE RENT PAID BY THE PARENTS WHO RECEIVED HEALTH LESSONS AND TAUGHT, IN THE THREE SOCIO-ECONOMIC GROUP AREAS

House Rentage per month in Naira	Number of Parents in the high socio-economic group area	Number of parents in the Middle socio-economic group area	Number of parents in the Low socio-economic group area
20 - 99	24 (12%)	19 (15%)	72
100 -149	36 (19%)	94 (73%)	-
150 and above	134 (69%)	15 (12%)	-
Total	194 (100%)	128 (100%)	72 (100%)

CHAPTER FOUR

RESULTS

Analysis of variance

For each sccio-economic group area, the analysis of variance showed a statistically significant difference in the health knowledge mean scores of the pupils for the four different approaches of raising the pupils' health knowledge, $P < 0.05$ (Appendices 16, 17 and 18).

Hypothesis one (HO_1)

Hypothesis one stated that there would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from parents (alone) with special preparation in health education.

The results of the pair-wise comparison (Table 16) between the health knowledge mean score of the primary five school pupils who received health information from the teachers (alone) with special preparation in health education and those primary five pupils who received

TABLE 16

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS (ALONE) RECEIVED HEALTH LESSONS AND PUPILS WHOSE PARENTS (ALONE) RECEIVED HEALTH LESSONS

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F.	Level of Significance
High	Teachers (alone) with health Lessons	27.64	15.55	177	9.85	318	P < 0.001 (Significant)
	VS						
	Parents (alone) with health Lessons	11.15	11.72	143			
Middle	Teachers (alone) with health Lessons	26.87	14.13	179	6.97	274	P < 0.001 (Significant)
	VS						
	Parents (alone) with health Lessons	13.96	14.95	97			
Low	Teachers (alone) with health Lessons	25.39	14.09	145	7.90	197	P < 0.001 (Significant)
	VS						
	Parents (alone) with health Lessons	8.30	11.54	54			

their health information from the parents (alone) with special preparation in health education showed that there was a significant difference between the pupils who received health information from the teachers (alone) with special preparation in health education and those pupils who received health information from the parents (alone) with special preparation in health education. This was true in all the three socio-economic group areas. In the High ($P < 0.001$), Middle ($P < 0.001$) and Low ($P < 0.001$). Hypothesis one was rejected.

Hypothesis two (HO2)

It stated that there would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from parents (alone) with special preparation in health education who taught the pupils.

The results from the pair-wise comparison (Table 17) between the health knowledge mean score of the primary five school pupils who received health information from the teachers (alone) with special preparation in health education and those primary five

TABLE 17

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORE OF PUPILS WHOSE TEACHERS (ALONE) RECEIVED HEALTH LESSONS AND THE MEAN SCORE OF PUPILS TAUGHT BY THEIR PARENTS AFTER THE HEALTH LESSONS

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F.	Level of Significance
High	Teachers alone with health lesson VS Parents alone with health lesson who taught	27.64 11.75	15.55 12.92	137 95	10.05	270	P < 0.001 (Significant)
Middle	Teachers alone with health lesson VS Parents alone with health lesson who taught	26.88 13.11	14.13 15.39	179 63	7.95	240	P < 0.001 (Significant)
Low	Teachers alone with health lesson VS Parents alone with health lesson who taught	25.39 10.82	14.09 12.17	145 34	4.5	177	P < 0.001 (Significant

school pupils who received their health information from the parents (alone) with special preparation in health education and who taught the pupils, showed that there was a significant difference between the two groups. This was true in all the three social economic group areas, High ($P < 0.001$), Middle ($P < 0.001$) and Low socio-economic group area ($P < 0.001$) Hypothesis two was therefore rejected.

Hypothesis three (HO_3)

There would be no significant difference between the level of health knowledge of the primary five school Pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary five school Pupils who received their health information from teachers (alone) with special preparation in health education.

The results of the pair-wise comparison (Table 18) between the health knowledge mean score of primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those pupils who received their health information from teachers (alone) with special preparation in health education showed that in the High and Middle socio-economic group areas there

TABLE 18

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND PUPILS WHOSE TEACHERS (ALONE) RECEIVED HEALTH LESSONS

Socio-economic group area	Pupils	Mean Score	S.D.	n	T-value	D.F.	Level of Significance
High	(combined) Teachers and Parents with health lessons	24.72	14.69	127	-1.69	302	P > 0.05 (not Significant)
	VS						
	Teachers alone with health lessons	27.64	15.95	177			
Middle	(combined) Teachers and Parents with health lessons	26.23	15.94	80	- .55	257	P > 0.7 (not Significant)
	VS						
	Teachers alone with health lessons	26.87	14.13	179			
Low	(combined) Teachers and Parents with health lessons	6.30	14.17	60	-9.17	203	P < 0.001 (Significant)
	VS						
	Teachers alone with health lessons	25.39	14.09	145			

were no significant differences between the level of health knowledge of the pupils who received health information from both the teachers and parents (combined) with special preparation in health education and the pupils who received their health information from teachers (alone) with special preparation in health education. In the High ($P > 0.05$), while in the Middle ($P > 0.7$). Hypothesis three was accepted. However, in the Low socio-economic group area, there was a significant difference with ($P < 0.001$). Hypothesis three was rejected.

Hypothesis four (HO4)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils who received their health information from teachers (alone) with special preparation in health education.

For hypothesis four, the results (Table 19), showed that in the High and Middle socio-economic group areas, there were no significant differences between the mean scores of pupils who recevnd health information

TABLE 19

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORE OF PUPILS WHOSE TEACHERS, PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND PARENTS TAUGHT AND MEAN SCORE OF PUPILS WHOSE TEACHERS (ALONE) RECEIVED HEALTH LESSONS

Socio-economic Group Area	Pupils	Mean score	S.D.	n	T-value	D.F.	Level of Significance
High	Teachers and parents (combined) with health lesson who taught VS Teachers alone with health lesson	24.85 27.64	16.06 15.55	99 177	-1.67	274	P > 0.10 (not Significant)
Middle	Teachers and parents (combined) with health lesson who taught VS Teachers alone with health lesson	26.43 26.88	15.44 14.13	65 179	-0.25	242	P > 0.7 (not Significant)
Low	Teachers and parents (combined) with health lesson who taught VS Teachers alone with health lesson	6.78 25.39	15.33 14.09	38 145	-9.69	181	P < 0.001 (Significant)

from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the pupils who received their health information from teachers (alone) with special preparation in health education, High ($P \nless 0.10$), Middle ($P \nless 0.7$). Hypothesis four was accepted. But, in the Low socio-economic group area, hypothesis four was rejected because there was a significant difference between the mean scores of the two groups of pupils ($P < 0.001$).

Hypothesis five (HO5)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary five school pupils that received health information from parents (alone) with special preparation in health education.

The result of the pair-wise comparison (Table 20) between the mean score of primary five school pupils who received their health information from both their teachers and parents (combined) with special preparation in health education and the mean score of those pupils

TABLE 20

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND PUPILS WHOSE PARENTS (ALONE) RECEIVED HEALTH LESSONS

Socio-economic group area	Pupils	Mean Score	S.D.	n	T-value	D.F.	Level of Significance
High	(combined) Teachers and Parents/ with health lessons	24.72	14.69	127	7.48	258	P < 0.0001 (Significant)
	VS						
	Parents alone with health lessons	11.15	11.72	143			
Middle	(combined) Teachers and Parents/ with health lessons	26.23	15.94	80	5.52	175	P < 0.001 (Significant)
	VS						
	Parents alone with health lessons	13.96	14.95	97			
Low	(combined) Teachers and Parents/ with health lessons	6.30	14.17	80	-0.78	112	P > 0.4 (not Significant)
	VS						
	Parents alone with health lessons	8.30	11.54	54			

that received from their parents (alone) with special preparation in health education, showed that there was a significant difference between the two groups of pupils. This was true in the high socio-economic group area ($P < 0.0001$) as well as in the Middle socio-economic group area ($P < 0.001$). Hypothesis five was rejected. In the Low socio-economic group area, no significant difference was found between the mean scores of the two groups of pupils ($P > 0.04$). Hypothesis five was therefore accepted.

Hypothesis six (HO6)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from parents (alone) with special preparation in health education (parents taught the pupils).

The results from the comparison (Table 21) showed that in the high and middle socio-economic group areas, there were significant differences between the mean scores of pupils who received health information from

TABLE 21

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORE OF PUPILS WHOSE TEACHERS, PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND PARENTS TAUGHT AND MEAN SCORE OF PUPILS WHOSE PARENTS (ALONE) RECEIVED HEALTH LESSON AND TAUGHT

Socio-economic Group area	Pupils	Mean score	S.D.	n	t-value	D.F.	Level of Significance
High	Teachers and Parents (combined) with health lessons who taught VS	24.85	16.06	93	7.66	192	P < 0.001 (Significant)
	Parents alone with health lessons who taught	11.75	12.92	95			
Middle	Teachers and Parents (combined) with health lessons who taught VS	26.43	16.44	65	6.69	126	P < 0.001 (Significant)
	Parents alone with health lessons who taught	13.11	15.39	63			
Low	Teachers and Parents (combined) with health lessons who taught VS	6.78	15.33	38	-1.86	70	P > 0.05 (not Significant)
	Parents alone with health lessons who taught	10.82	12.17	34			

both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the pupils who received health information from parents (alone) with special preparation in health education (parents taught the pupils). High ($P < 0.001$), and Middle ($P < 0.001$), hypothesis six was rejected. In the Low socio-economic group area, there was no significant difference between the two mean scores and so hypothesis six was accepted, $P > 0.05$

Hypothesis seven (HO7)

There would be no significant difference between the level of health knowledge of the primary five pupils who received health information from the teachers (alone) with special preparation in health education and those of the primary five school pupils who received health information from teachers without special preparation in health education (control).

The pair-wise comparison (Table 22) between the mean score of pupils who received health information from the teachers (alone) with special preparation in health education and the mean score of those pupils that received their health information from teachers without special preparation in health education (control) showed that there was a significant difference. This

TABLE 22

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS RECEIVED HEALTH LESSONS AND PUPILS WHOSE TEACHERS DID NOT RECEIVE HEALTH LESSONS (CONTROL)

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F.	Level of Significance
High	Teachers with health lessons (alone) VS Teachers without health lessons	27.64 9.24	15.55 16.42	177 173	11.56	348	P < 0.001 (Significant)
Middle	Teachers with health lessons (alone) VS Teachers without health lessons	26.87 9.61	14.13 14.41	179 172	14.18	349	P < 0.001 (Significant)
Low	Teachers with health lessons (alone) VS Teachers without health lessons	25.39 5.76	14.09 13.24	145 124	11.83	267	P < 0.001 (Significant)

was the case in each of the three socio-economic group areas. High ($P < 0.001$), Middle ($P < 0.001$) and Low ($P < 0.001$). Hypothesis seven was rejected.

Hypothesis eight (HO8)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from parents (alone) with special preparation in health education and those of the primary five school pupils that received health information from parents without special preparation in health education (control).

In the high and low socio-economic group areas, no significant difference was found (Table 23) between the mean score of pupils who received health information from parents (alone) with special preparation in health education and the mean score of those pupils that received health information from parents without special preparation in health education (control). High ($P > 0.2$), Low ($P > 0.2$). Hypothesis eight was accepted. However, in the middle socio-economic group area, the difference between the two mean scores was statistically significant ($P < 0.001$), and so hypothesis eight was rejected.

TABLE 23

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE PARENTS RECEIVED HEALTH LESSONS AND PUPILS WHOSE PARENTS DID NOT RECEIVE HEALTH LESSONS (CONTROL)

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F.	Level of Significance
High	Parents with health lessons (alone) VS Parents without health Lessons	11.15 9.24	11.72 16.42	143 173	1.14	314	P > 0.2 (not Significant
Middle	Parents with health Lessons (alone) VS Parents without health Lessons	13.96 4.61	14.95 14.41	97 172	5.01	267	P < 0.001 (Significant)
Low	Parents with health Lessons (alone) VS Parents without health Lessons	8.30 5.76	11.54 13.24	54 124	1.15	176	P > 0.2 (not significant

Hypothesis nine (HO9)

There would be no significant difference between the level of health knowledge of the primary five school pupils who received health information from parents (alone) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from parents without special preparation in health education (control).

The pair-wise comparison (Table 24) between the mean score of the pupils who received health information from parents (alone) with special preparation in health education (parents taught the pupils) and the mean score of those pupils that received their health information from parents without special preparation in health education showed that the difference between the two means was significant in both the Middle ($P < 0.001$), and Low ($P < 0.007$) socio-economic group areas. Hypothesis nine was rejected. In the high socio-economic group area the difference between the two means was not significant ($P > 0.13$), and hypothesis nine was accepted.

TABLE 24

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE PARENTS RECEIVED HEALTH LESSONS AND TAUGHT AND PUPILS WHOSE PARENTS DID NOT RECEIVE HEALTH LESSONS (CONTROL)

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F	Level of Significance
High	Parents alone with health lesson who taught VS	11.75	12.92	95	1.57	266	P? 0.13 (not significant)
	Parents without health lesson	9.24	16.42	173			
Middle	Parents alone with health lesson who taught VS	13.11	15.39	63	1.89	233	P / 0.001 (Significant)
	Parents without health lesson	4.61	14.41	172			
Low	Parents alone with health lesson who taught VS	10.82	12.17	34	2.79	156	P / 0.007 (Significant)
	Parents without health lesson	5.76	13.24	124			

Hypothesis ten (HO_{10})

There would be no significant difference between the level of health knowledge of primary school pupils who received health information from both the teachers and parents (combined) with special preparation in health education and those of the primary five school pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control).

The results of the comparison (Table 25), between the mean score of pupils who received health information from both the teachers and parents (combined) with special preparation in health education and the mean score of the pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control), showed that there was a significant difference. This was true in the high ($P < 0.001$), and Middle ($P < 0.001$) socio-economic group areas. Hypothesis ten was rejected. In the low socio-economic group area no significant difference was found, thus hypothesis ten was accepted, $P > 0.8$

TABLE 25

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) DID NOT RECEIVE HEALTH LESSONS (CONTROL)

Socio-economic group area	Pupils	Mean score	S.D.	n	T-value	D.F	Level of Significance
High	Teachers and Parents (combined) with health lessons	24.72	13.69	127			
	VS				8.90	298	P < 0.001 (Significant)
	Teachers and Parents (combined) without health lessons	9.24	16.42	173			
Middle	Teachers and Parents (combined) with health lessons	16.23	15.94	80			
	VS				10.06	250	P < 0.001 (Significant)
	Teachers and Parents (combined) without health lessons	4.61	14.41	172			
Low	Teachers and Parents (combined) with health lessons	6.30	14.17	60			
	VS				0.25	182	P > 0.8 (not significant)
	Teachers and Parents (combined) without	[illegible]	[illegible]	124			

Hypothesis eleven (HO11)

There would be no significant difference between the level of health knowledge of primary school pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control).

The result of the pair-wise comparison (Table 26), between the mean score of the pupils who received health information from both the teachers and parents (combined) with special preparation in health education (parents taught the pupils) and those of the primary five school pupils that received health information from both the teachers and parents (combined) without special preparation in health education (control), showed that there was a significant difference between the mean scores of the two groups of pupils. This was the case in the high ($P < 0.001$) and Middle ($P < 0.001$) socio-economic group area. Hypothesis eleven was rejected.

In the low socio-economic group area, no significant difference was found between the two mean scores. Hypothesis eleven was accepted, $P > 0.61$.

TABLE 26

COMPARISON BETWEEN THE HEALTH KNOWLEDGE MEAN SCORES OF PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) RECEIVED HEALTH LESSONS AND TAUGHT AND PUPILS WHOSE TEACHERS AND PARENTS (COMBINED) DID NOT RECEIVE HEALTH LESSONS (CONTROL)

Socio-economic group area	Pupils	Mean score	S.D	n	T-value	D.F	Level of Significance
High	Teachers and Parents (combined) with health lesson who taught VS	21.85	16.06	99	9.24	270	P < 0.001 (Significant)
	Teachers and Parents without health lesson	9.24	16.42	173			
Middle	Teachers and Parents (combined) with health lesson who taught VS	26.43	16.44	65	12.32	235	P < 0.001 (Significant)
	Teachers and Parents without health lesson	4.61	14.41	172			
Low	Teachers and Parents (combined) with health lesson who taught VS	6.78	15.33	38	0.53	162	P > 0.61 (not significant)
	Teachers and Parents without health lesson	5.76	13.24	124			

Educational And Occupational Status of Parents

The comparison of the level of education of parents in the three socio-economic group areas showed a significant difference, P /0.001. There were more parents with university education in the high socio-economic group area, while the number of illiterate parents was more in the low socio-economic group area (Tables 27 and 28). There was also a significant difference in the number of various occupational groups in the three areas. While the professionals were found more in the high socio-economic group area, the unskilled parents were more in the low socio-economic group area (Tables 29 and 30).

The reasons given by the parents for not being able to give health information to their children include lack of time (23%), inability to teach (6%); three of the parents (0.5%) were sick during the period and one (0.2%) travelled out of Nigeria (table 31). Comparison of the pupils' attendance in schools in the three socio-economic group areas showed that there was no significant difference in the pupils' average attendance in the three areas P) 0.97 (table 32).

TABLE 27

THE LEVEL OF EDUCATION OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND TAUGHT IN THE THREE SOCIO-ECONOMIC GROUP AREAS

Level of Education of the parents	Socio-economic group area			
	Number of parents in the high	Number of parents in the middle	Number of parents in the low	Total
Illiterate	11(3%)	20(5%)	38(10%)	69(18%)
Primary School Level	104(26%)	70(17%)	28(7%)	202(51%)
Secondary School Level	48(12%)	23(6%)	6(2%)	77(19%)
University level	31(8%)	15(4%)	-	46(12%)
TOTAL	194(49%)	128(33%)	72(18%)	394(100%)

( ) = Percentage of the total number of parents (394)

TABLE 28

COMPARISON OF THE LEVEL OF EDUCATION OF THE PARENTS WHO RECEIVED HEALTH LESSONS, AND TAUGHT IN THE THREE SOCIO-ECONOMIC GROUP AREAS

Level of Education of the parents	Socio-econonomic group area			
	Number of parents in the high	Number of parents in the middle	Number of parents in the low	Total
Illiterate	11(16%)	20(29%)	38(55%)	69(100%)
Primary School Level	104(51%)	70(35%)	28(14%)	202(100%)
Secondary School Level	48(62%)	23(30%)	6(8%)	77(100%)
University Level	31(67%)	15(33%)	-	46(100%)
Total	194(49%)	128(33%)	72(18%)	394(100%)

x^2 = 75.79, d.f.6, P< 0.001 (Significant).

TABLE 29

THE OCCUPATIONAL STATUS OF THE PARENTS WHO RECEIVED HEALTH LESSONS AND TAUGHT IN THE THREE SOCIO-ECONOMIC GROUP AREA

Occupation Status	Socio-economic group area			
	Number of parents in the high	Number of parents in the middle	Number of parents in the low	Total
High status professionals	34(9%)	13(3%)	-	47(12%)
Intermediate status professionals	28(7%)	21(5%)	5(1%)	54(14%)
Non-manual (Semi skilled)	15(4%)	23(6%)	10(3%)	48(12%)
Manual Skilled	98(25%)	48(12%)	20(5%)	166(42%)
Unskilled	19(5%)	23(6%)	37(9%)	79(20%)
T O T A L	194(49%)	128(33%)	72(18%)	394(100%)

( ) = Porcentage of the total number of parents (394)

TABLE 30

COMPARISON OF THE OCCUPATIONAL STATUS OF THE PARENTS WHO RECEIVED HEALTH EDUCATION AND TAUGHT, IN THE THREE SOCIO-ECONOMIC GROUP AREAS

Occupational status	Socio-economic group area			
	Number of parents in the high	Number of parents in the middle	Number of parents in the low	Total
High status professionals	34(72%)	13(28%)	-	47(100%)
Intermediate status professionals	28(52%)	21(39%)	5(9%)	54(100%)
Non-manual (Semi-skilled)	15(31%)	23(48%)	10(21%)	48(100%)
Manual skilled	98(59%)	48(29%)	20(12%)	166(100%)
Unskilled	19(21%)	23(29%)	37(47%)	79(100%)
Total	194(49%)	128(33%)	72(18%)	394(100%)

$X^2 = 73.16$. d.f. 8, $p < 0.001$ (Significant)

T A B L E 31

REASONS GIVEN BY THE PARENTS FOR NOT BEING ABLE TO GIVE HEALTH INFORMATION TO THEIR CHILDREN

REASONS	NUMBER OF PARENTS
I HAD NO TIME TO TEACH	128 (23%)
I COULD NOT TEACH	35 (6%)
I WAS SICK	3 (0.5%)
I TRAVELLED OUT OF NIGERIA	1 (0.2%)

() Percentage of the number of Parents who received Health Lessons.

Number = 561

Correlations

The mean scores of the pupils which were related to the educational level of the parents showed that those pupils whose parents had formal education performed better in their health knowledge test than those whose parents were illiterate (Fig. 4). It was also found that pupils whose parents belong to professional groups performed better than those pupils whose parents were from other occupational groups (Semi-skilled, skilled and unskilled) (Fig. 5). Also pupils whose parents economic status was high had better performance than those who parents' economic status was low (Fig. 6). The pupils whose parents and teachers received health lessons performed better in their promotion examination than those whose parents and teachers did not receive health lessons. (Figs. 7, 8 and 9).

Those parents with primary school level of education complained more of lack of time to teach their children while those that indicated that they could not teach were mainly illiterate (Fig. 10).

Parents whose occupational status was classified as skilled also complained more of lack of time to teach their children. They were followed by the high status professional parents. It was also found that those parents who complained that they

TABLE 32

COMPARISON OF THE PUPILS' ATTENDANCE IN THE SCHOOL IN THE THREE SOCIO-ECONOMIC GROUP AREA.

Socio-economic group area	Pupils Average Attendance*			
	First Term	Second Term	Third Term	Total
High	40(35%)	37(32%)	38(33%)	115(100%)
Middle	39(35%)	36(32%)	37(33%)	112(100%)
Low	35(37%)	29(31%)	31(32%)	95(100%)
Total	114(35%)	102(32%)	106(33%)	322(100%)

$X^2 = 0.23$, d.f. 4, $p > 0.97$ (Not significant).

*Total attendances for term.
Total times school was open

FIGURE 4

THE MEAN SCORES OF THE PUPILS RELATED TO THE EDUCATIONAL LEVEL OF THEIR PARENTS, IN THE THREE SOCIO-ECONOMIC GROUP AREAS

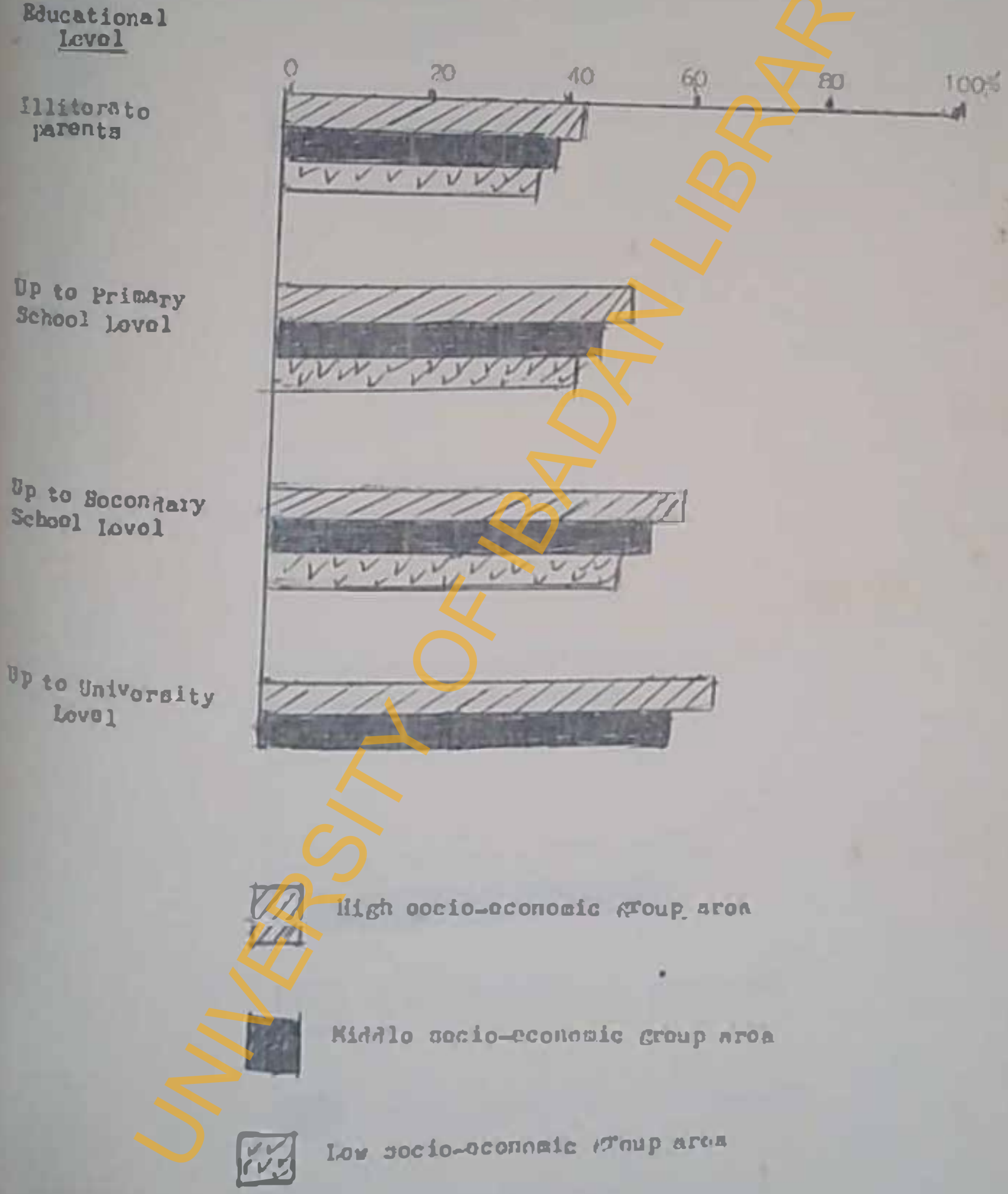


FIGURE 5

THE MEAN SCORES OF THE PUPILS RELATED TO THE OCCUPATIONAL STATUS OF THE PARENTS, IN THE THREE SOCIO-ECONOMIC GROUP AREAS

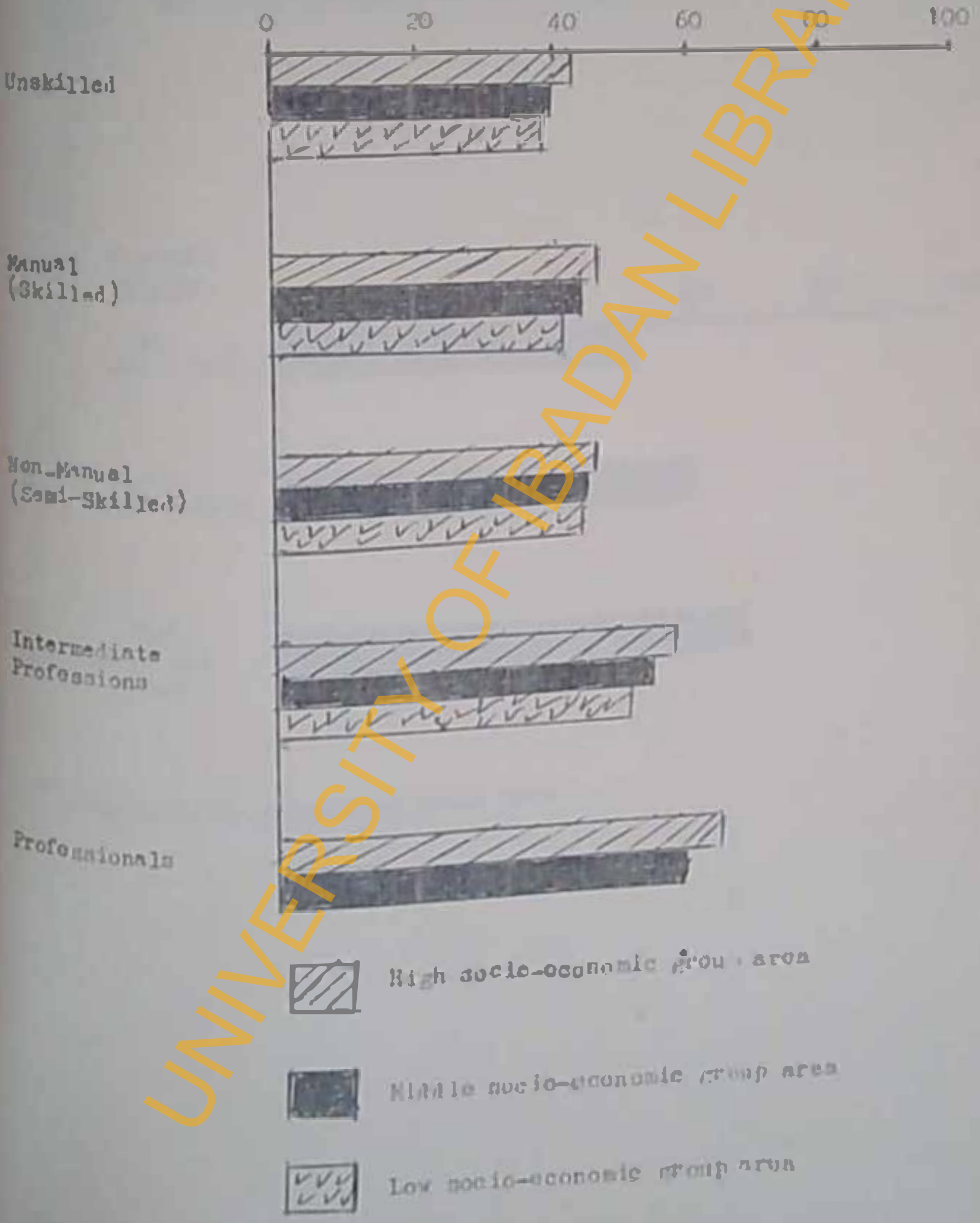


FIGURE 6

THE MEAN SCORES OF THE PUPILS RELATED TO THE ECONOMIC STATUS OF THE PARENTS

*Amount paid by parents as house rent.

FIGURE 7

THE HEALTH KNOWLEDGE POST-TEST MEAN SCORES RELATED TO THE PROMOTION EXAMINATION MEAN SCORES OF THE PUPILS IN THE HIGH SOCIO-ECONOMIC GROUP AREA

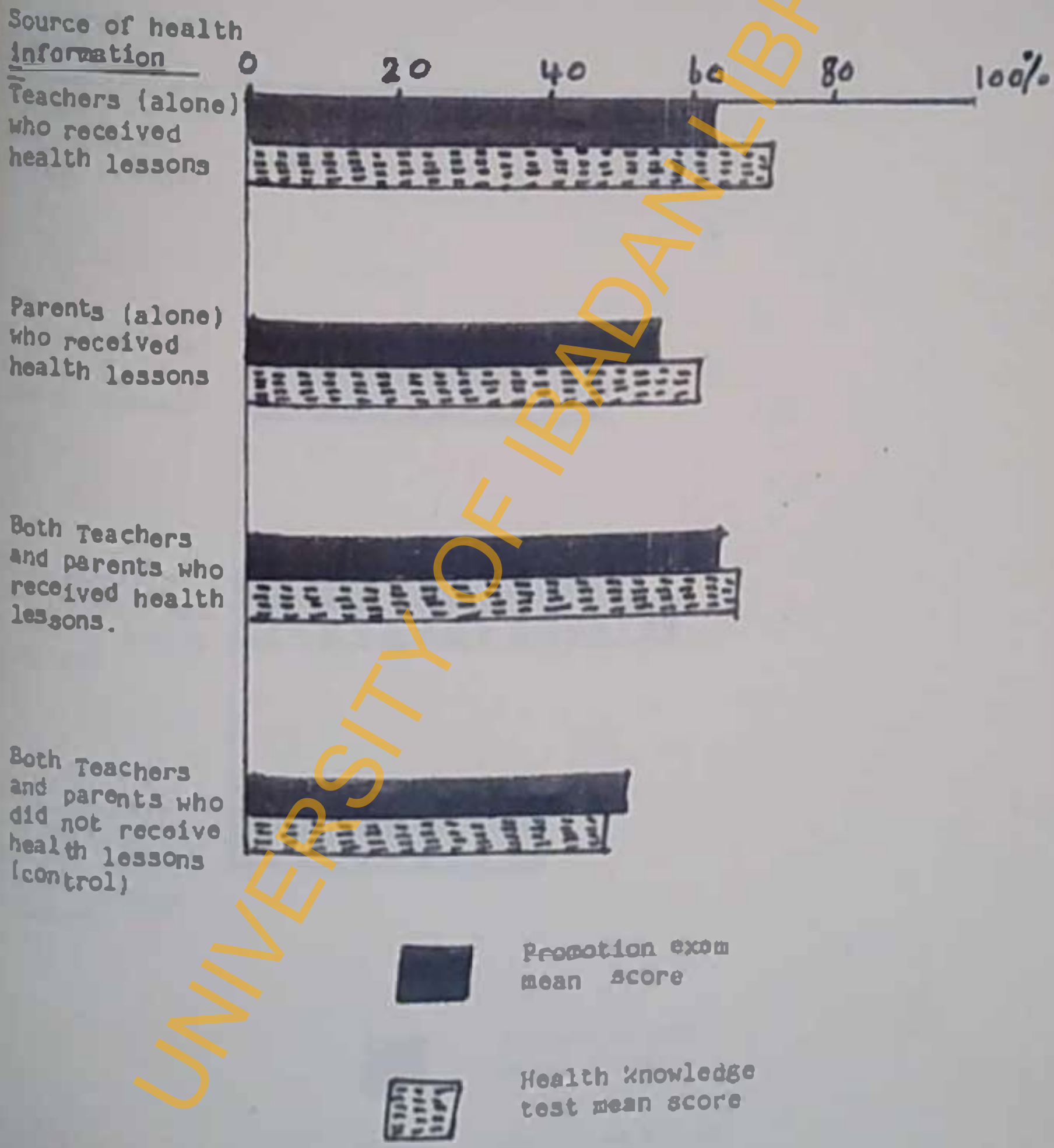


FIGURE 8

THE HEALTH KNOWLEDGE POST-TEST MEAN SCORES RELATED TO THE PROMOTION EXAMINATION MEAN SCORES OF THE PUPILS IN THE MIDDLE SOCIO-ECONOMIC GROUP AREA

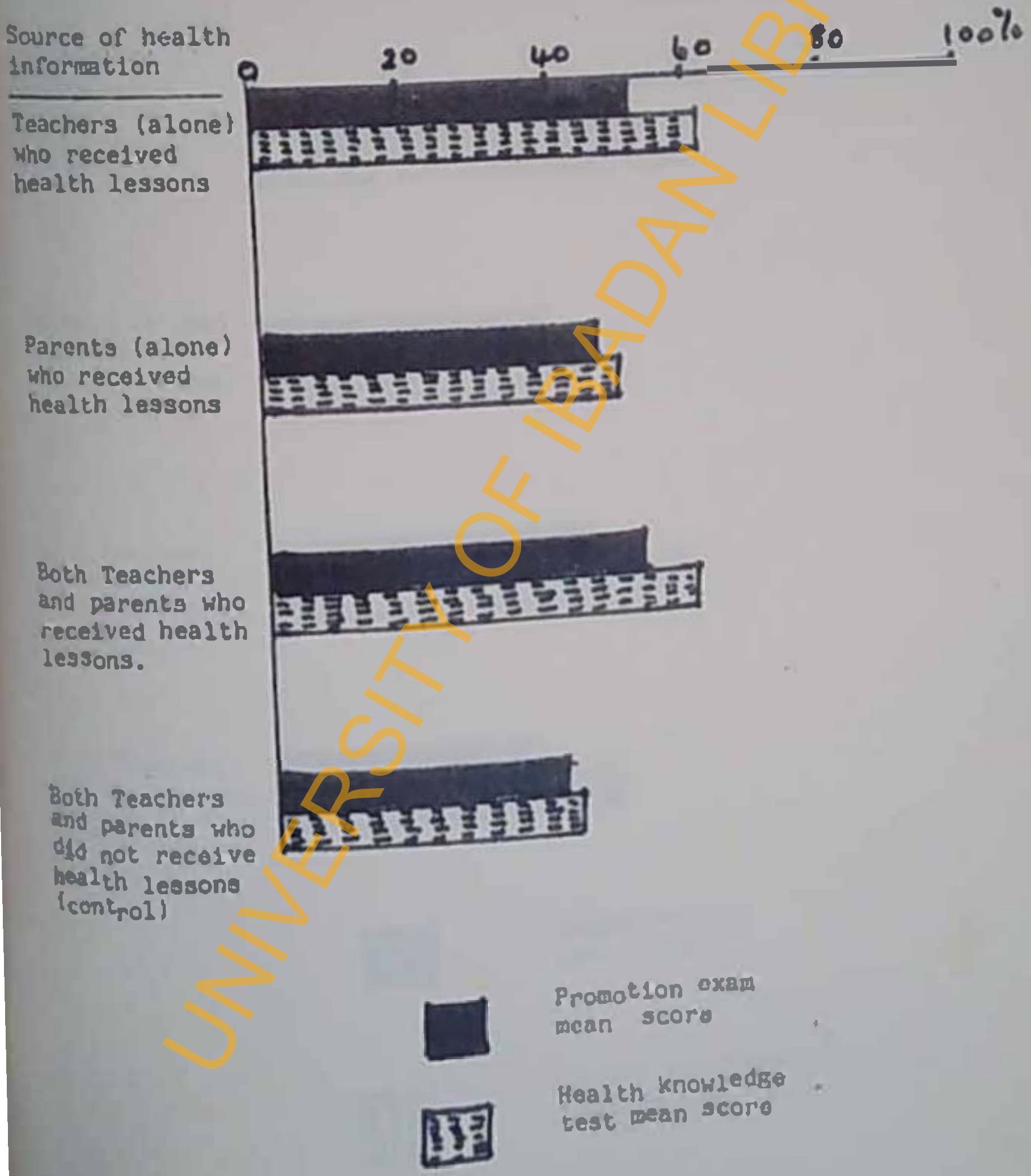
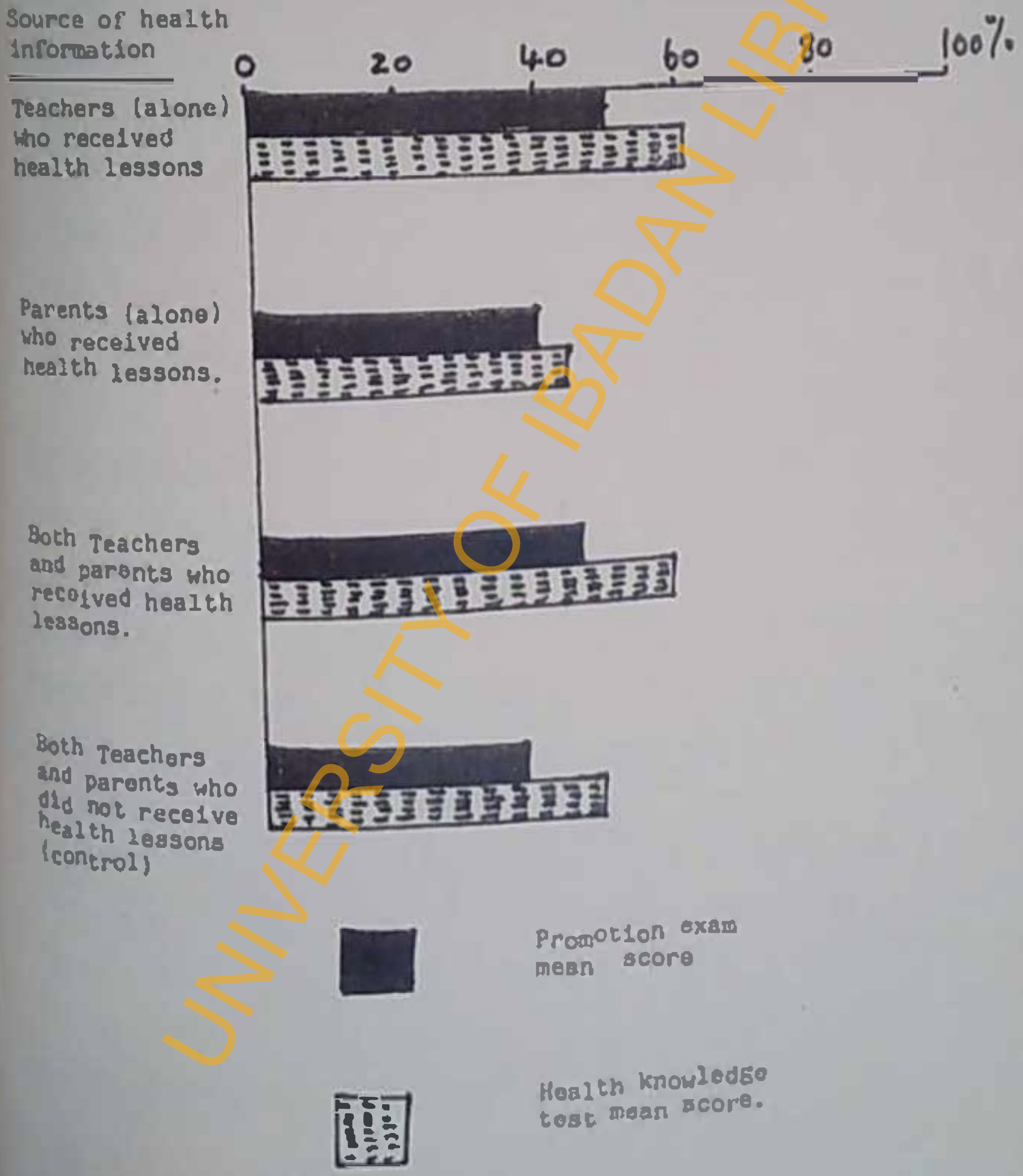


FIGURE 9

THE HEALTH KNOWLEDGE POST-TEST MEAN SCORES RELATED TO THE PROMOTION EXAMINATION MEAN SCORES OF THE PUPILS IN THE LOW SOCIO-ECONOMIC GROUP AREA



could not teach were more from the unskilled group of parents (fig. 11).

The answers to the question on whether the pupils received health information from any other source apart from their teachers and parents showed that 93% of the pupils said that they did not receive from any other source, 6% said that they did not remember while 1% said they received. The age distribution of the pupils showed that 5% of them were from the age group 5 - 9 years, 92% from the age group 10 - 14 and 3% from the age group 15 and above.

Tables 33 - 38 showed that some parents did not teach their children some health topics. Also, from the same tables above, the findings indicated that more pupils were taught by their parents in health topics such as Nutrition, Water borne diseases, Air borne diseases and insect borne diseases, and conversely, fewer pupils were taught by their parents in health topics such as First Aid, smoking and various organizations concerned with the health of people.

The teachers interviewed during the study indicated that they were giving their own health information to the pupils during the health education period. As for the parents, they had no definite time, health information was given to the pupils at the parents' convenient time.

FIGURE 10

EDUCATIONAL LEVEL OF THE PARENTS RELATED TO THEIR REASONS FOR NOT GIVING HEALTH INFORMATION TO THEIR CHILDREN

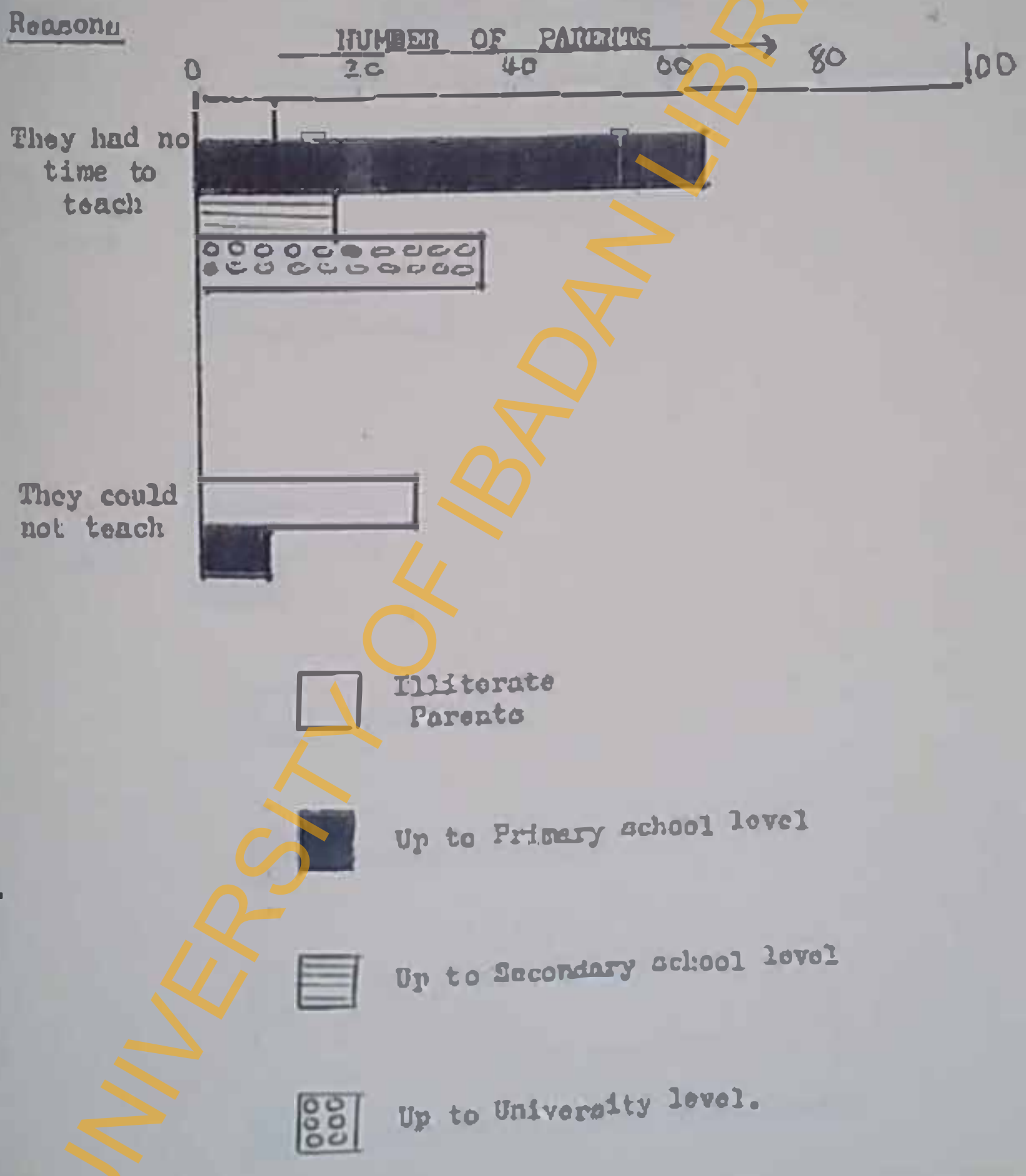


FIGURE 11

OCCUPATIONAL STATUS OF THE PARENTS RELATED TO THEIR REASONS FOR NOT GIVING HEALTH INFORMATION TO THEIR CHILDREN

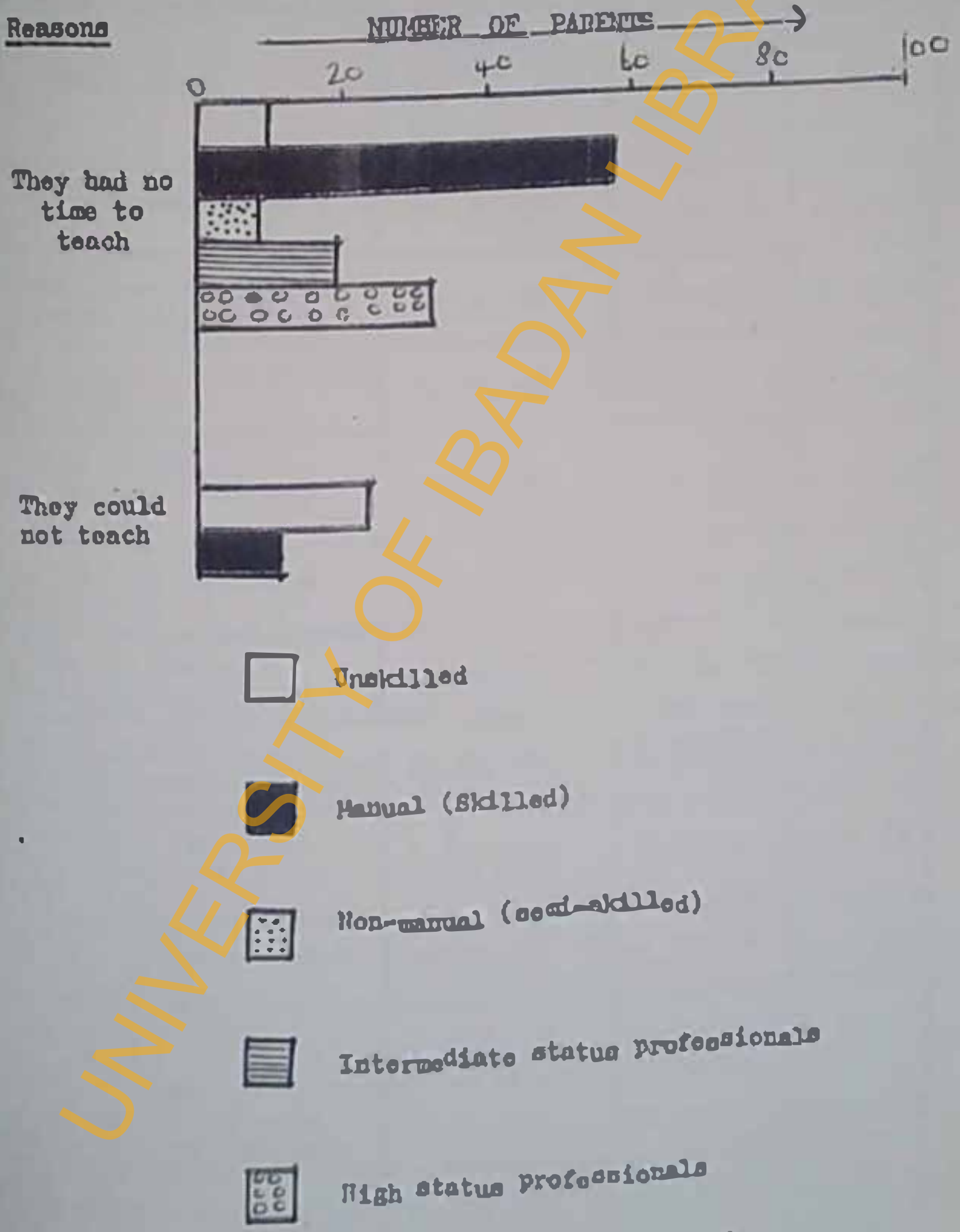


TABLE 33

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE THIRD APPROACH (HIGH SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of pupils taught by their parents	Number of pupils not taught by their parent	Total
Nutrition (Types and value of foods)	90 (90.9%)	9 (9.1%)	99 (100%)
Water borne diseases (Guinea worm, cholera, etc.	82 (82.8%)	17 (17.2%)	99 (100%)
Air borne diseases (Measles, whooping cough, etc.	79 (79.8%)	20 (20.2%)	99 (100%)
Insect borne diseases, (Malaria, sleeping sickness etc.	77 (77.8%)	22 (22.2%)	99 (100%)
Exercise and health (Value of exercise etc.)	71 (71.7%)	28 (28.3%)	99 (100%)
Care of the ear (use of cotton bud, noise etc.)	68 (68.7%)	31 (31.3%)	99 (100%)
Dental care (oral hygiene, Prevention of tooth decay etc)	65 (65.7%)	34 (34.3%)	99 (100%)
Sanitation (Need for clean environment, sanitary inspectors etc.)	64 (64.6%)	35 (35.4%)	99 (100%)
Immunization (Its value, where to go for it, etc.)	59 (59.6%)	40 (40.4%)	99 (100%)
First aids (Burns, Noise bleeding, etc.)	41 (41.4%)	58 (58.6%)	99 (100%)
Smoking and health (Effects of smoking, lung cancer etc).	38 (38.4%)	61 (61.6%)	99 (100%)
Various organization WHO, FAO. etc.	34 (34.3%)	65 (65.7%)	99 (100%)

TABLE 34

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE MIXED APPROACH (MIDDLE SOCIO-ECONOMIC GROUP AREA).

Health Topics	Number of pupils taught by their parents	Number of pupils not taught by their parents	Total
Nutrition (Types and value of foods)	54 (83%)	11 (17.0%)	65 (100%)
Water borne diseases (Guinea-worm, cholera, etc.)	52 (80.0%)	13 (20.0%)	65 (100%)
Insect borne disease (Malaria, sleeping sickness etc.)	53 (81.5%)	12 (18.5%)	65 (100%)
Air borne diseases (Measles, whooping cough etc.)	50 (76.9%)	15 (23.1%)	65 (100%)
Exercise and health (value of exercise etc).	46 (70.8%)	19 (29.2%)	65 (100%)
Immunization (Its value, where to go for it etc.)	42 (64.6%)	23 (35.4%)	65 (100%)
Dental care (oral hygiene, prevention of tooth decay etc.)	41 (63.1%)	24 (36.9%)	65 (100%)
Care of the ear (use of cotton bud, effect of noise etc.)	40 (61.5%)	25 (38.5%)	65 (100%)
Sanitation (Need for clean environment, sanitary inspectors)	38 (58.5%)	27 (41.5%)	65 (100%)
First Aids (Burns, Nose bleeding)	35 (53.8%)	30 (46.2%)	65 (100%)
Smoking and health (Effect of smoking, lung cancer etc.)	34 (52.3%)	31 (47.7%)	65 (100%)
Various organisations (WHO, FAO, etc.)	30 (46.2%)	35 (53.8%)	65 (100%)

TABLE 35

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY THEIR PARENTS IN THE THIRD APPROACH (LOW SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of Pupils taught by their parents	Number of pupils not taught by their parents	Total
Nutrition (Types and value of foods	23 (60.5%)	15 (39.5%)	38 (100%)
Insect borne diseases (Malaria, sleeping sickness)	22 (57.9%)	16 (42.1%)	38 (100%)
Water borne diseases (Guinea-worm, cholera)	20 (52.6%)	18 (47.4%)	38 (100%)
Air borne diseases (Measles whooping cough etc).	19 (50.0%)	19 (50.0%)	38 (100%)
Exercise and health (value of exercises etc).	18 (47.4%)	20 (52.6%)	38 (100%)
Dental care (oral hygiene) prevention of tooth decay etc)	17 (44.7%)	21 (55.3%)	38 (100%)
Immunization (Its value, where to go for it etc).	17 (44.7%)	21 (55.3%)	38 (100%)
Sanitation (Need for clean environment, sanitary inspectors.)	15 (39.5%)	23 (60.5%)	38 (100%)
Care of the ear (Use of cotton bud, effect of noise.	15 (39.5%)	23 (60.5%)	38 (100%)
First aids (Burns, Nose bleeding etc.)	13 (34.2%)	25 (65.8%)	38 (100%)
Smoking and health (Effects of smoking, lung cancer.	11 (28.9%)	27 (71.1%)	38 (100%)
Various organizations WHO, FAO, etc.	8 (21.1%)	30 (70.9%)	38 (100%)

TABLE 36

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE SECOND APPROACH (HIGH SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of pupils taught by their parents	Number of pupils not taught by their parent	Total
Nutrition (Types and value of food, etc).	75 (70.9%)	20 (21.1%)	95 (100%)
Insect borne diseases (Malaria, sleeping sickness, etc).	73 (76.8%)	22 (23.2%)	95 (100%)
Air borne diseases (measles, whopping cough etc).	72 (75.8%)	23 (24.2%)	95 (100%)
Water borne diseases (Guinea worm, cholera, etc).	70 (73.7%)	25 (26.3%)	95 (100%)
Immunization (its value where to go for it etc).	65 (68.4%)	30 (31.6%)	95 (100%)
Sanitation (Need for clean environment, sanitory inspectors etc).	60 (63.2%)	35 (36.8%)	95 (100%)
Dental care (oral hygiene, cause of tooth decay etc).	55 (57.9%)	40 (42.1%)	95 (100%)
Exercise and health value of exercise etc).	53 (55.8%)	42 (44.2%)	95 (100%)
Care of the ear (use of cotton bud, effect of noise etc).	40 (42.1%)	55 (57.9%)	95 (100%)
First aids (burns, nose bleeding etc).	38 (40.0%)	57 (60.0%)	95 (100%)
Smoking and health (Dangers of smoking, lung cancer etc).	32 (33.7%)	63 (66.3%)	95 (100%)
Various organization (WHO FAO etc).	27 (28.4%)	68 (71.6%)	95 (100%)

TABLE 37

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE SECOND APPROACH (MIDDLE SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of pupils taught by their parents	Number of pupils not taught by their parents	Total
Nutrition (Types and value of foods)	58 (92.1%)	5 (7.9%)	63 (100%)
Insect borne disease (Malaria, sleeping sickness etc.)	55 (87.3%)	8 (12.7%)	63 (100%)
Water borne disease (Guinea worm, cholera etc).	53 (84.1%)	10 (15.9%)	63 (100%)
Air borne disease (Measles whooping cough etc).	50 (79.4%)	13 (20.6%)	63 (100%)
Sanitation (Need for clean environments, sanitary inspector).	47 (74.6%)	16 (25.4%)	63 (100%)
Dental care (oral hygiene, prevention of tooth decay etc.	44 (69.8%)	19 (30.1%)	63 (100%)
Immunisation (Its value, where to go for it etc.)	42 (66.7%)	21 (33.3%)	63 (100%)
Care of the ear (use of cotton bud, effect of noise etc.)	40 (63.5%)	23 (36.5%)	63 (100%)
Exercise and health (value of exercise etc.)	38 (60.3%)	25 (39.7%)	63 (100%)
First aids (Burns, Noise bleeding).	30 (47.6%)	33 (52.4%)	63 (100%)
Smoking and health (Effects of smoking, lung cancer).	26 (41.3%)	37 (58.7%)	63 (100%)
Various organizations (WHO, FAO etc).	12 (19.0%)	51 (81.0%)	63 (100%)

TABLE 38

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE SECOND APPROACH (LOW SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of pupils taugh by their parents	Number of pupils not taught by their parent	Total
Nutrition (Types and value of foods)	22 (64.7%)	12 (35.3%)	34 (100%)
Insect borne diseases (Malaria sleeping sickness etc.)	20 (58.8%)	14 (41.2%)	34 (100%)
Water borne, diseases (Guinea worm, cholera etc).	20 (58.8%)	14 (41.2%)	34 (100%)
Air borne disease (Measles, whooping cough etc).	19 (55.9%)	15 (44.1%)	34 (100%)
Immunization (Its value, where to go for it etc.)	18 (52.9%)	16 (47.1%)	34 (100%)
Sanitation (Need for clean environment, sanitary inspectors).	17 (50.0%)	17 (50.0%)	34 (100%)
Dental care (oral hygiene. Prevention of tooth decay etc.	15 (44.1%)	19 (55.9%)	34 (100%)
Care of the ear (use of cotton bud, effect of noise etc.)	13 (38.2%)	21 (61.8%)	34 (100%)
First aids (Burns, Nose bleeding etc.)	12 (35.3%)	22 (64.7%)	34 (100%)
Smoking and health effects of smoking, lung cancer.	10 (29.4%)	24 (70.6%)	34 (100%)
Exercise and health (Value of exercise etc.)	8 (23.5%)	26 (76.5%)	34 (100%)
Various organisations (WHO, FAO, etc.)	6 (17.6%)	28 (82.4%)	34 (100%)

TABLE . 38

NUMBER OF PUPILS AND THE HEALTH TOPICS WHICH WERE EITHER TAUGHT OR WERE NOT TAUGHT BY PARENTS IN THE SECOND APPROACH (LOW SOCIO-ECONOMIC GROUP AREA)

Health Topic	Number of pupils teugh by their parents	Number of pupils not taught by their parent	Total
Nutrition (Types and value of foods)	22 (64.7%)	12 (35.3%)	34 (100%)
Insect borne diseases (Malaria sleeping sickness etc.)	20 (58.8%)	14 (41.2%)	34 (100%)
Water borne, diseases (Guinea worm, cholera etc).	20 (58.8%)	14 (41.2%)	34 (100%)
Air borne diseases (Measles, whooping cough etc).	19 (55.9%)	15 (44.1%)	34 (100%)
Immunization (Its value, where to go for it etc.)	18 (52.9%)	16 (47.1%)	34 (100%)
Sanitation (Need for clean environment, sanitary inspectors).	17 (50.0%)	17 (50.0%)	34 (100%)
Dental care (oral hygiene, prevention of tooth decay etc.	15 (44.1%)	19 (55.9%)	34 (100%)
Care of the ear (use of cotton bud, effect of noise etc.)	13 (38.2%)	21 (61.8%)	34 (100%)
First aids (Burns, Nose bleeding etc.)	12 (35.3%)	22 (64.7%)	34 (100%)
Smoking and health effects of smoking, lung cancer.	10 (29.4%)	24 (70.6%)	34 (100%)
Exercise and health (Value of exercise etc.)	8 (23.5%)	26 (76.5%)	34 (100%)
Various organizations (WHO, FAO, etc.	6 (17.6%)	28 (82.4%)	34 (100%)

1.1 SUMMARY OF RESULTS

1. Teachers who were well prepared in health education were effective as sources of health information to primary five pupils.
2. Teachers and parents (combined) who were well prepared in health education were effective as sources of health information to primary five pupils.
3. Teachers were more effective than parents as sources of health information to primary five pupils.
4. There was no significant difference between the level of health knowledge of pupils whose teachers and parents (combined) received health lessons and those pupils whose teachers alone received health lessons.
5. Parents with formal education were more effective than the illiterate parents as sources of health information to primary five pupils. The more educated the parents, the better they were as a source of health information.
6. Parents prefer to give health information on topics such as Nutrition, Insect-borne diseases, Water-borne diseases and Air-borne diseases.

CHAPTER FIVE

1. DISCUSSIONS

The results obtained from the study showed that teachers and parents who were well prepared in health education were effective as sources of health information to primary five school pupils. The health knowledge of primary five school pupils would therefore be enhanced by using well-prepared teachers and parents as their sources of health information.

The higher health knowledge mean scores observed for pupils whose teachers (alone) received health lessons when compared with the mean scores of pupils whose parents alone received health lessons might be due to several reasons. The teachers had been to teacher training colleges and were more likely to have acquired more health knowledge and teaching skills than the parents. According to (Turner, Sellery and Smith (1957)) the extent and effectiveness of teachers' participation in school health education would depend, among other things, on his/her health knowledge, his/her interest in the children as well as his/her skill in contributing to their health knowledge, attitude and behaviours. The Report of a Joint WHO/UNESCO Expert Committee on Teacher preparation for health education stated that health education provided for

the children and youth by the school would necessarily depend, among other things, on the attitude of the teacher towards his her pupils and the skill of the teacher in utilizing opportunities for education in health (WHO. 1960).

Other reasons which might have contributed to the higher mean scores observed for the pupils whose teachers (alone) received health lessons include, firstly, the teachers are paid for their teaching and are supervised. They are obliged to carry out their duty. The parents on the other hand are neither paid nor supervised and are teaching the pupils at their convenient time. Secondly, school environment might have also contributed. For example, the teachers have definite time (Health education period) for giving health information to the pupils and have facilities such as blackboard, visual aids at times for teaching the pupils. Most parents have no such time and facilities at home.

The non-significant difference observed in the comparison between health knowledge mean scores of pupils whose teachers alone received health lessons and the mean scores of pupils whose teachers and parents (combined) received health lessons might be due to two main reasons. Firstly, it could be that the parents in the combined group did not give sufficient

health information to the pupils so as to cause a significant increase in the health knowledge of the pupils when combined with the health information received from their teachers. This view was supported by the fact that some of the parents did not teach the pupils all the health topics which were supposed to be taught. (Tables 33-35).

Secondly, since the teachers in both groups (Teachers and parents (combined) and Teachers (alone groups) who receive health lessons had adequate health knowledge and skill and did show interest in health education during the health lessons, the health information given to the pupils by the two groups of teachers might be nearly the same. And if this was to be true and the parents as was mentioned earlier, did not give sufficient health information to the pupils, then it would be possible to have the non-significant difference as was observe

The higher health knowledge mean scores observed for those pupils whose teachers and parents (combined) received health lessons when compared with the mean scores of those whose parents (alone) received health lessons (High and middle socio-economic group area) was due to the fact that, the teachers in the (combined) group, because of their previous training and experience coupled with the health lessons received from the researcher, had more health knowledge and skill than the parents.

The teachers would have, therefore, given more health information to the pupils than the parents. And, as was observed by (Vanderschaitt, Massey and Arias (1976), the performance of health profession teachers would depend on the knowledge, skill and attitude of such individuals with regard to their work.

In the low socio-economic group area, the high pre-test mean score observed for those pupils whose teachers and parents received health lessons might be due to the extra lessons they received from their teachers. Two out of the three teachers in primary five gained admission into higher institutions. One of the teachers gained admission to do physical and health education; the other one was to do Biology education. Usually, it takes time to replace teachers who left in any of the schools in this area. The reasons were not far fetched - due to transport difficulties and lack of basic amenities in the area, teachers tend to reject being posted to the area. The head teacher knowing the above problem requested the out-going teachers to give some extra lessons to pupils in their class. This was to help the pupils cover their syllabus since it might take time to replace the teachers. Health education was one of the subjects in which the teachers gave extra lessons.

However, new teachers were posted to replace those teachers that left before the researcher started giving health lessons to teachers and parents. The non-significant difference found in the comparison between the mean score of pupils whose teachers and parents (combined) received health lessons and the mean score of pupils whose parents alone received health lessons in the low socio-economic group area might be due to several reasons. Firstly, in the combined group, one of the teachers who received the health lessons was transferred to a school in the high socio-economic group area (Shanahan Primary School), and was replaced by a teacher who did not receive the health lessons. Secondly, in the same combined group, one of the female teachers left for maternity leave two months after receiving the health lessons and so the three primary five classes were being taught by the two remaining teachers out of which one did not receive the health lessons. Thirdly, parents did not give sufficient health information as was shown in table 35. All this might have contributed to the low mean score observed for the combined group, and, hence, the non-significant difference observed for the group.

The higher health knowledge mean score found for those pupils whose teachers received health lessons when compared with those whose teachers did not receive health lessons (control) might be attributed to the health lessons received by the teachers in the experimental group. The health lessons led to an increase in the level of health knowledge of the teachers. The lessons might have also resulted in the teachers developing more interest in health education as was shown during the health lessons. With increased health knowledge and interest, the teachers in the experimental group might have given more health information to the pupils than the teachers in the control group; thus, resulting to the significant difference observed. These results supported the previous findings of Cleaver (op cit), Beougher (op cit), and Jones (op cit), in which pupils whose teachers received one form of instruction or another performed better than the pupils in the control group whose teachers were not given such instructions. The need for teachers to have refresher courses was highlighted by the World Health Organisation Expert Committee on training of health personnel in health education of the public (WHO, 1958). According to the Expert Committee:

The higher health knowledge mean score found for those pupils whose teachers received health lessons when compared with those whose teachers did not receive health lessons (control) might be attributed to the health lessons received by the teachers in the exporimental group. The health lessons led to an increase in the level of health knowledge of the teachers. The lessons might have also resulted in the teachers developing more interest in health education as was shown during the health lessons. With increased health knowledge and interest, the teachers in the experimental group might have given more health information to the pupils than the teachers in the control group, thus, resulting to the significant difference observed. These results supported the previous findings of Cleaver (on cit), Baugher (on cit), and Jones (on cit), in which pupils whose teachers received one form of instruction or another performed better than the pupils in the control group whose teachers were not given such instructions. The need for teachers to have refresher courses was highlighted by the World Health Organisation Expert Committee on training of health personnel in health education of the public (WHO, 1958). According to the Expert Committee:

Inservice-education makes the teacher more competent as a health educator. Short courses and seminars for teachers in-service are useful

The health knowledge mean scores for the pupils whose parents received health lessons were higher than the health knowledge mean scores of the pupils whose parents did not receive health lessons (control).

In the high socio-economic group area, the difference between the mean score of the experimental group and that of the control was not statistically significant. This might be due to the fact that the teacher who was transferred from the school in the low socio-economic group area in which the teachers received health lessons was posted to the school used as the control in the high socio-economic group area. This teacher also taught the primary five pupils in that school. And so, the mean score of the control group was increased, thereby resulting to the non-significant difference observed.

In the high and middle socio-economic group areas, the significant difference found between the health knowledge mean scores of pupils whose teachers and parents (combined) received health lessons and the mean scores of pupils whose teachers and parents did not receive health lessons could be attributed to the health lessons received by the teachers and

parents of the pupils in the experimental group. The health lessons might have increased the health knowledge and interest of both their teachers and parents, thereby making them more competent as health educators. This in turn, resulted in the better performance of the pupils in this group. The performance of the pupils in their promotion examination followed the same pattern as that of the health knowledge test. Pupils whose parents and teachers received the special preparation performed better than those whose parents and teachers did not receive such preparation.. This has shown that teachers and parents should be well prepared in health education if they were to play significant role in the health education of their children.

This finding has shown that when teachers and parents with special preparation in health education combined in giving health information to the pupils, that the health knowledge of the pupils would be increased. This has supported the previous suggestions of Baric (1972) and Williams (1980) that parents and teachers should play complementary roles with health education of the pupils. And for this to be effective parents' health education programme should go hand in hand with school health education programme (WHO 1956).

There was no significant difference in the performance of parents from the three socio-economic levels after receiving the special preparation. However, the pupils from the high socio-economic class after receiving their lessons from their parents performed better than the pupils from the other two lower classes. This suggests that there were other factors besides the possession of information which influenced the performance of the pupils. These factors were likely to be factors operating independently of the parents' knowledge and might include the ability of parents to transfer knowledge to their children, the learning environment of their children and the total time devoted to the teaching the pupils by their parents.

The pupils whose parents were educated performed better than those from the illiterate parents. The educated parents might have been exposed to some of the health topics during their primary and secondary school period. They were therefore more likely to have understood the health lessons better than the illiterate parents who had no such opportunity. Thus the educated parents might have given more health information to their children.

The level of education of parents is very important for them to educate their children well. If parents were to be educated, they would be in a position to read and write well.

they could read health magazines, books, periodicals, and articles on health matters in News papers. They would be able to follow radio and television discussions on health topics. Parents could educate their children based on the health information obtained from the afore-mentioned sources.

Some of the illiterate parents complained that they could not teach their children. The adult education programme which is being organized by the Directorate of Mass Mobilisation for Social Justice, Self Reliance and Economic Recovery (MAMSER) is highly commendable. It is hoped that such adult education programme would help to reduce the illiteracy rate. Also, it would be necessary to include health education in such adult education programme.

The Report from Rhode Island School Health Education Study (1969) showed that lack of interest in teaching health by teachers might affect the level of health knowledge of the pupils. It is therefore important that teachers should be made to be interested in the subjects they are teaching. In the three socio-economic group areas, more pupils were taught by their parents in the high socio-economic group area when compared with either those taught in the middle or low socio-economic group areas. One possible explanation might be that in the high socio-economic group area because there were more educated parents, they were able to teach their children.

The study showed that parents liked to give information on health topics such as Nutrition, Insect-borne diseases, Water-borne diseases and air-borne diseases. Since the study was limited to primary five health education syllabus, further study would be needed to identify other health topics not included in the syllabus but which the parents would be interested in teaching the pupils.

The various remarks made by parents during the interview made the researcher to feel that some parents, though not able to give their children health information, must have put what they learnt during the health lessons into practice. For example, one woman had this to say:

> "I never knew that we can get disease through the faeces until we had the health lesson with you. I now ensure that my children defecate inside the toilet and I have informed other parents in our yard whose children have formed the habit of defecating outside the toilet to ensure that such faeces are thrown into the toilet immediately after defecation."

Also from the interview the researcher had with some parents, even though they were not able to teach their children, they (parents) maintained that they have learnt a lot from the health lessons. They argued that their children do learn by watching what they do. To support this assertion, one of the mothers said: "I always cover cooked food to avoid flies and my daughter has learnt that and now does the same."

A father of five children, to illustrate one of the things he has gained from the lessons said: "I used to buy sweets for my children but I have stopped it now to prevent them from having dental problems."

Formal education of parents is very essential if they were to be used as sources of health information to the children. This has been shown in this study. Illiterate parents complained more of not being able to give health information to the pupils. Traders belong to the skilled occupational group and a good number of them had primary education. This might be the reason why more parents from the primary level of education and skilled occupational group complained more of lack of time to teach the pupils. Traders were known to be leaving their houses around six a.m. to their stalls and would come back around six p.m. Some of the high status professional who complained also of lack of time to teach their children included doctors and lawyers. For doctors and lawyers, in the morning and afternoon periods, they were in the hospital and court respectively, while in the evening they went to their private clinics and chambers respectively. So, very little time was spent with children at home. There were more pupils from the age group 10 - 14 years. This was because it had been the policy of the State Ministry of Education that children should register for elementary one at

the age of six years; and the study was limited to elementary five pupils.

Major contributions:

1. The study has thrown more light on the effectiveness of teachers and parents as sources of health information to primary five pupils. Teachers and parents with adequate health knowledge were effective as sources of health information to primary five pupils; they could, therefore, be used to improve the health knowledge of primary five pupils.

2. The study showed that teachers were more effective than parents as a source of health information to primary five pupils. However, the parents are still in a position to educate their children more than the teachers since the children stay more with their parents than the teachers.

3. They study also showed that the educational level of parents was an important factor influencing their ability to give health information to pupils. Educated parents were better than the illiterate parents as sources of health information to the pupils.

1.1 IMPLICATIONS FOR HEALTH EDUCATION

The implication of the results of the present study is that primary five pupils' health knowledge would be improved by the use of well-prepared teachers and parents as sources of health information. These findings on situations under which teachers and parents would contribute effectively in

raising the primary five pupils' health knowledge have three major implications for health education. Firstly, increasing teachers' health knowledge; secondly, improving teachers' teaching skills in health education; and thirdly developing teachers' interest in teaching health subjects. This can be done through planning short courses, seminars and workshops in health education for teachers. If health educators succeed with the above three tasks then primary school pupils' health knowledge would probably be improved.

A further implication of the present study for health education is that appropriate arrangement could be made through the school whereby health education lessons would be given to teachers and parents combined. Thus, school health will not be concerned with the pupils alone but will include the teachers and parents as well. Such an integration of teachers and parents in the school health programme will help to raise the health knowledge of the pupils.

Besides, such an integrated approach will help to reduce the conflicts that might arise as a result of information given at home by parents. For example, the teacher will tell the pupils that the bite of infected mosquitoes will cause malaria but on the other hand, at home, their parents will tell them that eating too much palm oil and witchcraft

cause malaria. So the pupils will be faced with conflicting information as to what causes malaria.

The fact that some of the parents in the experimental group who received health lessons are now putting into practice what they have learnt during the lessons is of particular interest to health education. This has strengthened the fact that knowledge is still necessary for a change to occur in behaviour, attitude and practice. The inability to give adequate health information by some parents was due to the parents' low level of education. This has an implication for health education. It means that in preparing health lesson for illiterate parents, priority has to be given to those health topics which the parents can put into practice themselv And by the act of 'watching' the parents, the pupils can learn and practice those positive health habits necessary for maintaining good health. Also, since parents with low level of education found it difficult to give health information to the pupils, adult education should be encouraged to raise the leve of education of parents. Parents should be encouraged to attend evening classes where such adult education centres exist. Adult education should be made free by the government At the moment parents are paying some amount of money which discourages attendance. Health education should be part of

adult education programme. The Ministry of Education should establish more adult education centres especially in the low socio-economic group area where the level of illiteracy is high. Establishment of more centres and free education would encourage more parents to attend adult education classes.

As at 1984/85 school year, there were nine adult education centres in the Onitsha Urban: six in the high socio-economic group area, two in the middle and only one in the low. In the 1985/86 school year, there were 18 centres; ten in the high, six in the middle and two in the low socio-economic group areas. This rapid development in the expansion of adult education centres is hoped to significantly raise the level of education of parents. The higher health knowledge mean scores observed for pupils in the experimental group whose teachers and parents (combined) received special preparation showed the role parents should play in the health education of the pupils.

The finding that teachers would be more effective in increasing primary five pupils' health knowledge than parents could also be utilized in increasing the health knowledge of the secondary school pupils. It is usually a common practice for some principals of secondary schools to invite health personnel to give the students health talks with the aim of increasing the students health knowledge. Health educators

from the health Education Units could organize seminars, workshops not only for primary school teachers but also for secondary school teachers. For the secondary school teachers, mainly those teachers who have something to do with health education will be involved. They include teachers teaching subjects such as Health Science, Home Economics, Biology and Agriculture. If these teachers would be well prepared during the seminars and workshops, they would be able to raise the health knowledge of the students.

CHAPTER SIX

1. CONCLUSION

A study has been conducted on the use of teachers and parents as sources of health information to Primary Five Pupils. The health knowledge of Primary Five Pupils increased significantly when teachers and parents with special preparation in health education were used as sources of health information to the Primary Five Pupils. Well-prepared teachers and parents with adequate health knowledge should therefore be used to improve the health knowledge of primary five pupils which was found to be inadequate.

Teachers were seen to be more effective as a source of health information to primary five pupils than parents. Use of teachers and parents combined as sources of health information to primary five pupils in the experimental group failed to give significant difference in the level of health knowledge of the pupils when compared with using teachers alone.

Both the teachers and the parents were effective as sources of health information when they had adequate health knowledge, skills and were interested in the health topics taught. For teachers and parents to be used as health educators therefore, they need to have adequate health knowledge, skill and should be interested in health education

The pupils whose teachers received the special preparation in health education (experimental group) performed significantly better than the pupils whose teachers did not receive the special preparation (control group). Teachers need to be well prepared in health education if they were to be used as source of health information to pupils.

The educational level of parents was an important factor in their ability to give health information to the pupils. Parents with primary education or more performed better than the illiterate parents as sources of health information to the pupils.

Although knowledge alone may not necessarily lead to a change in behaviour, this study has shown that knowledge is still necessary for a change in practice. Even though most parents were willing to give health information to their pupils lack of time to stay with them coupled with low level of education of some parents, particularly the illiterate parents constituted a problem for them.

1.1 RECOMMENDATIONS

In view of the findings from the present study, the following recommendations were made:

1. The Ministry of Health through its Health Education Unit should, in co-operation with the Ministry of Education, organise refresher courses, seminars and workshops in

health education for primary school teachers during the long vacations.

2. More adult education centres should be established by the Ministry of Education in both Urban and Rural Areas, and health education should be included in the curriculu for adult education.

3. Adult Education should be made free by the Government so that more parents would receive health education lessons

1.2 LIMITATIONS OF STUDY

1. The health lessons given to the teachers and parents were based on the health education contents of primary five school syllabus, as such the health information given to the pupils depended mainly on the content of the syllabus.

2. There were parents who were expected to attend the health lesson but did not. Their children were not included in the analysis and this led to a reduction in the number of pupils used for the analysis.

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A P P E N D I C E S

APPENDIX I

Dept. of Preventive and
Social Medicine
University of Ibadan
Ibadan, Nigeria

21st Aug. 1984

The Permanent Secretary
Ministry of Local Government
Planning and Research
Enugu, Anambra State.

Dear Sir,

Permission To Carry Out A Survey
In Primary Schools In Onitsha.

I am writing to request for permission to carry out a survey with some primary schools in Onitsha Urban. As part of my doctoral dissertation at the University of Ibadan, I am conducting a research on the use of parents and teachers as sources of health information to primary school pupils, with particular reference to situations in which parents and teachers would be most effective as health educators.

It is hoped that the study would come up with various approaches aimed at improving the health knowledge of primary school pupils which has been found to be inadequate.

Attached is a photocopy of a letter from my institution.

Thank you very much for your co-operation.

Yours sincerely,

Anthony Ik. Ogbalu

GOVERNMENT OF ANAMBRA STATE OF NIGERIA

APPENDIX 2

...: MINLOG ENUGU

...:

...

MLG/CPO/III/218

...to be addressed to the Permanent ...)

MINISTRY OF LOCAL GOVERNMENT, XX
RURAL DEVELOPMENT/C. Matters
PLANNING/RESEARCH
XXXXXXX DIVISION

P.M.B. 1045

ENUGU

21st August, 19 84.

TO WHOM IT MAY CONCERN

This is to certify that Mr. Anthony I. Ogbalu of the Anambra State Ministry of Health, and currently a post-graduate student of the University of Ibadan is carrying out a study titled 'Comparative Approaches to Health Education Intervention in Primary Schools'.

2. Please, co-operate fully with him.

Dr. O.I.O. Onyemelukwe,
Chief Planning Officer,
for Permanent Secretary.

UNITSHA LOCAL GOVERNMENT

APPENDIX 3

Ministry of Local Govrt.,
Rural Dev./C. Matters
PLANNING RESEARCH
~~LOCAL GOVERNMENT OFFICE~~

P. M. B. ~~1235~~ 1045
~~ONITSHA~~
ENUGU

MLG/CPO/III/218

(Correspondence to be Addressed to the Secretary)

21st August 19 84

TO WHOM IT MAY CONCERN

This is to certify that Mr. Anthony I. Ogbalu of the Anambra State Ministry of Health, and currently a post-graduate student of the University of Ibadan is carrying out a study titled '<u>Comparative Approaches to Health Education Intervention in Primary Schools</u>'.

2. Please, co-operate fully with him.

Dr. O.I.O. Onyemelukwe,
Chief Planning Officer
for: Permanent Secretary.

Education Department
Onitsha Local Government
Onitsha.

19th November' 1984

TO ALL HEAD TEACHERS
Primary Schools
Onitsha Local Government Area
ONITSHA.

The above passage is for your information and strict compliance, please.

EDUCATION DEPT. SIGN. DATE 19/11/84 ONITSHA LOCAL GOVT.

....
for: CHIEF EDUCATION OFFICER
ONITSHA LOCAL GOVERNMENT AREA.

APPENDIX 4

RANDOM SAMPLING NUMBERS

Random Sampling Numbers—I

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	6	3	0	5	0	4	2	2	4	8	6	5	8	5	8
2	3	6	3	2	6	1	8	3	2	8	5	8	5	1	3	7
3	7	2	0	1	8	6	2	8	2	6	0	8	1	3	6	5
4	9	9	6	5	5	5	6	9	1	5	7	6	7	2	0	6
5	8	0	4	5	1	1	3	3	9	0	8	8	6	9	4	5
6	9	0	8	9	0	6	0	2	3	1	8	6	9	3	7	9
7	4	0	5	3	8	3	0	9	2	1	2	1	1	3	7	0
8	7	2	3	0	3	3	5	6	6	2	2	3	7	7	7	9
9	4	5	2	3	9	0	9	5	9	4	1	8	6	5	3	0
10	7	5	8	1	2	6	6	9	9	0	3	3	0	3	6	1
11	8	1	6	7	6	4	0	1	2	4	8	1	4	7	8	5
12	7	2	0	6	3	2	1	0	2	2	3	8	0	6	3	9
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14	7	0	7	3	2	6	7	9	1	0	4	3	8	4	5	0
15	7	2	0	8	7	4	6	3	1	3	3	9	4	2	6	4
16	8	3	2	8	6	9	2	4	1	7	8	4	1	6	6	8
17	8	2	4	3	7	3	4	3	8	2	4	7	3	3	7	4
18	3	4	4	6	8	7	9	3	7	0	7	8	1	0	3	6
19	4	9	0	8	2	8	5	9	1	9	5	3	1	4	3	7
20	7	7	1	3	7	2	6	0	3	4	6	3	7	6	1	9
21	3	3	1	5	9	9	7	6	9	1	8	0	7	3	4	6
22	1	1	8	0	2	0	0	0	8	2	6	3	1	2	7	3
23	8	4	6	6	2	3	8	1	9	0	6	3	0	8	3	0
24	6	0	1	0	0	3	3	7	4	3	7	8	1	1	6	2
25	6	9	3	0	1	0	6	3	5	3	3	7	7	3	2	2
26	0	7	3	6	6	8	8	8	8	6	6	6	4	3	3	2
27	8	2	6	0	6	8	0	1	1	0	1	3	1	1	8	8
28	4	0	0	9	0	8	8	3	1	8	4	0	3	0	8	3
29	5	3	8	6	2	7	7	3	0	7	1	2	2	0	0	0
30	6	7	6	7	4	0	2	4	8	4	3	3	0	7	4	3
31	3	0	6	4	1	0	3	9	4	3	1	3	8	1	4	0
32	4	2	4	9	0	0	0	0	0	1	2	0	3	6	0	2
33	3	8	3	1	6	1	0	4	2	1	0	9	1	0	3	6
34	4	1	6	7	3	3	4	7	0	4	3	1	4	0	4	1
35	9	6	8	1	1	3	3	3	3	3	0	4	4	3	4	3
36	0	9	2	8	2	4	9	9	3	3	1	3	7	6	1	0
37	2	7	3	6	8	7	9	8	2	3	6	6	1	2	9	2
38	0	0	7	1	9	4	9	3	6	3	8	2	9	8	6	9
39	1	7	8	3	0	0	1	1	4	6	8	3	8	2	4	4
40	2	7	0	7	7	3	0	3	8	1	0	3	0	1	0	0

FROM

Hill A.B. (1977). A short textbook of Medical Statistics

APPENDIX '5

Dept. of Preventive And Social
Medicine
University of Ibadan
Ibadan.

2- IO - 84.

The Head Master/Mistress
And Staff

.....

.....

.....

Dear Sir/Madam,

I am writing to inform you that after the random sampling of the schools in the Onitsha Urban, your school has been chosen for the re-search in health education in primary schools.

Your school will be used for the

.....

.....

.....

Please, I am requesting for your co-operation.

Thank you.

Yours sincerely,

.....

Ugwu A.I.

A P P E N D I X 6

HEALTH KNOWLEDGE TEST

NAME:.....

SCHOOL:.....

CLASS:.....

INSTRUCTIONS:

The purpose of this test is to measure your health knowledge. Each question is followed by four(4) answers with numbers 1,2,3,4, and only one is the BEST correct answer.

Pick the answer which you think is correct, then write the number of the correct answer on the ANSWER SHEET provided. Write it infront of the number of the question. An example has been done for you below.

Please do not write, or make any mark on the question papers.

Answer ALL questions.

Example:

1. Which of the following is an insect?
   1. Lizard
   2. Tortoise
   3. Mosquito
   4. Bird

In the above example, Mosquito is the best answer, and the number is 3.

You will now write this 3 under the answer number for question number

QUESTION NUMBER	ANSWER NUMBER
1	3

Now, answer the following questions like the above example.

1. Which one of the following statements is correct for our teeth?
   1. We should brush our teeth once a week
   2. We should brush our teeth twice a week
   3. We should brush our teeth every morning and evening.

4. We should brush our teeth once a month

2. Licking sweets and eating sweet biscuits can lead to
   1. Stomach ache
   2. ear ache
   3. head ache
   4. tooth ache

3. Which one of the following is <u>true</u> of our finger nails?
   1. Our finger nails are equal in size
   2. Our finger nails should not be cut
   3. Our finger nails should be left dirty
   4. Dirty finger nails could harbour germs

4. Sleeping Sickness is caused by
   1. bite of blackfly
   2. bite of infected tse-tsefly
   3. bite of mosquito
   4. bite of housefly

5. Carbohydrate food is concerned with
   1. energy to the body
   2. growth to the body
   3. protection to the body
   4. nothing to the body

6. A person cutting grass in the field needs
   1. protein food to do the work
   2. fatting food to do the work
   3. carbohydrate food to do the work
   4. vitamin food to do the work

7. Protein food is concerned with
   1. energy to the body
   2. growth to the body
   3. protection to the body
   4. nothing to the body

8. Which one of the following food items is a protein food?
   1. Garri
   2. Yam

3. Palm Oil
4. Meat

9. Which one of the following food items is concerned with body gro-wth and repair?
   1. Beans
   2. Garri
   3. Palm oil
   4. Yam

10. A child needs one of the following food more than the adult of 30 years old.
   1. Carbohydrate food
   2. Protein food
   3. Fatty food
   4. Vitamin food

11. Food rich in fat and oil is concerned with
   1. growth to the body
   2. protection to the body
   3. energy to the body
   4. nothing to the body

12. We should not drink alcohol beoause
   1. alcohol is a bitter food
   2. alcohol is not good for our health
   3. alcohol is for rich people
   4. alcohol is for old people

13. Which one of the following food items contains greater amount of fat?
   1. Beans
   2. Bread
   3. Rice
   4. Palm oil

14. Vitamin is concerned with
   1. energy to the body
   2. protection to the body
   3. growth to the body
   4. nothing to the body

15. Which one of the following food items oontains greate- amount of vitamins?
1. Dread
2. Yam
3. Vegetables
4. Cassava

16. Whioh one of the following food items is oonoerned with body protection mainly?
1. Vegetables
2. Sugar
3. Yam
4. Cassava

17. House hold refuse should be
1. dumped on the main road
2. dumped in the gutter
3. dumped at the baok yard
4. dumped at the approved dumping site

18. One of the following is NOT how to keep our school oompound oloan
1. Sweeping the surroundings every morning
2. Sweeping the olassrooms every morning
3. Dropping pieces of paper every where
4. Cutting down grown grasses around

19. Mineral salt is concerned with
1. energy to the body
2. protection to the body
3. growth to the body
4. nothing to the body

20. One of the following reasons is NOT why we should always keep our olothes olean.
1. Dirty olothes oan harbour germs
2. Cloan olothes will help to prevent skin diseases
3. We look nice when we put on oloan olothes
4. To please our teachers.

21. Bite of infeoted mosquito will cause
    1. oholera
    2. malaria
    3. tuberculosis
    4. measles
22. To help the body digest the food, we should
    1. chew the food very well
    2. oook the food very well
    3. wash the food very well
    4. eat warm food.
23. Thioh one of the following food items is carbohydrate food?
    1. Fish
    2. Yam
    3. Beans
    4. Palm oil
24. Bite of blackfly(simulium) will osuse
    1. disoase of the eye
    2. stomaoh aohe
    3. hoed ache
    4. ear aoho
25. One of the following insoots do not transmit disoaso
    1. Blaokfly
    2. Butterfly
    3. Tse-tsefly
    4. Mosquito
26. Ono of the following insocts is oonoernod with oarrying germ to our food
    1. Mosquito
    2. Tse-tsefly
    3. House fly
    4. Blaok fly

27. One of the following dieases can easily be got by drinking dirty water(Pond water)
    1. Guinea worm disease
    2. Malaria disease
    3. Measles
    4. Cough

28. If we see flies on top of our food then
    1. sand may be present and will cause disease
    2. germ may be present and will cause disease
    3. water may be present and will cause disease
    4. we can get malaria

29. If faeces enter the food we eat then we can get
    1. disease due to the faeces smell
    2. tooth ache
    3. disease due to worm (e.g. round-worm)
    4. malaria

30. Germs grow better in a
    1. very clean place
    2. very hot place
    3. very cold place
    4. very dirty place

31. When faeces enter the water we drink we are likely to get
    1. cholera
    2. cough
    3. measles
    4. nothing

32. By eating raw unwashed vegetables and fruits
    1. we can get head ache
    2. we can get stomach ache due to worm
    3. we can get tooth ache
    4. we can get back ache

33. One of the following can NOT be got through food.
    1. Cholera
    2. Dysentery
    3. Catarrh
    4. Worms

34. Breathing dust can result in
    1. our having dysentery
    2. our having headache
    3. our having catarrh
    4. our having worms

35. One of the following can not be got by breathing air.
    1. Tuberculosis
    2. Whooping cough
    3. Catarrh
    4. Dysentery

36. Measles is got from
    1. the food we eat
    2. the air we breatho
    3. the water we drink
    4. the wine we drink

37. Which of the following can penetrate our body through the feet?
    1. Guinea worm
    2. Round worm
    3. Hook worm
    4. Tape worm

38. Guinea worm can enter our body when
    1. we have insect bite
    2. we eat unripe mango
    3. we breathe bad air
    4. we drink dirty water containing cyclops

39. Immunization(vaccination) can NOT prevent
    1. malaria
    2. measles
    3. tuberculosis
    4. whooping cough
40. Malaria is got by
    1. eating too much oil
    2. going under the sun
    3. eating plenty of food
    4. being beaten by infected mosquito
41. By removing all stagnant water around
    1. we are preventing malaria
    2. we are preventing measles
    3. we are preventing cholera
    4. we are preventing dysentery
42. The insect that breed in stagnant water
    1. Housefly
    2. Blackfly
    3. Mosquito
    4. Tse-tsefly
43. By removing all refuse around we are preventing
    1. Measles
    2. Malaria
    3. Cholera
    4. dysentery
44. Malaria can be prevented
    1. by killing all house flies
    2. by killing all black flies
    3. by killing all tse-tse flies
    4. by killing all mosquitoes

45. We go to have immunisation to
    1 please the government
    2.please our parents
    3.prevent us from diseases such as measles
    4.please our teacher

46. By removing all refuse around we are preventing
    1. where mosquito breed
    2. where tse-tse-fly breed
    3. where blackfly breed
    4. where butterfly breed

47. We were asked to wear sandals while coming to school because
    1. sandals will protect our feet
    2. our parents are rich
    3. sandals will help us pass our examination
    4. the government said we should wear them

48. When we cover our food we are preventing
    1. blackfly from reaching our food
    2. housefly from reaching our food
    3. tse-tsefly from reaching our food
    4. mosquito from reaching our food

49. Guinea worm can be prevented by
    1. not eating unripe mango
    2. avoid drinking dirty water (e.g.pond water)
    3. avoiding insect bite
    4. wearing clean shirt

50. Why should we not play along the main road?
    1. Because our teacher will cane us
    2. Because our parents will cane us
    3. Because we may be knocked down by a moving vehicle
    4. Because the police man will arrest us

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    4. where butterfly breed

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    4. mosquito from reaching our food

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    3. avoiding insect bite
    4. wearing clean shirt

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    1. Because our teacher will cane us
    2. Because our parents will cane us
    3. Because we may be knocked down by a moving vehicle
    4. Because the police man will arrest us

51. Which of the following statements is NOT true?
1. We should not play with fire
2. We should not play with broom
3. We should not play with pointed objects
4. We should play with electric appliances

52. One way of preventing catarrh is to
1. avoid breathing dust
2. avoid drinking dirty water
3. avoid eating bad food
4. have vaccination

53. Which of the following is NOT the correct thing to do when we are sick
1. Go and take medicine yourself any where and drink
2. Tell your parents to take you to hospital
3. Tell your parents to give you the medicine Prescribed by the doctor
4. Try to eat well

54. The type of teeth an adult has are called
1. periodic teeth
2. permanent tooth
3. milk teeth
4. temporal tooth

55. One reason for breathing through the nose is that
1. we can not breath through the mouth
2. We want the hairs inside the nose to remove dust
3. we need plenty of air
4. we do not want plenty of air

56. The type of teeth a child of four months has are called
1. permanent tooth
2. premolar teeth
3. milk (temporal) teeth
4. white tooth

57. To avoid injury to the ear clean it with
    1. broom stick
    2. match stick
    3. cotton bud
    4. finger nail

58. Which of the following organisations is concerned with health?
    1. O.A.U.
    2. U.N.O.
    3. I.T.O.
    4. W.H.O.

59. We can protect the ear from damage by
    1. avoiding very loud noise
    2. cleaning it with our finger nail
    3. cleaning it with broom stick
    4. cleaning it with match stick

60. Which of the following organisations is concerned with agriculture production?
    1. O.A.U.
    2. F.A.O.
    3. ECOWAS
    4. U.N.O.

61. If a child dips his hand in boiling water which of the following will you do as first-aid?
    1. Bandage his hand immediately
    2. Plaster his hand immediately
    3. Send him to hospital immediately
    4. Put his hand in cold water immediately

62. Vaccination against tuberculosis is done
    1. in the chemist
    2. in the health centre
    3. in the medicine store
    4. in the drug house

63. One of the following is correct for rest and sleep
    1. Adequate rest and sleep will help us grow well
    2. Resting and sleeping will make us lazy
    3. Resting and sleeping is for adults
    4. Resting and sleeping is not good for children

64. Which of the following is true of smoking cigarette?
    1. smoking is bad for our health
    2. smoking is good for our health
    3. smoking is for men only
    4. smoking is not for women

65. The main reason why we do exercise is that
    1. exercise makes us sweat
    2. exercise makes us pass exams
    3. exercise stops headache
    4. exercise makes us healthy

66. A fat boy will need one of the following to reduce his fatness
    1. drink plenty of soft drinks
    2. lick plenty of sweets
    3. do plenty of exercise
    4. eat plenty of biscuits

67. Making sure that the surroundings are clean is the work of
    1 Police Inspectors
    2 Road Inspectors
    3 Sanitary Inspector
    4. School Inspectors

68. Which one of the following food items is energy (strength) giving food?
    1. Fish
    2. Mango
    3. Beans
    4. Garri

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68. Which one of the following food items is energy (strenght) giving food?
    1. Fish
    2. Mango
    3. Beans
    4. Garri

69. What work does your father/guardian do?

.....

70. What work does your mother do?

.....

71. The name of your parents/guardian

.....

72. The house address of your parents/guardian

.....

73. What is your age?

1. 5 - 9 years
2. 10 - 14 years
3. 15 and above

74. Are you a boy or a girl

1. Boy
2. Girl

APPENDIX 7

Dept. of Preventive and
Social Medicine
University of Ibadan
Ibadan

4 - 10 - 84

Dear Sir/Madam,

I am conducting a doctoral research project on the use of parents and teachers as sources of health information to primary five school pupils in Onitsha Urban. The objective of the study is to throw more light on the use of parents and teachers in increasing the health knowledge of primary school pupils; which has been found to be inadequate. It is hoped that the study would come up with various approaches aimed at increasing the health knowledge of primary school pupils.

A health knowledge test questionnaire is being developed to test the primary five pupils health knowledge. And, in an attempt to determine which question will be included in the test instrument, it is important to have the questions evaluated by a jury of experts for content and face validity purposes. There are 68 multiple choice questions drawn from primary five health education syllabus. Please you are requested to:

1. Go through the questions and see whether they covered the primary five syllabus.

2. Indicate if any question/questions which you consider not appropriate for primary five pupils.

3. To comment on the language used.

Thanks for your co-operation.

Yours sincerely,

APPENDIX 7

Dept. of Preventive and
Social Medicine
University of Ibadan
Ibadan

4 - 10 - 84

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1. Go through the questions and see whether they covered the primary five syllabus.

2. Indicate if any question/questions which you consider not appropriate for primary five pupils.

3. To comment on the language used.

Thanks for your co-operation.

Yours sincerely,

APPENDIX B

ITEM ANALYSIS

ITEM NUMBER	RANK ORDER	HIGH GROUP	LOW GROUP	DISCRIMINATIONS INDEX H - L	DIFFICULTY INDEX H + L	% DIFFICULTY
1	5	13	10	3	23	72 %
2	7	14	7	7	21	66
3	2	16	10	6	26	81
4	7	13	8	5	21	66
5	11	16	1	15	17	53
6	14	10	3	7	13	41
7	9	15	4	11	19	59
8	10	11	7	4	18	56
9	15	10	2	8	12	38
10.	18	6	4	2	10	31
11.	17	8	3	5	11	34
12	25	1	1	0	2	6
13	12	10	6	4	16	50
14	7	15	6	9	21	66
15	11	9	8	1	17	53
16	10	11	7	4	18	56
17	22	3	3	0	6	19
18	5	14	9	5	23	72
19	17	8	3	5	11	34
20	1	15	13	2	28	86
21	4	16	8	8	24	75
22	8	12	8	4	20	63
23	3	15	10	5	25	78
24	8	16	4	12	20	63
25	5	15	8	7	23	72
26	13	13	1	12	14	44
27	9	11	8	3	12	38
28	11	12	5	7	17	53

ITEM NUMBER	RANK ORDER	HIGH GROUP	LOW GROUP	DISCRIMINATIONS INDEX H - L	DIFFICULTY INDEX H + L	% DIFFICULTY % DIFFICULTY
29	18	7	3	4	10	31
30	6	16	6	10	22	69
31	11	12	5	7	17	53
32	8	14	6	8	20	63
33	15	10	2	8	12	38
34	10	13	5	8	18	56
35	13	8	6	2	14	44
36	17	8	3	5	11	34
37	23	5	0	5	5	16
38	13	8	6	2	14	44
39	24	1	2	- 1	3	9
40	15	7	5	2	12	38
41	14	9	4	5	13	41
42	15	7	5	2	12	38
43	7	15	6	9	21	66
44	14	10	3	7	13	41
45	21	3	4	- 1	7	22
46	8	15	5	10	20	63
47	19	7	2	5	9	28
48	9	14	5	9	19	59
49	13	7	5	2	14	44
50	21	4	3	1	7	22
51	22	2	4	- 2	6	19
52	12	9	5	4	14	44
53	20	5	1	4	6	19
54	15	8	4	4	12	38
55	12	10	6	4	16	50
56	5	15	8	7	23	72

ITEM NUMBER	RANK ORDER	UPPER GROUP	LOW GROUP	DISCRIMINATIONS INDEX H - L	DIFFICULTY INDEX H + L	% DIFFICULTY
57	18	7	3	4	10	31
58	11	10	3	7	13	41
59	17	8	3	5	11	34
60	9	15	4	11	19	59
61	13	12	2	10	14	44
62	16	10	2	8	12	36
63	19	6	3	3	9	28
64	16	9	3	6	12	38
65	14	10	3	7	13	41
66	13	10	4	6	14	44
67	11	13	4	9	17	53
68	18	7	3	4	10	31

APPENDIX 9

VALIDITY TEST

ANYOCU MEM. P. SCHOOL

No.	NAME	PROF. EXAM. X	FIRST TEST Y	$X-\bar{X}$ x	$Y-\bar{Y}$ y	x^2	y^2	xy
1.	Eliobu Adaobi	80	70	25	16	625	256	400
2.	Okeke Ifeoma	73	68	18	14	324	196	252
3.	Nnanyelugo Uchenna	60	66	5	12	25	144	60
4.	Okonkwo Anthony	63	64	8	10	64	100	80
5.	Obiora Ngozi	75	62	20	8	400	64	160
6.	Nnolu Emeka	58	60	3	6	9	36	18
7.	Onwu Cosmos	50	60	-5	6	25	36	-30
8.	Obunime Arinze	55	58	0	4	0	16	0
9.	Agbanasi Innocent	60	54	5	0	25	0	0
10.	Ezeuko Francis	50	50	- 5	- 4	25	16	20
11.	Akwata Esther	60	50	5	- 4	25	16	-20
12.	Ifediora Ifeyinwa	38	44	-17	-10	289	100	170
13.	Emelia Gloria	45	44	-10	-10	100	100	100
14.	Okeke Michael	38	44	-17	-10	289	100	170
15.	Okafor Ifeoma	43	42	-12	-12	144	144	144
16.	Ofomah Chinyere	53	40	- 3	-14	9	196	42
17.	Ifenyi Cecilia	40	40	-15	-14	225	196	210
18.	Okafor Donatus	40	36	-15	-18	225	324	270
19.	Oreke Uchenna	32	26	-23	-28	484	784	616
20.	Anyaeji Ifeoma	65	74	10	20	100	400	200
21.	Ezu Chika	80	66	25	12	625	144	300
22.	Ifediora Emeka	78	70	23	16	529	256	368
23.	Chukwuneta Chinwe	60	70	5	16	25	256	80
24.	Okeke Patricia	61	68	6	14	64	196	112
25.	Ezeh Andrew	60	68	5	14	25	196	70
26.	Ikediuko Ruchuria	65	66	10	12	100	144	120
27.	Chukwu Helen	78	66	23	12	529	144	276
28.	Unaji Patricia	68	64	13	10	169	100	130
29.	Ewuko Blessing	75	62	20	8	400	64	160

No.	ANYACU MEM. P. SCHOOL NAME	PROM EXAM: X	FIRST TEST: Y	X-X̄ x	Y-Ȳ y	x2	y2	xy
30.	Ikeji Florence	50	62	- 5	8	25	64	-40
31.	Mbakwe Anulika	55	60	0	6	0	36	0
32.	Nwanedo Ngozika	53	60	- 2	6	4	36	-12
33.	Ozochukwu Ngozika	58	60	3	6	9	36	18
34.	Eze Ngozika	58	58	3	4	9	16	12
35.	Eneje Perpetua	60	56	5	2	25	4	10
36.	Anlakor Ogochukwu	55	56	0	2	0	4	0
37.	Nzekuche Chinedu	58	52	3	-2	9	4	- 6
38.	Ifekandu Ndidi	60	52	5	-2	25	4	-10
39.	Aron Joseph	50	52	- 5	-2	25	4	10
40.	Elike Kenneth	58	50	3	-4	9	16	-12
41.	Eze...lu Perpertual	63	50	8	- 4	64	16	-32
42.	Nwadinamma Tabansi	58	56	3	2	9	4	6
43.	Ezimefuna Chibuzo	50	46	- 5	-8	25	64	40
44.	Arinze Ngozi	43	46	-12	-8	144	64	96
45.	Obiefuna Joseph	50	46	- 5	-8	25	64	40
46.	Nkem Elbiana	42	40	-10	-14	100	196	140
47.	Nwobidi Nwamaka	35	40	-20	-14	400	196	280
48.	Ezeu Peace	333	76	-22	-18	84	324	396
49.	Onboji Michael	33	34	-22	-20	484	400	440
50.	Ezeo Sanctus	40	32	-15	-22	225	484	330
51.	Ekechi Josephine	33	30	-22	-24	484	576	528
52.	Ikeno Charles	45	48	-10	6	100	36	60
53.	Nwachukwu Ikechukwu	45	48	-10	6	100	36	60
54.	Nucha Franka	55	50	0	4	0	16	0
55.	Nduchie Charles	58	50	3	4	9	16	-12
56.	Ahanonkwu Evelyn	68	72	13	18	169	324	234
57.	Ojukwu Hilary	70	68	15	14	225	196	210
58.	Emendu Onika	70	60	15	6	225	36	90

No. ANYAGU MEM. P. SCHOOL	PROJECT:	INTEST TEST:	$X-\bar{X}$	$Y-\bar{Y}$			
No. NAME	X	Y	x	y	x^2	y^2	xy
30. Ikeji Florence	50	62	- 5	6	25	64	- 40
31. Mbakwe Anulika	55	60	0	6	0	36	0
32. Nwanedo Nnozika	53	60	- 2	6	4	36	- 12
33. Ozoohukwu Nnozika	58	60	3	6	9	36	18
34. Eze Nnozika	58	58	3	4	9	16	12
35. Eneje Perpetua	60	56	5	2	25	4	10
36. Aniakor Ogochukwu	55	56	0	2	0	4	0
37. Nwakuche Chinedu	58	52	3	-2	9	4	- 6
38. Ifekandu Ndidi	60	52	5	-2	25	4	-10
39. Aron Joseph	50	52	- 5	-2	25	4	10
40. Ejike Kenneth	58	50	3	-4	9	16	- 12
41. Ezeulu Perpertual	63	50	8	- 4	64	16	-32
42. Kwadinaora Tabansi	58	56	3	2	9	4	6
43. Ezitefuna Chibuzo	50	46	- 5	-8	25	64	40
44. Arinzo Nnozi	43	46	-12	-8	144	64	96
45. Obiefuna Joseph	50	46	- 5	-8	25	64	40
46. Ntonu Bibiana	45	40	-10	-14	100	196	140
47. Uzobidi Nwamaka	35	40	-20	-14	400	196	280
48. Kanu Peace	33	36	-22	-18	484	324	396
49. Ogbodi Michael	33	34	-22	-20	484	400	440
50. Ibe Sanctus	40	32	-15	-22	225	484	330
51. Ekechi Josephine	33	30	-22	-24	484	576	528
52. Akano Charles	45	48	-10	- 6	100	36	60
53. Nwachukwu Ikechukwu	45	48	-10	- 6	100	36	60
54. Nweke Frank	55	50	0	- 4	0	16	0
55. Nnduchie Charles	58	50	3	- 4	9	16	-12
56. Nwankwo Evelyn	68	72	13	18	169	324	234
57. Ojukwu Hilary	70	68	15	14	225	196	210
58. Nnendu Chika	70	60	15	6	225	36	90

ANYOGU MEM. P. SCHOOL	FROM. EXAM.	FIRST TEST	$X-\bar{X}$	$Y-\bar{Y}$			
NO. NAME	X	Y	x	y	x^2	y^2	xy
59. Ezekwem Onyinye	53	64	-2	IO	4	IOO	-20
Σ	3268	3I86	0	0	9294	8096	7334

Mean $\frac{3268}{59}$ $\frac{3I86}{59}$

$= 55.39$ $= 54$

$\bar{X} = 55$ $\bar{Y} = 54$

$\sigma x = \sqrt{\frac{9294}{59}} = \sqrt{I57.53} = I2.55$

$\sigma y = \sqrt{\frac{8096}{59}} = \sqrt{I37.22} = II.7I$

$rxy = \frac{\Sigma xy}{N\sigma x\ \sigma y} = \frac{7334}{59(I2.55)(II.7I)} = \frac{7334}{8670.67}$

$= 0.846$

$r = 0.85$

r = Correlation coefficient

X = Promotion examination score

Y = First test score

x = Difference of individual exam score from the mean

y = Difference of individual test score from the mean

N = Total number of pupils who took the test

σ = Standard deviation

Conclusion: The Health Knowledge Test Questionnaire is valid, $r = 0.85$

RELIABILITY TEST	FIRST TEST	RE-TEST	$X-\bar{x}$	$Y-\bar{y}$			
NAME	X	Y	x	y	x^2	y^2	xy
Akigwe Amaka	50	44	0	-7	0	49	0
Onyejekwe Ngozi	64	62	14	11	196	121	154
Okoye Jacob	54	50	4	-1	16	1	-4
Osuchukwu Ugochukwu	58	54	8	3	64	9	24
Onunaka Chigozie	54	58	4	7	16	49	28
Anyanwu Josephine	54	52	4	1	16	1	4
Okoye Ifeanyi	44	48	-6	-3	36	9	18
Okoro Uzoma	56	60	6	9	36	81	54
Onwubualili Stephen	58	60	8	-1	64	1	-8
Agu Ferdinand	66	70	16	19	256	361	304
Ndife Euphemia	34	28	-16	-23	256	529	368
Onyeanusi Ngozi	66	60	16	9	256	81	144
Uba Augustina	36	30	-14	-21	196	441	294
Okechukwu Emelia	42	34	-8	-17	64	289	136
Okafor Agatha	50	58	0	7	0	49	0
Odigo Uzonicha	50	42	0	-9	0	81	0
Nnamedo Chukwuemeka	54	58	4	7	16	49	28
Onyeka Chinenye	52	46	2	-5	4	25	-10
Onyekwelu Loretta	44	50	-6	-1	36	1	6
Agunobi Oliver	28	34	-22	-17	484	289	374
Okafor Patricia	36	42	-14	-9	196	81	126
Onekwuka Juliana	50	62	0	11	0	121	0
Nnaemeni Nkirika	68	62	18	11	324	121	98

RELIABILITY TEST	FIRST TEST	RE-TEST	$X-\bar{x}$	$Y-\bar{y}$			
NAME	X	Y	x	y	x^2	y^2	xy
Ohaeregaba Anthony	68	78	18	27	324	729	486
Okani Mary Rose	50	52	0	1	0	1	0
Oranazor Chinyelu	56	52	6	1	36	1	6
Dike Patience	52	44	2	-7	4	49	-14
Tagbo Christopher	66	58	16	7	256	49	112
Akasike Christiana	62	60	12	9	144	81	108
Ugwu Emmanuel	76	66	26	15	676	225	390
Obianika Stella	52	48	2	-3	4	9	-6
nu Nwobgonwa	54	52	4	1	16	1	4
Agbani Patricia	52	46	2	-5	4	25	-10
Onuorah Uko	68	70	18	19	324	361	342
Modabe Nonso	62	56	12	5	144	25	60
Obi Nwanneka	50	58	0	7	0	49	0
Nmaduigwe Nwadiogo	60	56	10	5	100	25	50
Amapechi Jude	56	62	6	11	36	121	66
Eze Pamela	58	56	8	5	64	25	40
Okeke Celestina	52	58	2	7	4	49	14
Anakwe Chinyeaka	62	60	12	9	144	81	108
Onyibara Ogechi	76	76	26	25	676	625	650
Anieze Jude	50	50	0	-1	0	1	0
Campbell Anthony	76	78	26	27	676	729	702
Ibeduo Christiana	82	88	32	37	1024	1369	1184
Nwophalu Peter	50	52	0	1	0	1	0

RELIABILITY TEST	FIRST TEST	RE-TEST	$x-\bar{x}$	$y-\bar{y}$			
NAME	X	Y	x	y	x^2	y^2	xy
Obiluo Janet	44	46	-6	-5	36	25	30
Onuegbu Veronica	34	34	-16	-17	256	289	272
Okeke Agustine	42	34	- 8	-17	64	289	136
Anene Philip	30	38	-20	-13	400	169	260
Ogbuonara Chukwudi	38	42	-12	- 9	144	81	108
Ogbonna Uju	44	42	- 6	- 9	36	81	54
Ezekwem Amobi	26	32	-24	-19	576	361	456
Dumbili Stella	72	70	22	19	484	361	418
Onochie Obinweze	48	58	- 2	7	4	49	-14
Anyaneze Stella	26	32	-24	-29	576	841	696
Nebo Rita	36	42	-14	- 9	196	81	126
Okoli Clement	44	42	- 6	- 9	36	81	54
Nebo Francis	46	38	- 4	-13	16	169	52
Onyekwe Philomina	42	44	- 8	- 7	64	49	56
Achike Ugozi	38	44	-12	- 7	144	49	84
Ihema Edith	28	34	-22	-17	484	289	374
Ani Ebele	32	30	-18	-21	324	441	378
Okonkwo Grace	36	34	-14	-17	196	289	238
Ndulue Anthonia	52	58	2	7	4	49	14
Ezechukwu Theresa	50	48	0	- 3	0	9	0
Ezeazu Georgina	42	38	-8	-13	64	169	104
Chukwuneke Obiageli	40	34	-10	-17	100	289	170
Agwunobi Chukwudi	54	60	4	9	16	81	36

RELIABILITY TEST	FIRST TEST	RE-TEST	$X-\bar{x}$	$Y-\bar{y}$			
NAME	X	Y	x	y	x^2	y^2	xy
Ibe Ifeoma	60	64	10	13	100	169	130
Osuoke Stella	42	38	- 8	-13	64	169	104
Aroh Emmanuel	62	58	12	7	144	49	84
Onyiuba Rita	62	64	12	13	144	169	156
Ogbuji Emeka	30	34	-20	-17	400	289	340
Okeke Sylvester	42	34	- 8	-17	64	289	136
Nwaigbo Chukwudi	32	26	-18	-25	324	625	450
Agumba Euphemia	52	58	2	7	4	49	14
Iheanacho Angela	50	50	0	- 1	0	1	0
Nwanebisi Okechukwu	30	38	-20	-13	400	169	260
Okeke Ifeoma	52	52	2	1	4	1	2
Ogugo Florence	30	36	-20	-15	400	225	300
Nkwoka Onyeinye	52	60	2	9	4	81	18
Umerah Ngozika	60	58	10	7	100	49	70
Oforekwenam Nkideka	38	32	-12	-19	144	361	228
Iwugo Damaian	36	40	-14	-11	196	121	159
Eze Eucharia	42	34	- 8	-17	64	289	136
Abaneleke Mosea	50	52	0	1	0	1	0
Nwanelo Rose	36	36	-14	-45	196	225	210
Okonkwo Ebele	48	44	- 2	- 7	4	49	14
Okoye Obiageli	32	26	-18	-25	324	625	450
Okpara Ogochukwu	46	52	- 4	1	16	1	- 4
Igwe Elias	26	28	- 24	-23	576	529	552

RELIABILITY TEST

NAME	FIRST TEST X	RE-TEST Y	$x = X-\bar{X}$	$y = Y-\bar{Y}$	x^2	y^2	xy
Mefor Ngozichukwuka	44	50	- 6	-1	36	1	6
Eze Innocent	46	52	- 4	1	16	1	-4
Nweze Francis	28	28	-22	-23	484	529	506
Uwu Hyginus	46	44	- 4	-7	16	49	28
Dim Ifeanyichukwu	48	54	- 2	3	4	9	- 6
Umeh Uju	78	78	28	27	784	729	756
Nwankwo J. Amaka	64	64	14	13	196	169	182
Oeondu Chioma	64	58	14	7	196	49	98
Madu Ifeanyi	22	24	-28	-27	784	729	756
Egemba Okechukwu	64	66	14	15	196	225	210
Okeke Eucharia	68	62	18	11	324	121	198
Ojige Loveline	68	62	18	11	324	121	198
Onuorah Chijioke	72	68	22	17	484	289	374
Nwakame Osadebe	52	44	2	- 7	4	49	-14
Ofoedu Charles	54	60	4	9	16	81	36
Okeke Mary-Rose	66	62	16	11	256	121	176
Arinze Uju	72	70	22	19	484	361	418
Onyeka Ogechukwu	66	64	16	13	256	169	208
Diunhi Chukwudi	46	44	-4	-7	16	49	28
Ezeokeke Ephraim	30	32	-20	-19	400	361	380
Okoye Martin	44	42	- 6	- 9	36	81	54
Okafor Felix	32	40	-18	-11	324	121	198
Orakwue Ebere	38	38	-12	-13	144	169	154

RELIABILITY TEST NAME	FIRST TEST X	RE-TEST Y	$x = X-\bar{X}$	$y = Y-\bar{y}$	x^2	y^2	xy
Ezeh Onyema	42	46	-8	-5	64	25	40
Igbonmoze Victoria	40	38	-10	-13	100	169	130
Akanenu Edith	36	36	-14	-15	196	225	210
Okafor Ebele	42	34	-8	-17	64	289	136
Nwadike Mary-Rose	46	42	-4	-9	16	81	36
Ezeamaka Folly	44	54	-6	3	36	9	-18
Okoji Barthlolomew	34	30	-16	-21	256	441	336
Kalu Ngozi	28	30	-22	-21	484	441	462
Mugbo Chibueze	22	28	-28	-23	784	529	644
Muoneke Jude	36	34	-14	-17	196	289	238
Nwanoro Mathew	38	46	-12	-5	144	25	60
Emeka Lawrence	32	40	-18	-11	324	121	198
Igweonu Veronica	46	50	-4	-1	16	1	4
Ikegwuonu Jane	48	52	-2	1	4	1	-2
Alisiobi Anayo	54	56	4	5	16	25	20
Asoegwu Evelyn	46	58	-4	7	16	49	-28
Obiorah Ukeaka	38	26	-12	-25	144	625	300
Eliobu Adebi	70	66	20	15	400	225	300
Uzochukwu Mathew	68	70	18	19	324	361	342
Okeke Ifeoma	68	74	18	23	324	529	414
Nnaveluko Ucheoma	66	70	16	19	256	361	304
Okonkwo Anthony	64	66	14	15	196	225	210
Njoku Simon	64	70	14	19	196	361	266
Ohiora Ngozi	62	70	12	19	144	361	228

RELIABILITY TEST

NAME	FIRST TEST X	RE-TEST Y	$x = X-\bar{X}$	$y = Y-\bar{Y}$	x^2	y^2	xy
Enendu Chika	60	72	10	21	100	441	210
Ngobe Emeka	60	62	10	11	100	121	110
Onwu Cosmas	60	50	10	-1	100	1	-10
Hamitton Ifeanyi	58	70	8	19	64	361	152
Maduako Remingus	58	54	8	3	64	9	24
Okafor Nkechinyere	58	52	8	1	64	1	8
Tabansi Nwadinamma	50	56	0	5	0	25	0
Agbanusi Innocent	54	56	4	5	16	25	20
Ezeuko Francis	50	44	0	-7	0	49	0
Akwata Esther	50	48	0	-3	0	9	0
[illegible] Francis	46	58	-4	7	16	49	-28
Ifediora Ifeyinwa	44	46	-6	-5	36	25	30
Okeke Michael	40	40	-10	-11	100	121	110
Ofomah Chinyere	40	50	-10	-1	100	1	10
Okudo Merian	40	36	-10	-15	100	225	150
Okonkwo Ebele	38	32	-12	-19	144	361	228
Ahanonu Geraldine	36	46	-14	-5	196	25	70
Anyabolu Kingsely	34	44	-16	-7	256	49	112
Mbanugo Amaka	32	36	-18	-15	324	225	270
Unejieyo Nnaemeka	74	78	24	27	576	729	648
Anyaeji Ifeoma	74	74	24	23	576	529	552
Ahuchekwu Evelym	72	70	22	19	484	361	418
Agu Chika	66	506	16	5	256	25	80
Chukwuetu Chinwe	70	62	20	11	400	121	220

RELIABILITY TEST

NAME	FIRST TEST X	RE-TEST Y	$x = X-\bar{X}$	$y = Y-\bar{Y}$	x^2	y^2	xy
Ojukwu Hilary	68	72	18	21	324	441	378
Okpala Patricia	68	68	18	17	324	289	306
Umeh Andrew	68	76	18	25	324	625	450
Ilochiuko Eucharia	66	58	16	7	256	49	112
Chukwu Helen	66	70	16	19	256	361	304
Ikeji Florence	62	50	12	-1	144	1	-12
Nwanedo Ngozika	60	64	10	13	100	169	130
Okafor Emeka	60	68	10	17	100	289	170
Ozochukwu Ngozika	60	48	10	-3	100	9	-30
Akpa Felix	56	54	6	3	36	9	18
Aniakor Ogochukwu	56	42	6	-9	36	81	-54
Nwakuche Chinedu	52	48	2	-3	4	9	- 6
Maduchie Charles	50	60	0	9	0	81	0
Ezike Kenneth	50	52	0	1	0	1	0
Emejulu Perpertual	50	50	0	-1	0	1	0
Okonkwo Jude	48	58	-2	7	4	49	-14
Nwachukwu Ikechukwu	48	52	-2	1	4	1	- 2
Osondu Ifeanyi	46	50	-4	-1	16	1	4
Obiefuna Joseph	46	62	-4	11	16	121	-44
Ufuanya Regina	42	32	-8	-19	64	361	152
Mbonu Bibiana	40	52	-10	1	100	1	-10
Ngobidi Nwaneka	40	48	-10	-3	100	9	30
Ikue Sanctus	32	46	- 8	-5	64	25	40
Nezue Ifeoma	36	38	-14	-13	196	169	182
Ezubelu Michael	62	22	12	21	144	441	252

RELIABILITY TEST	FIRST TEST	RE-TEST	$X-\bar{x}$	$Y-\bar{y}$			
NAME	X	Y	x	y	x^2	y^2	xy
Ekechi Josephine	30	38	-20	-13	400	169	260
Akano Charles	48	52	- 2	1	4	1	- 2
Umeji Mathias	42	52	- 8	1	64	1	- 8
Eze Tobias	46	36	- 4	-15	16	225	60
O. Jogbue Mary-Rose	48	40	- 2	-11	4	121	22
Ikeanyionwu Abel	36	30	-14	-21	196	441	294
Nwadialu Sabina	58	70	8	19	64	361	152
Naude Chukwuma	60	60	10	9	100	81	90
Igwemmadu Abunchukwu	52	64	2	13	4	169	26
Nwufor Obiageli	66	68	16	17	256	289	272
Agu Ducharia	72	68	22	17	484	289	374
Eze Eneka	60	68	10	17	100	289	170
Emeli Chukwuma	60	56	10	5	100	25	50
Iwuoha Emmanuel	48	42	-2	-9	4	81	18
TOTAL Σ	10180	10336	0	0	34140	36970	31726

N=202

Mean $\frac{10180}{202}$ $\frac{10336}{202}$

$= 50.39$ $= 51.16$

$\bar{x} = 50$ $\bar{y} = 51$

$\sigma_x = \sqrt{\frac{34140}{202}} = \sqrt{169.0099} = 13.00$

$\sigma_y = \sqrt{\frac{36970}{202}} = \sqrt{183.0198} = 13.53$

$$r_{xy} = \frac{\Sigma xy}{N\,\sigma x\,\sigma y} = \frac{31726}{202\ (\ 13.00\ )\ (13.53\ )}$$

$$r_{xy} = \frac{31726}{35529.78} = 0.8929$$

$$r = 0.8929$$

Correlation coefficient $r = 0.89$

r_{xy} = Correlation coefficient

X = First Test Soore

Y = Re-Test Score

x = Difference of individual score from the mean $\overline{x}$ (i.e $X - \overline{x}$)

y = Difference of individual score from the mean $\overline{y}$ (i.e $Y - \overline{y}$)

N = Total number of pupils who took the test.

σ = Standard deviation

The Health knowledge Test is reliable.

$r = 0.89$.

APPENDIX 11

HEALTH KNOWLEDGE TEST

NAME.....

SCHOOL.....

CLASS.....

Instructions

The purpose of this test is to measure your health knowledge. Each question is followed by four (4) answers with number 1, 2, 3, 4 and only one is the BEST correct answer.

Pick the answer which you think is correct, then write the number of the correct - answer on the ANSWER SHEET provided.

Write it infront of the number of the question. An example has been done for you below.

Please do not write, or make any mark on the question papers.

Answer ALL questions.

Time 1 hour

Example

1. Which of the following is an insect ?
   1. Lizard
   2. Tortoise
   3. Mosquito
   4. Bird

In the above example, Mosquito is the best answer and the number is 3. You will now write this 3 under the answer number for question number 1

QUESTION NUMBER

1.....3.....

Now, answer the following questions like the above example.

1. Carbohydrate food is concerned with
   1. energy to the body
   2. growth to the body
   3. protection to the body
   4. nothing to the body

2. Which one of the following food items is energy (strength) giving food ?
   1. Fish
   2. Maniro
   3. Beans
   4. Carri

3. A person cutting grass in the field need
   1. protein food to do the work
   2. fatty food to do the work
   3. carbohydrate food to do the work
   4. vitamin food to do the work.

4. Protein food is concerned with
   1. energy to the body
   2. growth to the body
   3. protection to the body
   4. nothing to the body.

5. Which of the following food items is a protein food ?
   1. Carri
   2. Yam
   3. Palm Oil
   4. Meat.

6. Which of the following food items is concerned with body growth and repair ?
   1. Beans
   2. Garri
   3. Palm Oil
   4. Yam.

7. A child need one of the following food more than the adult of 30 years old.
   1. Carbohydrate food
   2. Protein food
   3. Fatty food
   4. Vitamin food.

8. Food rich in fat and oil is concerned with
   1. growth to the body
   2. protection to the body
   3. energy to the body
   4. nothing to the body.

9. Which of the following food items contains greater amount of fat
   1. Beans
   2. Bread
   3. Rice
   4. Palm Oil.

10. Vitamin is concerned with
   1. energy to the body
   2. protection to the body
   3. growth to the body
   4. nothing to the body.

11. Which of the following food items contains greater amount of vitamins ?
    1. Bread
    2. Yam
    3. Vegetables
    4. Cassava

12. Which of the following food items is concerned with body protection mainly.
    1. Vegetables
    2. Sugar
    3. Yam
    4. Cassava

13. Mineral salt is concerned with
    1. energy to the body
    2. protection to the body
    3. growth to the body
    4. nothing to the body

14. To help the body take in the food we should
    1. chew the food very well
    2. cook the food very well
    3. wash the food very well
    4. eat warm food.

15. Bite of blackfly will cause
    1. bad eye sight
    2. stomach ache
    3. head ache
    4. ear ache

16. Sleeping sickness is caused by
    1. bite of blackfly
    2. bite of tse - tsefly
    3. bite of mosquito
    4. bite of housefly.

17. One of the following insects is concerned with carrying germ to our food.
    1. Mosquito
    2. Tse - tsefly
    3. House fly
    4. Black fly

18. One of the following disease can easily be got by drinking dirty water.
    1. Worm disease
    2. Malaria disease
    3. Measles
    4. Cough.

19. If we see flies on top of our food then
    1. germ may be present and will cause disease
    2. germ may be present and will cause disease
    3. water may be present
    4. we can get malaria.

20. If faeces enter the food we eat then we can get
    1. disease due to the faeces small
    2. tooth ache
    3. disease due to worm
    4. malaria.

21. Germs grow better in a

1. very clean place
2. very hot place
3. very cold place
4. very dirty place.

22. When faeces enter the water we drink we are likely to get

1. cholera
2. cough
3. measles
4. nothing

23. By eating raw unwashed vegetables and fruits

1. we can get head ache
2. we can get stomach ache
3. we can get tooch acho
4. we can get back ache

24. One of the following can NOT be got through food ?

1. Cholera
2. Dysentery
3. Catarrh
4. Worms

25. Breathing dust can result in

1. our having dysentery
2. our having headache
3. our having catarrh
4. our having worms

26. One of the following can NOT be got by breathing air.

1. Tuberculosis
2. Whooping cough
3. Catarrh
4. Dysentery

27. Measles is got mainly from

1. the food we eat
2. the air we breathe
3. the water we drink
4. the wine we drink

28. Guinea-worm can enter our body when

1. we have insect bite
2. we eat unripe mango
3. we breathe bad air
4. we drink dirty water

29. Malaria is got by

1. eating too much oil
2. going under the sun
3. eating plenty of food
4. being beaten by infected mosquito

30. By removing all stagnant water around

1. we are preventing malaria
2. we are preventing measles
3. we are preventing cholera
4. we are preventing dysentery

31. The insect that bredd in stagnant water ?

1. Housefly
2. Blackfly
3. Mosquito
4. Tse-tsefly

32. By removing all refuse around we are preventing

1. measles
2. malaria
3. cholera
4. dysentery

33. Malaria can be prevented

1. by killing all house flies
2. by killing all black flies
3. by killing all tse-tse flies
4. by killing all mosquitos

34. By removing all refuse around we are preventing

1. where mosquito breed
2. where tse-tse fly breed
3. whereblackfly breed
4. where butterfly breed

35. When we cover our food we are preventing

1. blackfly from reaching our food
2. house fly from reaching our food
3. tse-tse fly from reaching our food
4. mosquito from reaching our food

36. Guinea worm can be prevented by
    1. not eating unripe mango
    2. avoid drinking dirty water
    3. avoiding insect bite
    4. wearing clean shirt.

37. One way of preventing catarrh is to
    1. avoid breathing dust
    2. avoid drinking dirty water
    3. avoid eating bad food
    4. have vaccination

38. Licking sweets and eating sweet biscuits can lead to
    1. stomach ache
    2. ear ache
    3. head ache
    4. tooth ache

39. The type of teeth an adult has are called
    1. periodic teeth
    2. permanent tooth
    3. milk teeth
    4. temporal teeth

40. One reason for breathing through the nose is that
    1. we can not breathe through the mouth
    2. we want the hair inside the nose to remove dust
    3. we need plenty of air
    4. we do not want plenty of air

41. To avoid injury to the ear clean it with
    1. broom stick
    2. match stick
    3. cotton bud
    4. finger nail.

42. We can protect the ear from damage by
    1. avoiding very loud noise
    2. clearing it with our finger nail
    3. cleaning it with broom stick
    4. cleaning it with match stick

43. Which of the following organizations is concerned with health ?
    1. O.A.U.
    2. U.N.O.
    3. B.H.O.
    4. W.H.O.

44. Which of the following organization is concerned with agriculture production ?
    1. O.A.U.
    2. F.A.O.
    3. ECOWAS
    4. U.N.O.

45. If a child dips his hand in boiling water, which of the following will you do as first aid ?
    1. Bandage his hand immediately
    2. Plaster his hand immediately
    3. Send him to hospital immediately
    4. Put his hand in cold water immediately.

46. Vaccination against tuberculosis is done

1. in the chemist
2. in the health centre
3. in the medicine store
4. in the drug house

47. Making sure that the surroundings are clean is the work of

1. Police Inspectors
2. Road Inspectors
3. Sanitary Inspectors
4. School Inspectors

48. The main reason why we do exercise is that

1. exercise makes us sweat
2. exercise makes us pass exams
3. exercise stops headache
4. exercise makes us healthy.

49. Which of the following is true of smoking cigarette?

1. Smoking is bad for our health
2. Smoking is good for our health
3. Smoking is for men only
4. Smoking is not for women.

50. A fat boy will need one of the following to reduce his weight

1. drink plenty of water
2. lick plenty of sugar
3. do plenty of exercise
4. eat plenty of vitamins.

51. What is your age ?

1. 5 - 9 years
2. 10 - 14 years
3. 15 - and above

52. Are you a boy or a girl ?

1. Boy
2. Girl

53. What work does your father/guardian do ?

_____

_____

54. What work does your mother/guardian do ?

_____

_____

55. What is your religion ?

_____

56. The name of your parents/guardian

_____

57. The house address of your parents/guardian

_____

58. I live with my parents/guardian

59. My parents/guardian can read and write

60. Location of school

61. Approach being tested

62. Whether pre-test/post-test

63. Have you interest in health education ?

64. Did your parents teach you any thing on health education

65. If yes to question 64, from which of the following areas.

1. Nutrition (Types and value of food etc.)
2. Insectborne diseases (Malaria, Sleeping sickness etc).
3. Air borne diseases (Measles, Whooping cough etc).
4. Waterborne diseases (Guinea-worm, Cholera, etc).
5. Dental care (Oral hygiene, cause of tooth decay)
6. Care of the ear(Use of cotton bud, noise. etc).
7. Various organizations (e.g. W.H.O. F.A.O. e.t.c.)
8. Immunization (vaccination, its value e.t.c.)
9. Smoking and health (Dangers of smoking, lung cancer)
10. Exercise and health (Value of exercise e.t.c.)
11. Sanitation (Need for clean environment etc).
12. First aids (Burns, nose bleeding etc).

HEALTH KNOWLEDGE TEST
ANSWERS TO QUESTION NUMBER 1 TO 50.

QUESTION NUMBER	ANSWER NUMBER	QUESTION NUMBER	ANSWER NUMBER
1	1	26	4
2	4	27	2
3	3	28	4
4	2	29	4
5	4	30	1
6	1	31	3
7	2	32	2
8	3	33	4
9	4	34	1
10	2	35	2
11	3	36	2
12	1	37	1
13	2	38	4
14	1	39	2
15	1	40	2
16	2	41	3
17	3	42	1
18	1	43	4
19	2	44	2
20	3	45	4
21	4	46	2
22	1	47	3
23	2	48	4
24	3	49	1
25	3	50	3

HEALTH KNOWLEDGE TEST
ANSWER SHEET

NAME.....

SCHOOL.....

CLASS.....

INSTRUCTION

Write down the correct answer NUMBER for each question inside the box (Box = ☐ provided for the question

QUESTION NUMBER	BOX
1.....	7
2.....	8
3.....	9
4.....	10
5.....	11
6.....	12
7.....	13
8.....	14
9.....	15
10.....	16
11.....	17
12.....	18
13.....	19
14.....	20
15.....	21
16.....	22

QUESTION NUMBER	BOX
17.....	23
18.....	24
19.....	25
20.....	26
21.....	27
22.....	
23.....	29
24.....	30
25.....	31
26.....	32
27.....	33
28.....	34
29.....	35
30.....	36
31.....	37

.../2.

QUESTION NUMBER	BOX
32	38
33	39
34	40
35	41
36	42
37	43
38	44
39	45
40	46
41	47
42	48
43	49
44	50
45	51
46	52
47	53
48	54
49	55
50	56
51	57
52	58

QUESTION NUMBER	BOX
55. Name of the Church	61
56 Name of parents/guardian	
57 House address of parents/ guardian	
58 I live with 1. My parents 2. My guardian	62
59 My parents/guardian can read and write 1. Yes 2. No	63
60 Location of school 1. High (Odoakpu, Inland Town waterside areas) 2. Middle (Fegge) 3. Low (Okpoko)	64
61 Approach	65
62. Post test	66
63 Interest 1. Yes 2. No	67

64. Did your parents teach you any thing on health education

1. Yes
2. No.

68

65. If yes from which of the following areas.

1. Nutrition (Types and value of food e.t.c.)

1. Yes
2. No.

69

2. Insects and diseases they carry (Malaria e.t.c.)

1. Yes
2. No.

70

3. Diseases we get through the air

1. Yes
2. No.

71

4. Diseases resulting from drinking dirty water

1. Yes
2. No.

72

5. Dental care (oral hygiene & Tooth decay)

   1. Yes
   2. No.

73

6. Care of the ear (Use of cotton bud)

   1. Yes
   2. No.

74

7. Various organization (e.g. W.H.O.)

   1. Yes
   2. No

75

8. Value of vaccination and where it is done

   1. Yes
   2. No.

76

9. Smoking and health (Dangers of smoking)

   1. Yes
   2. No.

77

5. Dental care (oral hygiene & Tooth decay)

   1. Yes
   2. No.

73

6. Care of the ear (Use of cotton bud)

   1. Yes
   2. No.

74

7. Various organization (e.g. W.H.O.)

   1. Yes
   2. No

75

8. Value of vaccination and where it is done

   1. Yes
   2. No.

76

9. Smoking and health (Dangers of smoking)

   1. Yes
   2. No.

77

10. Exercise and health (value of exercise)

1. Yes 78

2. No.

11. Sanitation (Need for clean [illegible] environment)

1. Yes 79

2. No.

12. First aid (Burns, nose bleeding)

1. Yes 80

2. No.

66. Did you receive any health information from any other source apart from your teacher and parents.

81

1. Yes
2. No.
3. Can not remember

67. If yes above what was the health information received.

.....

.....

APPENDIX 13

QUESTIONNAIRE FOR THE PARENTS AND TEACHERS (AFTER THE HEALTH LESSONS)

The purpose of this test is to know whether you have understood the things that were taught during the health lessons. Answer all the questions in the paper provided.

1. Name of parents/guardian .....
surname
.....
other names

2. Name of your child in primary five
.....
surname other names

3. Name of school .....

Questions

4. Give two examples each of
   1. food that gives us energy
   2. food that builds and repairs our body
   3. food that helps to protect our body against diseases

5. Name three harmful insects and the diseases they transmit to man

6. Name two water borne diseases

7. Name two air borne diseases

8. Name two food borne diseases

9. Give one reason why our children should be immunised

10. Where should we send our children for immunization?

11. Name three diseases that could be prevented by immunization

12. Give two reasons why we should keep our surroundings clean

13. Name three ways of maintaining personal hygiene

14. What do you understand by first aid?

15. Which one of the following is good for our health; smoking, alcohol and physical exercise.

16. Name one organization that is concerned with our health

17. Name one organization that is concerned with food production

18. What is your occupation?

.....

19. Indicate your level of education- Illiterate, primary school level, secondary school level, university level.

20. What is your residental address?

21. How much do you pay as house rent?

22. If you are the owner of the house what would have been the rantage for the house

23. Sex: male, female

24. Age: 15-24 years, 25-34, 35-44, 45 and above

25. Religion: .....

APPENDIX 14

AKWUKWO AJUJU NKE NDI NKUZI NA NDI NNE NA NNA
(ka E nwechara Ihe Omumu Gbasara Ahu Ike)

Ihe bụ isi a huru kwaba okpu n'ule nta a bụ ịchọputa ma ị ghotakwara ihe nile a kuziri n'oge ọmụmụ ihe gbasara ahụ ike.

Zaa ajụjụ n'ile dị n'akwukwọ.

1. Aha nne/nna ma obu onye nlekota enya:.....
Aha nna

.....
Aha ndị ọzọ

2. Aha ụwa gị nọ na Praimarị nke isie.....
Aha nna

.....
Aha ndị ozo

3. Aha ụlọ akwukwọ:.....

AJỤJỤ

4. Nye ihe omumma atụ abụọ na nke ọ bụla n'ime ndị a:
   (1) nti ndị na-enye anyi ike
   (2) nri ndị na-edozi ahụ
   (3) nri ndị na-enye aka n'ichekwa ahu maka ụmụ ọria
5. Gụputa ahụbụ ato na-emebi ihe na ọria ha na-ebunye mmadu:.....
6. Kpoputa oria abụọ a na enweta site na mmiri .....
7. Gụputa oria abuo a na-enweta site n'ikuku .....
8. Gụputa oria abụọ a na-enweta site na nri.....
9. Nnọọ otu ihe kpatara oji dị ukpa na a ga-agbarịrị ụmụaka ọgwụ mgbochi:.....

10. Olee ebe anyị gẹ-akpọga ụmụ anyị kọ agbaa ha ọgwụ mgbochi.....
11. Kwụputa ọrịa ato e nwere ike igbochi site n'igba ọgwụ mgbochi.....
12. Nye ihe abụọ O jiri dị mkpa na anyị ga edebe gburugburu ebe anyị bi ọcha:.....
.....
13. Kwụo ụzọ atọ mmadu nwere ike isi na-edebe onwe ya ọcha.....
14. Kedu ihe ị ghọtara "First Aid" putara?.....
.....
15. N'ime ọkwụ ndị a, olee nke dị mma maka ahu ike: ịse eiga, mmanye na-aba anya na imegharisi ahu ike (Physical Exercise).
16. Kpọputa ọfụ otu na-ahụ maka imeputa nri (ihe oriri) .....
17. Kpọputa ọfụ otu na-ahu maka ahu ike.....
18. Gịnị kọ ị na-arụ?.....
19. Ziputa ebe i gutoọebere akwụkwụ - ogugbi chaa, praimari, sekondiri, Mahadum.....
20. Kedụ ebe ibi?.....
21. Ego ole kọ i na-akwụ n'ụlọ ahụ?.....
.....
22. Ọ bụrụ na ụlọ ahụ bụ nke gị, ego ole a ga-abu ugwo ya:.....
23. Ị bụ nwoke kọ ị bụ nwanyị:.....
24. Afọ ole kọ ịdị? 15-21, 25-34, 35-44, 45 and above:.....
25. Ụmụ I nwa oga:.....

APPENDIX 15

QUESTIONNAIRE FOR PARENTS/GUARDIAN

WRITE THE ANSWER NUMBER IN THE BOX PROVIDED

1. Name of parents/guardian .....
surname
.....
other names

2. Name of your child in primary five
.....
surname other names

3. Name of school.....

4. Sex (parents/guardian)
   1. Male
   2. Female

5. Age (Parents/guardian)
   1. 15-24 years
   2. 25-34 "
   3. 35-44 "
   4. 45 and above

6. Were you able to teach your child
   1. Yes
   2. No.

7. If No give reason(s)

1. Come back late and tired (No time)
2. Could not teach
3. Others .....
.....

8. Educational back ground

1. Illiterate
2. Primary school level
3. Secondary school level
4. University level

9. Occupation (The work you do)

.....
.....

APPENDIX 16

COMPARISON OF THE PUPILS HEALTH KNOWLEDGE MEAN SCORES FOR THE FOUR APPROACHES IN HIGH SOCIO-ECONOMIC GROUP AREA

Source of Variation	D.F	SSQ	MSQ	F Value	Level of Significance
Between Groups	3	42166.75	14055.58		
Within Groups	616	136471.85	221.55	63.44	P < 0.005 (Significant)
Total	619	178638.60	-		

APPENDIX 17

COMPARISON OF THE PUPILS HEALTH KNOWLEDGE MEAN SCORES FOR THE FOUR APPROACHES IN MIDDLE SOCIO-ECONOMIC GROUP AREA

Source of Variation	D.F.	SSQ	MSQ	F	Level of Significance
Between Groups	3	51602.44	17200.81	79.45	P / 0.005 (Significant)
Within Groups	524	113441.44	216.49		
Total	527	165043.88			

APPENDIX 18

COMPARISON OF THE PUPILS HEALTH KNOWLEDGE MEAN SCORES FOR THE FOUR APPROACHES IN LOW SOCIO-ECONOMIC GROUP AREA.

Source of Variation	D.F.	SSQ	MSQ	F	Level of Significance
Between Groups	3	32507.63	10835.88	58.87	F / 0.005 (Significant)
Within Groups	379	69761.19	184.07		
Total	382	102268.82	-		

APPENDIX 19

LIST OF PRIMARY SCHOOLS USED FOR THE STUDY

High socio-economic group area.

Name of school		Approach tested
Anyaegbunam	p/s	1
Ogboli	p/s	1
Premier	p/s	2
Obi-Okosi	p/s	2
Community	p/s	3
Queen of the Niger	p/s	3
Modebe	p/s	4
Shanahan	p/s	4

Middle socio-economic group area

Name of school		Approach tested
Lafiaji	p/s	1
Niger	p/s	1
Township	p/s	2
Otumoye	p/s	2
Niger City	p/s	3
Agri	p/s	3
Pegge Community	p/s	4
Zik Avenue	p/s	4

Low socio-economic group area

Name of school		Approach tested
Okpoko Community 1	p/s	1
Okpoko Community vi	p/s	2
Okpoko Community 111	p/s	3
Okpoko Community 11	p/s	4

APPENDIX 20

ANAMBRA STATE
MINISTRY OF EDUCATION
SCHEME OF WORK FOR
PRIMARY SCHOOLS

Subject: Health education
Form : Primary One

FIRST TERM

Personal cleanlinese: Keeping different parts of the body clean, bathing, washing hands, use soap etc.

Personal cleanliness: Health habits regarding finger nails, handkarchiefs, hair, clothes, feet.

Posture : : Posture, correct sitting, standing, writing.

How to improve posture.

Care of tho teeth - Demonstration and practice. Different methods. food particles, things that will cause harm. Food that build strong teeth.

Care of the eyes

Care of the ears

Care of the nose, discharge from nose and how to clean it, why we should breath through the nose. kinds of food we eat - good storage, preparation eating.

Uses of exercises to the body: Value of games and play in open air.

Value of rest and sleep : Give strength, sleep in well ventilated house:- Bedtime habits

SECOND TERM

Personal cleanliness: Proper use of handkerchief and tissue

Simple care of hair and nails

Uses of clothes to the body and danger of putting on other people's clothes

Good habits : Importance of keeping object and hands out of the mouth

Need of washing hands before and after using the toilet.

Good manners at table.

Value of drinking adequate and clean water/Dangers of eating contaminated or dirty food.

Things they can do for themselves - looking after their bodies, taking responsibility at school, home. Using time wisely, getting along with others, developing to be truthful.

THIRD TERM

Road safety - As school children, as pedestrians
Safety habits in classrooms and play ground
Parts of the body
First aids and first aid box
Treatment of cuts and wounds
How to use toilets properly and habits
Cleanliness of the school and home surrounding
Equipment uses in the sweeping of the school and at home
How to live in the Community.

Form: Primary Two

FIRST TERM

A simple way of cleaning the classroom and furniture
Care of the skin
Care of tooth, hair, eyes, ears and nose
Importance of rest to the body and daily habits
Importance of exercise to the body - Useful out-door games
Correct posture for sitting, standing, lying or sleeping
Care of toilets - How to use it and its habits
How diseases are transmitted to the body through dirty skins, hands, fingernails, barefoot, dirty clothes, contact with sick people.

SECOND TERM

How diseases entor our bodies - by food, water and air. It's prevention.
Care of food we eat - Cleanliness in handling food etc. Kinds of food we eat - importance of mixed diet. Good habits at meal. Safety on the road and school traffic signs and habits of marching in and out orderly in the class.

Safety to and from the school and home - motchee, medicines, sharp objects electronics and appliances. Safety Contd.
People who work to protect the safety of others, Police, Firemen. Safety practices in the car, bus and lorry.
First aid - Treatment of cuts and wounds
First aid - Nose bleeding - How to stop it burns precautions and what to apply. Symptoms of illness and what should be done, when, someone is sick and ways of keeping well.

THIRD TERM WORK

Why the home and Community should be kept clean.
How to keep the classroom and school clean
How to keep the home clean.
How to keep the Village clean and also town
Ways of keeping water safe for drinking
How the Government helps to protect the health of the citizen.
How children can take care of their own things leaving the parts of the body and how to they can care for them.
How to live healthy in the community

Form: Primary Three

FIRST TERM

Keeping the body clean with special attention to face and hand and hair etc.
Use of soap and regular bathing - Appropriate time for bathing
Bad effects of dirty body and clothes correct body posture in all activities.
Care of teeth, some teeth disorders
Food that helps to build strong teeth, things that harms the teeth.
Need for regular visit to the dentist in cases of dental trouble
The care of the eyes. Use of the eyes to us.
Correct light for reading and writing.
Care of the ears, protecting from blows, injuries, diseases, loud noise, cleaning the ears.
Care of the nose. Why we should breath through the nose.
Use of handkerchief and tissue

Food and nuitrition. Importance of balanced diet.
The importance of fruits and vegetables good table manners
How to make bad water good for drinking
Good use of drining water-pots in the home and at the school.
The value of sleep, some healthful sleeping habits, normal duration of sleep for children

SECOND TERM

Why we should cover our mouth and nose while coughing or sneezing.
The value of breathing through the nose
The importance of ventilation
Where harmful bacteria are found
What to do when we are sick. Dangers of quack doctors
Relationship between regular exercise and body fitness.
Care of home and clothing
Effect of some substances to health e,g. sweets, smoking and alcoholic drinks.
How the body grows and what helps it to grow
Names of the major parts of the body and their functions
The value of sleep some healthful sleeping habits.
Care of some bones, measurement of height and weight
The names of some bones in the body, their functions.

THIRD TERM

Safety and acoident how to prevent accident caused by use of the road.
Safety practises on the P.E. grounds - care of the play ground
Safety in the home - taking care of things that can cause fire disaster
Keeping medicines safe
First aid in accidents wounds, cuts, burns, blisters, bleeding. How to wash bandage wound and cuts. Reports to doctors, bandage of deep wounds
Bleeding - How to stop nose bleeding. First aid for broken bones.

Prevention and control of diseases, ways to fight against house flies, rats and other flies in the home

Germs that cause diseases, breeding places and how to prevent them.

Sympt oms of specific common diseases, fever cough and headache.

Communicable diseases e.g. diseases passed from one person to another, diseases spread by air.

Diseases spread by food, water and insect. Need for children to take care of food from houseflies.

How we can protect ourselves from germs that cause diseases.

Form: Primary Four

FIRST TERM

Responsibility for personal cleanliness - daily habits - Use of towel and soap, clean hair, body clothing.

Habits of cleanliness in handling and eating food, using the toilet, biting finger-nails, spitting and using chewing stick.

Habit of cleanliness regarding clothing - school uniform, games dress handkerchiefs, shoes e.t.c.

Dental health: Revise care of the teeth and its importance

Kinds of teeth and functions of each kind. Things that harm the teeth.

Work of the dentist and oculist.

The functions and care of the skin

Prevention and control of diseases: Importance of immunization against ~~Communicable~~ diseases e.g. measles, polio, chicken-pox, smallpox.

Cleanliness in the home, clothes, kitchen, bathroom and toilet.

Health heroes - Edward Jenner, Joseph Lister, Louis Pasture, Florence Nightingale

Review care of the eyes. How to control the eyes and need for adequate lighting to protect the eyes.

Review how to keep the ears clean protecting them from injury and deafness

Review care of the nose, protecting from injury cold, how to be clean.

health habits in breathing, coughing e.t.c.

SECOND TERM

Diseases spread by air: Smallpox, measles, and chicken-pox. Food and Nuitrition, sources of water supply and purification of it.

Different food groups and their values: Uses of certain stable food groups and their values - water and milk.

Food hygiene, preparation, eating and table manners.

Names of Nigerian dishes.

Making food appetizing. A sample menu: Food digestion. Need for emptying the bowel regularly

Exercises - Games that can keep us strong and well.

Group games, individual games, ball games, track and field activities.

Avoid excessive strains during exercises.

Rest and sleep - Sleep as best form of rest. Other sources of relaxation. Habits.

Care of our sleeping room - beds and beddings

Growth and development - How food, exercises and sleep can help us to grow.

Evidence of growth - Measurement of height and weight.

Signs and effects of malnutrition on growth and children, Need for regular health inspection. Alcoholic, tobacco and drugs - effects on physical. social and mental health. Review work on Primary 111 on these.

Tinned foods - examples; the need for care in buying and using of them, the dangers involved.

THIRD TERM

Safety education and first aid. Causes of accidents - mainly as a result of carelessness

Safety on the roads to and from school.

Revision on safety first rules.

Review of Primary 111 work on first aid in - cuts, bites, burns.

Review of first aid in wounds, bleeding, nose bleeding, broken bones.

Poisoning resulting from liquid food, pills, first aid treatment.
Diseases spread by food and water, insects.
Prevention and control of diseases. Communicable diseases - how they are spread, how to prevent the spread.
Diseases spread by air - smallpox measeles and T.B.
Ways of making water safe for drinking
Help the Covernment to be healthy - the work of nurses, doctors, health inspectors e.t.c. Voluntary Health Organizations - Akamu Ibiam National Ambulance; Tho Red Croes society e.t.c.
How tho whole body work together.
Form:

Form: Primary Five

FIRST TERM

Uses of clothes to the body. How to keep clothes clean. Structure of the teeth. Kinds of teeth. Health habits connected with the teeth.
How to protect the eyes to avoid infections
How to protect the ear from injury. Effect of loud noise on the ear.
Importance of breathing through the nose. How to avoid catarrh. Why we eat food. Kinds of food. Nutrients in food needed by the body, Vitamins Proteins e.t.c. Vitamins in body.
Nutrients in food needed by the body, Vitamins, fats, and oil. Ways of retaining nutritional values of food, cooking, drying in cool.
Value of rest and sleep. Values of hobbies, value of exercises, rest and sleep.

SECOND TERM

Care of the house, kitchen and surroundings.
Growth and function of different parts of the body - the muscles.
Functions of alimentary system. How to aid digestion.
Variation in the food, need of different individuals, such as children, old people, truck pushers e.t.c.
Prevention and control of insects borne diseases e.g. Malaria.
How to avid accidents on the road, simple traffic rules, signals
How to prevent accidents in the homes, stream and pools.

What to do incases of wounds, cuts, bleeding, nose bleeding, broken bone, burns, scalds, bites and stings.

THIRD TERM

How germs cause diseases. Conditions favourable to the growth of germs.
How to control and prevent communicable disease air borne disease and how to provent them.
Food and water diseases and how to prevent them.
Ways to improve sanitation of the school and community. Works of Sanitary Inspectors.
Bodies connected with public health services, Health centres, clinics and hospitals.
Voluntary Health Organization e.g. WHO,
UNICEF e.t.c.
The breathing Organs and how to care for them
The effect of exercises, consumption of alcohol and tobacco. The evil of drug abuse - Dangers of self medication and treatment by quacks.

Form: Primary Six

FIRST TERM

The structure, function and care of the eyes, ear and nose
The care of the tooth disorders and the remedy
Kinds of food building, energy giving food.
Protein and their sources
Fats, oil and their sources
How to protect food from contamination
The meaning and value of a balanced diet.
How to retain the nutritional value of food in cooking and in good storage
Some good habits at menu

SECOND TERM

How germs cause diseases. Control and provention of communicable air-borne
Air - borns diseases and how to Prevent them

Food and water - borne diseases and how to prevent them. Insect - borne diseases

How cleanliness helps to prevent diseases e.g. worm.

Some diseases not caused by worms e.g. diabetiee, stroke, hypertension, heart diseases

Epidemics and how to prevent them.

Types of immunization and its importance

Dangers of self - medication and teatment by quacks.

Sleep as a perfect form of rest.

The valu. of rest, leisure.

THIRD TERM

How to treat wounds - cuts, bleeding, types of bleeding,

How to treat broken bone - simple and compound fracture, burns, scalds and bites, sprains and dislocation, nose bleeding and insect sting.

The use of dust - bins and incinerators .

Function of some body system. The circulatory and the exoretory system.

The digestive system.

The function of public Health Department, hospital as a health centre and clinics.

Evil effects of alcohol and tobacco in health.

A P P E N D I X 21

P I C T U R E S

F R O M

F I E L D W O R K

APPENDIX 21.1

PRIMARY FIVE PUPILS' TEACHERS FROM
ASYAEGBUNAM AND OGBOLI PRIMARY SCHOOLS
RECEIVING HEALTH LESSON FROM THE
RESEARCHER

APPENDIX 21.2

PRIMARY FIVE PUPILS' TEACHERS LISTENING ATTENTIVELY TO THE HEALTH LESSON BEING GIVEN BY THE RESEARCHER

APPENDIX 21.3

PRIMARY FIVE PUPILS' PARENTS FROM PREMIER PRIMARY SCHOOL RECEIVING HEALTH LESSON FROM THE RESEARCHER

APPENDIX 21.4

PRIMARY FIVE PUPILS FROM ANYAEGBUNAM PRIMARY SCHOOL

COLLEGE OF MEDICINE

DEPARTMENT OF PREVENTIVE AND SOCIAL MEDICINE

SITY OF IBADAN, IBADAN, NIGERIA
e: Ibadan 400560.400570 (30 lines)
Campus 31128 NG
Telegrams: University Ibadan

UNIVERSITY COLLEGE HOSPITAL
IBADAN, NIGERIA
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Telegrams: Teacher, Ibadan

21 December 1984.

Dr. C.K. Obicou,
Lecturer/Consultant,
Department of Community Medicine,
College of Medicine,
Enugu.

Dear Sir,

Supervisor of Ph.D Thesis-
Mr. A. Ogbalu

I wish to acknowledge with thanks the receipt of your letter of 21 August, 1984 accepting to be one of the supervisors of Mr. Ogbalu's Ph.D. Thesis.

I hereby confirm that you have been nominated as one of the two supervisors (the other one is Dr. J.D. Adeniyi of this Department) for Mr. Ogbalu's Ph.D. thesis and action has been initiated to send you official confirmations from the Head of the Department of Preventive and Social Medicine and the Dean of our Postgraduate School.

Yours faithfully,

J.D. Adeniyi, Dr. P.H.
Coordinator of Doctoral Programmes.