# A DEMOGRAPHIC STUDY OF HANDICAPPED CHILDREN IN SCHOOLS IN PLATEAU STATE: IMPLICATIONS FOR EDUCATION SERVICE PROVISION

BY

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# CERTIFICATION

This is to certify that the research work for this thesis and the subsequent preparation of this thesis by Uba Paul Chukwu PGED)/UJ/7204/92 were carried out under my supervision.

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***U. P. Chukwu***

# DEDICATION

1. This work is humbly dedicated to the Prince of Peace and Saviour of Mankind, our Lord Jesus Christ.
2. To my loving wife Mrs. Anthonia C. Chukwu, and my beloved daughters Chidimma and Chinwendu.

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# ABSTRACT

The demographic survey of handicapped children was conducted in schools in Plateau State. Five special schools for the handicapped and twenty-one integrated schools were covered in the survey. A total of five hundred and thirteen children that were made up of the auditorily impaired, mentally retarded, multiple impaired, physically impaired as well as visually impaired were studied. The main purpose of this study was to survey the characteristics of the handicapped children in schools in both special and integrated schools with a view to study analytically their basic demographic characteristics and to make recommendations that would improve the provision of educational other related services for the handicapped children. The paucity of data on the handicapped children hinders knowledge of their demographic characteristics which adversely affect the implementation of policies targeted on them. The Demographic survey instrument (DSI) and Related Service Survey Instrument (RSSI) were used to collect the relevant data. Data were presented on age ranges of the population, causes of each type of handicapping condition, age at onset of impairment, the prevalence rate, educational placement, age students started education, service delivery options, vocation and alternative living potentials after school, using tables, percentages, bargraphs. The findings among others indicated that auditory impaired was the most prevalent, the least being the multiple impaired. The findings showed that the prevalent rate of all the impairments in the area of study is 0.08%. The auditorily impairment with prevalent rate of .0057 was the most prevalent of all, and this is followed by physical impairment and visual impairment with the rate of .00009% each. This finding corroborates the international statistics, which showed that among children the numerical most common type of disability is deafness. The highest percentage of the handicapped were of Hausa ethnicity, and males were more in number than female handicapped in schools. The causes of the various categories of impairments included meningitis for auditory impairment, congenital factors for mentally retarded and multiple impairment, poliomyelitis for physical impairment and measles for visual impairment as the

most frequent factors in each case. There was indication that more children were affected by various categories of impairment early in life at age range of birth to nine years. Also, a high percentage of the population will enter into competitive employment and vocational training not for the handicapped. The implications of the study among others means that there is need for the provision of preventive special education services as well as adequate and appropriate facilities and equipment and materials for the education of the handicapped. There is need for early diagnostic and screening services that would ensure early therapeutic and special education for those early detected. Recommendations were made suggesting among others that diagnostic and screening centers should be established in every educational zone in the state. Methods of prevention and control of diseases such as meningitis, enchocerciasis, poliomyelitis, as well as general preventive measures of handicapping conditions should be made compulsory in curriculum of schools. More integrated schools should be established in each Local Government Area. Integrated schools for the handicapped emphasize inclusive education, which among other things provide equal opportunity for access to a quality education at all, levels. A greater emphasis should be placed on prevocational and daily living skills programming and planning for work and living options after school.

# CHAPTER ONE

# INTRODUCTION

## 1.1 BACKGROUND OF THE STUDY

The alarming prevalence of various categories of handicapped persons in our contemporary society has generated a great awareness of people on the problems of these members of the society. Ezera (1990) agreed that there has been a phenomenal increase in awareness of the society on the plight of the handicapped children including their vocational needs. Adebose (1989) posited that the World Health Organization (WHO); the International Labour Organization (ILO); the United Nations Educational Scientific and Cultural Organizations (UNESCO) and United Nations Children Fund (UNICEF) all agreed on some world data. According to them, 10% of all people in the world have disabilities. Out of this number 10% have serious disabilities which most often prevent them from working, 3% can work with help or rehabilitation; 6% just exist and do not avail themselves of helpful services for average living.

In 1981, the United Nations Economic and Social Council released a startling figure that 45 million people in Africa suffer from various disabilities. Nigeria, being the most populated country in Africa, would no doubt have a large number of these disabled people. The United Nations projection leaves Nigeria with about 8.5 million people that are disabled. In fact, Adebose (1989) puts the figure at 10 million disabled people in Nigeria. Consequently, Plateau state with a population of about four million would by this projection have between 400,000 to 500,000 disabled people (Adebose, 1989).

There has really been a steady growth of societal consciousness that handicapped persons are human beings who require the respect and care of the society they belong (Ihenacho, 1985). According to Ihenacho beliefs are fast changing from that of superstition

to that of scientific research, and proven ideas. The mass media, and various authors have begun to expose the various nature of handicapping conditions, including their causes. Beliefs are no more on fairy tales but on what could be done practically to help the handicapped people in Nigeria. In recent times, he continued, governments have come up with policies and programmes to provide education and other related services to the handicapped children. Similarly, non-governmental organizations, social clubs and philanthropists are all making efforts to help educate and rehabilitate handicapped persons.

Both the National Policy on Education (1981) and the Plateau State Education Bill of 1981 stipulated that handicapped children should be provided with free education where possible. Section 56(7) of the national policy on education stated that "The education of handicapped and gifted children will be free at all levels where possible." In the same vein, the Plateau State Government Handicapped Bill Section (i) stated that the Plateau State Government shall provide free special education and related services to all handicapped and young persons of the state origin (Plateau State Handbill Section 2(a), 1981). But the question is, can this be effectively done without taking a comprehensive demographic study of the number and characteristics of the handicapped persons?

For any meaningful service to be packaged for handicapped children in any society, adequate planning which goes with knowing the handicapped by having a study of their characteristics and the implications of these characteristics for provision of educational services is necessary. Urwick (1994) agreed with this when he asserted that one of the tasks of education planning is to use demographic data from population census and other suitable sources in order to assess needs and to meet targets, which correspond to the goals of wider participation and equitable distribution of resources.

Policy decision-making requires the near exact number and demographic characteristics of the people who are to benefit from welfare packages (Ihenacho, 1985). According to Ihenacho, this is necessary because if wrong and inappropriate decisions are

taken the people will be deprived of viable assistance. This is true of the handicapped people in the society. To this end, it was stipulated in the National Policy on Education (1977) Section 8 Sub-section 56 Number 2, that:

> A census will be taken of all handicapped children and adults by age, by sex, by locality and by type, and schools will be obliged to make yearly returns of children who could be classified as highly gifted or otherwise so as to attract national attention as to develop their potentialities beyond granting of mere scholarship.

The National Policy on Education (1981 Revised) expressed the intention of Nigeria to carry out a census of handicapped children. It stated that a census of the handicapped persons will be carried out by the federal and state Ministries of Education and data collection and records on special education development shall be a regular exercise so that the handicapped persons are identified, enumerated and targeted for treatment before their conditions become irredeemable. But up to this time, Nigeria has not been able to adequately carry out a comprehensive survey of the handicapped persons in their various cultural societies (Ihenacho, 1985). However, some Nigerians have carried out some surveys of the handicapped persons in schools. Such authors as Akogun (1971), Oni (1983), Abiose (1994), Onabolu (1996) have been able to carry out studies of the handicapped persons. But in most of the surveys carried out, the data presented were mere estimates and general in nature.

It is pertinent to note that since 1960 Nigeria has had three general demographic studies of her population in form of census for effective formulation of policies and programming. These were the 1963, 1973, and the 1991 censuses. In these censuses, no figure of the number of the handicapped children and their characteristics was made available except in the 1991 census. In spite of the completion of 1991 population count and its acceptance in principle by the government, Urwick (1994) noted that the census information available for educational planning was still far from adequate.

The recent data on disability in Nigeria were made available in the report of 1991 census. The 1991 Nigeria population census uniquely collected data on disability. Although only some broad and general conditions were investigated; it was the first time such data were collected nation wide in Nigeria (Uche, 1999).

The 1991 census counted 429,142 Nigerians who were disabled with slightly more males (221,909) than females (207,233). This gives a crude disability figure of nearly 5 Nigerians out of a thousand people that are disabled, National Population Commission (1998). According to the report, state-specific disability rate varies markedly, with Anambra, Kebbi, Imo, Yobe, Sokoto and Borno, in that order, having the highest rates (6.0 or above), and the lowest rates found in Akwa-Ibom, Cross River, Lagos, and Kogi (rates between 3.1 to 3.6). Apart from the presence of Lagos in the second category, there might be an arguable link between level of industrialization and commercialization and the incidence of disability.

It was also revealed that nationally, deafness is the most prevalent disability (24%), followed by blindness (18.2%), crippling condition (12.9%), deafness and dumbness (12.5%), mental illness (10.2%) and dumbness (8.3%). The remaining 13.4% reported other disabilities but failed to state specific disability.

National Population Commission (1998) indicated that males generally have higher disability rates than females, clearly as a function of the socialization process and differential social and economic roles performed by males. For instance, men engage in occupations and life styles or behaviours that predispose them to higher incidence of disabilities compared to females.

Informative as the data are, they grossly underscore the number of persons with handicapping conditions in Nigeria. Nothing was told about the causes of disabilities, which is vital for their prevention (Uche, 1999). Apart from missing people with mild disabilities, especially children, disabled persons were undercounted in censuses because many do not

have permanent homes or addresses, which is the hallmark of a de facto census. Furthermore, reliance on self-reporting and the lack of expertise among census enumerators in the identification of disabilities are other sources of bias in census data on disability. Uche, therefore opined that the deficiency of census data on people with handicapping conditions underscores the need to supplement such data with data from other sources such as sample survey, and the building of data bank where the data are stored and analyzed for the benefit of end-users.

Demographic study of the handicapped persons therefore has been narrow in scope. Lack of a comprehensive demographic study of the handicapped persons becomes a serious problem facing the government, education planners, teachers and all others involved in the improvement of the welfare of the handicapped persons.

According to United Nations (1994), the needs of all citizens constitute the basis for planning and policy. The general system of the society is made accessible to all by accommodating its structures and function to the needs of all its citizens and, consequently, strengthens its developmental potential.

The rights of persons with disabilities have been the subject of much attention in the United Nations and International Year of Disabled Persons, in 1991 when the world programme of action concerning disabled persons, was adopted by the General Assembly by its resolution 37/52 of 3rd December 1992. They both emphasized the right of persons with disabilities to the same opportunities as other citizens and to equal share in the provision and improvement of educational services and living conditions (United Nations Assembly, 1994).

The declaration and frame-work for action made explicit actions needed to be taken by states to realize their various objectives and principles in providing and caring for the disabled persons. Thus, Rule 13 of the Standard Rules on the Equalization of opportunities for persons with disabilities clearly stipulated that:

1. States should assume the ultimate responsibility for the collection of and dissemination of information on the living conditions and status of persons with disabilities and promote comprehensive research on all aspects including obstacles that affect the lives of persons with disabilities.
2. States should at regular intervals collect gender-specific statistics and other information concerning the living conditions of persons with disabilities. Such data could be in conjunction with national census and household survey and could be taken in close collaboration with universities, research institutes and organizations or persons with disabilities.
3. States should initiate and support programmes or research on social, educational, economic and participation issues that affect the lives of persons with disabilities and their families. Such research should include studies on the causes, types, and frequencies of disabilities, the availability and efficacy of existing programmes and the need for development and evaluation of services and support measures.
4. States should support the exchange of research findings and experiences and should take measures to disseminate information and knowledge on disability to all political and administrative levels within national, regional and local spheres.

The need for this research is therefore, apparent since Nigeria is advancing in all aspects of life and she is patterning her activities in line with fast advancing and technological world of today. Nigeria is also continuously reappraising her commitment to her citizens of all categories and at the same time calling on them to reappraise their love for their fatherland. This calls for more efficiency of services in all sectors of service to the nation and her people. The government, non-governmental agencies, private organizations, research centers and indeed the field of special education would achieve much in the provision of education and related services if the demographic studies of all handicapped persons is comprehensively carried out.

## 1.2 STATEMENT OF PROBLEM

The world has never been so wealthy, has never been so advanced in science and technology, there has never been such a break through in medicine as we have today, yet the number of handicapped children in the various categories is on the increase in Nigeria. Thus the size of the population of handicapped school age children with special educational needs continue to be a special problem to the society (Adebose 1989). Governments at various levels have been showing special interest in this category of people by formulating educational policies aimed at bettering their lot. The question to be asked is this, Do those making these policies know the people they are planning for? Do they know the number in schools?

For any meaningful planning for the provision of educational services for the population, the demographic characteristic factor must be given priority attention. It is generally believed that the previous censuses figures have failed to provide adequate data for effective population planning because of the fact that the census schedules have not yielded enough information on the demographic variables necessary for this planning, among others. The Plateau State government handicapped Bill is still awaiting implementation because of lack of demographic data on the characteristics of the handicapped children especially those in schools. In support of this, Adima (1989) noted that there is no precise documentation of the handicapped children in Nigeria. Lack of knowledge of demographic characteristics of the handicapped children in schools is a great problem to effective planning and implementation of educational services for handicapped children. What type of educational planning will be made for handicapped children if their educational needs based on their demographic characteristics are not known? Will lack of data on the needs of the handicapped children not perpetuate lack of awareness of the total programming needs, resulting in the undeserving of this population? For handicapped children in the schools to be adequately provided for, there is need for a comprehensive demographic survey of the handicapped children in schools, which this work sets out to do.

## 1.3 PURPOSE OF STUDY

The main purpose of this study, therefore, is to survey the demographic characteristics of the handicapped children in primary and secondary schools in both special and integrated schools in Plateau State. It is an attempt to study analytically the basic

demographic characteristics of all handicapped children in both types of schools with a view to making appropriate recommendations for improving the provision of educational services for the children under study. Specifically, the research intends to:

1. Determine the distribution of the handicapped children in the schools.
2. Determine the ethnic distribution of handicapped children according to age range of the population and sex.
3. Find out causes of each type of handicapping condition.
4. Determine the percentage of children who are deaf and those with low level of hearing.
5. Determine the percentage of children who are totally blind and those with usable vision.
6. Ascertain the age at onset of impairment of the children.
7. Ascertain prevalence rate of the various handicapping conditions.
8. Determine the educational placement of the handicapped children.
9. Determine the age at which the child started receiving special education.
10. Determine related services other than academic oriented programmes available in the schools.
11. Find out the vocation and alternative living potential of the handicapped

## 1.4 RESEARCH QUESTIONS

The following questions have been formulated to guide the investigations, which will try to find answers to them.

1. What is the distribution of handicapped children in the schools?
2. What is the ethnic distribution of the handicapped children according to age range of population and sex?

3. What are the possible causes of each type of handicapping condition of those in the schools?
4. What is the percentage of deaf children versus children with partial hearing?
5. What is the percentage of children with blindness versus children with usable vision?
6. What was the age at onset of impairment of the children?
7. What is the prevalence rate of various categories of handicapping condition in the schools?
8. What are the educational placements of the children in the schools?
9. At what age did the child start receiving special education?
10. What related services other than academic oriented programmes are made available to the children in the schools?
11. What is the vocational and alternative – living potential of the handicapped children?
12. What are the possible implications of the result of the study for educational service provisions?

## 1.5 THEORETICAL FRAMEWORK

This study has its main background; the census theory and the humanistic psychology theory of Abraham Maslow (1954), May Rollo (1950) and Carl Rogers (1954).

Census theory concerns itself, among others; with population planning that is fundamental in any efforts made in the provision of services to the people. Data generated through census enumeration address the areas of population planning problem of those being enumerated (Asipade, 1989). For example, in the handicapped being studied, several population problems may arise out of their demographic situation. It is expected that the age

and sex characteristics of the population may have some effects on the population problems such as in the provision of educational services.

According to the theory, the age distribution of the population would indicate the possible demographic and educational problems that may be expected in the population where, for example, if there is a large proportion of the population in age group, say 6-9 years old due to blindness, it is expected that there will be high need to provide special schools for the blind in the area. Similarly, if the population distribution consists of a large age group of people whose cause of impairment is mainly onchocerciasis, it is expected that preventive and rehabilitation education services would be included in the school curriculum.

The humanistic psychology theorists emphasize the whole person and the importance of each person's subjective experience. The theories are approaches to psychology that emphasize person's growth and achievement of human potentials rather than the scientific understanding, prediction and control of behaviour. Perhaps the central concept in humanistic psychology is the need for self-actualisation. Humanistic psychology theorists believe that the most important is the underlying need to develop ones full potential. The exploration of human potential according to the theories should be pursued and thus learn how this potential can be more effectively realized.

The humanistic theorists further, feel that the structure of society, its pressures and its restrictions account for human problems. Consequently, people need help in discovering themselves and in starting on the part towards self-actualisation. They feel that there needed to be more emphasis on what a person is like as an individual; how he perceives the world around him, how he grows and develops his full capacity.

In view of the above discussion, this study will adequately take cognisance of these possible assumptions in order that the data generated should be meaningful for educational planning vis-à-vis the provision of appropriate educational services for the handicapped children in the schools.

## 1.6 SIGNIFICANCE OF STUDY

The demographic study of the handicapped children in schools is considered important for the following reasons:

Demographic study of the handicapped children has not been given the proper attention it deserves. This research is, therefore, one that would provide the Plateau State Government and the populace in particular a fairly clear picture of the figure, characteristics of each category of handicapped children in the area. The study would give indications as to the contemporary knowledge of the demographic situations of the handicapped children in schools in Plateau State.

It would provide planners and administrators information on the accurate or approximate number and characteristics of handicapped children so as to be able to package adequate educational services and relevant programmes for them. It will facilitate the establishment of adequate social services such as rehabilitation and health services. A lack of knowledge of demographic characteristics of handicapped children in the schools will sustain loopholes in any concrete efforts to alleviate their problematic conditions.

Various governments and non-governmental agencies would use the findings as scientific facts to be able to formulate concrete objectives in the area of provision for educational need of the handicapped children according to their age, sex, need, abilities and problems. Thus, adequate planning of support services as well as educational services would be rendered to each category of the handicapped children on long and short term basis.

Confirmation of the accurate number in schools and their peculiar characteristics would create an awareness of the need to review the educational services in the future to include non-available ones. There is the need to render educational services such as appropriate educational placement, counselling individual or group instruction programme

and career placement in consideration of characteristics and needs of the children, which the research intends to expose.

It would serve as a data bank for a future research enthusiasts, scholars, university students and government officials, and the information from this study would give direction for further research to determine what education the population requires.

In addition, the research will serve as a reference work for the demographic situation of the handicapped children in the schools in the state. It is therefore, pertinent that it gives a fairly complete picture of the apparent demographic characteristics of the handicapped children in schools in the state.

## 1.7 DELIMITATION OF THE STUDY

The research intends to carry out a comprehensive study of demographic characteristics of the handicapped children. The survey will specifically cover the following categories of the school age handicapped children: visually impaired, auditory impaired mentally retarded, physically impaired and multiple impaired. The research will only include those whose disabilities have been clearly diagnosed or identified and are found in special and integrated schools within the state. The school age children include all the individuals in either the primary schools or secondary schools in Plateau State. It did not cover children outside the school system.

The study will however, concentrate in the following areas: percentage of the various categories and their distribution according to sex and age range; the ethnic background; causes of the impairment; age at onset of the handicapping condition; age highest at risk; educational placement; educational services available and vocational and alternative living potential.

It is important to note that the study does not intend to develop any programme but rather recommendations will be made to enhance the provision of educational and other related services for the handicapped children in schools.

## 1.8 OPERATIONAL DEFINITION OF TERMS

Individual whose body parts (limbs) are removed and may or may not be using artificial limbs.

**Age at Onset**

This is the age at last birthday prior to the onset of impairment.

**Residential School for Handicapped Children:**

A school facility in which handicapped students are educated, housed, and cared for.

**Day School for Handicapped Children.**

A facility where a significant proportion of all closes are conducted exclusively for handicapped children, all of whom live at home and attend school during the day.

**Full-time Special Education Classes**

Special classes consisting entirely. The handicapped children. Classes are located in an elementary or secondary school building in which the handicapped children also attend classes.

**Part-time Special Education Classes**

The students time is spent partly in special educational classes consisting entirely of theses of the same handicapping condition.

**Resource Room**

A special classroom located in a regular school for the handicapped children which contains personnel, services, and facilities specifically designed for handicapped students. Students participates in regular classroom activities and receives special help in resource room as needed.

**Census**

A head-to-head count of people (handicapped children) in a given geographical area.

**Demographic Study**

This is a scientific process of collecting compiling and reporting of characteristics of the handicapped children. The characteristics cover the population structure and size, its composition by sex, range of age distribution and ethnic background.

**Educational Placement**

It is placement in special education, which presupposes identification of, and selective location of the handicapped child where majority of children of comparable age receive their education. Placement could take any of these forms: special class, regular class with supplementary resource room service, residential school, day school, fulltime special education classes etc.

**Low Level Of Hearing**

This is an indication that the individual has a hearing loss of 50-70 db. These are children between the borderline and the deaf. They possess usable hearing and can be trained to use their residual hearing.

**Prevalence**

Prevalence refers to total number of cases of a particular disease (impairment) within a given population present at any given time.

**Usable Vision**

This is partial sightedness, which makes a person to have less than 20/70 visual acuity in the better eye after correction. It is a progressive eye disorder that will probably reduce vision below 20/70 or a peripheral vision that subtends an angle less that 20 degrees. These are to be educated with special aids, through the medium of vision with consideration given to the useful vision they retain.

**Incidence**

Incidence refers to the number of new cases of a particular disease divided by the number of persons at risk, which occur in a specified time.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.0 INTRODUCTION

In this chapter, relevant and related literatures are reviewed. Concerted efforts are made to review aspects of literature considered quite relevant to this study. The issues discussed include:

(i) Concept of Handicapped Children: These include mentally retarded, visually impaired, hearing impaired, physically handicapped, speech impaired. It is important to give in-depth references in the above areas because they form the basic foundation upon which this study rests. Thus, the definitions and meanings that would be highlighted will go beyond the operational definitions for this study.

(ii) The prevalence, causes, and characteristics of the Mentally Retarded, Visually Impaired, Hearing Impaired, Physically Impaired and Emotionally Disturbed.

(iii) Methods of demographic study.

(iv) Databank of people with handicapping conditions.

(v) Studies on demographic characteristics of some categories of impaired children.

(vi) The demographics of children with special education needs.

(vii) Related services concept.

(viii) Summary of literature review

## 2.1 CONCEPT OF HANDICAPPED CHILDREN

"Handicapped" is a concept quite difficult to understand by ordinary man. But efforts have been made by various authors and specialists in special education, medical

sciences, psychology, etc. to develop comprehensive definitions and meanings. For clear presentation and discussion, the concepts would be approached one after the other.

Various terms have been used to designate children whose characteristics interfere with their optimum development, though the term currently used is children with special education needs. United Nations Children's Fund (1979) described handicap as a disability that constitutes disadvantage for a given individual in that it limits or prevents the fulfillment of a role that is normal depending on age, sex, social and cultural factors for that individual. A handicapped child as contended by Bowley (1980) is a wider concept, defining how the impairment affects the person's life style, and involves a number of psychological and special factors. He maintained that in reaching a fuller understanding of what is meant by handicap, we must bear in mind four important points. These are:

(a) There are some organic, psychological or culturally induced difficulty compared to general population

(b) This difficulty leads to some limitations of functions as far as ordinary activities are concerned.

(c) This is likely to affect the individual's psychological development especially his self-image, his views of himself as a competent person.

(d) All the above will be affected by society's attitude and how the majority of people in contact with the handicapped person view his situation.

It is necessary to define how it affects the person's functioning in life, which again is not simply a matter of physical competence but of attitudes towards it of the person affected as well as his peers and associates. To comprehend how the four aspects listed above can interact with each other, the loss of finger as argued by Bowley, (1980) will not constitute handicap for a majority of people. But some individuals do over react even to such a small impairment as this. According to Bowley, if physical attractiveness and inactiveness are

very valued by a particular family, the family could become very disturbed even by a minor or mostly cosmetic impairment.

Attempting to explain the concept, Adima (1989) classified the handicapped into the following – the blind, deaf, mentally retarded, physically impaired, emotionally handicapped, speech impaired and the multiple handicapped.

National Teachers Institute (1990) explained that handicapped children are those with some forms of disabilities that make it difficult for them to benefit fully from the regular education programme, designed for normal children. It further identified the following as handicapping conditions; mental retardation, emotional disturbance, auditory impairments, speech impairments, visual impairments, learning disabilities and orthopaedic impairment.

From the foregoing, it can be concluded that "a handicapped child is one who suffers the undesirable consequences arising from diminished ability to perform certain tasks" (Ozoji, 1993:9). He is disadvantaged because he has impairment and disability that prevent him from benefiting fully from the regular education programme. Therefore, handicap is an interference or obstruction to normal growth, development and educational progress (Abang, 1992).

## 2.2 THE MENTALLY RETARDED

Various literatures have shown the difficulties in clear definition of mental retardation. Supporting the above, Adima (1989) asserted that there is no such thing as definition of mental retardation. According to him, there are many definitions as there are experts in this field and that the problem of defining it is due basically to the issue of perception.

In Adima's (1989) view, mental retardation is in degrees and that the definition of one degree or class is often inappropriate for another degree or class of the condition. In

spite of these difficulties however, positive attempts have been made to define mental retardation.

Doll (1941) maintained that for one to be diagnosed as mentally retarded, a person must manifest the following:

(i) Mentally subnormal

(ii) Socially incompetent and unable to manage his own affairs;

(iii) Retarded intellectually from birth or early stage;

(iv) Retarded at maturity;

(v) Mentally retarded as a result of constitutional origin, that is through heredity or disease and

(vi) Essentially incurable.

Doll believed that those six criteria must be met before any person could be said to be mentally retarded.

Similarly, another scholar Ozoji (1993) agreed that mental retardation refers to sub-average general intellectual functioning that originates during the developmental period and it is associated with impairment in one or more of the following:

(i) Maturation

(ii) Learning

(iii) Social adjustment

Ozoji thus defined mentally retarded children as those whose intellectual functioning is significantly below average and who also have social adequacy problems. According to him, the slightly below average intellectual functioning and moderately socially inadequate are referred as trainable mentally retarded, and the terribly worse in intellectual functioning and out rightly socially inadequate are referred to as the totally dependent. (Ozoji 1993:61)

Elaborating further, Adedoja (1991) highlighted that for one to be labeled retarded, he must fall into any of the following:

(i) Educable mentally retarded with IQ of 53

(ii) Moderately retarded with IQ of 36-52

(iii) Severely retarded with IQ 20-35

(iv) Profound retarded with IQ below 20.

The above definition has only highlighted the level of IQ as a parameter, leaving the social competence, which also determines the level of mental retardation of the child. This definition is therefore not inclusive but limited.

### 2.2.1 Prevalence of Mentally Retarded

The prevalence of this problem varies from country to country. But there is no accurate statistics of the mentally retarded as this has not been taken care of in the national census. In his observation, Adima (1989) noted that there is no act of specific agency in Nigeria charged with the responsibility of reporting the prevalence or recording the indices of mentally retarded persons. According to Adima (1989) the few surveys of various populations by professionals in Special Education to determine the population of mentally retarded persons have shown a wide range of prevalence estimated.

Adima (1989) revealed an example of the difference in prevalence rates of mental retardation as provided by different investigation as shown below:

In 1975 the Federal Ministry of education reported the percentage of mentally retarded in total population as 2%, Ministry of Social Workers in 1977 showed 4%, Society for the Handicapped revealed 4.24% in 1978; Mba (1985) reported 2.03% the same year and in 1980 Uwakwe (1980) gave an estimate of 1.80%.

Estimating the number of school-age children in primary schools, Adima (1989) carried out a survey between 1978 and 1980 in the Federation and showed that 19,865 were

mildly retarded, 8110 moderately retarded and 2,695 were severely retarded given a total of 30, 670 mentally retarded school-age children.

Abramoweiz and Richardson (1975) observed that in marked contrast to mild retardation, most epidemiological studies indicate that prevalence of severe mental retardation tends to remain relatively constant across all socio-economic classes and ethnic groups and does not fluctuate greatly by age. They asserted that epidemiological data also confirmed that more than half of all severely retarded children have another major handicap requiring additional service.

Heber (1970) summarized 28 prevalence surveys conducted in Europe, Japan and United States between 1906 and 1966 and found the median value to be one per hundred (1 percent) with a range from 0.16% to 23%. According to him, the appalling high figures such as the 23 percent are based on studies of school-age children using the dual criteria of 1Q score.

In the United States, Jerome (1971) observed that approximately 5.4 million individuals are mentally retarded. Kirk (1972) estimated the number of school age severely retarded children at about 4 per 1000 school children.

### 2.2.2 Characteristics of the Mentally Retarded:

Mentally retarded persons possess various characteristics and no two mentally retarded persons manifest exactly the same characteristics (Adima, 1989). The characteristics can be discussed under the intellectual, socio-emotional and health characteristics.

**(i) Intellectual characteristics.**

According to Kirk and Gallagher (1974) and Kolo (1994) mentally retarded children are often slower than their age mates in using their memory abilities effectively, associations and classifying of information, reasoning and making adequate judgments.

The mentally retarded find it difficult to learn anything from experience. The little knowledge they may acquire from repeated experiential contact may be hardly utilized in their daily lives. Verbal communication problem is common with them and they acquire very low level rate of language in spite of their chronological age. Smith (1994) contended that mentally retarded children hardly acquire the necessary skills for discrimination learning, effective learning sets, incidental learning transferring learning and productive thinking. Adima (1989) added poor memory for anything academic, inability to pay attention to stimulus, inability to use abstraction in the solution of problems as attributes of the mentally retarded.

**(ii) Socio-economic characteristics:**

Mentally retarded children often find it difficult to socialize with children of their age group. While some of them engage in purposeless and non-goal directed behaviour, others may tend to be completely withdrawn or only occasionally show signs of temporary anger as their emotions fluctuate (Kolo, 1994))

Adima (1989) and Kolo (1994) posited the socio-emotional personal characteristics as exhibition of short attention span or lack of concentration in group activities; reduced motivation and difficulty to participate in group activities; low self concept; exhibit sudden outburst of temper which tend to alienate them socially, poor effectance for example, deriving no pleasure from having accomplished a social task; poor social discrimination; and manifestation of tolerance.

**(iii) Health characteristics:**

Kolo (1994) stated that the poor health experienced by many mentally retarded persons often makes them physically fragile. Some of them can hardly control their tongues as saliva and smear drops persistently from the mouth and nose respectively. In terms of

physique, some mentally retarded children could be hydrocephalic or micro cephalic (Kolo 1994).

Ogbue, Obani and Abosi (1987) pointed out that the mentally retarded have a high incidence of cerebral palsy, epilepsy and even other forms of physical deformities as the after effects of some of the etiological factors associated with the conditions.

Some other health characteristics of mentally retarded children according to Kolo include: mouth decay as some of them never learn care of the mouth; frail physical appearance in the sense that they are often too weak to carry on any physical exercise to keep them fit; altered muscle i.e. lack of enough strengthened muscles to do physical exercises; poor physical and motor abilities and susceptible to physiological diseases like that of the heart and kidney.

## 2.3 THE VISUALLY IMPAIRED

The term visually impaired is often referred to as persons with amount of visual problems, which could be remedied either by surgical operation or by optical corrections, or persons with loss of vision (Crowe, Auxter and Pyfer, 1981). According to Crowe, et al, this include those who are partially sighted and the blind, as well as those with hyperopia, myopia, colour blindness, muscular imbalance resulting to facial squint.

Blackhurst and Berdine (1981) viewed visual impairment in terms of visual acuity as measured by a snellen chart, designed so that the top letter when seen at a distance of 200 feet seems to be the same size as the standard letter when seen from a distance of 20 feet.

The term partially sighted refers to persons who have less than 20/70 visual acuity in the better eye after correction, have a progressive eye disorder that will probably reduce vision below 20/70 or have peripheral vision that subtends an angle less than 20 degrees (Crowe, Auxter & Pyfer, 1981). Similarly, Adedoja (1991) referred to partially sighted children as those whose visual acuity is between 20/200 and 20/70 in the better eye with the

best possible correction. Adedoja also contended that they are those who in the opinion of an eye specialist need either temporary or permanent special education facilities.

The blind is defined by Kirk (1962) as a person whose vision is so defective that he cannot be educated through visual methods. According to him, this category includes persons with light-dark and gross-form discrimination as well as totally blind.

According to Wilson (1965), blindness is not only world wide but goes back to the early days of recorded history that for many centuries blindness meant exactly loss of sight. However, over the centuries the definition used was amended to include partial sight (or blindness) and it is in this inclusion, which varying across the world has produced the prevalence rates that are found.

On the other hand, definition of blindness varies. The American Medical Association developed the following definitions:

(i) Total or absolute blindness: inability to perceive light

(ii) Light perception: ability to perceive the presence or absence of light

(iii) Economic blindness: absence of ability to do any kind of work, industrial or otherwise for which sight is essential (World Health News 1968).

According to World Health News (1968), in 1935 the definition of economic blindness was modified for administrative purpose and became known as the definition of legal blindness. A person was therefore considered legally blind whose central acuity is greater than 20/200 in the better eye with correcting lenses or whose visual acuity is greater than 20/200 but is accompanied by a limitation in the field of vision such that the widest diameter of the visual field subtends an angle of not greater than 20 degrees.

Abang (1995) posited that Genurshy developed a functional classification for blindness and severe visual impairment. That one is considered functionally blind if he is either totally blind or has at most light perception. One is considered to be partially sighted if the visual acuity in his better eye even with ordinary corrective lenses does not exceed

20/70 or if the maximum diameter of his visual field does not exceed 20 degrees and if he is not functionally blind.

From the above, it can be rightly said that though there are variations in definition of the blind, there has been agreement among experts in defining the visually impaired individuals. The most widely accepted definition is that in which a person is considered blind if he has central visual acuity of 20/200 or less in the better eye, with correcting glasses or central visual acuity of more than 20/200 or less in the better eye, with correcting glasses or central visual acuity of more than 20/200 if there is field defect in which the peripheral field has contracted to such an extent that the widest diameter of visual field subtends an angular distance not greater than 20 degrees. (Abang, 1995).

### 2.3.1 Prevalence of Visual Impairment

Until recently, there has not been any in-depth and reliable studies and statistics of the population of the blind in Nigeria. In support of this contention, Adima (1986) noted that the number of blind persons in Nigeria and the categories are not precisely known. However, estimates have been put forward by some. For example, according to unpublished feasibility study carried out by Salisbury in 1975 for Kaduna Polytechnic, 10,000 handicapped persons who registered were blind. This population of blind persons was from four out of the previous six states in the northern part of the country (Adima, 1989). Adima (1989) further pointed out that there is strong indication that 3 percent of the population of 100 million could be visually impaired.

In a study in Taraba river valley, Akogun, (1992) reported that out of 2,876 persons examined, 11.8% were blind. The blindness rates ranged between 1.7% in Kabarinbature and 71.9% in Bobi. According to Akogun, communities with hyperendemic onchocerciaisis had over 20% of their population blind, and impaired vision was recorded in all communities, including Mayoselbe where no cases of blindness were reported. Akogun

(1992) further revealed that impaired vision ranged between 0.6% in Mayoselbe and 42.1% in Gangumi. Altogether, more than a quarter of the examined population had one form of visual involvement or the other.

Akogun (1992) summarized the frequency of visual involvement in different age groups and sex as thus:

> In children, serious and irreversible eye lesions were seen especially in those with head nodules. In both male and females, blindness, impaired vision as well as eye lesions tend to increase in frequency with age. More than 10% of those between 20 and 30 years had visual involvement, irrespective of sex. At 40 years the proportion of visually impaired males (33.3%) surpassed that of females (23.5%). A similar pattern was observed in the distribution of sclerosis into age groups and gender.

In a similar study carried out on Distribution and Aetiology of Blind and Visual impairment in Mesoendemic Onchocercel Communities in Kaduna state (Abiose, Murdoch, Babalola, Cousens Liman, Onyema, Evans, Gregory and Jones, 1994) that a census of those under 5 years of age which constituted 17% of the total population of 8,275 and a prevalence of 2.2% for those blind by acuity criteria. Abiose et al (1994), established in their study that onchocercal infection in a community significantly affects the number of blind in that community. They reported a smaller contribution by trachoma to blindness at only 7.9% of the blind population or 0.26% prevalence in the total population. They discovered that the overall prevalence of blindness due to optic atrophy was 0.42% (29 individuals) in the population.

Abang (1995) asserted that onchocerciasis occurs principally in 3 major areas in the world. These include Africa, central and south America, and eastern Mediterranean countries of Sudan and Yeman. Twenty million of these are affected out of which one million people have been rendered blind, or partially blind. Ninety-five percent of the infected cases are from Africa and Nigeria has a share of 7 million people affected by filarial worms.

Onabolu (1996) observed that Nigeria is the most endemic country in the world with prevalence of onchocerciasis causing visual impairment and blindness. According to

Onabolu of 85 million people at risk of infection worldwide, 39 million are Nigerians. Of the 20 million estimated by World Health Organization currently infected, 7 million are Nigerians. Out of 350,00 already blind, 114,000 are from Nigeria.

In some oversea countries, there has been almost authentic statistics of the blind or visually impaired established. Using figures from Office of Education, Dunn (1963) estimated that 0.15 percent of children had visual impairments requiring special education services. He indicated that the prevalence estimates include 0.14 percent of partially seeing and 0.01 percent as blind. Applying these estimates to the total population of school-age children, there were about 5,000 blind and 71,000 partially seeing children in 1968 (Dunn, 1971).

Jone and Collins (1966) analysed reports from 353 local programmes and 54 residential schools for these children and found out that out of every 100 children 0.1 percent in average was classified as visually handicapped by local school system with special; programmes for these children.

In 1977, a governmental health survey in the United States estimated that there were approximately 114 million persons in the United State with some form of visual impairment (Abang 1995), of that number approximately 14 million have had a visual loss that interferes with normal living. The survey also revealed that more than one million persons were partially impaired rather than totally blind, and that of the totally, blind and severe visually impaired, 25% are in the 18 to 54 age range, approximately 6% are under 18 age group.

Looking at the above prevalence figures, it can be argued that there are slight discrepancies. However, the number of visually impaired and the blind constitutes the smallest group of exceptional children.

### 2.3.2 Causes of Visual Impairment:

Visual impairment can result from many causes. The common causes of visual impairments include:

**Refractive Errors**

Heward and Orlandsky (1984) defined refraction as the process of "bending" light rays to produce a clear image on the retina. Many people have been identified to have the size and shape of the eye which prevent refraction from being perfect (Miller, 1979); Kirk (1972) put 49 percent of visual deficits found among partially seeing children as due to refractive errors. These errors involve light rays focusing behind the retina (hyperopic) in front of the retina (myopic), or partially in back and partially in front of the retina (astigmatism) instead of directly on the retina as in the mature normal eye (Howard & Orlanksy, 1984).

**Cataract:**

Cataract has been identified as a cause of visual impairment (Heward & Orlansky 1984; Abang, 1992). According to Heward and Orlansky, a cataract is cloudiness in the lens of the eye, which blocks the light necessary for seeing clearly, vision may be blurred distorted or incomplete. Though cataracts are common in elderly people, they maintained, it may also occur in children.

**Glaucoma:**

Identified as a cause of visual impairment is glaucoma (Heward & Orlanshky, 1984; Adima, 1986; Abang, 1992). Glaucoma is a prevalent disorder marked by abnormally high pressure within the eye. Heward and Orlansky (1984) noted that there are various types of glaucoma, all related to disturbances or blockages of the fluids which normally circulate within the eye. Consequently, central and peripheral vision are impaired or lost entirely when the increased pressure damages the optic nerve.

Mohammed (1982) identified three common causes of the most serious visual impairment as:

(i) Condition of excessive pressure in the eye ball (glaucoma),

(ii) Clouding of the lens of the eye resulting to blurred vision (cataract) referred to as "Congenital cataracts" in children which has a relationship with colour blindness;

(iii) Interferences of the blood supply to the retina as a result of diabetes.

According to Abang (1995), glaucoma is an eye disease characterized by a higher than normal pressure inside the eye. The disease is characterized by an increase in pressure in the eye due to faulty draining of the normal eye fluids. The fluid build up pressure eventually, if not detected early, it damages structures in the eye and results in visual loss or total blindness (Abang, 1995).

**Infections:**

Causes of visual impairment have also been traced to infections comprising mainly bacteria, viral chlamydial, onchocerciasis, syphilis, and German measles or rubella (Orlanhsky, 1984, Orji, 1986; Adima, 1989, Abang, 1995). According to Orji, (1986) when bacterial and infections are not treated they lead to atrophic degenerative eye (phthisis bulb) and severe corneal opacity. Onchocerciasis has been identified as a major cause of viral impairment. The disease is transmitted by a species of black fly called stimulus damnosun, and about 1.2 million Nigerians are estimated to be suffering from onchocerciasis (National Concord 31/1/91). Odiakosa (1982) noted that infections in pregnancy such as measles, chicken pox and other viral infections may result in blindness. Abang (1992) revealed in a survey of causes of blindness in Nigeria that measles was a major causative agent of visual impairment.

**Malnutrition:**

Another important cause of blindness is malnutrition. Abang (1992) argued that blindness due to malnutrition is common in most developing countries. She stated that malnutrition blindness is due mainly to lack of vitamin A which leads to dryness of the eye that is followed by softening and ulceration of the cornea. According to Iheannacho (1985), lack of balanced daily vitamins and poor dietary habits cause handicapping conditions including blindness.

**Accidents:**

Accidents have also been indicated as causing visual impairment including blindness, Abang (1980), and Adima (1989) identified accidents as one of the major causes of blindness. Abang ranked accidents third in a survey of the causes of blindness in Nigeria. Motor traffic accidents ranked high in most developing countries and other forms of trauma came from wood and vegetable materials from farm or home getting into the eyes (Abang, 1980). Odiakosa (1982) confirmed that head injury causing trauma also occurred from falls which may or may not be known to parents.

Summarizing, Adima (1984) put down the causes of visual impairments as hereditary factors, infectious diseases, venereal diseases, glaucoma, diabetes, tsetse-fly, tumors, drug abuse, poisoning, defects, accidents, keratitits and unknown causes.

### 2.3.3 Characteristics of Visually Handicaped

Masqsud (1982) opined that visually handicapped children in terms of their psychological and behavioural characteristics tend to resort more to verbalism to describe the world. This is because blind people utilize more of their auditory, tactual and olfactory senses to explore and experience the environment. However researchers according to Kirk and Gallagher (1989) have shown that apart from the effects of stress or disability, blind persons have not been found to be psychologically and physiologically different from the normal sighted population. On the part of Lowenfield (1973) however, the limitations in the

variety of experience, visually handicapped persons usually have restrictions on their movements, which consequently affect their self-perception.

Abosi and Ozoji (1985) posited a number of characteristics that can be shown by children as symptoms of visual handicapping conditions. These include poor school achievement; inability to accomplish reading tasks involving extensive use of the eyes; preference for and remembering more of materials read to him than reading; skipping letters or words in reading exercise; exhibiting difficulties in copying work; poor eye co-ordination; rubbing and brushing the eye frequently; squinting the eyes; swollen red-rimmed eyes; unusual discharge from the eyes; constant moving of the eyes and crossed eyes or strabismus.

Kirk and Gallagher (1989) stated that visually handicapped persons usually develop sensory perception and compensation, normal language, acquisition, some levels of educational attainment on learning tasks, as well as normal personal and social adjustment needs like every one else once conditions are not made grossly difficult for them. However according to Kolo (1994), the learning needs and social-psychological development of visually handicapped persons depend on whether that condition is a congenital one or adventitious.

## 2.4 THE HEARING IMPAIRED

Hearing is one of the strongest lines of communication between persons and the world in which they live (Crowe Auxter and Pyfer (1981). Commenting on the importance of hearing, Abang (1995) viewed hearing as an invaluable asset of man, particularly young children, and the most important senses of the acquisition of language.

Individuals with hearing impairment include hard of hearing or deaf (Kirk, 1962). A hard of hearing has been defined by Kirk as those in whom the sense of hearing, although defective, is functional with or without a hearing aid. Kirk also noted that the deaf are those

in whom the sense of hearing is non-functional for the ordinary purpose of life. According to Kirk, this is made up of two groups:

(i) The congenitally deaf

(ii) The adventitiously deaf.

Kirk (1962) further explained that the congenitally deaf are those who were born deaf which must be severe or profound. He maintained that if the person with hearing loss were assessed, he would record 60 to 70 decibels losses or 75 and above decibels in some cases to be defined as deaf. On the other hand, Kirk presented the adventitiously deaf as those who were born with normal hearing but in whom the sense of hearing become non-functional later through illness or accident.

In his own definition, Taylor (1970) classified deaf students as those with impaired hearing who require education by methods suitable for students with little or no natural acquired speech and language, while the partially hearing students are those with impaired hearing whose development of speech and language even if retarded, follow a normal pattern and who acquire for their education special arrangement of facilities though not necessary for all the educational methods used for the deaf. Agreeing with the above, Adima (1989) contended that deafness is a condition of inability to hear and that this condition may be total or partial. When it is total, it means deafness and if it is partial, it means the hard of hearing.

Similarly, Winnick and Short (1985) described hard of hearing as a decibel loss ranging from 27-90 decibel in the better ear or when the sense of hearing ability is abnormal. They further highlighted that hearing loss can be classified as mild, marginal, moderate, severe and profound. Winnick and Short classified the hearing impaired as 20 – 30dB, marginal hearing loss 30-40dB, moderately hearing 40-60dB, severe loss 60-70dB and above.

Contributing, Ozoji (1993) defined hearing impaired children as those whose sense of hearing is defective and this ranges from ability to hear partially to total deafness. And for education purpose, Ozoji saw deaf children as those who cannot process information through audition with or without hearing aid. In line with the above the conference of Executive of American School of Deaf in 1975 defined a deaf person as that one whose hearing disability precludes successful processing of linguistic information through audition with or without a hearing aid (Abang, 1995).

The conference, according to Abang classified hearing handicaps into three categories. These are as follows:

(i) Hearing impairment

(ii) Hard of hearing; and

(iii) Deafness.

In describing hearing impaired students, Abang (1995) posited five classes or categories. These include:

(i) Those with slight hearing loss who are said to be in the boarderline between normal hearing and significant defective hearing. The pure average individual within this range is between 27dB and 30dB.

(ii) Those with mild hearing loss are those whose average hearing loss is from 30db to 50db. The victims of this level of loss will not be able to hear faint words or distinct speech clearly, hence will have to learn speech reading.

(iii) Those with moderate hearing loss are children between the borderline and the deaf. The pure tone average of these children is between 50db and 70db. They have frequent difficulty with normal speech especially in conversations and in group discussions. They are at times referred to as hard of hearing possess usable hearing and therefore can be trained to use their residual hearing.

(iv) Those with severe hearing loss: These are children whose hearing loss range from 70db to 90db. Loud noises, such as sirens and airplanes could be heard. Voices could be heard within a distance of one foot from the ear and moderate voices several inches from the ear.

(v) Those with profound hearing loss: These are those whose hearing loss range from 90db and above. The person can hear only loud shouts at a distance of one inch from the ear to nothing at all.

From the foregoing, it can be rightly concluded that hearing impairment is a disorder of the hearing mechanism that makes a person unable to hear speech or other sounds loudly or clearly enough. It includes the subsets of hard of hearing and total deafness. In other words, hearing impairment is a generic term indicating a hearing disability that may range in severity from mild to profound.

### 2.4.1 Prevalence of Hearing Impairment

Hearing impairment exists in many degrees of severity. Hewet and Forness (1977) reported that many children with hearing problems go unnoticed although their difficulties may definitely interfere with their learning in school. Although the United States Office of Education estimate for the deaf and hard of hearing is approximately 60%, estimates as high as 5 percent have been reported when more mild hearing losses are considered (Silverman and Lane, 1970). Of this 5 percent (McConnell, 1973) probably 1 to 1.5 percent require some form of special education intervention; the remaining 3.5 to 4 percent primarily need prompt medical assistance so that their condition is remedied and further hearing loss prevented.

Fait (1978) stated that statistically, 35 out of every 1,000 adults in the United Kingdom experience some hearing impairment while 8 out of every 1000 children to the age of 20 have auditory handicap.

Crowe, Auxter and Pyfer (1981) explained that in the United States, there are approximately 18 million hearing impaired individuals, 3 million of whom are children. Also, it has been estimated that 5% of school-aged children have some hearing deficiency with 1 or 2 out of 10 of this group requiring special education attention.

In Nigeria, Igbokwe and Adeyoyin (1978), reporting the Nigerian Federal Ministry of Education survey of 1975, showed that of the 1,628 handicapped children of all categories in schools, 32% were deaf and hard of hearing. In addition, Mba estimated that one out of every 10 people has some hearing problems which rob him/her one or the other many advantages which normal hearing makes possible.

Mba (1984) noted that there is no accurate statistics of the hearing impaired persons in Nigeria. However, Mba provided what he referred to as "estimate" of hearing impaired in Nigeria based on 1984 primary school enrolment as a total of 103,006 persons. According to him, this population is only a small fraction of persons with hearing defects in Nigeria. Plateau state registered 4,269 pupils with hearing defects (Mba, 1984). Adima (1989) maintained that complete statistics of the population would not be possible through a national census of the handicapped by Federal Government.

### 2.4.2 Causes of Hearing Impairment

Causes of hearing impairment can be discussed under three major periods; pre-natal, peri-natal and post natal.

**(a) Prenatal Causes:**

Similar hearing impairment has been linked to genetic causes (Mohammed, 1982, Abang, 1992). It has been described as resulting in profound irreversible bilateral sensorineural deafness that is normally of early onset.

Abang (1980) revealed that Komgemark identified sixty types of hereditary deafness, which are differentiated by type of transmission. The most common are recessive congenital deafness, developmental congenital deafness and sex-linked congenital deafness. Contributing, Moores (1981) maintained that there is strong evidence that congenital impairment runs in families; and a tendency toward certain causes of adventitious hearing loss may also be inherited.

According to Abang (1992), recessive gene is transmitted to the child by clinically normal parents who have no hearing loss but are carriers of the gene for deafness. These parents are referred to as heterozygotes while the deaf child is refereed to as homozygous for the gene.

Also dominant gene has been estimated to comprise 13 to 25 percent of genetic deafness (Abang, 1980). The possession of single abnormal dominant gene is sufficient to produce deafness.

Sex-linked congenital factor has been identified as a cause. Abang continued, only one to three percent of genetic deafness is caused by sex-linked inheritance. Genetically, females have two X chromosomes while males have only one X and one Y chromosome. The X chromosome carries other genes, some of which may be abnormal genes for deafness. In XX pairing the abnormal gene is active, thus the male child is affected (Abang, 1980).

RH factor or mother child blood incompatibility is also a major cause of deafness (Heward & Orlansky, 1984; Adima, 1989; Abang 1992 ). According to Heward and Orlansky damage to cells and nerve tissues can occur if a pregnant woman with Rh negative blood is carrying a fetus with Rh positive blood. Elaborating further, Vernon (1969) stated

that the problem arises when a woman is Rh minus carries a Rh positive fetus. The mother develops antibodies that would fight this foreign body. The antibodies then are transmitted through the placenta to the fetus to destroy the Rh positive antibodies of fetalblood cells.

Parental infection of mothers has been traced to cause auditory impairment. Statistical estimates issued during and since the International Year of Disable persons (Abang, 1981), revealed exposure of mothers to infection and diseases as a leading cause of childhood deafness. Frank and Steven (1977); Adima (1989), Abang (1992), have indicated infectious diseases such as rubella, German measles, mumps, whooping cough, typhoid fever, influenza as causes of hearing defects. These may cause degeneration of important nerve cells that result in deafness. The viral diseases are able to infiltrate the inner ear by way of the internal measles resulting in mild to profound sensorineural hearing loss.

Toxic condition that results when a pregnant woman takes unprescribed drugs may cause destruction to the auditory cells (Mores 1981; Adima 1989; Abang 1992). Crediting, Hawkings highlighted that drugs are capable of causing permanent hearing damage to the fetus especially when taken during the first trimester of pregnancy. Such drugs as karomycin, neomycin, streptomycin and others of mycin group are good example.

Malformation of organs of hearing leads to hearing impairment. A spongy bone may be formed in the middle ear or inner ear. In some few cases, the eardrum may be deformed or absent in birth (Adima, 1989).

**(b) Peri-natal causes:**

During birth process, some accidents may occur to cause damages to the hearing organ of the body. This may include anoxia (Abang, 1981; Mohammed, 1982; Adima 1989), which is deprivation of oxygen to the brain resulting in damage to the brain cells. This can result in deafness and mental retardation.

The use of forceps occasioned by difficult labour is another important factor. The pressure of the forceps on the tender head of the baby may destroy some vital cells that may impair hearing (Adima, 1989; Abang 1992).

Prolonged and difficult labour can result in childhood deafness. Adima (1989) and Abang (1992) noted that in prolonged labour, oxygen supply to the child is thin or inadequate (Anoxial and vital organs) including auditory organ, which are affected.

The effect of pelvic pressure has also been highlighted by Adima as causing hearing impairment. According to him, in isolated cases where the pregnant women are underaged, delivery may be difficult due to pelvic pressure. This situation could produce destructive effect on the auditory passages.

Yet another important cause is blockage of respiratory passages. There are a number of biological factors such as venereal disease, web umbilical cord that could block the child's respiratory passages. If the respiratory passages are blocked it could produce rapid destruction of important auditory organs (Adima, 1989).

**(c) Post-natal causes:**

Diseases and accidents account for a large percentage of hearing loss after birth (Mohammed, 1982, Adima, 1989). According to Abang (1992) and Adima (1989) childhood infections such as measles, meningitis, chicken pox, mumps, influenza, whooping cough, diptheria, scarlet fever, tuberculosis and other respiratory diseases can result to deafness if not treated early and properly. A bacterial or viral infection which according to Moores (1981) among its other effects, destroy the sensitive accustic apparatus of the inner ear.

Myklebust (1960) observed that hearing impairment can be acquired or hereditary. He found 39.1 percent of the incidence of deafness to be acquired, 22.6% to be hereditary and 38.8% to be unknown origin. He associated some impairment with neurosis or psychoses and this he called psychogenic deafness. According to Myklebust (1960) central

deafness (affecting the auditory pathways within the (CNS) is caused by diseases of the brain affecting the auditory pathways such as cerebral tumor, or abscess, artericcrosis, cerebral hemorrhage, and multiple sclerosis. Another form of central deafness is auditory asphasia, which is caused by a lesion in the cortex and association paths of the brain, preventing comprehension, concept formation and symbolization through audition.

Premature birth appears to increase the risk of deafness and other disabling conditions. Supporting this view, Moores (1981) affirmed that early delivery and lower birth weight are more common among deaf children than in the general population.

Lynch and Lewis (1988) asserted that in the U.S. four major causes of deafness have been consistently reported over the years. They posited that:

(i) Heredity, which is the bye-products of dominant or recessive genes and sex-linked is a factor in this regard. Thus with dominant genes, one deaf parent passes on deafness to his child; with recessive genes, both parents who are even probably hearing pass on deafness to their children, and with sex-linked factors deafness is passed on to a son through the mother;

(ii) Rubella as a vital disease could attack the foetus of a pregnant woman and consequently leading even to congenital deafness;

(i) Prematurity;

(iv) Meningitis – a non-congenital cause. As a disease, it invades the labyrinth in the middle ear and consequently resulting in deafness or some hearing loss.

Concluding, etiology of deafness or hearing impairment is said to vary from one geographical area to another, from country to country and from race to race, hence in discussing etiologies of deafness, generalization must be made with caution. This notwithstanding, some diseases and certain hereditary factors together with some environmental conditions are common to all races (Oni, 1992).

### 2.4.3 Characteristics of Hearing Impaired:

Igbokwe (1987) listed frequent request for spoken words to be repeated inattention, cupping the hand to the ear during oral communication, rocking the head, difficulty in writing dictation, abnormalities in speech, indifference to on-going music, hesitance to participate in oral communication activities, day dreaming and poor scholarship all as characteristics of deaf children. Igbokwe asserted that children with hearing handicaps often lag behind in school achievement as they may often resort to truancy, compulsive aggression, tantrums and general lack of sociability. Kirk and Gallagher (1989) also cited a number of researches that are a pointer to the fact that hearing handicapped people usually have problems in academic achievement, social and personal adjustment as direct results of their hearing loss.

Reviewing general characteristics of individuals with hearing disorders, Moores (1988) portended that basically in most personality traits, hearing impaired people do not manifest significant differences with the hearing population. In terms of learning characteristics, the intellectual functioning of hearing handicapped persons appear more or less to be the same as that of hearing people especially when measured on standardized IQ test (Kolo, 1994). On academic achievement according to Kolo, most deaf children obviously score lower than their hearing mates but obviously because of the handicap in communication. In terms of socio-emotional characteristics, Kolo continued, the hearing handicapped persons exhibit a lot of inadequacies due mainly to poor parent-child relationships at the early state of life.

## 2.5 PHYSICAL IMPAIRMENT

Defining this physical impairment child is not as controversial as defining other groups of exceptional children (Adima, 1989). According to Adima, this lack of controversy in definition is due to the visible nature of the impairment.

In defining the physically disabled, Kirk (1962) stated that the physically disabled like the cripple is one who has an orthopaedic impairment interfering with the normal functions of the bones, joints or muscles to such an extent that special arrangements must be made by the school. Also, Coner, Rusalem and Cruickshank (1971) observed that a child who has deformity that causes interference with the normal use of bones, muscles or joints would come within the province of this group. Included also are children with poliomyelitis, osteomyelitis, tuberculosis of the bone and or joints and those with congenital deformation such as club foot or spinabifida.

In contributing, Abba and Aduwo (1985) defined physical and health impaired as those children who are crippled, deformed, physically handicapped and/or neurologically impaired. Physically handicapped persons do not include children who have such sensory handicaps as deafness, blindness, speech defects and so forth". According to the two scholars, the physically handicapped include children with crippling health impairments such as abnormal heart conditions, asthma, diabetes, epilepsy, arthritis, spina bifida, cerebral palsy etc. Explained further, NTI (1990) saw it as those with skeletal disorders such as club-foot or the absence of somebody parts which often results from congenital abnormalities or diseases such as poliomyelitis, tuberculosis of the bone or accidents.

Essentially, therefore, the physically disabled are those individuals with functional limitations relating to physical ability e.g. hand use, trunk use and movement (Abang, 1992). The handicapping condition interferes with the normal functions of bones, joints and muscles.

### 2.5.1 Prevalence of Physical Impairment

Like in the case of other exceptional children in Nigeria, the number of the physically handicapped in the country is not precisely known (Adima, 1989). It is more difficult to estimate the population of the physically impaired than other categories of

handicaps. However, Mba (1986) estimated the number of handicapped children in relationship to primary school enrolment in 1984 as 93,168 children out of over seventeen million enrolled in all the primary schools in the country. There is no estimate of children who are outside the schools, who might be roaming the streets and villages. Mba (1986) believed that if a comprehensive and systematic survey of the physically handicapped persons in and out of schools in Nigeria were conducted, there would be five to eight million of them.

In a related study, approximately 45,000 children in six county areas of Iowa were sampled to determine the incidence of educationally and psychologically relevant physical handicapping conditions among school children. Friedman and McQueen (1971) found 195 physically handicapped children. This number constitutes 0.44 percent of the total group. Dunn (1973) indicated prevalence for the group as 0.36 percent approximately half of who have cerebral palsy and other crippling conditions and the other half chronic health problems.

### 2.5.2 Causes of Physical Impairment

Causes of physical impairment are varied and depend upon the type of physical impairment. Impairments could be congenital disease-linked or through accidents of life (Lynch and Lewis, 1988). In support of the above, many authors have come up with lists of general causes. Adima (1989) identified the following as causes of physical impairment; hereditary or genetic factors, chronic illness, rubella or German measles (contracted by an expectant mother during the first three months of pregnancy), excessive use of X-ray therapy, diabetes, abnormal labour, abnormal deliveries, pre-maturity and low birth weight, insufficient supply of oxygen to the brain of the unborn child, head injury, disorders of the central nervous system, brain tumor, defect due to the failure of the bony elements of the spine to close completely, infections such as tuberculosis of the bone, arthritis, ontogenesis,

ostemylitis, and traumatic experiences such as motor accidents, gun shots, falls from high places, burns, fractures, amputation.

Earlier, Auxter and Pyfer (1977) stated that physical impairment can result from congenital defects in which children are born with an orthopedic handicap, and trauma which deforms muscles, ligaments, tendons or the nervous system.

**Specific Physical Impairment And Causes**

**Cerebral Palsy:**

Cerebral palsy is a complex neuromuscular disability due to injury to the brain before, during and after birth (Hewett and Forness, 1977; Heward and Orlansky, 1984). Agreeing with the above, Cruickshank and Lowandowski (1979) pointed out that cerebral palsy is an excellent example of a multiply handicapping condition.

Wilson (1973) noted the following as main causes:

(i) Prenatal factors;

(ii) Blood-type incompatibility, especially the Rh factor;

(iii) Maternal infections particularly rubella toxemia – a condition associated with presence of toxic substances in the blood of the mother.

(iv) Condition that cut off the supply of oxygen to the brain of the fetus or affect oxygen carrying properties of the mother's blood, such as

  (a) Severe anemia; prematurity, diabetes, X-ray therapy.

  (b) Birth condition that cause nervous system damage such as prolonged labour, breech birth, anoxia and obstrical procedures;

  (c) Factor that may be responsible for central nervous system damage in the early years of life which include infections of brain tissue such as encephalitis, accidents, lead poisoning and progressive neurological disorders.

In line with the identifiable causes by Wilson, Heward and Orlansky (1984) attributed the causes of cerebral palsy to injuries, accidents or illness occurring pre-natally, perinatally or post-natally; lack of oxygen during the pre-natal or perinatal period which is thought to be one of the major causes of the brain damage.

Auxter and Pyfer (1977) reported that statistical estimates indicate that in the United States, results in severe brain injury and conditions that give rise to disorders may be operative during the prenatal, natal and postnatal periods. Authorities believed that approximately 30% of the cases are due to prenatal causes, 60% to natal causes and the remaining 10% to postnatal causes. Prenatal causes include maternal infection such as rubella, syphilis and toxoplasmosis metabolic malfunction, toxemia, diabetes, abnormalities such as fetal, anoxia and excessive radiation.

### 2.5.3 Characteristics of Physically Handicapped:

Heward and Orlansky (1984), and Lynch and Lewis (1988) provided examples of motor-orthopaedic neurological and health related impairments.

Except orthopaedic, neurological and health related impairments are compounded, i.e. accompanied by other handicaps, they are not expected to interfere with intellectual abilities of victims (Kolo, 1994). Kolo asserted that school achievement for neurological and health impaired person may, however, be poor because of absence from school. According to Kolo, social-psychological and emotional conditions of physically handicapped individuals do not also seem to be affected so adversely, except for cases of poor self-concept of motor orthopaedic handicapped. However, problems of fatigue, weakness and pain are usually associated with physically disabled persons. As for neurological and health related impairments, fragile health is the major problem characteristics.

**(a) Orthopaedic cases:**

(i) Muscular dystrophy: a conditions of diseased muscles in specific parts of the body (most often the limbs) characterized by atrophied skeleton, waned and weakened muscles.

(ii) Amputation: referring to total or partial loss of the limb

(iii) Osteogenesis imperfecta: an inherited condition in which the skeletal frame is not properly developed characterized by high vulnerability to fractures and bone disease like rickets.

(iv) Quadriplegia: a motor-orthopedic condition in which all four limbs of a person are not functional.

(v) Paraplegic: a physical dysfunction of the legs only.

(vi) Hemiphlegia: a physical malfunction of only one side of the body.

**(b) Neurological cases:**

(i) Spina-Bifida: A congenital defect in the formation or development of the spinal cord and the overlying bones of the vertebrae. Often this condition leads to loss of effective use of lower parts of the body as well as lack of bladder and bowel control.

(ii) Spinal cord injury: translocation of the spinal cord column or bones which protect neurological system and resulting mostly in paralysis of half of the body or from the neck down the toes.

(iii) Cerebral Palsy: a general term used in reference to a syndrome of motor dysfunctions. It is characterized by the inability of the central nervous system to control motor movements such as legs, toes, fingers, lips, etc.

**(c) Health related cases:**

These include direct effects of a variety of diseases like epilepsy, diabetes, sickle cell, rheumatic fever, cystic fibrosis, burns, and asthma. In all related

cases of physical impairment, the effect of the disease is so severe that the welfare and education of the child is persistently disrupted (Kolo, 1994).

## 2.6 THE EMOTIONALLY DISTURBED

The emotionally disturbed children are those who have some psychiatric disturbances, which are not traceable to clearly defined physical damage in the brain. Supporting, Kirk (1962) stated that emotionally disturbed children refer to those who have inner tensions and who have anxiety, neurotics, or psychiatric behaviour." In appreciating this definition, one may add that children whose behaviours have negative effects on their own personal or educational development could be referred to as emotionally disturbed, for example a withdrawn child or a depressed child.

Contributing to this view, Amadi and Caulirick (1985) in discussion of introduction to behaviour disorders, remarked that behaviour disorder is an area in special education which is difficult to define because of many reasons. According to them, these include:

(ii) The problem of cultural influences on behaviour and the expectation of accepted standards for appropriate behaviour may be different across tribal and cultural groups.

(iii) Disordered behaviour is sometimes linked with other handicapping conditions such as mental retardation, learning disabilities and communication disorders.

Abang (1992) contributing, saw the emotionally disturbed individuals as those who repeatedly exhibit behaviours that are not commensurate with the age of those who exhibit them. The emotionally disturbed child is a child who is angry with himself, with the family, the school system and the society at large. The child's reason for the anger may be biological in nature, it may be due to lack of care by the family, it may be due to frustration, result of failure in school.

From the above, it can be seen that the provision of acceptable definitions of the emotionally disturbed child is not any easy task. However, the emotionally disturbed children are those who have deviated in an extreme manner from the norms of the society within which they operate. The behaviour they exhibit is unacceptable and high in frequency and not in accordance with the social and cultural expectation (Abang, 1992).

### 2.6.1 Prevalence of Emotional Disturbance.

Prevalence figure for behavioural disabilities is extremely difficult to ascertain. Considering the difference in terminology and definition that are used by various agencies, it is not surprising, to find estimates varying widely and sometimes changing abruptly (Dunn, 1971). According to Schults Hirshoren, Manton and Henderson (1971) prevalence figures for special education purposes vary widely according to states. In a survey they found that 18 states used a prevalence estimate of 2 percent and 7 states used 3 percent, while 6 states used 5 percent.

Dunn (1971) further stated that emotional disturbance is not distributed evenly throughout the population, and that while disturbed children can be found in all social classes, lower socio-cultural classes produce far more than their share.

Hewett and Forness (1977) predicted that 2 to 6 children per 10,000 of the child population would be so afflicted. Nevertheless, they maintained that schizophrenia and infantile autism, which are all severe emotional disturbance, are rare conditions.

There is no serious attempt in Nigeria to have a complete census of emotionally disturbed children because most Nigerians do not see this disturbance as a problem. But this is not so in other countries like Britain, America, France and Germany etc. Adima (1989) revealed that one of the most comprehensive attempts to obtain a census of emotionally disturbed children was complete in Rhode Island (USA) where nine children in every thousand in the ages of four through twenty were emotionally disturbed. Boys were found to

outnumber girls by three to one. By age, one percent was reported disturbed at given years with gradual increase of 2.4 percent at the age of fifteen after which it again decreased by 5 percent at eighteen. In alignment with Rhode Island survey result, Gulliford (1987) reported that Yule and Rutter sought reliable information from surveys of 2,193 children in need for special services. From screening procedures, 286 children were selected for intensive psychological and psychiatric assessment. Their estimate was that 5.7 percent showed a psychiatric disorder. Of these about 36 percent showed neurotic disorders, 36 percent conduct disorders and 23 percent were mixed group. There was only a slightly smaller number of boys to girls with conduct disorders at a ratio of nearly 4:1.

Mba (1986) estimated the number of handicapped children in relationship to primary school enrolment and gives a population of emotional disturbed children in Nigerian schools as 355,907 out of 43,089,123 pupils enrolled in 1984. Of this, Plateau state has 14,451 out of 742,593 enrolled.

Looking at the figures above, Adima (1989) concluded that one thing is certain in the situation in Nigeria and that is that the large majority of emotionally disturbed children are enrolled in regular schools with normal children. But still the exact population of emotionally disturbed children in our school is unknown. However, Adima put the population of this group of handicapped children between 5 and 10 percent of our school population.

### 2.6.2 Characteristics of Emotionally Disturbed Children

According to Gulliford (1971), emotional upsets and difficulties can hardly be avoided in the process of human development. Thus, it is not uncommon to experience emotional difficulties in the forms of stress, temper, and even regressive behaviour in children and grown ups. However, when such emotional upsets not only persist, but reach a level at which it becomes a permanent feature of a persons social adjustment, it most often

turns out to be an emotional disorder requiring special educational adaptations (Gilliford, 1971). Gulliford made reference to a British Underwood Report of 1955 which described the emotional disturbance as maladjustment in which there is a feeling of insecurity and unhappiness resulting from failed personal relationships. According to the report, emotionally disturbed children hardly know how to reciprocate emotions like love, comfort and reassurance, making them hard to school discipline of whatever form.

Kolo (1994) posited the following characteristics of emotionally disturbed: nervous disorders in form of fears, anxieties, withdrawal and timidity, habit disorderliness like enuresis, poor eating habits, fidgeting; behaviour disorders like temperaments, stealing, cruelty and aggression mainly to known weaker victims; organic disorders in the form of neurological dysfunction resulting to impulsiveness and distractibility; psychotic behaviour in which there is a lack of achievement of psychological developmental tasks; and educational and vocational difficulties in the form of academic underachievement and poor career awareness.

Hence, it is characteristic of emotionally disturbed children to exhibit signs of inability to concentrate, awkward behaviour, restlessness, marked skepticism about every environmental change (Kolo, 1994).

## 2.7 METHOD OF DEMOGRAPHIC STUDY

The importance of qualitative and valid data on demography cannot be over-emphasized. Onerkerhoraye (1985) pointed out that the validity of the results of the analysis of population in any locality depends on the coverage of methods used in studying events.

The conventional methods allow data on the state of the population at a given time, its real distribution and characteristics to be recorded. Onerkerhoreya further highlighted that conventional methods include censuses, demographic sample surveys, and registration systems.

Pollard, Yusuf and Pollard (1981) highlighted conventional methods to include population census, demographic sample surveys as well as vital statistics. According to Pollard, Yusuf and Pollard, census taking started in ancient Egypt (2,500BC) China (3000BC), Palestine and Rome (3,500 BC). These early counts were undertaken principally to determine the fiscal labour, tax and military strength, and they were strictly to heads of household, males of military age, tax payers and adult citizens (Pollard, Yusuf and Pollard, 1981).

The United Nations (1975) defined a modern census as the total process of collecting, compiling and publishing demographic, economic and social data at specified time, to all persons in a country or delimited territory. Information collected during censuses include those on age, sex, place of birth, nationality, ethnic origin, education level, occupation and religion (Chandna, & Sidhu, 1980)

Information canvassed in a census is usually self-reported and because of the fact that the presence of disability is often difficult to ascertain under census conditions, census data may undercount the number of people with certain disabilities (United Nations 1975). Thus census data are important but not sufficient for building a national data bank on people with handicapping conditions.

Another method is known as demographic sample survey which Makinwa Adebusoye (1985) defined as the process of collecting, compiling and publishing demographic data at a given time, to a statistical representative sample of all persons, group of persons or things in a country or delimited area. The sample is normally a fraction of the population to be studied.

National sample surveys can be designed to collect data on people with handicapping conditions (Uche 1999). Uche confirmed that the Federal Office of Statistics and National Population Commission, as well as many researchers have undertaken national sample surveys. Uche maintained that such surveys involved using a probability sample of

households whose members are first screened for disabilities. People identified are then interviewed in detail on the causes of disabilities, types, and consequences of impairment and on their social, economic and demographic characteristics.

Yet another method as posited by Onerkerhoreya (1985) is the registration systems, which describes the state of the population at a particular point in time in an area. The main methods according to Onerkerhoreya include vital registration, population register and migration record. According to Onerkerhoreya, a well-designed system will yield high quality data on people with handicapping conditions.

The non-conventional methods also known as dynamic or non-traditional methods are semi-official studies, which include parish registers, civil registers, school registers and hospital records (Pollard, Yusuf and Pollard, 1981). The parish register, explained by Pollard, Yusuf and Pollard, register births, deaths, baptism and marriages, which are kept by the churches. They are restricted to members only. On the other hand, school registers are records of school children on sex, ages, medical certificates, admission, attendance, parents' names and occupation.

Though the non-conventional methods are useful in demographic studies, the information they give is on small localities and they are not as accurate as conventional methods. Thus, the conventional methods are most useful, accurate and reliable in demographic study, the conventional methods more appears appropriate and this will be employed in the present research.

## 2.8 DATABANK OF PEOPLE WITH HANDICAPPING CONDITIONS

The hall mark of a databank of people with handicapping conditions is the collection of reliable data and the storage, retrieval and compilation of such data for both policy and research purposes, (Uche, 1999). Continued Uche, apart from the storage and updating of comprehensive data on disabled persons, such a databank forms the basis for trend analyses and provides the needed statistical base for the formulation and implementation of policies

and programmes by governments, and even individuals. Other importance enumerated by Uche include, identifying the number of people with handicapping conditions in a specific population and the types of disability they manifest, giving the variations in the prevalence of handicaps by sex, age, place of residence, cause of impairment, etc, providing a comparison of persons with handicapping conditions relative to the non-handicapped with respect to demographic factors and characteristics such as schooling, educational attainment, labour force participation and occupation.

## 2.9 STUDIES ON DEMOGRAPHIC CHARACTERISTICS OF SOME CATEGORIES OF IMPAIRED CHILDREN:

This section deals with a review of some studies on the characteristics of handicapped persons particularly those under study by the researcher. Because very little work has been done in this area especially using the Nigerian background, most of the works reviewed here are based on foreign background.

### 2.9.1 Ries Bateman and Schildroth Study on Ethnic Background in Relation to Other Characteristics of Hearing Impaired Students in the United States:

Ries, Batman and Schildroth (1972) carried out a demographic survey of 44,000 hearing impaired students in special education programmes throughout the United States. The survey mainly looked at ethnic background of these students as related to other key demographic characteristics and to other national regional population figures. The major variables of the study include ethnic distribution of hearing impaired students enrolled in special educational programmes for the hearing impaired, ethnic distribution of the hearing impaired according to age groups and sex, number and percentage distribution of persons by age group and level of bilateral hearing loss, type of educational programme at onset of hearing loss, cause of hearing loss as well as additional handicapping conditions.

To collect data, the researchers used basic survey form, which was designed to cover all the areas that data were needed for the study. These forms were sent to the schools and were asked to use students' record files where the information needed were contained. Schools were asked to report on their student by code rather than by names.

The survey revealed ethnic distribution according to white, black, Spanish, American as well as other ethnic origin which ranked the lowest. These ethnic distributions were generally reflected in all the age groups except the pre-primary school children.

Regarding age at which the hearing loss occurred, the distribution was reported according to age and ethnic distribution. Also reported to be causing the condition included maternal rubella, meningitis and hereditary factors as causes of the impairment.

The above variables indicated and method of data collection has given a guide for the researcher to clearly comprehend how a study of this nature could be carried out.

### 2.9.2 Karchmer, Rawlings, Trybus, Wolk and Milone Study of Educationally Significant Characteristics of Hearing Impaired Students in Texas.

A study was conducted by Karchmer, Rawlings, Trybus, Wolk & Milone (1978) on educationally significant characteristics of hearing impaired students in Texas. The purpose of the study was to make possible output reports, which could be used for education planning at a variety of levels. The population was 4,508 hearing impaired children receiving public education in the State of Texas. The educationally significant characteristics of these students included hearing level, ethnic origin and additional handicapping conditions which were examined and compared to characteristics of hearing students nationally.

The method employed for data collection was by going through the public data file that contained the relevant information needed for the study. The nine variables included; age and sex distribution of the impaired, age at onset of hearing loss, hearing levels, cause

of hearing loss and educational placement, additional handicapping conditions, ethnic origin, time integrated in academic classes, time integrated in non-academic classes.

It was discovered in the study that Texas hearing impaired students as a group differed markedly from national distributions on several characteristics, notably ethnic background. "To the extent that this is so, the services required for hearing impaired students in Texas naturally reflect the state's own demographic realities."

In the light of the above, it is considered that the variables covered in the above study are quite relevant in the study of this type. Also interesting to note is the peculiarity of the characteristics of the hearing impaired which reflected the demographic characteristics of the state.

### 2.9.3 Gates Survey of Multiply Handicapped, Visually Impaired Children in the Rocky Mountain/Great Plain Region.

Gates (1982) conducted a survey of the visually impaired from birth to age 21 in the 11 states Rocky Mountain/Great Plains Region.

The purpose was to survey the population of visually impaired children from birth to age 21 in the eleven states Rocky Mountain/Great Plain and determine educational needs of the population.

A survey questionnaire was used to collect data from vision consultants who indicated the precise numbers of children with multiple handicaps, degrees of visual loss and services. available. Each vision consultant in the catchment area for the study was asked for the total number of visually impaired children, including the multiply handicapped, visually impaired and then the estimated number of children for each of the other items included in the survey.

In the presentation and analysis, the researcher compiled the data by tallying the responses from all the questionnaires and converting some data to percentages.

In the collection of data, the researcher used only vision consultants. He could not explain how this data was collected by the consultants, especially on such variables as educational placement and children receiving other educational services covered in his study. This would have provided a guide for the reader to ascertain the adequacy or appropriateness of the data instrument.

The method of presentation and analysis of the data as indicated were appropriate since the survey was merely a descriptive type and he used descriptive statistics which shows direct and correct result of a survey study.

### 2.9.4 Oni's Study of Etiological Implications of Deafness in Developing Countries.

The main purpose of this study was to determine the main causes of hearing disorders as well as the implications of such causes on prevalence and services in order to decide possible measures to solve the problem (Oni, 1992).

The study was conducted in six states with established schools for the deaf in Northern States of Nigeria. To collect information on the causes and age of onset, parents of the hearing impaired children were interviewed. In order to authenticate the information collected from the interview, audiological records available in the schools were examined. Simple percentage was used to analyze and report the data collected.

The study revealed that diseases were the major etiological factors in the areas of study. These included meningitis, measles and influenza. However, unknown causes accounted for quite a large number of cases.

The population according to the report was 430 parents of hearing impaired instead of the hearing impaired students themselves. Since a population in research is the target group which a researcher is interested in studying (Awotunde, Ugodulunwa and Ozoji, 1997) using the parents as the population of the study was wrong. Therefore having used a

wrong concept of population for the study, the finding cannot be said to be true representation of the target population.

### 2.9.5 Shown Study of the Demographic Characteristics of Visually Impaired Children in Some Selected Schools:

Shown (1990) carried out a survey of the characteristics of the visually impaired children in Plateau State. The purpose of his study was to seek information on the characteristics of visually handicapped children with a view to making appropriate recommendations for improving services for the children under study. The variables covered in the study included age at onset of visual problems, degree of visually impairment, sex distribution of the visually handicapped, visual acuity, additional handicap and age at which the impairment was detected.

The data was obtained through the review of the students' school records, which contained the relevant medical information needed, (Shown 1990). There was also informal discussion held with the headmasters of the schools. In obtaining information on the distribution of visual acuity, the records of the consultant ophthalmologist that tested students were used. He covered seven schools located in Jos, Zawan, and Mangu towns and only 35 visually handicapped students were studied.

In the finding, according to Shown (1990), 68.89% were totally blind while 37.15% had partial sightedness. It also revealed that 80% of the students reported onset of the impairments occurring at birth. Also found was the presence of additional handicapping condition such as hearing defect and physical disabilities.

It is important to note that in this survey, which is the descriptive type, the instruments used for the collection of data was quite appropriate but the population or sample was so small to warrant any generalization to be made. The recommendation made

by the researcher, which only calls for a comprehensive demographic data on each child, did not really satisfy the purpose of the study mentioned above.

## 2.10 THE DEMOGRAPHICS OF CHILDREN WITH SPECIAL EDUCATION NEEDS:

In a study carried in 1989, Akinpelu (1994) estimated that two million of school aged Nigerian children are disabled. This assertion implies that this number of persons may have required some form of special education as of that time. Statistics of number of disabled persons in Nigeria conducted earlier by the Federal Ministry of Education Lagos showed that only 0.35% of disabled persons within the school age range of 6-24 years received any form of special education treatment in 1986 (Akinkugbe 1994). It was estimated that by 1983 that there were probably between 1,584,000 and 3,108,000 children of school age (6-18) in Nigeria who needed special education services, as compared to approximately 9,500 who were receiving services then (Oni, 1983).

In another survey on vocational preparation needs of the disabled, Akobundu (1996) revealed that out of the 24 options featured on the needs assessment questionnaire, two of the five most frequently chosen vocational needs centered upon the need to be given adequate, not less, responsibilities in learning situations to facilitate the acquisition of job performance skills and expected citizenship responsibilities. Vocational needs least frequently chosen include; the need to participate in some volunteer work in leisure time, the need for information about actual on-the-job experience and the need to know what is like to be employed.

United Nations Children Fund (1987) reported that there are estimated 3 million disabled people in Bangladesh but exact numbers are not available. About 30,000 children become blind every year because vitamin deficiency and malnutrition. Around 2,400 children with impairments are schooled in government and special schools operated by non-

governmental organizations. An additional 264 blind children are enrolled in integrated programmes.

In the Philippines, 4.4% of both sexes have impairment according to the 1980 disability survey. A national survey of exceptional school age children was conducted from July 1979 to December 1982 for the purpose of establishing a more accurate base line on the national prevalence of school-age gifted and impaired children in the country (Pascual and Gregario, 1988). They survey covered 118 of 126 school divisions. Nearly 25% of schools in each division were sampled (1,1024 schools). As a result of the survey 11.90% (108,814 students) were found to require special education services.

In India, in a project carried out by National Council of Education Research and Training (1987) made discovery of 4.3 million children with impairments comprise the school going age group. Continued the report, about 3 to 5% of Indian population has various degrees of learning difficulties. The number of children in the category is estimated to be no less than 2 million. The total number of visually impaired people is estimated to be 9.5 million people.

In China, UNICEF (1989) reported that at least 10 million children below 14 years of age have impairments. Preliminary analysis of sample survey results published in an interim report in January 1989 showed that 4% of families with children had a child with impairment. The proportion of impaired children was highest in poor areas with limited services (UNICEF, 1989). The survey revealed that 4.9% of the population had an impairment. In a similar survey conducted in 1983, 1.4% of the 0-14 age group had an impairment, and learning difficulties were found to be the major impairment category among the under 14 age group.

In Pakistan, according to the 1981 Population Census, approximately 0.5% of the population has an impairment. Of these an estimated 1 million children aged 5-14 have severe impairments and that a further 5-6 million children with moderate to mild

impairments will require extra support to join ordinary schools. The number of children in Special Education programmes was 8,100 or 1% of children with impairments (Johnson, 1991).

UNICEF reported that the size of the population of primary age children with special educational needs in Asian nations is difficult to quantify for reasons explained below. UNICEF maintained that while it is important to realize that it comprised only a portion of all the children with special educational needs, the world prevalence rate for impairments, however, was estimated by World health Organization in 1978, to be around 10%. This figure was generally accepted and adopted by other United Nations Agencies and internal NGOs concerned with disability issue. The magnitude of the estimated population affected by impairment may be gauged from the following (UNICEF, 1991).

(a) Based on the 10% figure, the total number of impaired in the world was approximately 450- million in 1980, 500 million in 1990 and is expected to rise to well over 600 million by the end of this century.

(b) UNICEF estimated that 140 million children with significant impairments are living in developing countries;

(c) Of these 140 million children, 120 million live in developing countries, 88 million in Asia, 18 million in Africa, 13 million in Latin America, and only 11 million in Europe and 6 million in North America.

(d) One family in 4 estimated to be affected by impairments in one way or the other;

(e) Each year 35 million children die and another 35 million become impaired.

United Nations statistics office (1998) revealed that estimates of the percentage of the total population with impairments in the Asia Region countries range from 0.1% to 13%. That there are presently no estimates of the total population of children who would

fall into the category of “special educational needs” which includes those with learning difficulties that are not associated with a specific impairment, as well as those who come from impoverished environments who are unable to learn in the regular school environment due to health or nutritional reasons. Estimates in the United States of such children who need special educational services can range from 11% to 90% in some poor urban cities.

Reports from the United Nations Statistics (1990) also showed that most prevalence surveys integrated into national census or conducted independently result in underestimation. The range of prevalence rates typically and normally given for those with impairments was between 1% and 5%. According to the office, rough estimates of the much larger number of primary school age population potentially in need of special education can be made by taking into account the distribution of children in the countries.

Lipsky and Gartner (1988) asserted that most children with impairments could be served in regular classrooms with better-trained regular teachers and more appropriate methods and curricular. Like the developing countries, the western countries are re-examining the special education service systems and the access of children with impairments to the regular classroom. In the United States, continued Lipsky and Gartner, special education experts claim that the percentage of all students with impairments being served in segregated classroom and school is too high. Of the total student population with impairments, approximately 855 could be served in regular classrooms, with only 15% needing separate classes or schools. Others totally believe in virtually total integration.

According to Hegarty (1992) the estimated prevalence rates of school children with special educational needs in Western Nations range from 10% to 20%. Hegarty maintained that recent estimates range from 5% to 7%. On the other hand, there are those who argue that the size of the population and the pattern of impairments found among children in developing countries may be expected to be very different from those in western countries.

Surveys which were conducted by the UNESCO sub-regional Project for Special education in eastern and southern Africa suggested that 5% was a more accurate estimate for the region (Ross, 1988). The scaling down of estimated prevalence rates appear to reflect the high infant and under five mortality rates in many developing nations. According to Ross, in nations where childhood mortality rate is over 100 per 10,000, the consequence of disease and malnutrition may often be death rather than a life-long impairment Ross (1988). Some of the variables that are used in estimating or knowing impairment prevalence rates in developing nations include the following:-

(a) There is a lack of standardized screening to diagnose impairments;

(b) There is no clear standard for what constitutes a disability;

(c) Some impairments and reversible disabilities can be overcome;

(d) The percepters of disability are influenced by the local culture;

(e) Governments who are reporting data may not fully be aware of the number of children served by the non-governmental organization special education facilities and;

(f) Family members may be ashamed or afraid of exposing their child with impairment due to cultural stigma attached.

## 2.11 RELATED SERVICES CONCEPT

Some authorities have attempted to define the concept “related service” as used in special education, Wood (1993) contended that related services are services that are needed to assist a child with a disability to enable him benefit from regular or special education. This explanation sees the related services as services that are offered in addition to special education programmes to facilitate learning.

Lewis and Doorlag (1995) saw related services as services offered to students with disabilities to supplement special education programmes. Like the earlier explanation, this version also perceived related services as additional or support services. According to Lewis and Doorlag, such services include transportation and other developmental corrective and supportive services such as speech language therapy, audiology, psychological services counseling, physical and occupational therapy, recreation and diagnostic medical services.

Some handicapped children's needs require one or more of the services enumerated above for example, while a child with hearing impairment may require audiology services along side speech-language therapy to enable her benefit from instruction; another child with only communication disorder may require only speech language therapy (Avoke, Hayford, Ihenacho & Ochoo, 1998).

Therefore, related services in the context of this study include all those services other than academic oriented programmes or services provided in the schools for the handicapped children to facilitate their learning as well as offer corrective and supportive services to enhance their well-being. Thus, they should be seen as critical component of special education programme for every child with disability.

A number of services fall under related services in special education, and referring to PL 101-476 (IDEA) they include transportation and other developmental corrective and supportive services as speech-language therapy, audiology, occupational therapy, physical education therapy, vision correction, medical services, social services, counseling and mental health services, vocational rehabilitation counseling services (Meyen, 1996).

## 2.12 SUMMARY OF LITTERATURE REVIEW

The literature so far has highlighted the various views and findings of authorities on the concept of handicapped. The areas specifically studied include the mentally retarded, visually impaired, hearing impaired, the physically impaired, speech impaired and the

emotionally disturbed. In most of these areas various authorities agreed on the meaning of the conditions as discussed in the chapter. This has provided a common understanding of the handicapping conditions that are within the scope of this study. The researcher therefore has a clearer view of areas to cover without any ambiguity as to the meaning of the conditions.

A review was also made of the prevalence of handicapped children. In this area, highlights of results of studies by Mba (1983), Akogun (1992), Abiose (1994), Onabolu (1996) and other Nigerian authors and researchers were presented. Also the work of foreign authorities such as those of Heber, (1970), Jerome (1971) Abramoweiz and Richardson (1975), Hewett and Forness (1977), Heward and Orlansky (1984), Gallagher (1989), Hegarty (1992) and others were reviewed. In most of the studies of Nigerian authors, it was noted that all the data presented are mere estimates and cannot be taken as accurate prevalence rate in Nigeria. In most cases, the studies were generalized without bringing out results according to sex or age differences. The researcher therefore hopes that this gap would be covered in this study. However, studies of Akogun (1992), Abiose et al (1994), came out with precise research figures of blindness rate in communities in Kaduna State and Taraba Valley, respectively. Yet they could not clearly show the percentage of infected persons according to age or sex or even the social background of those affected.

Another important area reviewed is the causes of the handicapping conditions. The literature reviewed in this area highlighted the causes having bearing with physical, environmental, psychological as well as biological factors. It is equally noted that some of the impairment such as that of visual or hearing vary from one geographical area to another, from country to country. Therefore caution should be taken against unnecessary generalization. This then underscores the need for this study to precisely pinpoint major causes of the various handicapping conditions among the handicapped in the area of the study.

The characteristics of the various handicapped individuals were highlighted too, Works of notable authors ( Masquad 1982, Moores, 1988; Smith, 1994, etc) were reviewed and dicussed. This area of the reviews has provided a good reference base to guide the researcher in the course of his survey.

Some studies of the demographic characteristics of some categories of impaired children were reviewed. Studies of Ries et al (1972), Karchmar et al (1978), and Oni (1992) on demographic characteristics of the hearing impaired were reviewed. Also reviewed were those of Shown (1990) whose study on the demographic characteristics has given a lot of insight on important variables covered in study of this nature. Gates (1982) another foreign author carried out a survey on the multiply handicapped visually impaired children. His method of data presentation and analysis of the data in no small measure adds credence to the method of data presentation and analysis that would be used for this current study.

Another important area in the review were various demographic studies of special education needs of disabled children. Akinpelu (1994), Federal Ministry of Education, Lagos (1994) and Akobundu (1996) carried out surveys which highlighted the estimates of school aged Nigerian children who were disabled, the Federal Ministry of Education reported that 0.35% disabled persons within the school age range of 6-24 years received any form of special education treatment.

Many foreign authorities have made meaningful surveys in the area of education needs of the disabled. The UNICEF (1987, 1989), Pacual and Gregario (1988), National Council of Education Research Training (1987), United Nations Statistics Office and others have highlighted in estimated figures and actual and realistic figures of the special education needs of the disabled as well as the incidence and prevalence of the disabled in various parts of the world. However, some of these studies lack detailed demographic data such as those on the age at which impairment occur and age at highest risk children, as well as sex

differences. These and other variables in elaborate demographic studies have been covered in this study.

# CHAPTER THREE

# METHODS AND PROCEDURE

## 3.0. INTRODUCTION

This part attempts to outline the procedures that would be followed to carry out the research. The procedures are discussed under the following headings:

Research Design

Population

Instrument for data collection

Validity and reliability of instrument

Method of data collection

Method of data analysis

## 3.1 RESEARCH DESIGN

A survey research design was be employed in this study. The main design is census survey in which the entire population of the handicapped children in schools are categorized according to the handicapping conditions as well as age, sex and ethnicity. This type of design employed descriptive methodology and sought explanation of the demographic characteristics of the handicapped children in the schools vis-à-vis the implications of the characteristics for education service provision.

## 3.2 POPULATION

The target population for the study is primary and secondary school pupils classified as handicapped in special schools for the handicapped children and integrated schools in the state. The population was made up of male and female handicapped children of visually impaired, auditory impaired, mentally impaired, physically impaired or orthopedically

impaired or orthopedically impaired and multiply impaired. The population represents pupils from rural and urban located schools (as these schools are located in both urban and rural areas of the state). These children from varying home and family backgrounds are studied as they are found in these schools. In essence, all the schools that have handicapped pupils were covered in this study.

There are six special schools for the handicapped children and twenty two (22) integrated schools in the state (Lere, 1995) and all these were covered in this study. (see appendix A.)

## 3.3 INSTRUMENTS FOR DATA COLLECTION

In this section, the instruments for the study are described. In particular, the procedure for development and validation of the major instrument are discussed.

**Description of the Instrument**

The instruments used for the study which are Demographic Survey Instrument (DSI) and Related Service Survey Instrument (RSSI) were developed and validated by the researcher. Also used were structure interviews. These instruments are described below:

**(a) Demographic Survey Instrument (DSI)**

The DSI is a questionnaire made up of six sections:

A = General information;

B = Ethnic Background;

C = Type of handicapping condition

D = Causes of impairment

E = Age of onset of impairment

F = Educational History and Special Education Programmes and placement

G = Vocational and Alternative Living Potential. Below is a description of the different sections of the questionnaire.

**SECTION A: General Information:**

This section is concerned with the names of pupils, age and date of birth, sex, class level in school. The items require the respondents to complete blanks with relevant precise information. There are five items in this section.

**SECTION B: Ethnic Background:**

The purpose of this section is to obtain the ethnicity as well as religious background of the child. There are two items covering such details as ethnicity and religion. The closed-ended questionnaire method is used. Each part ticked was counted as one during analysis.

**SECTION C: Type of handicapping condition:**

This section covers the type of impairment that the pupil is a victim of. Various handicapping conditions are provided and each respondent is expected to tick which applies to the child.

**SECTION D: Causes of impairment:**

In this case, each type of impairment is covered and possible causes are provided whereby respondent is expected to tick one or two or more of the causes of the pupil's handicapping condition.

**SECTION E: Age at onset of impairment:**

The purpose of this section is to collect information on the age at which the child started suffering from impairment or when the impairment was first noticed. The respondent would write in the age or by checking the box "At Birth." If age at onset is unknown, the box marked" Unknown is ticked.

**SECTION G: Vocational and Alternative Living Potential:**

This section covers likely vocational and alternative living potentials of the impaired child. Vocational alternatives are provided and the respondent is expected to tick which of the alternatives suits the child considering his or her impairment. Also, alternative living situations are listed.

**SECTION F: Education History and Programmes:**

There are seven items in this section which include age at which special education was first received by the child, time enrolled in school, special educational programmer provided and type, and other educational services for handicapping condition.

**(a) Related Service Survey Instrument (RSSI)**

The RSSI is a checklist made up of educational and other services for the handicapped children in schools. These include resource room, educational instruments, identification, diagnostic and screening services remediation services, counseling services, medical clinic services, and transport services.

**(b) Structured Interview**

A structured interview, which is closed ended, was used. This allowed face-to-face interaction; a situation in which the interviewer asks the interviewee questions expecting oral response.

The interview focused on eliciting useful suggestions from the school heads for likeable educational services that can be provided for the handicapped children in schools. (See appendix D).

## 3.4 VALIDATION OF RESEARCH INSTRUMENT

The content validity of an instrument seeks to determine the extent to which questionnaire items or the instrument relate to the aims of the study and to the research questions under review (Lannap, 1991). The usual procedure for establishing the content validity of an instrument is to subject that instrument to the scrutiny of relevant experts.

In line with the above statements, the following steps were taken to ensure the validity of the instruments described above.

The first step was to ensure that the questionnaire items were designed and constructed in such a way that questions are relevant to the research objectives: language is couched to suit the respondents; double-barreled statements were avoided.

Most of the questions and statements together with their scoring techniques are adaptations from renowned researchers whose works have been regarded as standard. For example, the items on type and causes of handicapping condition section of the questionnaire in Section C and D are adapted from a pool of original work of Neil (1992), the items of Educational History and Programme in Section F are modified adaptation of work of Ries, Bateman and Schildroth (1972). The adaptation of these work is because of their relevance and wide coverage of the variables that are important in the present study. Adaptation and modification affect the aspects of type of language, change of items that have environmental biases.

The next step involved, distributing the instrument to three competent experts in the field of special education at the University of Jos, as well as two colleagues teaching special education at the Federal College of Education, Pankshin. Each of them was asked to study them independently and give expert opinions on their representativeness, adequacy, relevance and clarity of the expression of the items. Their criticisms were considered in modifying the items and in adding new ones. To further strengthen the validity of the instrument, the responses of the experts underwent a pre and post validation and their responses were passed through spearman's Rank Correlation Coefficient shown as

$$r = \frac{6\sum d^2}{n(n^2-1)}$$

The summaries are as follows;

N=5, $\sum d^2$ =2 and r =0.9. This signifies a very strong positive correlation between the experts hence the test items have a strong validity. (See table I in appendix C.)

To further strengthen the validity of the instruments, a trial testing of the modified instrument was conducted during the pilot study.

## 3.5 RELIABILITY OF RESEARCH INSTRUMENT

The research instrument went through test-retest of twenty pupils. The scores were plotted through scattered plots of their joint responses. A line of best fit was carefully drawn and this showed a perfect reliability of I. The relation that exists between their test – retest responses was $Y = x + 0$. This shows that any handicapping condition being stated is a perfect representation of such conditions. (See appendix C.)

## 3.6 METHOD OF DATA COLLECTION

For a successful administration of the research instrument and collection of valid and reliable data the following steps were taken:

Collection of letter of introduction from the researcher's supervisor to the Ministry of education Plateau State and the schools soliciting for their co-operation and assistance to the researcher. This enabled the researcher also to get permission from the Ministry of Education to carry the study in the schools.

With the letter of permission from the Ministry of Education, the researcher went to the Zonal Educational Offices and Local Government Education Units to get information on the number and location of special schools and integrated schools in the areas (see appendix A).

There was canvassing of schools. In this case, the Heads of schools and teacher or the individual handicapped if disposed to understand and respond to the questions was contacted for the collection of necessary data for the study. The instruments for the study were delivered to the respondents by hand. That is, direct delivery technique was used. The

researcher travelled to the various schools to administer the instruments and to personally collect them.

Research assistants drawn from the researcher's students of Federal College of Education, Pankshin were trained on the details of the survey and instrument (DSI). The assistants numbering six visited the various schools with the researcher to assist in filling the questionnaires using the files of the pupils as was allowed by the school authorities.

## 3.7 METHOD OF DATA ANALYSIS

The various data analysis tools used in the study are discussed here. The analyses were carried out based on the research questions stated.

The data were organized in tables and frequency counts made. Research statistical techniques of frequency distribution and percentage were used for Research questions 1, 3, 4, 5, 6, 7, 8, 10, 11 and 12. For clearer presentation and analysis, graphical representations of bar or histograms was used. The Federal College of Education computer center provided all the computer services for the analysis of the data.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.0 INTRODUCTION

In this chapter, the data pertinent to the research questions, which guided the study, are presented and analyzed. In all cases, the research question is restated. The results of the study are discussed according to the research questions.

## 4.1 PRESENTATION AND INTERPRETATION OF DATA

Research Question I: What number and percentage of each category of handicapped children exist in the schools?

**Table 2: Type, Number and Percentage of Handicapped children in schools.**

| Category | Number | Percentage % |
|---|---|---|
| Auditorily handicapped | 352 | 68.62 |
| Mentally retarded | 26 | 5.07 |
| Multiply impaired | 20 | 3.90 |
| Physically handicapped | 58 | 11.31 |
| Visually handicapped | 57 | 11.11 |
| **TOTAL** | **513** | **100** |

Table1 indicates that in the schools auditorily handicapped ranked the highest consisting of 352 (68.62%). This is followed by physically handicapped with 58 (11.31%), then visually handicapped consisting 57 (11.11%), mentally retarded 26 (5.07%) and finally multiple handicapped, which is the least with 20 (3.90%) cases.

This goes to explain that in Plateau State there are more auditory impaired individuals in schools than any other category of children with handicapping condition.

This observation may be due to the nature of the impairment, which makes it less difficult for the auditorily handicapped children to benefit from formal education than others. This means that the school system attracts more auditorily handicapped children than any other category of handicapped children in the state. Also, the prevalence of this impairment is higher than any other impairment studied. Therefore, many of this category of handicapped children are likely to be found in the schools than any other category of children.

**Research Question 2: What is the ethnic distribution of the handicapped children according to sex and age range of population?**

**Table 2: Age range distribution of male auditorily handicapped children by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | | | 4 | 4.05 | 3 | 15.79 | 12 | 63.16 | 19 | 100 |
| MWAGHAVUL | | | 3 | 20.00 | 7 | 46.67 | 5 | 33.33 | 15 | 100 |
| NGAS | 3 | 21.43 | 2 | 14.29 | 5 | 35.71 | 4 | 28.57 | 14 | 100 |
| TAROH | 1 | 12.50 | 2 | 25.00 | 2 | 25.00 | 3 | 37.00 | 8 | 100 |
| FULANI | | | 2 | 18.18 | 4 | 36.36 | 5 | 45.45 | 11 | 100 |
| HAUSA | 10 | 16.13 | 20 | 32.26 | 18 | 29.03 | 14 | 22.58 | 62 | 100 |
| IBO | 5 | 31.25 | 5 | 31.25 | 3 | 18.75 | 3 | 18.75 | 16 | 100 |
| YORUBA | 1 | 12.82 | 5 | 33.33 | 2 | 25.62 | 6 | 42.86 | 14 | 100 |
| OTHERS IN PLATEAU | 5 | 2.82 | 13 | 33.33 | 10 | 25.62 | 11 | 28.21 | 39 | 100 |
| OTHERS IN NIGERIA | 2 | 6.90 | 7 | 24.14 | 13 | 44.83 | 7 | 24.14 | 29 | 100 |
| TOTAL | 27 | 11.89 | 83 | 27.75 | 67 | 29.52 | 70 | 30.84 | 227 | 100 |

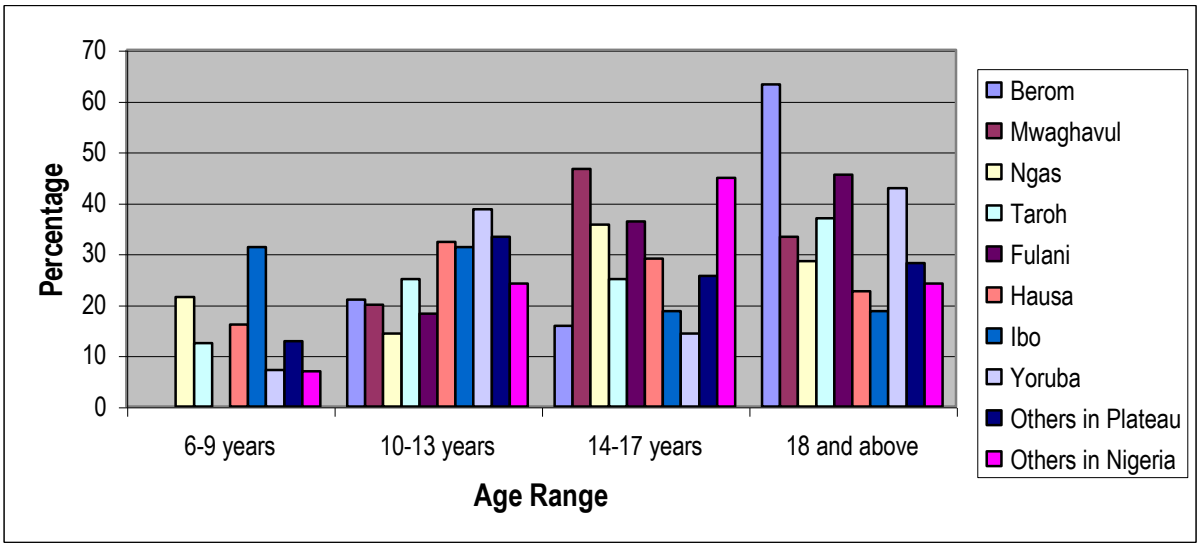


**Figure 1: Percentage Age Range Distribution of male Auditorily handicapped by Ethnic group.**

Figure 1 compares the percentage distribution of age range of the handicapped according to ethnic group. There is a clear indication that the auditory impaired is most prevalent among the Hausa ethnicity. The figure indicates that Hausa ethnic group has the impairment distributed as follows: 6-9 years 16.13%, 10-13 years 32.26%, 14-17 years 29.03, and 18 and above years 22.58%, the highest percentage being at 10-13 years with a total male population of 20. This is followed by Berom ethnic group with a total of nineteen males, having the highest percentage of 63.16% at the age range of 18 and above years. The single ethnic groups with the least male population are Fulani (11) and Taroh (8) respectively, and they have the highest at 18 and above years.

The table however indicates a good number of male distribution in other ethnic groups in Plateau State and Nigeria. In other groups in Plateau State with a total of 39 males have the highest percentage at 10-13 years range and the least at 6-9 years. For Others in Nigeria, with a total of 29 males the highest percentage of 44.83 distribution is found at 14-17 years.

It could be satisfactorily established from figure 1 that most of the auditorily handicapped male children are in the age range of population of 18 and above years. This gives a total percentage of 30.84% male auditorily handicapped in all the ethnic groups. This is followed by children at 14-17 years with a total percentage of 29.52%. The age range with the least percentage of 11.89 is 6-9 years.

**Table 3: Age range distribution of female auditorily impaired by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | 1 | 8.33 | | | 2 | 16.66 | 9 | 75.00 | 12 | 100 |
| MWAGHAVUL | 3 | 17.65 | 5 | 29.41 | 3 | 17.65 | 6 | 35.29 | 17 | 100 |
| NGAS | 1 | 12.50 | 3 | 37.50 | 2 | 25 | 2 | 25.00 | 8 | 100 |
| TAROH | | | 1 | 20.00 | 2 | 40.00 | 2 | 40.00 | 5 | 100 |
| FULANI | | | 2 | 66.66 | 1 | 33.33 | | | 3 | 100 |
| HAUSA | 3 | 12.50 | 5 | 20.83 | 10 | 41.66 | 6 | 25.00 | 24 | 100 |
| IBO | 1 | 7.70 | 2 | 15.38 | 5 | 38.46 | 5 | 38.46 | 13 | 100 |
| YORUBA | | | 3 | 27.27 | 6 | 54.54 | 2 | 18.18 | 11 | 100 |
| OTHERS IN PLATEAU | | | 8 | 57.14 | 5 | 35.71 | 1 | 7.14 | 14 | 100 |
| OTHERS IN NIGERIA | 1 | 5.55 | 4 | 22.22 | 6 | 33.33 | 7 | 38.89 | 18 | 100 |
| TOTAL | 10 | 8.00 | 33 | 26.40 | 42 | 33.60 | 40 | 32.00 | 125 | 100 |

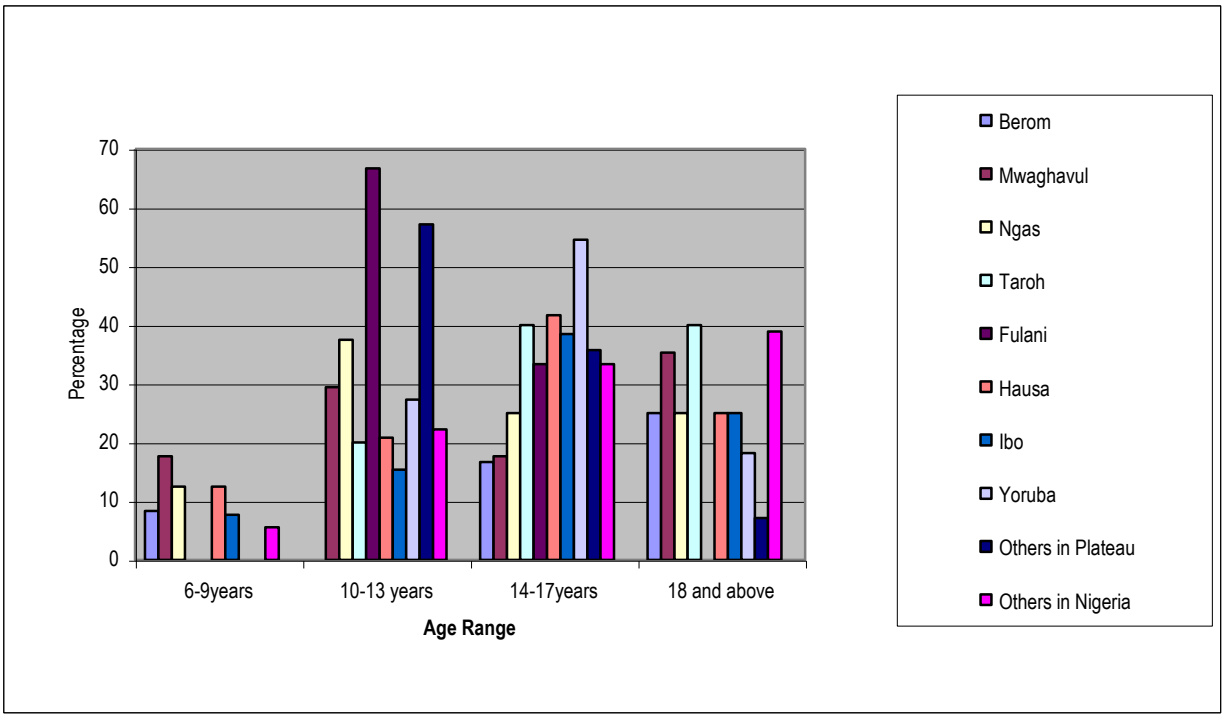


**Figure 2: Percentage age Range of female Auditorily impaired by ethnic group.**

Table 3 indicates the ethnic breakdown of female auditory impaired children according to age range of population. Figure 2 clearly makes percentage comparison of ethnic distribution of the population according to age range. It shows that the Hausa group with the highest female population has the highest percentage of 41.66% at the age-range of 14-17 years, and this is followed by 18 and above years with 25%. The Berom, Mwaghavul, Ibo and Others in Nigeria have their highest population of 75%, 35%, 38.46% and 38.89% respectively at 18 and above range of years. Therefore, the highest percentage population of female handicapped children is at the range of ages of 14-17 (33.6%) and 18 and above (32.00).

**Table 4: Age range distribution of male mentally retarded by ethnic group**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | 1 | 50.00 | | | 1 | 50.00 | | | 2 | 100 |
| MWAGHAVUL | | | | | | | | | | |
| NGAS | | | | | | | | | | |
| TAROH | | | | | | | 1 | 100 | 1 | 100 |
| FULANI | | | | | | | | | | |
| HAUSA | 1 | 25 | 1 | 25 | 2 | 50 | | | 4 | 100 |
| IBO | | | | | 1 | 25 | 3 | 75.00 | 4 | 100 |
| YORUBA | | | | | | | | | | |
| OTHERS IN | | | | | | | | | | |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | | | | | | | | | | |
| NIGERIA | | | | | | | | | | |
| TOTAL | 2 | 18.18 | 1 | 9.09 | 2 | 18.18 | 6 | 54.55 | 11 | 100 |

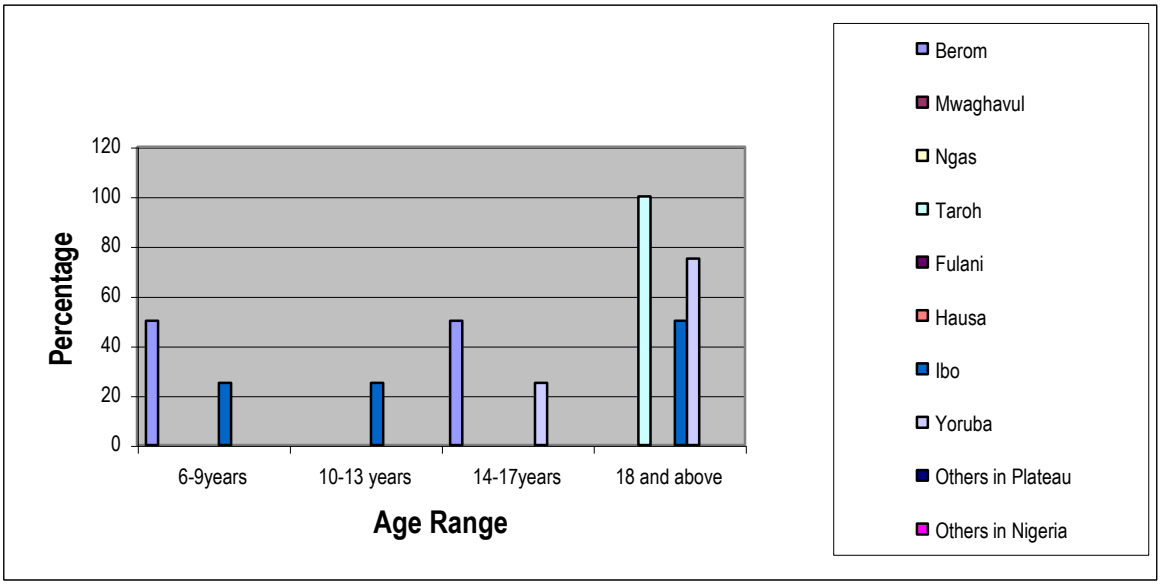


**Fig. 3: Percentage age range of male mentally retarded by ethnic group**

Table 4 shows the percentage ethnic distribution of mentally retarded according to age range of the population. Of all the ethnic groups in the study only Berom, Taroh, Hausa and Ibo ethnic groups have mentally retarded children in schools. The Hausa and Ibo ethnic groups having the highest number of 4 each have their highest percentage of 50% and 75% respectively at 18 and above age range. The figure 3 above clearly shows that the highest age distribution concentrates at 18 and above years of age range of population with 54.55% of the total male mentally retarded in schools. The least percentage distribution is found at age range of 10-13 years.

**Table 5: Age range distribution of female mentally retarded by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | 1 | 33.33 | 1 | | | | 2 | 66.66 | 3 | |
| MWAGHAVUL | | | | | | | | | 1 | 100 |
| NGAS | | | | | | | | | | |
| TAROH | | | | | | | | | | |
| FULANI | | | | | | | | | | |
| HAUSA | 1 | | | | | | | | 1 | 100 |
| IBO | | | | | 3 | 60 | 2 | 40 | 5 | 100 |
| YORUBA | | | | | | | | | | |
| OTHERS IN | | | | | | | | | | |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | 2 | 40 | | | 1 | 20 | 2 | 40 | 5 | 100 |
| NIGERIA | | | | | | | | | | |
| TOTAL | 4 | | 1 | | 4 | | 6 | | 15 | 100 |

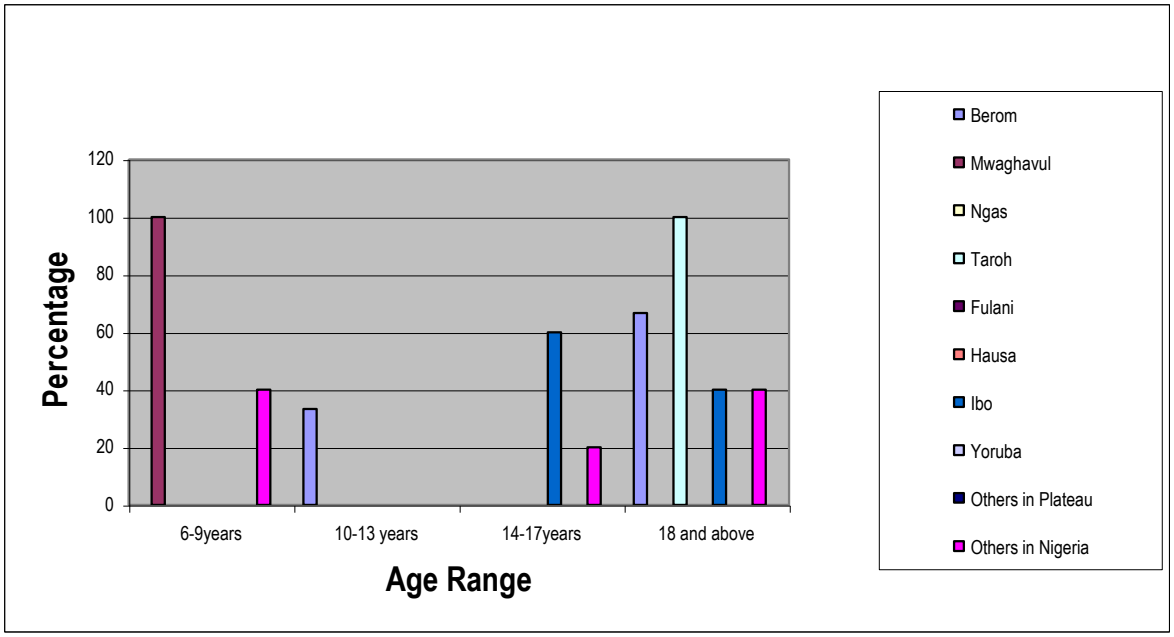


**Figure 4: Percentage of age range distribution of female mentally retarded by ethnic group.**

Figure 4 shows the percentage distribution of age range of female mentally retarded. The figure indicates that the Ibo and others in Nigeria have the highest percentage of female mentally retarded in school with 60% at 14-17 years and 40% at 18 and above respectively. It can be observed that the highest percentage of 40% is found at 18 and above years and 26.67 at 6-9 and 14-17 years respectively.

It is pertinent to point out from the figure above that out of all the ethnic groups only four ethnic groups and Others in Nigeria have mentally retarded children in the schools.

**Table 6: Age range distribution of male multiply handicapped by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | | | | | 2 | 40 | 3 | 60 | 5 | 100 |
| MWAGHAVUL | | | | | | | | | | |
| NGAS | | | 1 | 25 | 3 | 75 | | | 4 | 100 |
| TAROH | 1 | 50 | | | 1 | 50 | | | 2 | 100 |
| FULANI | | | | | | | | | | |
| HAUSA | | | | | 2 | 50 | 2 | 50 | 4 | 100 |
| IBO | 1 | 50 | 1 | 50 | | | | | 2 | 100 |
| YORUBA | | | | | | | | | | |
| OTHERS IN | | | 2 | 66.66 | | | 1 | 33.33 | 3 | 100 |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | | | | | | | | | | |
| NIGERIA | | | | | | | | | | |
| TOTAL | 2 | 10 | 4 | 20 | 8 | 40 | 6 | 30 | 20 | 100 |

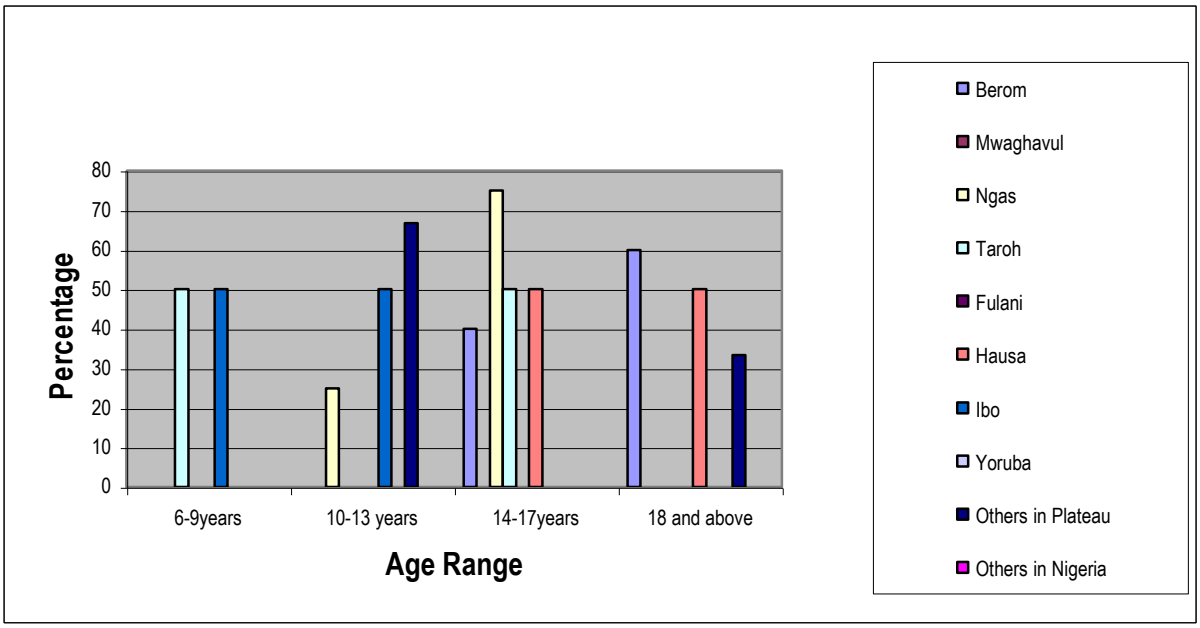


**Figure 5: Percentage age range male multiply handicapped by ethnic group.**

Table 6 and Figure 5 above indicate the percentage age range distribution of male multiply handicapped by ethnic group. In the distribution, Berom, Ngas, Taroh, Hausa, Ibo and Others in Plateau are the only ethnic groups having male multiply handicapped in schools. The age range 14-17 has the highest percentage of 40% and this is followed by 18 and above age range that has 30%. The least percentage of 10% is found at 6-9 years.

**Table 7: Age range distribution of male physically handicapped by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | 1 | 100 | | | | | | | 1 | 100 |
| MWAGHAVUL | 2 | 28.57 | 1 | 14.29 | 2 | 28.57 | 2 | 28.57 | 7 | 100 |
| NGAS | | | 6 | 100 | | | | | 6 | 100 |
| TAROH | 1 | 50 | | | | | | | 1 | 50 |
| FULANI | 1 | 20 | 1 | 20 | 3 | 60 | | | 5 | 100 |
| HAUSA | 4 | 57.14 | 1 | 14.29 | | | 2 | 28.57 | 7 | 100 |
| IBO | 2 | 66.67 | 1 | 33.33 | | | | | | |
| YORUBA | | | | | | | | | | |
| OTHERS IN PLATEAU | 3 | 30 | | | 6 | 60 | 1 | 10 | 10 | 100 |
| OTHERS IN NIGERIA | | | | | | | | | | |
| TOTAL | 13 | 33.33 | 10 | 25.64 | 11 | 28.21 | 5 | 12.82 | 39 | 100 |

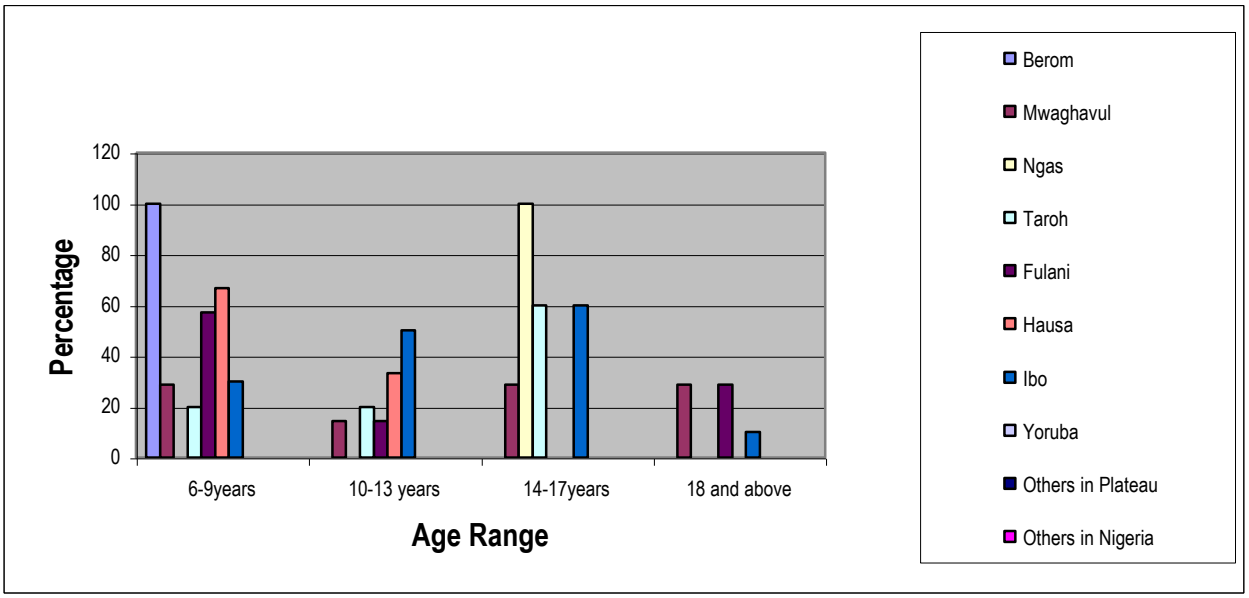


**Figure 6: Percentage Age range male physically handicapped by ethnic group.**

Table 7: shows the background of male physically impaired children in schools in Plateau State according to age range of population distribution. Figure 6 shows that distribution of the population is highest among Mwaghavul ethnic group, this is followed by Ngas group whose all children are concentrated at the age range of 10-13 (100%). However, 6-9 age range of all the groups have 33.33% the highest percentage of the distribution. This is followed by 14-17 with 28.21 and then 10-13 years with 25.64%. The least percentage of 12.82 is at 18 and above years.

**Table 8: Age range distribution of female physically impaired by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM MWAGHAVUL | | | | | | | 2 | 100 | 2 | 100 |
| NGAS | | | 1 | 25 | 2 | 50 | 1 | 25 | 4 | 100 |
| TAROH | | | | | | | | | | |
| FULANI | 1 | 50 | 1 | 50 | | | | | 2 | 100 |
| HAUSA | | | 2 | 100 | | | | | 2 | 100 |
| IBO | | | | | 1 | 100 | | | 1 | 100 |
| YORUBA | | | | | | | | | | |
| OTHERS IN | 2 | 28.57 | 1 | 14.28 | 4 | 57.14 | | | 7 | 100 |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | 1 | 100 | | | | | | | 1 | 100 |
| NIGERIA | | | | | | | | | | |
| TOTAL | 4 | 21.05 | 5 | 26.32 | 7 | 36.84 | 3 | 15.79 | 19 | 100 |

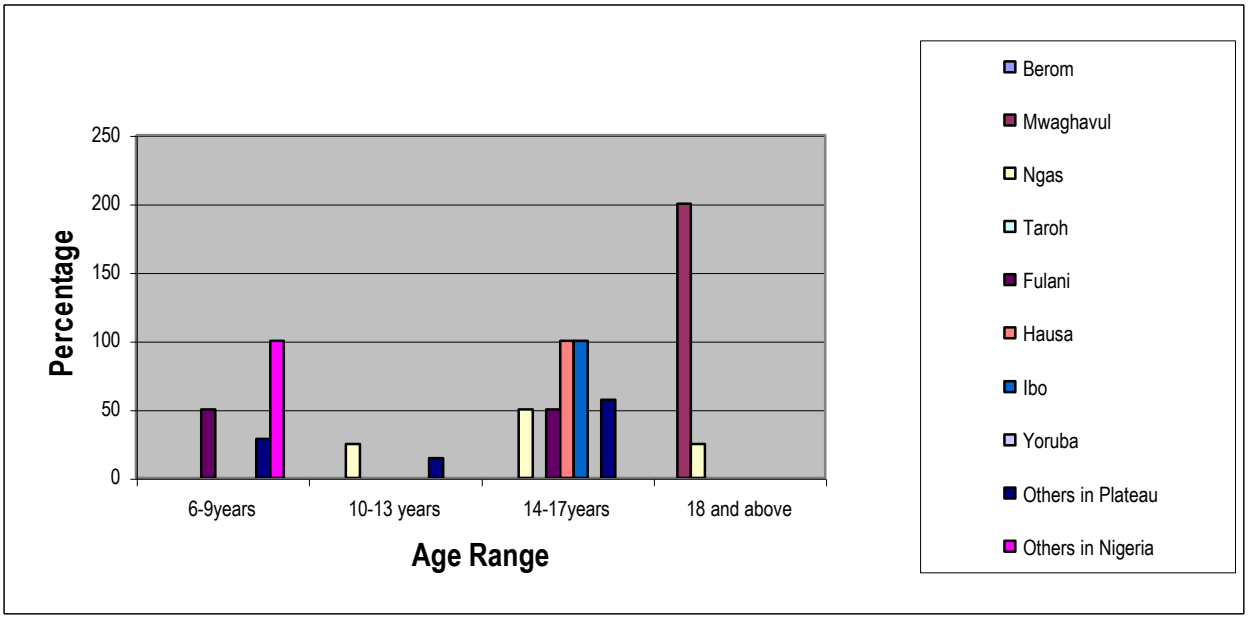


**Figure 7: Percentage Age Range Distribution of Female Physically impaired by Ethnic group.**

Table 8 indicates the ethnic distribution of female physically impaired according to age range of population. Figure 7 clearly compares the percentage distribution, by each ethnic group and reveals that Ngas ethnic group with 4 females has the highest females physically impaired in the schools and with the highest distribution of 50% at age range of 14-17 years. However, out of the 19 female physically impaired in schools, other ethnic groups all together have 7 with 5.14% of this number at also agree range of 14-17 years. It is important to observe here that 14-17 age range has the highest percentage of 36.84. This is followed by 10-13 years with 26.32%. The least percentage is found at 18 and above years that has 15.79%.

**Table 9: Age range distribution of male visually impaired children by ethnic group**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | | | 1 | 50 | 1 | 50 | | | 2 | 100 |
| MWAGHAVUL | | | | | 1 | 100 | | | 1 | 100 |
| NGAS | | | 1 | 50 | 3 | 75 | | | 4 | 100 |
| TAROH | | | | | 1 | 100 | | | 1 | 100 |
| FULANI | | | | | | | | | | |
| HAUSA | 1 | 25 | | | 3 | 75 | | | 4 | 100 |
| IBO | | | | | 1 | 50 | 1 | 50 | 2 | 100 |
| YORUBA | | | | | | | | | | |
| OTHERS IN | 1 | 11.11 | 1 | 11.11 | 2 | 22.22 | 5 | 55.56 | 9 | 100 |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | | | | | 1 | 8.33 | 11 | 91.67 | 12 | 100 |
| NIGERIA | | | | | | | | | | |
| TOTAL | 2 | 5.71 | 3 | 8.57 | 12 | 34.29 | 18 | 51.43 | 35 | 100 |

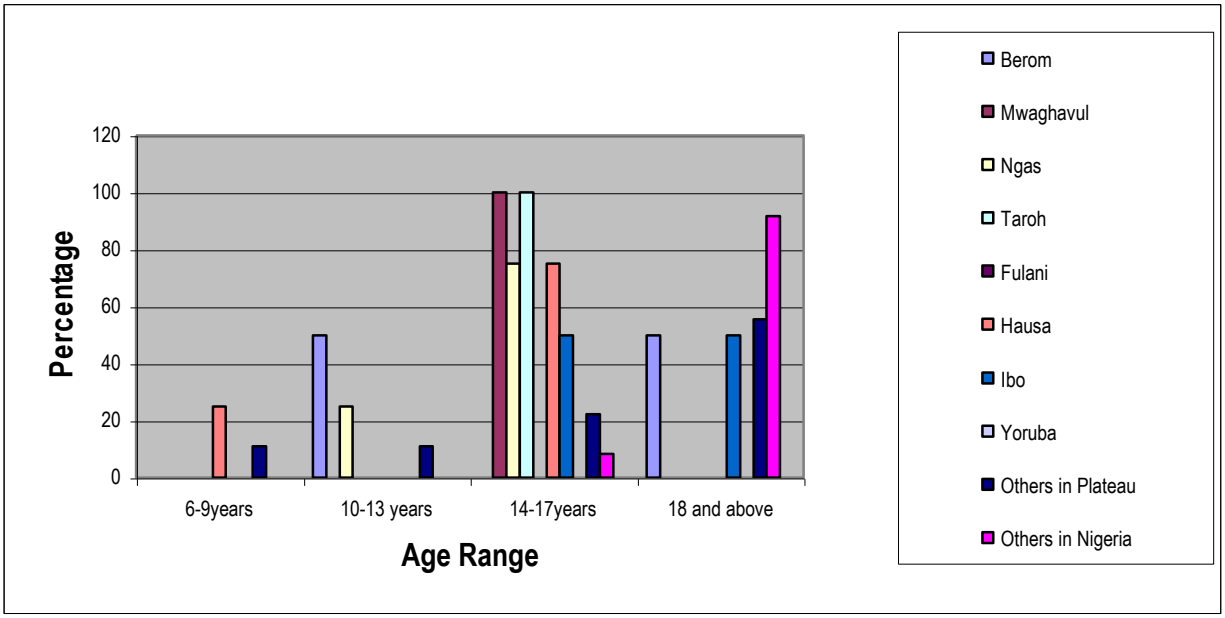


**Figure 8: Percentage age range distribution of male visually impaired children by ethnic group**

Table 9 shows the ethnic breakdown of male visually impaired children in schools. This shows how this population is distributed according to age range along ethnic line. Figure 8 compares the percentage distribution of age range of population of this category of handicapped children. It clearly indicates that the Ngas and Hausa ethnic groups have 4 male visually impaired each and 75% of this population in each case is located at 14-17-age range. The other ethnic groups however have 9 male visually impaired in schools and out of this number 55.56% is at 18 and above years. The table further highlights that 18 and above year has the highest percentage of 51.43 of the all the distribution. This is followed by 14-17 years with 34.29% and the least is 6-9 that has only 5.71%.

**Table 10: Age distribution of female visually impaired by ethnic group.**

| AGE RANGE | 6-9 | | 10 -13 | | 14-17 | | 18 and above | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| BEROM | | | | | | | | | | |
| MWAGHAVUL | | | | | | | 1 | 100 | 1 | 100 |
| NGAS | | | | | | | 1 | 100 | 1 | 100 |
| TAROH | | | | | 1 | 100 | | | 1 | 100 |
| FULANI | | | | | | | | | | |
| HAUSA | 1 | 50 | 1 | 50 | | | | | 2 | 100 |
| IBO | | | | | | | | | | |
| YORUBA | | | | | | | | | | |
| OTHERS IN | 1 | 16.67 | 2 | 33.33 | 1 | 16.67 | 2 | 33.33 | 6 | 100 |
| PLATEAU | | | | | | | | | | |
| OTHERS IN | | | 1 | 9.09 | 1 | 9.09 | 9 | 81.82 | 11 | 100 |
| NIGERIA | | | | | | | | | | |
| TOTAL | 2 | 9.01 | 4 | 18.18 | 3 | 13.64 | 13 | 59.09 | 22 | 100 |

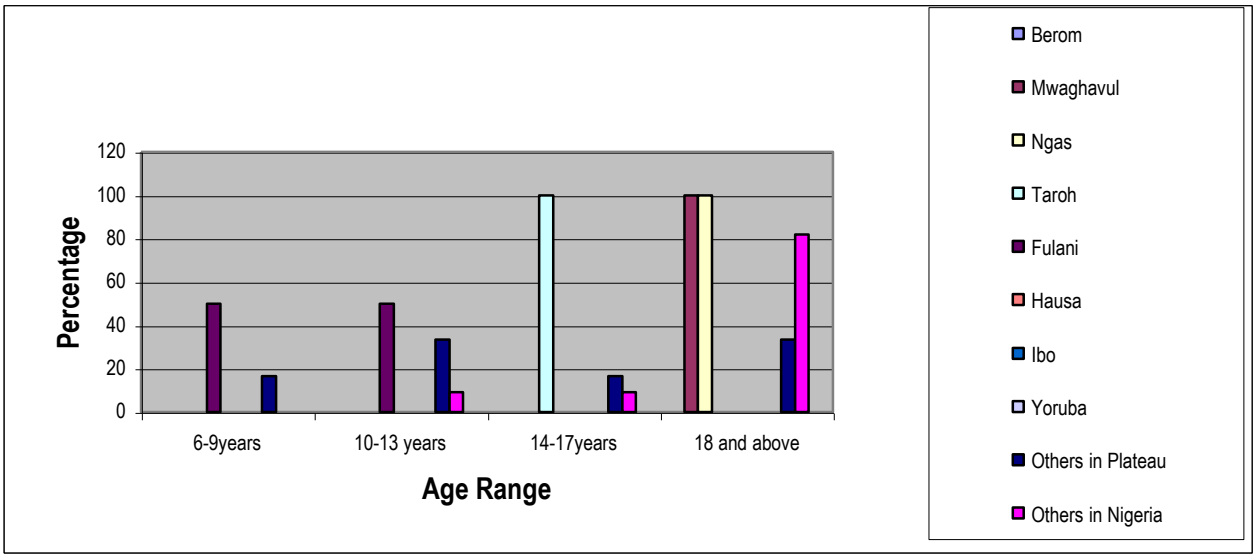


**Figure 9: Percentage age range distribution of female visually impaired children by ethnic group.**

Table 10 describes the ethnic distribution of the female visually impaired in the school population according to age. Figure 9 clearly compares the percentage distribution and shows that the highest percentage of the female population is found among other ethnic groups in Plateau and 33.33% at 10-13 years and 18 and above years respectively. Four ethnic groups namely Berom, Fulani, Ibo, Yoruba have not a single female visually impaired in the schools.

The table shows that 18 and above years with 59% has the highest percentage distribution of the female followed by 10-13 years with 18.18% and 6-9 years with the least percentage of 9.01%.

**Research Question 3: What were the possible causes of each impairment condition of those in schools?**

**Table 11 Causes of various categories of impairment of children in the schools by percentage.**

| | Auditory impairment | | Mental retardation | | Multiply impairment | | Physical impairment | | Visual impairment | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Accident | 4 | 1.14 | 2 | 7.69 | 3 | 15 | 5 | 8.62 | 4 | 7.02 |
| Blew to the head | 4 | 1.14 | | | | | | | | |
| Congenital | 16 | 4.55 | 12 | 46.15 | 4 | 20 | 13 | 24.41 | 1 | 1.75 |
| High fever | 73 | 20.74 | | | 2 | 10 | | | 1 | 1.75 |
| Maternal rubella | 10 | 2.84 | | | | | | | 3 | 5.26 |
| Measles | 14 | 3.98 | | | 2 | 10 | | | 28 | 49.12 |
| Meningitis | 138 | 39.20 | | | | | | | | |
| Mumps | 6 | 1.70 | | | | | | | | |
| Onchocerciasis | 12 | 3.41 | | | | | | | | |
| Poliomylitis | | | | | | | 23 | 39.66 | | |
| Side effects of drugs | 7 | 1.99 | | | | | 2 | 3.45 | | |
| Trauma at birth | 10 | 2.84 | | | | | 3 | 5.17 | 3 | 5.26 |
| Heredity | 8 | 2.27 | 3 | 11.54 | | | | | 2 | 3.51 |
| Cerebral palsy | | | | | | | 2 | 3.45 | | |
| Cataract | | | | | | | | | 4 | 7.02 |
| Glaucoma | | | | | | | | | 3 | 3.51 |
| Unknown | 50 | 14.20 | 9 | 34.62 | 9 | 45 | 10 | 17.24 | 8 | 14.04 |
| TOTAL | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

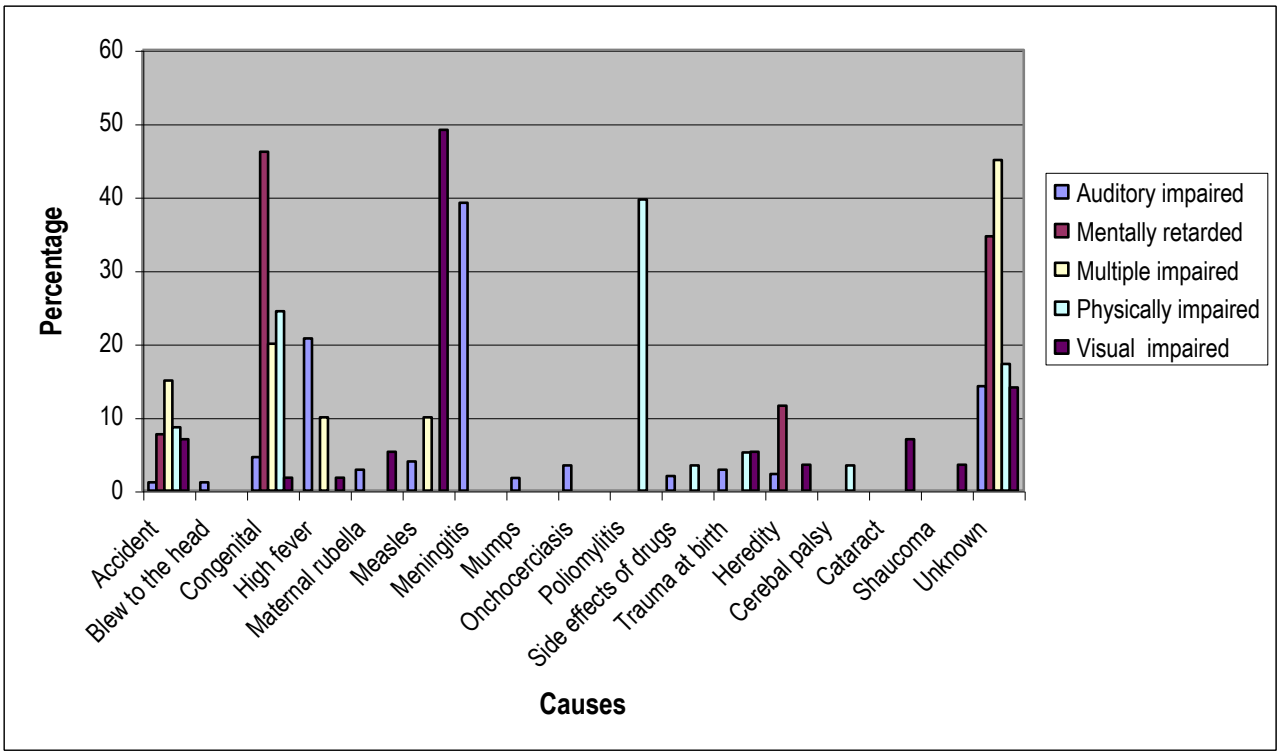


**Figure 10: Bar chart showing the causes of various handicapping conditions in the schools.**

Table 11 and figure 10 above show the possible causes of the handicapping conditions of the pupils in the schools. Various causes of the five handicapping conditions are presented in both the table and the figure.

For the auditory impairment, there are a total of 12 different causes shown to have caused it. The cause that ranked highest is meningitis (39.20%) followed by high fever (20.74%) and then congenital factors (4.55%). Other identified causes of auditory impairment are accidents and blow to the head having 1.14%.

In the case of mental retardation the following factors are indicated by the table as follows: Congenital 46.15%, heredity 11.54%, and accident 7.69%.

Multiple impairment as shown in the above table and figure has factors as congenital factors 20% being the highest, followed by accident with 15% and other causes scoring the least are high fever 10% and measles also 10%. Unknown causes is however 45%.

The table and figure indicate that physical impairment has six factors that caused it. Of the six causes poliomylitis scored the highest with 39.66%, followed by congenital factor 24.41% and then accident with 8.62%. The least two factors are side effects of drugs and cerebral palsy 3.45% each. Unknown causes has 17.24%.

Visual impairment as shown in the above table and figure has measles 49.12% as the highest causing factor followed by accidents and cataract with 7.02% each, maternal rubella, trauma at birth and glaucoma has 3.51% each. The least causing factors are congenital and high fever each having 1.75%. It is therefore highlighted that nine different causative factors were responsible for the prevalence of visual impairment among children in schools.

**Research Question 4: What is the percentage of deaf children versus children with low hearing?**

**Table 12: Deaf children versus children with low hearing level.**

| Age Range | Deaf | | Low Hearing | |
|---|---|---|---|---|
| | N | % | N | % |
| 6-9 | 32 | 9.09 | 5 | 1.42 |
| 10-13 | 81 | 23.01 | 20 | 5.68 |
| 14-17 | 89 | 25.28 | 20 | 5.68 |
| 18 and above | 91 | 25.85 | 19 | 5.39 |
| Total | 293 | 83.23 | 59 | 18.18 |

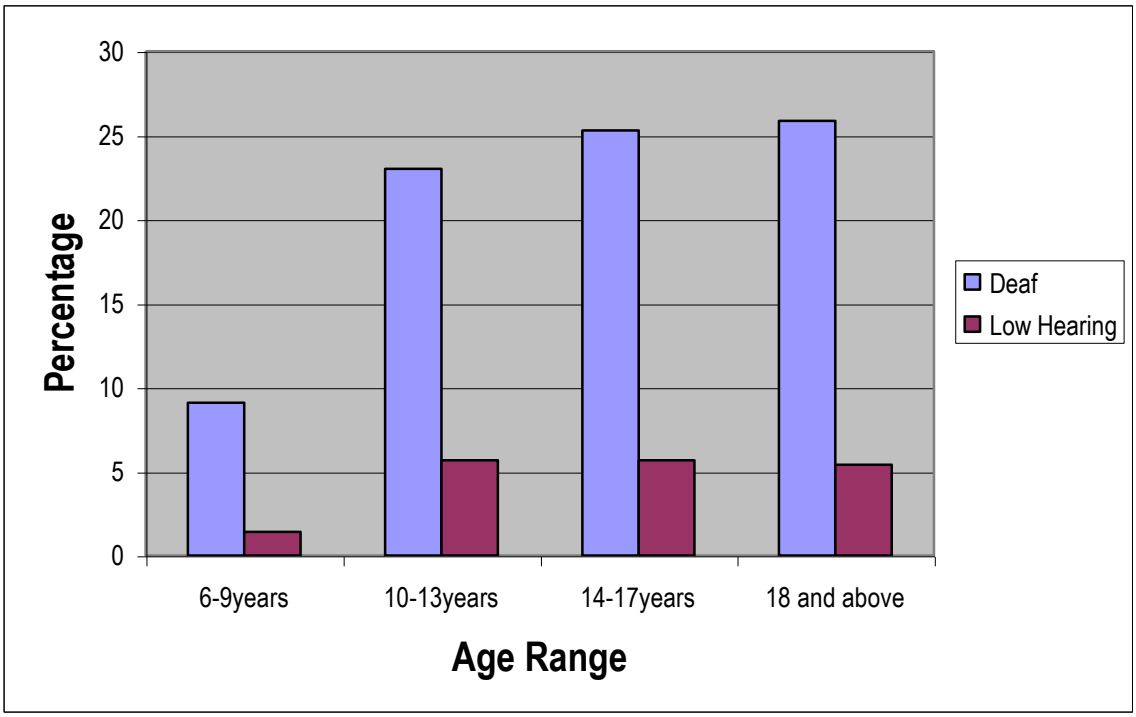


**Figure II: Bar graph showing number and percentage distribution of deaf and low hearing level children according to age range of the population.**

The number and percentage of the population with deafness versus children with low hearing level was based on data of both sexes. Table 11 and Figure 10 present and compare the percentage of deaf with low hearing level according to age range of population. As indicated in the table and the figure the deaf constitutes 293 (83.23%) while low hearing level children are 59 (18.18%). The age range of 18 and above years has the highest number of 91 and percentage of 25.85 for the deaf. This is followed by 14-17 age range with 89 showing 25.28%. In the case of low hearing children two age range groups 10-13 and 14-17 have equal number of 20 and percentage of 5.68 each. This is followed by 18 and above age range with 19 (5.395). The least distribution is found at 6-9 age showing 32 (9.09 for the deaf and 5 (1.42%) for low hearing level.

Data presented above show that significant population of low hearing level children exists in the schools where they receive the same special education programme with deaf children.

**Research Question 5: What is the percentage of children with total blindness versus children with usable vision.?**

**Table 13: Number and percentage of children with total blindness versus Children with low vision.**

| Age Range | Blind | | Low Vision | |
|---|---|---|---|---|
| | N | % | N | % |
| 6-9 | 3 | 5.26 | 1 | 1.75 |
| 10-13 | 4 | 7.01 | 3 | 5.26 |
| 14-17 | 11 | 19.30 | 4 | 7.01 |
| 18 and above | 18 | 31.58 | 13 | 22.81 |
| Total | 36 | 63.15 | 21 | 36.83 |

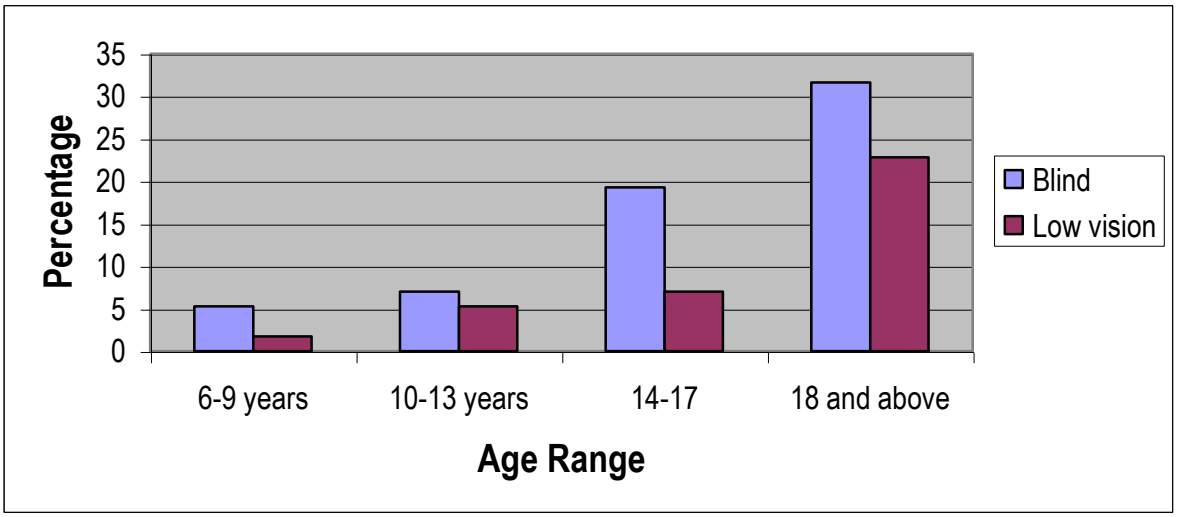


**Figure 12: Bar graph showing number and percentage distribution of blind and low vision according to age range of the population.**

Table 12 and Figure 11 show the number and percentage of the population with total blindness versus low vision (usable vision). They show a total of 36 (63.15%) with total blindness while low vision (usable vision) children constitute 21 (36.83%) of the population. The age range of 18 and above year has the highest population of 18 (31.58%) for the blind and 13 (22.81%) for the low vision. This is followed by 14-17 years for the blind that has 11 (19.30%) and the low vision with 4 (7.01%). The least distribution is seen at 6-9 age range which has 3 (5.26%) for the blind and 1 (1.75%) for the low vision. Therefore the table and figure show a significant number of the low vision (usable vision) existing in the special schools).

**Research Question 6:** What was the age of the child at onset of the impairment?

**Table 14: Age of the child at onset of impairment**

| Age Range | Auditorily Impaired | | Mentally impaired | | Multiply Impaired | | Physically Impaired | | Visually Impaired | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| At birth | 69 | 19.60 | 14 | 53.85 | 11 | 55 | 11 | 18.97 | 12 | 21.05 |
| 1-5 | 138 | 39.20 | 4 | 15.38 | 3 | 15 | 16 | 27.59 | 12 | 21.05 |
| 6-9 | 93 | 26.42 | | | 5 | 25 | 17 | 29.31 | 16 | 28.07 |
| 10-13 | 11 | 3.13 | | | 1 | 5 | 1 | 1.72 | 5 | 8.77 |
| 14-17 | | | | | | | | | 2 | 3.51 |
| 18and above | 2 | 0.57 | | | | | | | 8 | 14.04 |
| Unknown | 9 | 2.56 | 1 | 3.85 | | | | | | |
| Data not available | 30 | 8.52 | 7 | 26.92 | | | 13 | 22.41 | 3 | 3.51 |
| Total | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

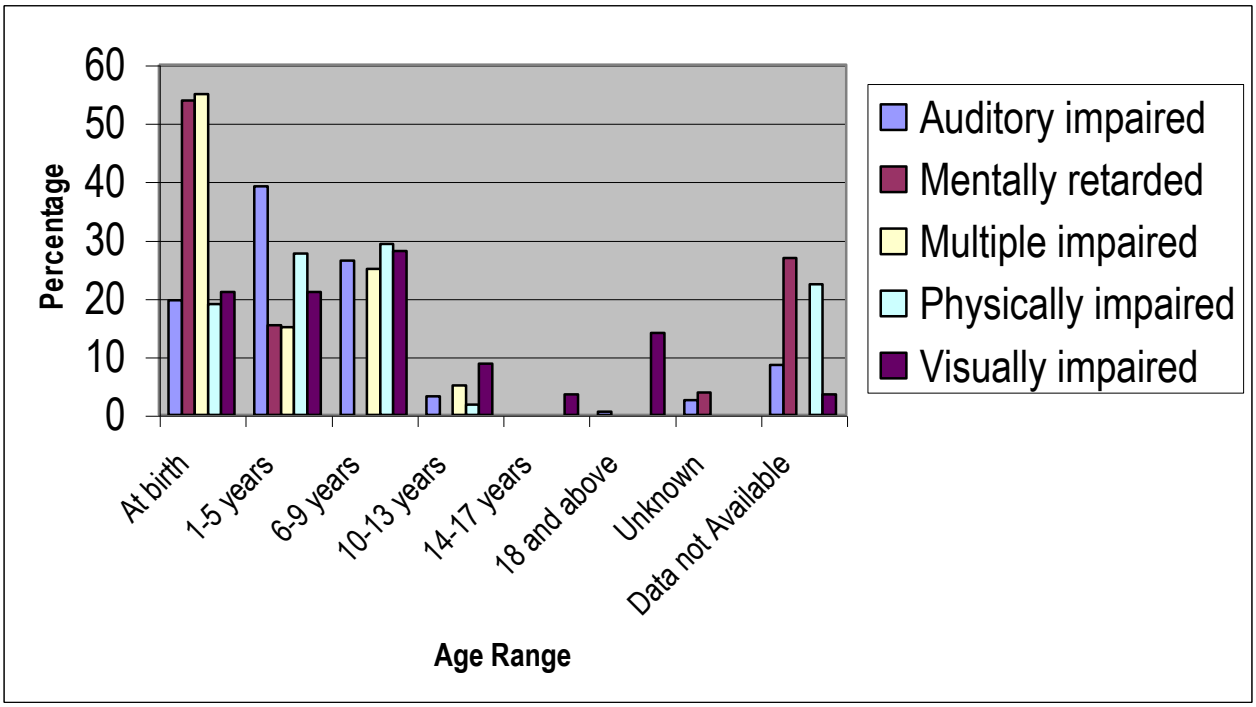


**Figure 13: Age at onset of impairment**

Table 14 and Figure 13 give information on the age at on-set of the impairments. Figure 13 presents percentage distributions.

In the auditory impaired it is indicated that the highest percentage of the children which is 39.20% had their onset of the impairment at the age of 1-5 years followed by age range of 9 years having 26.42%. The third highest is at birth children with 19.60%. the age range of 18 and above years has the least percentage (0.57%) of children showing that very few number of children had the onset of their impairment at 18 years and above.

The above figure also reveals that the age at onset of mentally retarded was highest at birth showing the percentage of 53.85 more than half of the total number of the mentally retarded surveyed. This is followed by 1-5 year group with 15.38%.

The multiple impaired as indicated by the figure had their onset highest at birth with 55%, then followed by age range of 6-9 years with 25% and the least being 10-13 years of which only 5% of the children had the onset of their impairment.

In the case of the physically impaired the highest percentage (29.31%) of the children had their impairment at the age of 1-5 years constituting 27.59% of the population and then at birth children who were 18.97% 10-13 age range scored the least percentage of 1.72.

Figure 13 further shows that 28.07% of the visually impaired had their condition at the age of 6-9 years, at birth and 1-5 years 21.05% respectively had the onset of the impairment. Then followed by 10-13 years with 8.77% and 14-17 years having 3.51%.

Though a significant number had the onset at 10-13 years in auditorily and visually impaired, there was no recorded onset at the age range of 14-17 years except in the category of visually impaired. The specific age range at onset was unknown for 9 (2.56%) and 1 (3.85%) of auditory and multiple impairment respectively. Information was not available on

30 (8.52%) of auditory, 7 (26.92%) mentally retarded, 13 (22.41%) physically handicapped and 3 (3.51%) of visually impaired.

It is important to observe that the greatest number and percentage of children as revealed by the table and figure had the various impairment set in early from birth and age of 9. There is clear indication that more children are affected by the impairments early in life than later.

**Research Question 7: What is the prevalence rate of various handicapping conditions.**

**Table 15: Prevalence rate of various categories of handicapping conditions in schools.**

| TYPE | NUMBER | RATE % |
|---|---|---|
| Auditory impairment | 352 | 00057 = $5.7 \times 10^{-4}$ |
| Mental Impairment | 25 | 00004 – $4.10^{-5}$ |
| Multiple Impairment | 20 | 00003 = $3.10^{-5}$ |
| Physical Impairment | 58 | 00009 = $9.10^{-5}$ |
| Visual impairment | 57 | 00009 – $9.10^{-5}$ |
| TOTAL | 513 | .08% |

Total number of pupils in school in Plateau State 632479.

**(source: *Plateau State Ministry of Education).***

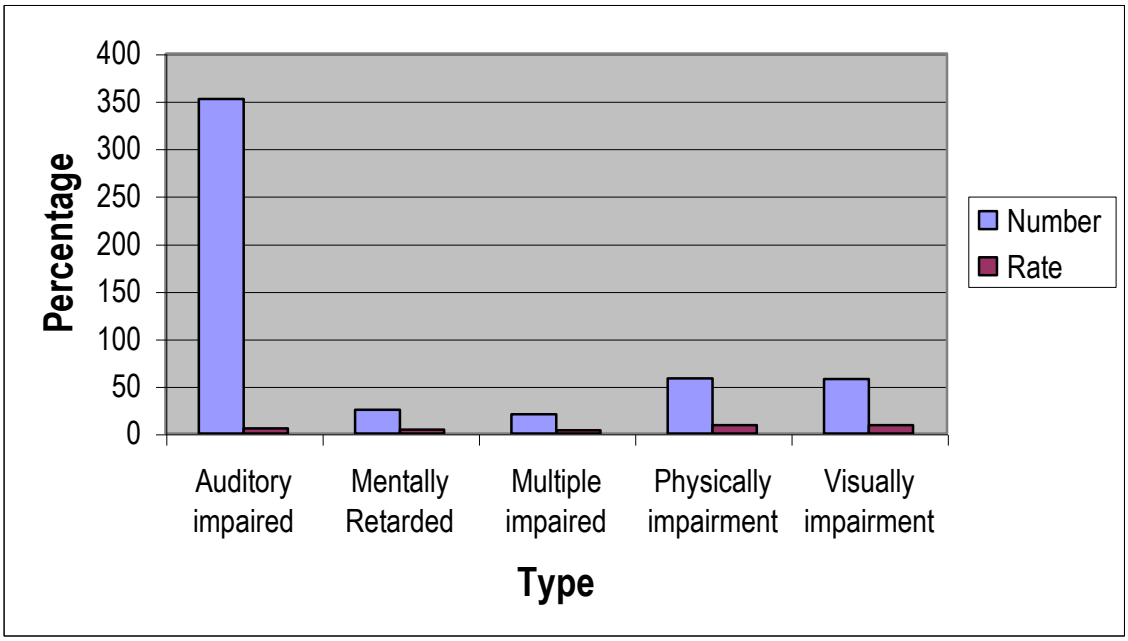


**Figure 14: Prevalence rate of various categories of handicapping conditions.**

Table 15 and figure 14 indicate that auditory impairment has the highest prevalence rate of $5.7x10^{-4}$, followed by the physical and visual impairments with $9x10^{-15}$ each; then mental retardation with $4x10^{-5}$ and lastly multiple impairment with the lowest rate of $3 \times 10^{-5}$. By this finding, the auditory impairment constitute the major groups that need special education services in the state.

**Research Question 8: What are the educational placements of the children in the schools.**

**Table 16: Education placement of auditorily, mentally retarded, multiply, physical ly and visually impaired.**

| Educational Placement | Auditorily Impaired | | Mentally impaired | | Multiply Impaired | | Physically Impaired | | Visually Impaired | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Resident Day | 94 | 27.84 | 26 | 100 | 16 | 80 | 38 | 65.52 | 11 | 19.30 |
| | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |
| Full-time special Education classes | 327 | 92.90 | 26 | 100 | 15 | 75.00 | 43 | 74.14 | 38 | 66.67 |
| Part-time Special Education classes | 4 | 1.14 | | | | | | | 9 | 15.79 |
| Regular Class and Resource room | 21 | 5.96 | | | 5 | 25.00 | 15 | 25.26 | 10 | 17.54 |
| Total | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

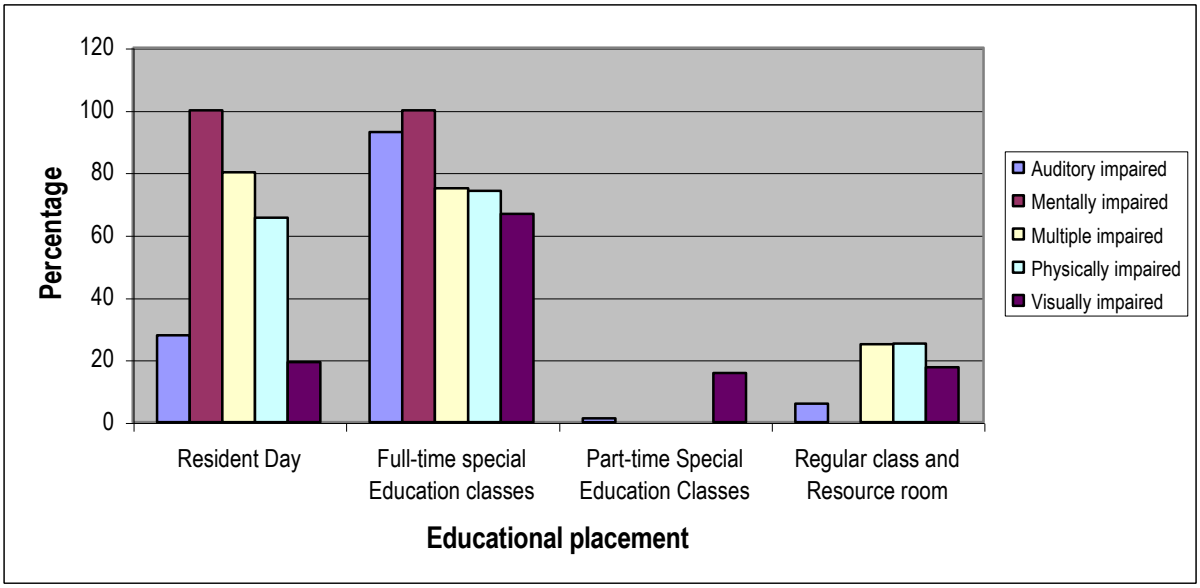


**Figure 15: Percentage of educational placement of the auditorily, mentally retarded, multiply, physically and visually impaired.**

Table 16: and figure 15 show the number and percentage distribution of the children according to education placement. From the table and figure above 254 (72.16%) of the auditory impaired population are in residential setting while 98 (27.84%) are in day or non-residential programme. In the case of mentally retarded all were in day school programme and none is in residential setting. The multiply impaired had 4 (20%) of her population in residential programme while 16 (30%) were in day or non-residential programme. Twenty or 34.48% of the physically impaired enjoy residential programme while 38 (65.52) are in day schools.

The highest numbers and percentages are shown in all the cases to be in full – time special education classes. Thus, 327 (92.90%) of the mentally impaired 15 (75%) of physically impaired and 38 (66.67%) of visually impaired undergo full-time special education classes.

The data above also indicate that a very low number and percentage of the population of auditorily impaired and visually impaired were in part-time special education classes. The other categories including the mentally retarded, multiply impaired and physically impaired had not a single child in the part-time special education classes.

Table 16 and Figure 15 further show that 21 (5.96%) of the auditory impaired, 5 (25%) of multiply impaired, 15 (25.26%) of physical impaired and 10 (17.54%) of the visually impaired are place in regular class and resource room. It is pertinent to observe that very few number of the population of the handicapped children were in integrated schools.

**Research Question 9: At What age did the child start receiving special education?**

**Table 17: Age at which child started receiving special education**

| Age Range | Auditorily Impaired | | Mentally impaired | | Multiply Impaired | | Physically Impaired | | Visually Impaired | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| 1-5 years | 48 | 13.64 | | | 1 | 5.00 | 6 | 10.34 | 2 | 3.51 |
| 6-9 | 180 | 51.14 | 4 | 15.38 | 6 | 30 | 27 | 46.55 | 15 | 26.32 |
| 10-13 | 58 | 16.48 | 16 | 61.54 | 7 | 35 | 7 | 12.07 | 8 | 14.04 |
| 14-17 | 24 | 6.82 | 5 | 19.23 | 2 | 10 | | | 8 | 14.04 |
| 18 and above | 17 | 4.82 | | | | | 2 | 3.45 | 19 | 33.33 |
| Data Not available | 25 | 7.10 | 1 | 3.85 | 4 | 20 | 16 | 27.59 | 5 | 8.77 |
| Total | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

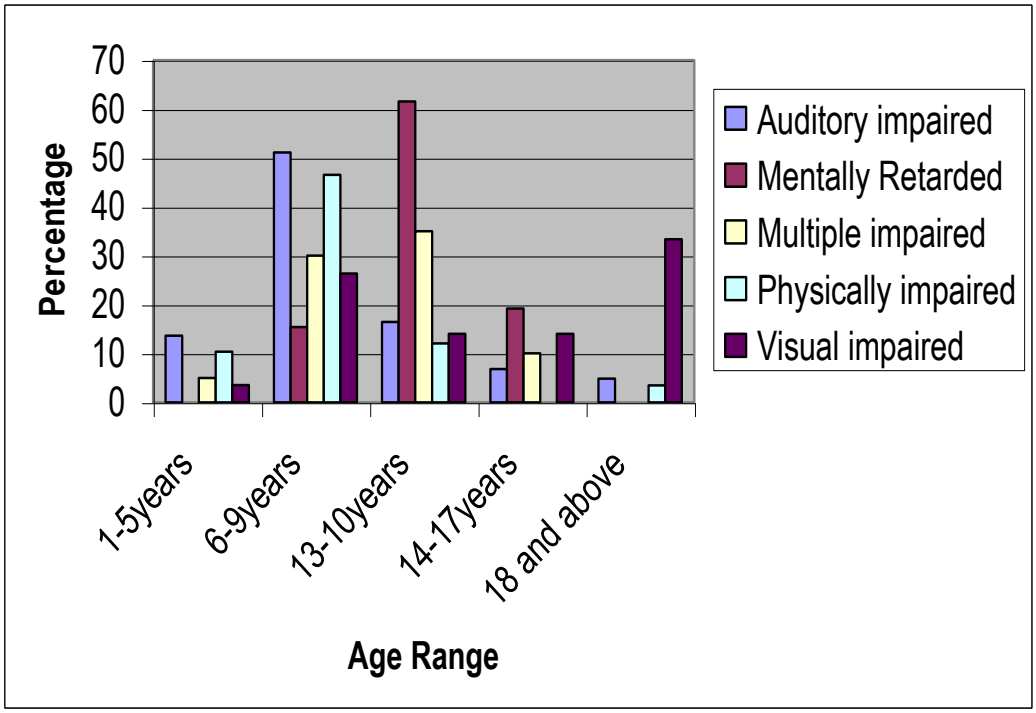


**Figure 16: Percentage distribution of age children started receiving special education.**

Table 17 and Figure 16 above indicate the range of the population of the handicapped children when they started receiving special education. It is revealed that the highest percentage of auditory impaired 51.14% started their education at age range of 6-9 years showing early commencement of special education programme. Also other categories whose highest number of children started special education at 6-9 age range include physically impaired 27 (46.55%) and visually impaired with 15 (26.32%). The mentally retarded and multiply impaired had their highest of 16 (16.54%) and 7 (35%) respectively at age range of 10-13 years. It is worth noting from the data above that a good percentage (28.12%) of the auditory, 80.77% of mentally retarded, 45% of multiply impaired, and 61% of the visually impaired started receiving special education from the ages of 10-18 and above years indicating that they started receiving education services late after they had been affected by the predicament. However, majority of the auditorily impaired and physically impaired started fairly early enough as indicated by the figure that 64.78% of auditorily and 56.89% of physically impaired started receiving education from the ages of 1-13 years.

For this variable, information was not available for 25 (7.10%) of the auditory impaired, 1 (3.85%) of the mentally retarded, 4 (20%) of the multiply impaired, 16 (27.59%) of the physically impaired and 5 (8.77%) of the visually impaired, all showing a total of 9.94% of the total cases.

**Research Question 10: What related services other than academic oriented programmes are made available to children in schools?**

**Table 18: Related services available in schools for the children.**

| Related Services | N* | n* | % |
|---|---|---|---|
| Adapted physical education therapy | 17 | 1 | 5.88 |
| Audiology | 12 | 1 | 8.33 |
| Computer Service | 25 | 0 | 0 |
| Counselling unit | 25 | 0 | 0 |
| Medical service | 25 | 2 | 8 |
| Mental health clinic | 25 | 0 | 0 |
| Physiotherapy | 17 | 1 | 5.88 |
| Recreation/Sports | 25 | 10 | 40 |
| Screening/diagnostic | 25 | 2 | 8 |
| Speech language therapy | 17 | 1 | 5.88 |
| Transportation | 25 | 1 | 4 |
| Vision correction | 6 | 0 | 0 |
| Vocation Rehabilitation | 25 | 1 | 4 |

N* Total number of schools

n* Number of schools providing related services.

Table 18 indicates that a great number of related services were not provided for the handicapped in schools. It is only recreation activities/sports that an appreciable number of schools provided. As shown in the table on recreation/sports has ten of the schools providing it, out of 25 schools two provided medical services, and screening/diagnostic services. All other services were either provided only in a school or not at all.

It can be inferred that the schools significantly lack support services to supplement special education programmes. As confirmed by Meyen (1996), support services such as transportation, speech language therapy, auditory counseling, vocational therapy, physical education or recreation screening, vision correction and diagnostic medical services facilitate learning and enhance the well being of the handicapped children.

**Research Question 11: What are the vocational and alternative – living potentials of the handicapped children?**

**Table 19: Vocational Alternative after school**

| Vocational Alternatives | Auditorily Impaired | | Mentally impaired | | Multiply Impaired | | Physically Impaired | | Visually Impaired | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Vocational training for handicapped | 53 | 15.06 | 2 | 7.69 | 10 | 50 | 27 | 46.55 | 17 | 29.82 |
| Vocational training not for handicapped | 102 | 28.98 | 0 | 0 | 2 | 10 | 6 | 10.34 | 21 | 36.84 |
| Competitive employment | 196 | 55.68 | 0 | 0 | 5 | 25 | 20 | 34.48 | 19 | 33.33 |
| Sheltered workshop | 0 | 0 | 4 | 15.38 | 1 | 5 | 0 | 0 | | |
| Day activity Center | 1. 0 | 0.28 0 | 20 | 76.42 | 2 | 10 | 5 | 8.62 | | |
| TOTAL | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

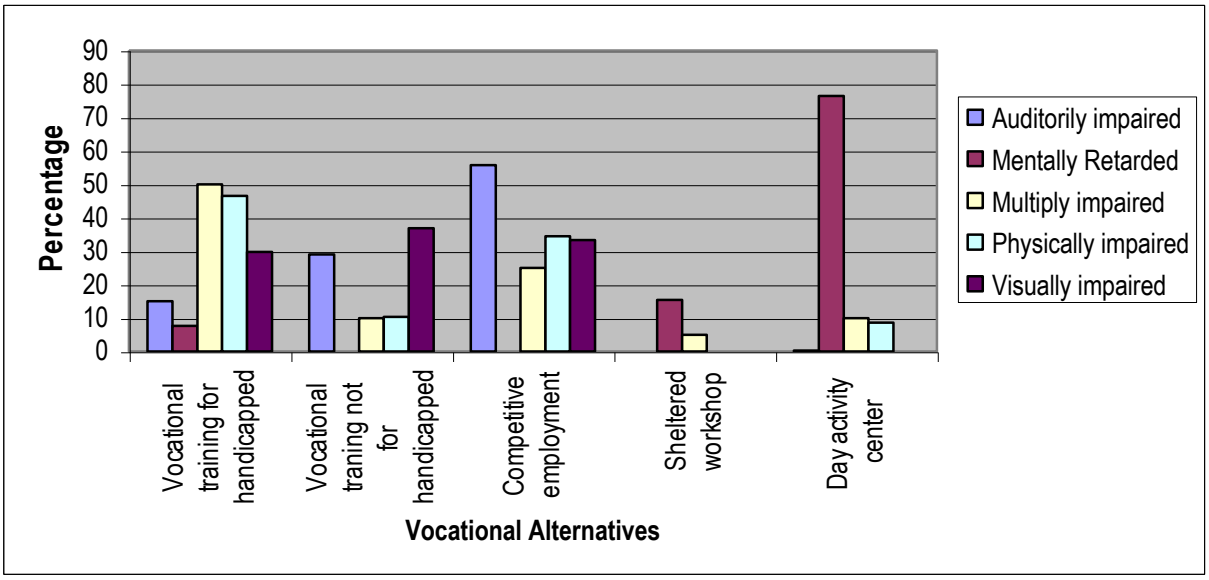


**Figure 17: Bar-chart showing percentage distribution of vocational alternatives after school.**

Table 19 and Figure 16 show and compare the number of percentage of the vocational alternatives of the population of the categories after leaving school. The percentage of the categories needing the various work is clearly presented by Figure 16.

The figure clearly indicates that the highest percentage (55.68%) of the auditorily impaired will enter competitive employment; for the mentally retarded 76.92% will be in day activity center; 50% of the multiply impaired will be good for vocational training for the handicapped. Also, the highest percentage (46.55%) of the physically impaired will enter vocational training for the handicapped while 36.84 of the visually impaired will be for the vocational training not for the handicapped persons. The figure also indicates that an insignificant percentage of 10% of the auditory (0.28%) impaired and 8.6% of the physically impaired will remain unproductive workforce after school.

**Table 20: Alternative living situation**

| Placement | Auditorily Impaired | | Mentally impaired | | Multiply Impaired | | Physically Impaired | | Visually Impaired | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Independent | 186 | 52.84 | 0 | 0 | 2 | 10 | 26 | 44.83 | 35 | 61.40 |
| Minimally supervised apartment/home | 0 | | 0 | 0 | 10 | 50 | 10 | 17.24 | 0 | 0 |
| Minimally supervised group apartment | 0 | | 4 | 15.38 | 1 | 5 | 8 | 13.79 | 0 | 0 |
| Maximally supervised group apartment | 0 | | 16 | 61.54 | 2 | 10 | 56 | 8.62 | 0 | 0 |
| At home with family | 166 | 47.16 | 6 | 23.08 | 5 | 25 | 9 | 15.52 | 22 | 38.60 |
| TOTAL | 352 | 100 | 26 | 100 | 20 | 100 | 58 | 100 | 57 | 100 |

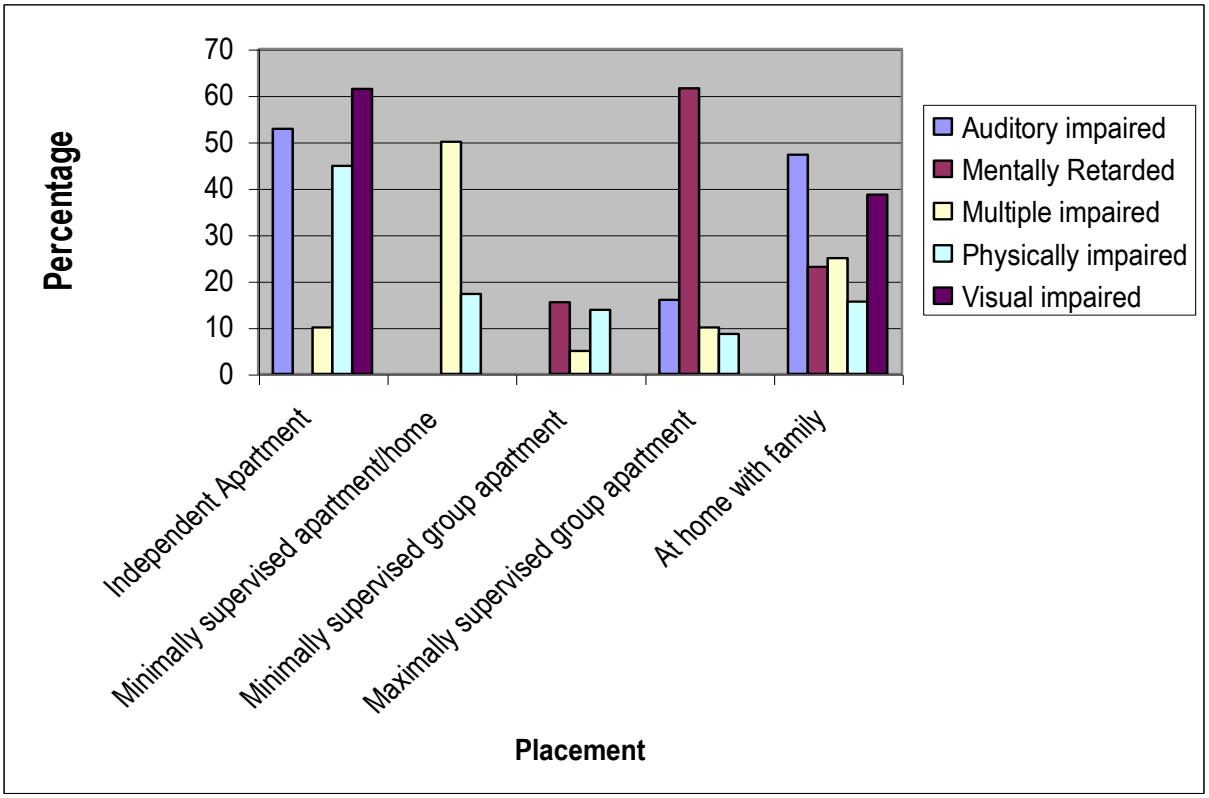


**Figure 18: Bar chart showing percentage distribution according to alternative living situations.**

Table 20 and figure 17 indicate that 52.84% of the auditorily impaired, 44.83% of physically impaired and 61.40% of the visually impaired are expected to live in independent apartment.

In the minimally supervised apartment the figure indicates only two categories viz 50% and 17.24% multiply and physically impaired respectively that can be attracted to it. The minimally supervised group apartment can only attract 4 (15.38%) or mentally retarded, 1 (5%) multiply impaired and 8 (13.79%) of physically impaired.

The highest percentage (61.54%) of the mentally retarded is attracted to maximally supervised group apartment. Also attracted to this apartment are 2 (10%) of the multiply impaired and 5(8.62%) of the physically impaired.

It is further indicated by the table and figure that a higher percentage of (47.16%0 of auditory 6 (23.08%) of mentally retarded 5(25%) of multiply and 22 (28.60%0 of visually impaired are expected to live at home with family. A significant number (15.52%) of the physically impaired is also attracted to this apartment.

## DISCUSSION OF FINDINGS

The discussion in this section is presented to follow the sequence of the findings pertaining to each of the research questions.

**Research Question 1: What number and percentage of each category of handicapped children exist in the schools?**

The result presented in Table I indicated that the auditorily handicapped ranked the highest having more than sixty percent of the entire population of the handicapped in schools. This goes to explain that in Plateau State there are more auditorily impaired children in schools than any other category of children with handicapped condition. This

observation may be due to the nature of the impairment, which makes it easier for the auditory-impaired children to benefit from formal education than other categories of impaired children This co. This means that the school system attracts more auditorily-impaired children than any other category of the impaired children in the state.

The percentage of the auditory impaired as revealed by the study appears to be high when compared with the Federal Ministry of Education (1975) estimate of 32 percent of auditory impaired in schools in Nigeria. This increase may be as a result of increase awareness of the parents that auditory impaired children can still benefit from formal education.

**Research Question 2: Ethnic distribution of handicapped children according to sex and age range of population?**

In the result, figure 1 indicated that the Hausa ethnic group had the highest number and percentage of male auditorily impaired in the school and the highest distribution is revealed at the age range of 10-13 years. It is also indicated in the figure that the single ethnic group that had the least number of auditorily male impaired was the Fulani group with the highest distribution at 18 and above years.

However, the overall distribution in all the ethnic groups showed that most of the auditorily impaired children in the schools were in the age range of 18 and above years, 14-17 years and 10-13 years. The least is in the 6-9 years group. This showed that by the time of this study there was decrease of auditorily impaired enrolled in the schools if the estimate number 4, 269 of this category provided by Mba (1984) is considered. This could mean either that there was decrease in the prevalence rate or that fewer parents now bring their children to schools.

The result presented in table 3 clearly indicated that Hausa ethnic group with the highest female auditorily impaired had the highest distribution of the children at 14-17 years

range and the same age range group had the highest concentration of number of the children in all the ethnic groups. The overall result however, showed that most of the handicapped in schools were between 10-13 years and 18 above years, meaning that very few were in 6-9 years group range.

The assumption here could be that most of the handicapped children did not start education early or that there was obvious decrease in the enrollment, which also went to suggest that there was low prevalence of all the impairments in the schools.

The result further showed that the mentally retarded had the least number of ethnic groups, found in the schools in the state. Only four of the ethnic groups had children in the schools. Among these ethnic groups, Ibo and Hausa ethnic groups had the highest percentage of their male mentally impaired in the age range of 18 and above years. Also, when the overall was calculated the result indicated that more than fifty four percent of the entire mentally retarded male population were in the age of 18 and above years. This is also true of the female population where the age range of 18 and above years had forty percent of the total population, though the Ibo ethnic group with the highest population of 5 had the highest distribution at 14-17 years.

It is therefore pertinent to observe that very few mentally retarded were in schools in Plateau state, and that those already in schools were old children. This means that if nothing is seriously done to enlighten parents to see the need to send their mentally retarded children to special schools, there is likelihood that fewer mentally retarded will be in the school system in future.

The result in table 6 indicated that a total of twenty male multiply handicapped were the only children in this category found in the schools. This number was fairly distributed among the six tribes, which included Berom with the highest number, Mwaghavul, Ngas, Berom, Hausa, Ibo and others. As in the case of mentally retarded the population of this group concentrated on 14-17 years and 18 and above years groups. This number revealed in

this study is far short of the expected number when one considers the observed number of multiply handicapped children roaming the streets and villages.

The ethnic distribution of male and female physically impaired was highlighted in table 7 and 8 respectively. The findings showed that a total of 58 physically impaired were in schools. The distribution of this number covered more ethnic groups with the highest number at age range of 6-9 years for male and 14-17 years for female.

In the study the age distribution of both male and female visually impaired according to ethnic groups were also found. Tables 9 and 10 clearly showed that the Hausa ethnic group had the highest number of both sexes, though other ethnic groups in Plateau and Nigeria had 15 and 23 respectively. This means that most of the visually handicapped in schools in Plateau State are not from the major ethnic groups in the study.

It is noteworthy that the greatest percentage of both male and female handicapped fell within 18 and above years, meaning that probably at present not many young ones are enrolled in schools. The reason could be due to ignorance of the existence of education facilities or that there is decrease in the prevalence of the impairment.

**Research Question 3: What were the possible causes of each impairement Conditions of those in Schools.**

As might be expected in a state with very many inhabitants of various ethnic groups the prevalent impairments in schools in Plateau State were caused by many factors. Each impairment had not less than three various factors causing it (Table11). For instance auditory and visual impairments had twelve and nine causative factors respectively. This, confirms the findings of Adima (1989) and Abang (1995) who revealed many various factors causing blindness and hearing impairment in Nigeria. The overall prevalence of auditory impairment due to meningitis is considered higher than any other causative factor.

High fever which could not be defined also constituted a great cause of the impairment among the children. If all infective causes (meningitis, high fever, ochocerciasis, measles, maternal rubella, mumps) are taken together, then up to 71.89 percent (253) of all auditory impairment in the schools studied can be said to be potentially a preventable or curable auditory impairment.

The remaining auditorily impairement cases 28.13 percent (99) were caused by hereditary, trauma at birth, side effects of drugs, blow to the head and accident (Table 11 below).

Congenital factor, which according to the findings, constituted 46.15 percent (12) was the primary cause of mental retardation of the population. Another factor was heredity, which of course did not constitute a large percentage. But it was indicated that 34.62% of the population was due to unknown causes, which made it difficult for any early treatment or remediation to be given to them. Congenital factor also featured prominently as a cause of multiple impairment in the population. But important concern was that 45 percent (9) of this population had no known cause. This lack of knowledge of the causes expressed probably could be that the parents of the children did not care to seek for knowledge of the cause of their children impairment. It could also be due to unavailability or in accessibility to diagnostic and screening centers or health clinics in the communities.

The physically impaired conditions were as a result of a number of causes but poliomyelitis, another infectious preventable disease constituted 39.66 percent. Congenital factor was another major cause of which 24.41 percent (13) of the population were caused by congenital complications which the study could not establish. As expected in a state prone to high accident rate, accidents caused 8.62 percent (5) of the conditions recorded in schools.

The result presented in table 11 further revealed that a total of nine factors caused visual impairment conditions among the subject studied in schools. Measles was the most

common cause of visual impairment in the population (Table 11). The other causes were fairly distributed though accidents and cataracts were the second most common cause.

The findings agree with the result of the study of Adima (1989) and Oni (1989) who discovered that impairments such as deafness and blindness were caused mainly by diseases.

A major consideration regarding the data on the various causes of the impairments was that a significant proportion of the population did not indicate or know the causes of the impairment. It was indicated that causes were not known in 14.20 percent of the auditory impairment, 34.62 of the multiple impairment and 17.24 found out that the causes of visual impairment were not known in 14.04 percent of the visually impaired studied. When all the factors were compared the following results emerged:

1. Meningitis ranked highest as the cause of auditory impairment.
2. Congenital factor was the highest-ranking factor for the cause of mental retardation and multiple impairment. It was also the second most prevalent cause of physical impairment.
3. Poliomyelitis was the most cause of physical impairment.
4. Measles was the highest causing factor of visual impairment.
5. Two factors accidents and congenital were the common causes of the five impairment conditions in the schools.

**Research Question 4: What is the percentage of deaf children versus children with low hearing?**

Results obtained revealed that majority of the children were deaf. There was appreciable number of children with low hearing level in special schools for the deaf. This confirms early study of Olaniyan (1990), which revealed that 4.88 percent of the children in schools in Plateau State had moderately hearing loss. Most of the deaf in the schools were in

the age ranges of 10-13 to 18 and above years. This is also applicable to those with low hearing level.

The findings that the greatest proportion of the children enrolled in the schools for the deaf are deaf conform with the recommendations of Committee of American Teachers for the Deaf. The high enrollment of children with varying levels of hearing impairment was mainly the only educational institutions where most hearing impaired children irrespective of degree of loss can receive education in the state.

The presence of both deaf and low hearing level children in the schools suggests that children with different educational needs are being taught together using the same modes of communication. It is expected according to Olaniyan (1990) that children with moderate to moderately severe hearing losses aided with amplification are capable of developing near normal speech and language through audition. In view of this, the present practice in grouping together all hearing impaired children may create a situation where the educational need of only a proportion of the children will be met.

**Research Question 5: Percentage of children with total blindness versus children with usable vision?**

The result presented in Table 13 indicated that there was appreciable number of children with low vision receiving education together with total blind children in special schools for the blind. However few blind children also were found in the integrated schools. This confirms early study of Shown (1990) which revealed that 37.15 percent of the students in schools in Plateau State had partial sightedness. The majority of the visually handicapped children receiving special education services in the state belong to the category of total blindness. This means that children with usable vision are not given special attention with special programmes in the school. They are taught the same way and under the same situation as the children with total blindness.

**Research Question 6: What was the Age at onset of impairment**

The data on the age of onset showed that more children were affected by the impairments early in life. That 71.07 percent of the cases reported onset early in life could mean that if suitable measures were taken most of these impairment conditions would have been prevented. This calls for early diagnostic and screening services so that early therapeutic and special education programme could be instituted.

In the findings only 21 percent of the cases reported onset at birth. This differs greatly from that of Shown (1990), which revealed 80 percent of the cases of onset at birth. Though the current findings are not as high as that of Shown, the 21 percent observed is high enough to warrant early intervention programme.

**Research Question 7: What is the prevalent rate of various handicapping conditions?**

In the result, table 15 indicated that the prevalent rate of all the categories of impairments studied to be 0.08. The impairment with the highest prevalent rate is auditory impairment with .00057 percent and this is followed by physical impairment and visual impairment with .00009 percent respectively. This finding corroborates the international statistics concerining disabled which shows that among children, the numerically most common type of disability is deafness (30 percent) (Ozoji, 2003:37). This rate may also agree with 1991 census crude disability rate of 0.48 percent with progressively higher rates from one age group to the next due to links between disability and aging (UNICEF 2001).

Though the population studied is a small fraction of pupils with these impairment especially if one considers those children outside the schools, one is almost certain that the prevalence may be in the increase in the next few years. Also by the rate of increase in population in the country coupled with the high awareness of parents to sent their handicapped ones to school, this figure will increase greatly if nothing is done to prevent the prevalence in the state.

There is need to intensify efforts in the prevention of the major causative factors such as meningitis and onchocerciasis responsible for the high prevalence of auditory impairment and visual impairment respectively.

The prevalent rates of the impairments in schools show that there is good number of each category and as such provision of adequate educational services for them become pertinent. Emphasis is more needed in provision of educational services for the children with auditory impairment as well as those with physical and visual impairments.

**Research Question 8: What are the education placements of the children in the schools?**

The result presented in Table 15 indicated that a higher percentage of all the cases were in residential schools except in the cases of the physically handicapped whose 65.52 percent of the total population were in day schools. Of note is that all the mentally retarded were in day school too. The practice of providing residential schools for a good number of the handicapped children in the state conforms with the Federal Government Policy on Education where emphasis is placed on the provision of both residential and day schools to suit different types of handicapping conditions. However, more emphasis in placed on mainstream programmes for the handicapped children.

Educational placement is made according to the degree of handicapping condition. For instance, in Nigeria children with hard of hearing are generally educated in the regular classroom with an itinerant teacher helping in specific areas, and the deaf are educated in full-time special education classes. This agrees with the result on Table 15 where 92.90 percent of all the auditorily impaired were shown to be receiving full-time special education classes.

The mentally retarded as the result showed had all the population in full-time special education classes. The reason may be to  where parents bring them to and back daily. None

in this category was seen in regular classes which reason may be was to avoid the ugly labeling and stigmatization suffered by those who had once enrolled in such school programmes.

The physically handicapped as the findings showed had 74.14 percent and 25 percent in regular class and resource room. This is really contrary to the practice in most other states in Nigeria. As observed by Essien (1982) most physically handicapping children in Nigeria are in normal classrooms where they are integrated though with no special approach to educate them.

The result in Table 15 also showed that most of the visually impaired were in full-time special education classes and a good number were in regular class and resource room and part-time special education classes. This practice is in line with the provision in the Blue print on Education of the Handicapped in Nigeria which stipulates among others that the visually handicapped should be in school or special class in regular school with structured contact with pupils enrolled in classes.

**Research Question 9: At what age did the child start special education?**

The age at which the child started receiving special education was shown in Table 16 and it was revealed that 56.33 percent of the total population of the various handicapped children began their education at the age range of 1-9 years. It could be observed that in all cases a good number started school late between 10-18 and above years. This does not conform with the provision of National Policy on Education, which stipulates that primary education is given to children between the age of six and eleven plus.

**Research Question 10: Related services other than academic oriented programme made available to children in schools?**

The result in Table 17 showed that a great number of related services were not provided for the handicapped children in the schools. From the finding it would be observed that schools significantly lack supportive services to supplement Special Education programmes. As confirmed by Meyer (1996), supportive services such as transportation, speech language therapy, audiology counseling, vocational therapy, physical education or recreation activities, screening, vision correction and diagnostic medical services facilitate learning and enhance the well being of the handicapped children.

Some handicapped children in schools need one or more of the related services to enable them benefit from instruction. This agrees with Avoke, Hayford, Ihenacho and Ochoo (1998) assertion that while a child with hearing impairment may require audiological services along side speech language therapy to enable her benefit from instruction, another child with only communication disorder may require only speech language therapy. These related services are seen as critical components of special education programme for every child in the school.

**Research Question 11: What are the vocational and alternative-living potentials of the handicapped children after school?**

The higher percentage of the auditorily impaired, multiply impaired and visually impaired needing vocational training for handicapped, vocational training not for handicapped and competitive employment expressed in the study suggest high expectations of living and working potentials of the population after completing schooling. Although a need for some form of sheltered workshop was indicated for 15.38 percent of the mentally retarded population (Table 17.18) the percentage of the handicapped that indicated for day

activity center seems rather high particularly in the light of the result as indicated in Table 15 that all the mentally retarded attend day schools.

With the high awareness of the potentials of the handicapped children in the society for instance, as expressed by the United Nations (1994), the needs of all citizens including the handicapped constitute the basis for planning and policy, an emphasis on prevocational and daily living skills programming and planning for work and living options after school become necessary. Most of the handicapped children are expected to need work activity or day activity-center environment if they have work potential and minimally to maximally supervise living environment.

Because of the multiplicative effects of multiple impairment, the multiply handicapped children may need more sheltered living and work environments than indicated in the data.

## IMPLICATIONS OF THE FINDINGS FOR EDUACTIONAL SERVICE PROVISION

The findings have important implications in the provision of educational services for the handicapped children in the schools. A number of implications for educational services provision are discussed below.

The prevalence of handicapped children in schools shows that many children in the state will not benefit from normal educational programmes. This implies that in planning for educational services these categories of children with special education needs are taken into consideration. More efforts are needed to adequately provide adequate special educational services for all categories both in the cities and in the rural areas.

The handicapped children in the schools represent various ethnic groups found in the state. Of all the groups, the Hausa ethnic group has the highest number of the handicapped children. It then means that in planning and provision of educational services the Hausa ethnic population needs special consideration and attention. More important, it implies that

there is need for the provision of preventive special educational services for this group and to all other ethnic groups particularly those as indicated in the findings that have appreciable number of the handicapped children in the schools. This will help to reduce to the barest minimum the prevalence of handicapping conditions in the state.

As indicated in the findings that auditory impairment is the most prevalent in the schools implies that the auditorily impaired need more attention. This can only be given if the schools are appropriately equipped with needed facilities such as special schools. Like hearing aids and audiology machines and materials as well as training appropriate number of special education teachers for this purpose.

The findings that 18.18 percent of auditorily impaired had partial hearing and are receiving education along with deaf children indicate that children with different educational needs are being taught together using the same methods of communication and approaches.

Thus, these children cannot develop to their full potential under this arrangement. It is expected that children with partial hearing loss with amplification are capable of developing near normal hearing and language through audition (Downs,1978). In view of this, different learning situations need to be created in order to accommodate the varying educational needs of both the children of partial hearing loss and the deaf. Since the children with partial hearing loss would rely mainly on the visual mode of communication, it is important that teachers in the education of the auditorily impaired acquire high level of proficiency in sign language and lip reading to enable them communicate effectively with the children.

Also, the findings that 36.83 percent of the visually impaired had usable vision and this group are left in the schools for blind means that these children will not develop their vision at all. Whereas, if alternative approaches, assessment and stimulation are made available the children's vision may be improved. This implies that there is the need to

emphasize visual assessment, stimulation and alternative approaches to train teachers for children who have low vision. There is need for service and integrated approach or mainstreaming to give children the opportunity to attain their full potentials.

That meningitis, congenital complications, poliomyelitis and measles were the most prevalent causes of auditory impairment, mental retardation, physical impairment and visual impairment respectively implies that prevention and control methods of these factors need to be given priority attention in the health education programmes right from the primary schools and if this is done there is the likelihood that their prevalence will be reduced. It calls attention to the need for public enlightenment particularly as it affects parents and child upbringing.

The finding that more children were affected by the impairment early in life suggests that early diagnostic and screening services are needed to be carried out especially among the ethnic groups whose population showed a high prevalence. Early programme of diagnostic and screening services would ensure early therapeutic and special education services for those early detected.

With high percentage of the population of the handicapped in the residential schools except the physically handicapped and mentally retarded, the residential schools for the blind and that of the auditorily impaired with adequate provision of facilities would be centers for programmes emphasizing functional academic, prevocational and daily living skills training. This school, if properly established, could offer special sandwich programmes for students educated in other settings who do not have such programming available to them.

The findings that a great number of related services were not provided for the handicapped children in the school implies that special education programmes are not effective since related services which are critical components of special education programmes were lacking in the schools. This therefore means that the children cannot

meaningfully benefit from instruction, implying that there is need to adequately provide the related services in the schools.

The findings also suggest high expectations of living and working potential of the handicapped children after completing education. This implies that an emphasis on prevocational and vocational training be given priority in the schools. There is however need for full programme in the schools to develop daily-living skills of the children.

# CHAPTER FIVE

# SUMMARY AND CONCLUSION

## 5.0 INTRODUCTION

This chapter presents a summary of the study. Based on the findings of the study already discussed, conclusions are drawn and some recommendations made. Limitations of the study are pointed out and suggestions for further studies are made.

## SUMMARY OF THE STUDY

The demographic survey of handicapped children was undertaken as a result of paucity of demographic data needed for effective planning. In addition the provisions of the National Policy on Education (1981) demands census of handicapped children so as to plan and provide adequate education and related services for them.

The Demographic Survey Instrument (DSI) and Related Service Survey (RSI) were used to collect the relevant data on 513 handicapped children in special schools for the handicapped and integrated schools in Plateau State.

The analysis of data was done in line with the research questions and the following findings were made:

1. There are various categories of handicapped children existing in the schools in the state and out of which auditorily impaired was the most prevalent, the least being that of the multiply impaired.
2. The greatest percentage of the handicapped in the schools are of Hausa ethnicity consisting of 21.44 percent of the entire population. This is followed by Ibo having 8.97 percent, Mwaghavul 8.77 percent Berom 8.38 percent, Ngas 7.79 percent, Yoruba 4. 87 percent, Fulani 4.09 percent and Taroh a single ethnic group with the least population of 3.51 percent. The Others in Plateau State have 17.15 percent

while Others in Nigeria have 14.81 percent of the entire population of the handicapped children in the schools.

3. The causes of the various categories of impairment of children in the schools among others include the following factors that ranked highest: meningitis for auditory impaired and multiply impaired, poliomyelitis for physically impaired, and visually impaired had measles as the most frequent causative factor.
4. It was discovered that both deaf children and children with low hearing (hard of hearing) were educated in the special for the deaf schools. A good number (18.18 percent) of children with low hearing level which could otherwise benefit in visual normal education programme were educated in the special education school for the handicapped.
5. Also, a good number of children with low vision (usable vision) were found in the same special education programme with blind children with no special education approach for them.
6. There was indication that more children were affected by various categories of impairment early in life at age range of birth to nine years. The least number of children had the impairment set in at age eighteen years and above.
7. The schools operated both residential and non-residential programme. A greater percentage of all the cases were in residential schools, except in the case of physically handicapped whose 63.52 percent was in day schools.

   Also, most of the auditorily impaired, visually impaired and all mentally retarded were in full-time special education classes while a majority of physically handicapped were receiving services on part-time and regular class as well as resource room.
8. The age at which a good number of the children started receiving special education was discovered to be late. For instance, only 51. 33 percent of the total population of

the various handicapped children began their education at the age range of 1-9 years while 33.72 started at the age range of 10-18 and above years, indicating that they started receiving educational services late after they had been inflicted by the predicament.

9. The overall distribution of the handicapped children in all the ethnic groups shows that more of the impaired children are in the age range of 14-18 and above years for instance, the auditorily impaired children are within the age range of 10-13 and 14-17 and 18 and above years; for the mentally retarded are in the age range of 18 and above years, the multiply handicapped are mostly concentrated within 14-17 years and 18 and above years. The visually handicapped has the highest number at 18 and above years. It is only the physically handicapped that highest number of the handicapped are found at the age range of 6-9 years.
10. Schools lacked related services to supplement special education programmes. A great number of related services were not provided for the handicapped in the schools.
11. A high percentage of the population will enter into competitive employment and vocational training not for the handicapped after their education. This means that very low percentage of the population will not be productive members of the workforce after school. Also, most of the children would be able to live independently at home with family. However a good percentage of visually impaired and physically impaired is expected to live in minimally supervised group apartment and maximally supervised apartment respectively.

## CONCLUSION

The Demographic Study of Handicapped children in Schools were carried out in Plateau State. The study showed that these categories of handicapped-auditorily impaired,

mentally retarded, multiply impaired, physically impaired and visually impaired in various age groups were present in the schools.

Majority of the handicapped in the schools were in special schools for the handicapped. In the various schools including the integrated schools the educational facilities and related services needed were not adequately provided, meaning that the children were not fully benefiting from educational services. Therefore, for the effective implementation of programme for the handicapped children in schools the various categories of the handicapped in schools need to be adequately provided for.

In an era marked by highly visible opposition to infringement of human rights, handicapped children including those in schools should not be denied the most human or rights the right to personal fulfillment and indeed the right to appropriate education.

## RECOMMENDATIONS

Based on the findings of this survey, the following recommendations are made:

1. Efforts should be made by the various governments and non-governmental organizations by way of campaigns and enlightenment programmes to attract more handicapped children especially those roaming the streets and at homes to schools.
2. Handicapped children should be attracted early to school early in life. If early diagnostic and screening services are made available the children identified should be put in schools including the nursery schools. Therefore early diagnostic and educational services should be made a matter of policy for every handicapped child in the state.
3. In addition, a demographic survey center should be established by the state charged with the responsibility of carrying out regular diagnostic and survey of the handicapped children in the state with the view to identifying and appropriate educational placement of those identified.

4. The use of medical examination to identify disabilities especially among children should be made a matter of priority. This method involves screening of all children including those at home annually and keeping the records. Children suspected of conditions that might be educationally disadvantageous could be subjected to further testing which may involve screening vision, hearing, speech, mental ability testing, etc.
5. In the light of the above, diagnostic and screening centers should be established in every zonal educational area in the state. Parents are encouraged to take their children to this center annually for this service.
6. Methods of prevention and control of diseases such as poliomyelitis, meningitis, as well as general preventive measures of handicapping conditions should be made compulsory in the curriculum of schools.
7. More integrated schools, should be established in each local government area of the state. At least two integrated schools should be established in each Local Government area. Integrated provision as generally observed has the cost of effective advantage of making use of existing education system which should be capable of dealing with most of the handicapped children in the schools.
8. To ensure appropriate and complete services to the entire population of handicapped children in the state, the needs of each category should be taken into consideration. This calls for a more comprehensive study on the needs of the handicapped in the state.
9. More teachers should be trained in each area of special education with emphasis on those impairment conditions that are prevalent in the state as revealed by this study. The teachers should be made to acquire high level of proficiency in their various fields to enable them effectively teach and manage the children placed under their care.

Another approach should be to train teachers with competency in levels of functioning, instead of by category of condition. This includes sufficient competency in area of general special education so that they would be able to coordinate services with special education teachers of handicapped children.

10. To ensure adequate and effective educational services to the entire population of the handicapped children in schools, appropriate and adequate related educational services such as transportation, audiology, vision correction, speech therapy, physiotherapy, adapted physical education and computer services should be provided in the schools.
11. A greater emphasis should be placed on prevocational and daily living skills programming and planning for work and living options after school. There should be an elaborate policy on this so that the handicapped can become aware and appreciate the opportunity created for them.
12. There should be more enhanced sheltered living and work environment in the schools for the multiply handicapped children because of the multiplicative effects of multiple handicapping conditions.

## LIMITATIONS OF THE STUDY

In this study, the descriptive accounts of the individuals of the individuals from their records were collected. The accounts contained in the records may or may not be true since all the disadvantages of crude observation and anecdotal report were involved. The information is not verifiable and is highly subjective. Parents particularly the illiterate ones hide the defects of their children or may even exaggerate their problems. Information supplied by them may hardly be relied upon to reach some definite conclusions. Data on the various impairment may indicate characteristics but do not solve the problem of defining education service needs.

The instruments used were modified adaptations, which had to be subjected, to reliability treatments because of lack of standardized instruments.

The study was restricted to special schools and integrated schools in Plateau State, it cannot be said to be totally representative of all the handicapped children in the state. There can be others that may be still found in the non-special and integrated schools. A study of this nature cannot cover all these schools especially where records are not kept on such children.

## SUGGESTIONS FOR FURTHER STUDIES

1. Further research into the vocational and alternative living needs of the handicapped population should be conducted. Date from such a study may also indicate a need for more pre-vocational and daily living skills training and functional academics related to the practical living situations.
2. There is need to further research in demographic characteristics of the handicapped in the state by widening the scope to cover all handicapped children including those outside the schools and also their education needs.

## CONTRIBUTIONS OF KNOWLEDGE

The following novel findings have been articulated and they no doubt will contribute to knowledge in special education as well as education of the handicapped children in Plateau State in particular.

i. This study has given a fairly clear picture of the number and demographic characteristics of each category of the impairment in Plateau State. The auditorily impaired ranked the highest having more than sixty percent of the entire population of the handicapped children in the schools.

The findings revealed that the Hausa ethnic group had the highest number of both male and female auditorily impaired in the schools and the highest distribution is revealed at the age range of 10-13 years.

ii. It also revealed that each prevalent impairment in the schools had not less than three various factors causing it. For instance, auditorily impairment and visual impairment had twelve and nine causative factors respectively. The most prevalent causes were meningitis, congenital complications, poliomyelitis and measles that were responsible for causing auditory impairment, mental retardation, physical impairment and visual impairment respectively.

It was revealed that children were affected by the impairments early in life which suggests that early diagnostic and screening services are needed to be carried out especially on the ethnic groups whose population showed high prevalence in the study. Early programme of diagnostic and screening services would ensure early therapeutic and special education services for those early detected.

iii. The findings further revealed that with high percentage of the population of the handicapped in the residential schools except the physically handicapped and the mentally retarded the residential schools for the blind and that of the auditorily impaired with adequate provision of facilities would be centers for programmes emphasizing functional academic, pre-vocational and daily living skills training.

An inference of the findings is that, there are high expectations of living and working potentials of the handicapped children after completing education. This therefore implies that an emphasis on pre-vocational and vocational training be given priority in the schools.

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# APPENDIX A

## LIST OF SCHOOLS

| S/NO | NAME | POPULATION |
|---|---|---|
| i. | Plateau State school for the blind, Bassa | 219 |
| ii. | Islamiya Primary School, Jos (Classfor the handicapped) | 17 |
| iii. | Model Teaching Centre, University of Jos | 111 |
| iv. | School for the blind Children, Gindiri | 36 |
| v. | School for the Physically handicapped, Mangu | 24 |
| vi | Government Vocational Centre for the Blind, Zawan | Nil |
| **2.** | **INTEGRATED PRIMARY SCHOOLS** | |
| i. | Angwan Gwanji Primary School, Dengi | 6 |
| ii. | Hossan COCIN School Namu | 3 |
| iii. | Fatima Private School Namu | 2 |
| iv. | Staff Children School, Gindiri | 4 |
| v. | St. Jarlath Primary School, Bukuru | 3 |
| vi. | Merit Primary School, B/Ladi | 2 |
| vii. | Holy Cross Primary School, Pankshin | 3 |
| viii. | Central School, Pankshin | 3 |
| ix. | Central School, Shendam | 4 |
| x. | Central School, Langtang | 5 |
| | | **35** |
| **3.** | **INTEGRATED SECONDARY SCHOOLS** | |
| i. | Government Secondary School, B/Ladi | 4 |
| ii. | Government Secondary School, Dengi | 6 |
| iii. | Government Secondary School, Bwalbung Gindiri | 5 |
| iv. | Government College, Jos | 3 |
| v. | Nakam Memorial Secondary School, Panyam | 5 |
| vi. | Boys Secondary School, Gindiri | 8 |
| vii. | Girls High School, Gindiri | 7 |
| viii. | Government College, Gindiri | 6 |
| ix. | United Tongfom Fellowship College, Pankshin | 16 |
| x. | Langkuk Memorial Secondary School, Pankshin | 4 |
| xi. | Government College, Pankshin | 4 |
| xii. | Government College, Kurgwi | 3 |
| | | **513** |

## APPENDIX B

## SCHOOL OF POST-GRADUATE STUDIES,UNIVERSITY OF JOS. RESEARCH QUESTIONNAIRE FOR RESEARCHERS AND HEADS OF INSTITUTIONS.

**DEMOGRAPHIC STUDY OF HANDICAPED CHILDREN IN SCHOOLS IN PLATEAU STATE: IMPLICATIONS FOR EDUCATIONAL SERVICE PROVISIONS.**

Sir,

Please, complete this questionnaire about all the pupils (Handicapped Children) in your schools. Information which would permit description of any individual or school will be held strictly confidential and will be used only for the purpose of this survey which is purely academic. The data will not be release to others for any other reasons.

**INSTRUCTION:** Please read the information carefully and complete or tick appropriately.

**A. GENERAL INFORMATION:**

1. Name of your school……
2. Date of birth of the child……
3. Sex……..
4. Religion:
   (a) Christianity
   (b) Islam
   (c) traditional Religion
   (d) No Religion
   (e) Any other (Name it)…….

**B. ETHNIC BACKGROUND:**

[ ] Brom [ ] Jarawa [ ] Taroh [ ] Ngas
[ ] Mwaghavul [ ] Ibo [ ] Yoruba
[ ] Any other, specify

**C. TYPE OF IMPAIRMENT OF HANDICAPPED CONDITION:**

[ ] Visual impairment ( blind) [ ], ( partial) [ ]
[ ] Auditory impairment ( deaf) [ ], (partial) [ ]
[ ] Orthopedically impaired (specify)
[ ] Mental impairment [ ] multiple handicapped
[ ] Any other types suffered by the same impaired child specify

**D. CAUSES OF IMPAIRMENT:**

1. Visual impairment
   [ ] German measles
   [ ] Maternal rubella
   [ ] Trauma at birth
   [ ] Other complications in pregnancy
   [ ] Heredity
   [ ] Rh Incompatibility
   [ ] Injury to the eye

[ ] Glaucoma
[ ] Cataract
[ ] Trachoma
[ ] Accident
[ ] Malnutrition
[ ] Diabetic Retinopathy
[ ] Any other (specify) …….
[ ] Unknown
[ ] Information not available

**2. HEARING IMPAIRMENT:**

[ ] Maternal Rubella
[ ] Trauma at birth
[ ] Other complications of pregnancy
[ ] Heredity
[ ] prematurity
[ ] Rh Incompatibility
[ ] Meningitis
[ ] High fever
[ ] Mumps
[ ] Blow to the head
[ ] Allergies
[ ] Tumours of external canal
[ ] Anoxia
[ ] Side effects of drugs
[ ] Any other ( specify)
[ ] Unknown
[ ] Information no available

**3. Orthopedical impairment**

[ ] Cerebral palsy
[ ] Damage of brain
[ ] Accidents
[ ] premature birth
[ ] physical trauma
[ ] maternal exposure to toxic substances
[ ] X- rays
[ ] Congenital malformation
[ ] disease, specify
[ ] poisoning
[ ] unknown
[ ] other conditions, specify

**4. Mental Retardation:**

[ ] Infections (disease)
[ ] Trauma
[ ] metabolism problem- phenyletonuria
[ ] Brain tumour
[ ] Chromosomal abnormality- down syndrome
[ ] Congenital malformation
[ ] hydrocephalus

[ ] Accident, specify
[ ] Unknown other conditions, specify
[ ] Data not available

**E. AGE AT ONSET OF IMPAIRMENT:**

[ ] At birth [ ] 1-5yrs[ ] 6-10yrs [ ] 11-15yrs [ ] 16-20yrs [ ] Above 20yrs
At what age was the impairment detected?
[ ] At birth [ ] After birth [ ] 1-5yrs [ ] 6-10yrs [ ] 11-15yrs [ ]16-20yrs
[ ]Above 20yrs

**F. EDUCATIONAL HISTORY:**

1. What was the child's age when the child first started receiving special educational services on continuing basis?
   [ ] ……years
   [ ] Data not available
   [ ] has not been to any special school
2. When did the child first enroll in your school/ programme? [ ] Month [ ] year
3. Educational placement
   What educational placement is the child enrolled in?
   [ ] Residential school [ ] Regular classroom plus resource room.
   [ ] Itinerant teacher programme
   [ ] Homebound [ ] Day school [ ] Vocational school
   [ ] Part- time special class [ ] Full-time special class
   [ ] Hospital school [ ] hospital and treatment centre
   [ ] Institution for retarded
   [ ] Regular classroom
   [ ] Self- contained for handicapped public school
   [ ] School for the handicapped ( specific handicapped mentioned)

**G. VOCATIONALO AND ALTERNATIVE- LIVING POTENTIALS OF THE HANDICAPPED CHILDREN**

1. Vocational alternatives:
   [ ] College
   [ ] Vocational training ( specifically for handicapped)
   [ ] Competitive employment
   [ ] Sheltered workshop ( product- oriented)
   [ ] No work training situation.

   Alternative living situations:
   Tick the alternative living situations for the child.
   [ ] Independent apartment/ home
   [ ] Minimally supervised apartment
   [ ] Minimally supervised group home
   [ ] Institution for retarded
   [ ] nursing home

# APPENDIX C

## CHECKLIST OR RELATED SERVICES IN SCHOOLS

**To filled by School Heads**

***Instruction:*** Please read the items carefully and tick appropraitely ones available in your school.

| S/NO | RELATED SERVICES | TICK |
|---|---|---|
| 1. | Transportation | |
| 2 | Audiology | |
| 3 | Vision correction | |
| 4 | Speech langauge therapy | |
| 5 | Adaptive Physical Education therapy | |
| 6. | Physiotheraphy | |
| 7 | Vocational rehabilitation | |
| 8 | Mental health | |
| 9 | Counselling | |
| 10 | Screening/diagnostic services | |
| 11 | Medical Services/Clinic | |
| 12 | Computer Services | |
| 13 | Recreational/Sports Activities | |

Any other Specify:.....

.....

Suggest what other educational services should be included in the school for the handicapped children in your school:

1.....

2.....

3.....

4.....

# APPENDIX D

## STRUCTURED INTERVIEW FOR HEADS OF SCHOOLS

1. What are some of the related education services available in your school?
2. Which services are lacking in your school?
3. What other services can be provided in your school to enhance the education of the children in your school?

# APPENDIX E

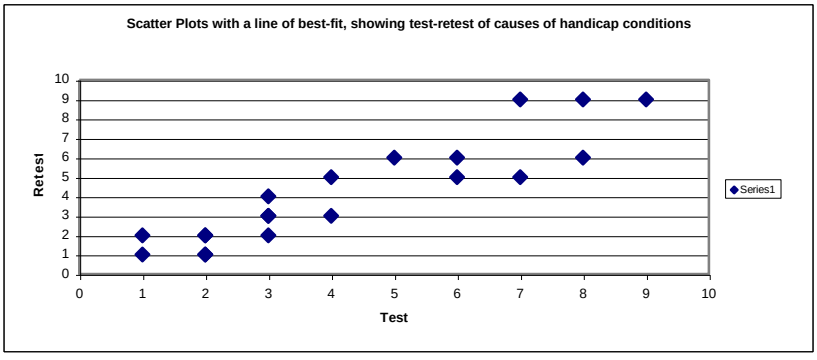
**Table I– Calculation procedure of Rank Correlation**

| X | Y | Rx | Ry | d | $d^2$ |
|---|---|---|---|---|---|
| 7 | 7 | 5 | 5 | 0 | 0 |
| 12 | 11 | 2 | 2 | 0 | 0 |
| 10 | 8 | 3 | 4 | -1 | 1 |
| 8 | 10 | 4 | 3 | 1 | 1 |
| 14 | 14 | 1 | 1 | 0 | 0 |
| | | $\sum d$ | | | 2 |

$$r = \frac{1-6\times 2}{5\times 24} = 1-\frac{1}{10} = \frac{9}{10} = 0.9$$

**RELAIBILITY RAW SCORES**

| TEST | RETEST |
|---|---|
| X | Y |
| 5 | 6 |
| 4 | 5 |
| 3 | 3 |
| 1 | 2 |
| 2 | 1 |
| 3 | 3 |
| 2 | 2 |
| 3 | 2 |
| 6 | 6 |
| 6 | 5 |
| 7 | 5 |
| 8 | 6 |
| 8 | 9 |
| 9 | 9 |
| 7 | 8 |
| 1 | 1 |
| 2 | 2 |
| 3 | 4 |
| 4 | 3 |
| 2 | 1 |



# APPENDIX F

## VALIDITY RAW SCORES

| X | Y |
|---|---|
| **Pretest** | **Post test** |
| 7 | 7 |
| 12 | 11 |
| 10 | 8 |
| 8 | 10 |
| 14 | 14 |

# APPENDIX G

# PART FOUR

# PILOT STUDY

## 4.0. INTRODUCTION

The pilot study was undertaken for three main reasons. The first was to try out DSI and RSSI in order to improve them in terms of content validity and clarity. The second reason was to test the suitability of data collection procedure, with the aim of identifying any inherent weakness. Lastly, there was the need to answer the research questions and to establish their suitability and appropriateness for the main study.

## 4.1 RESEARCH QUESTIONS

The following research questions were drawn and used.

1. What is the distribution of the handicapped children in the schools?
2. What is the ethnic distribution of the handicapped children according to age range of the population and sex?
3. What are the possible causes of each type of handicapping condition of those in the schools?
4. What is the percentage of deaf children versus children with low hearing?
5. What is the percentage of children with total blindness versus children with low vision (usable vision)?
6. What was the age of onset of the impairment of the children?
7. What is the prevalence rate of various handicapping conditions in schools?
8. What are the educational placements of the children in the schools?
9. At what age did the child start receiving special education?
10. What related services other than academic oriented programmers are made available to the children in the schools?

11. What is the vocational and alternative-living potential of handicapped children?
12. What are the possible implications of the result of the study for education services provisions?

## 4.2 THE AREA AND POPULATION

The pilot study was carried out in Bauchi State, which is, of course, outside the population of the main study. In choosing Bauchi State for the pilot study, the following factors that are believed to be common with Plateau and Bauchi states were considered:

(a) The two States are in the same geographical zone of the country having almost the same geographical conditions.

(b) Bauchi State has also multiple ethnicities as Plateau State. Such ethnic groups as Hausa, Fulani, Jarawa, etc. are found in both States.

(c) In addition, the two major religions in the country, Christianity and Islam, are found in both States.

The population is the total number of handicapped persons in the special schools for the handicapped children and two integrated schools. The special school is located at Yelwa. Also located at Yelwa is one integrated school while the other is at Tafawa Balewa.

But due to the nature of data needed for this study, the heads of the schools and teachers involved in the teaching of the handicapped persons served as the respondents, otherwise known as the observation unit.

## 4.3 PROCEDURE

Preliminary visits to the schools were undertaken for the following reasons:

1. to familiarize the researcher with the schools and authorities
2. to make consultations with the school Principals with the intention of soliciting their cooperation in the research work.
3. to confirm the schools where handicapped persons are educated in the State.

The visit actually enabled the researcher to fully solicit the assistance of the Principals and members of staff who helped to fill the questionnaires using the student personal records. In the first instance, they were briefed on the nature of the research. It was made known to them that they would constitute the much needed respondents whose assistance or responsibility would be to fill the questionnaires, using the individual pupil's file kept by the school.

On the following week, the researcher in the company of the research assistants went back to the schools with the questionnaires. Each Principal immediately delegated his Vice-Principal of the school to supervise the filling of the questionnaires by instructing some teachers who were allowed access to the pupils' files. The researcher and the research assistants spent three days to get the questionnaire filled. In addition, the principals and heads of units were interviewed and their views sought on the areas of improvement of educational services in the schools. Three Hundred and Ten (310) copies of the questionnaires were distributed to the schools in this order:

Special School Yelwa 264 copies, the two Integrated schools 10 copies, thirty six copies were not returned or not filled because the files had little or no useful information for the study. Two hundred and seventy-four questionnaires were filled and collected back.

## 4.4 RESULTS AND DISCUSSION

The data collected from the pilot study are presented and analysed below on the different research questions.

**Research Question 1: What number and percentage of each category of handicapped children exist in the schools?**

Table 1 Type, Number and Percentage of Handicapped Children in Schools

| Category | Number | Percentage |
|---|---|---|
| Auditory impaired | 114 | 41.60 |
| Physical impaired | 42 | 15.33 |
| Multiple impaired | 30 | 10.95 |
| Visual | 88 | 32.12 |
| TOTAL | 274 | 100 |

Table 1 indicates that in the schools auditorily impaired ranked the highest consisting of 144 (41.61%). This is followed by visual impaired with 88 (37.12%); then physical impaired consisting of 42 (15.33%) and finally multiple impaired which is the least with 30 (10.95%) cases.

This goes to explain that in Bauchi State there are more auditorily impaired individuals in schools than any other category of children with handicapping condition. The probability could therefore be that more auditorily impaired exist in the schools due to the nature of the impairment which makes it less difficult for the auditorily impaired children to benefit from formal education than others. This means that the school system attracts more auditorily impaired children than any other category of impaired children in the state.

**Research Question 2: What is the Ethnic Distribution of the handicapped children according to Sex and Age range of population?**

**Table 2 shows Age Range Distribution of Male Auditorily Impaired children by ethnic group.**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Igbo | | Ngas | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | N | % | |
| 6-9 years | 1 | 1.82 | | | 1 | 20 | | | | | | | 2 |
| 10-13 Years | 5 | 9.09 | 1 | 14.29 | | | 1 | 9.09 | | | | | 7 |
| 14-17 years | 19 | 34.54 | 4 | 57.14 | 1 | 20 | 4 | 36.36 | 1 | 25 | 1 | 25 | 30 |
| 18 and above | 30 | 54.54 | 2 | 28.57 | 3 | 60 | 4 | 36.36 | 3 | 75 | 3 | 75 | 45 |
| Unknown | | | | | | | 2 | 18.18 | | | | | 2 |
| TOTAL | 55 | 99.99 | 7 | 100 | 5 | 100 | 11 | 99.99 | 4 | 100 | 4 | 100 | 86 |

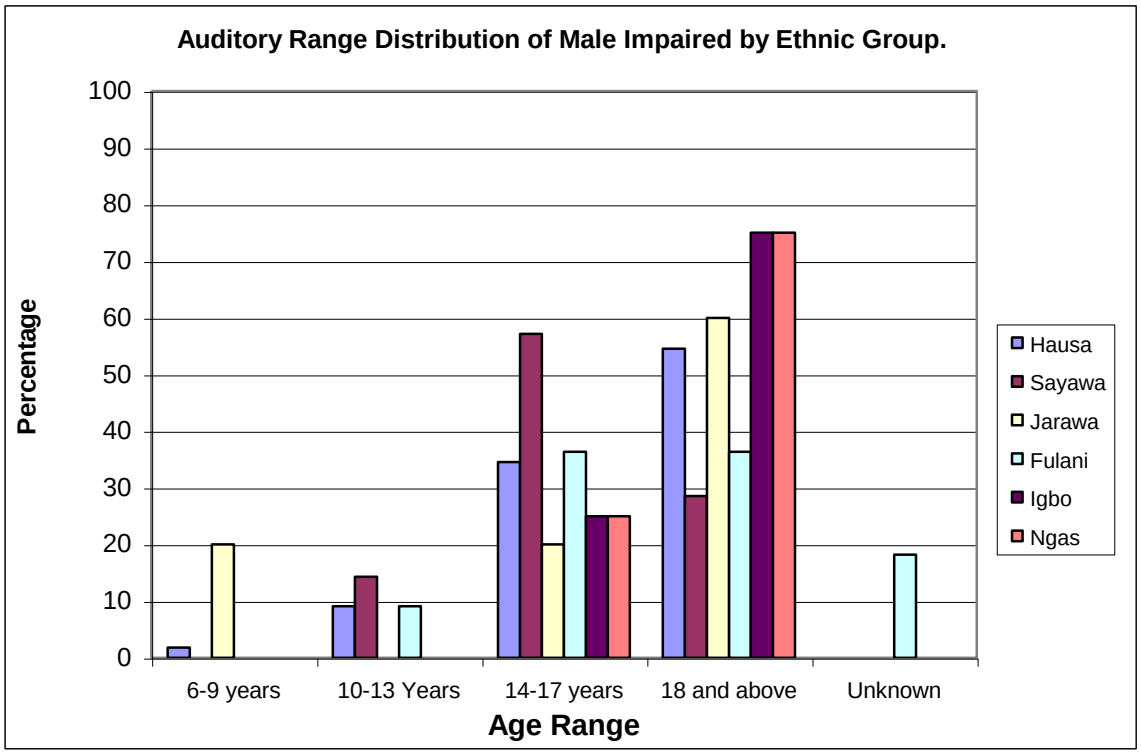



**Figure 1: Percentages of Age Range Distribution of Male Auditorily Impaired by ethnic group.**

Figure 1 compares the percentage distribution of age range of the handicapped according to ethnic group. There is a clear indication that auditorily impaired is most prevalent among the male children of Hausa ethnicity. The figure indicates that Hausa ethnic group has the impairment distributed as follows: 6-9 years 1.8%, 10-13 years 9.09%, 14-17 years 34.55%, and 18 and above years 54.55% as the highest range of population. This is followed by Sayawa ethnic group with a total of seven males, having the highest percentage (54.14%) the age range of 14-17 years. The Igbo and Ngas have the least which cases are concentrated at 18 and above years (75%) each.

It could be satisfactorily established from figure 1 that most of the auditorily handicapped children are in the age range of population of 18 and above years. This gives a total percentage of 51.14 auditorily handicapped in all the ethnic groups. This is followed by children at 14-17 years with a total percentage of 22.73%.

**Table 3: Age range distribution of male physically impaired by ethnic group.**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Waje | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | N | % |
| 6-9 years | 6 | 26.09 | 2 | 66.67 | | | | | | | 8 | 26.65 |
| 10-13 Years | 5 | 21.74 | | | | | 1 | 100 | | | 6 | 20 |
| 14-17 years | 5 | 21.74 | 1 | 33.33 | 2 | 100 | | | | | 8 | 26.65 |
| 18 and above | 6 | 26.09 | | | | | | | | | 7 | 23.33 |
| Unknown | 1 | 4.35 | | | | | | | 1 | 100 | 1 | 3.33 |
| TOTAL | 23 | 100 | 3 | 100 | 2 | 100 | 1 | 100 | 1 | 100 | 30 | 100 |

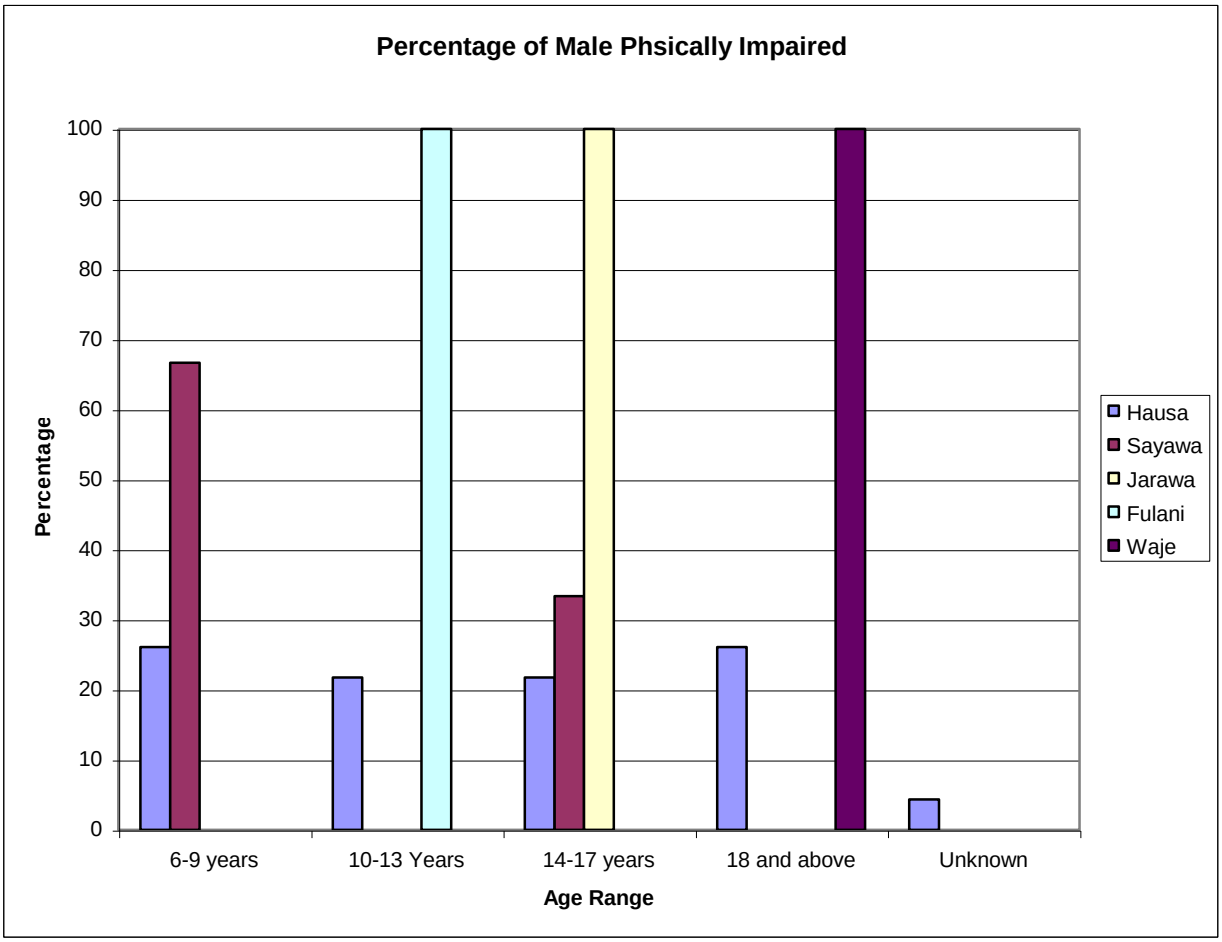



**Figure 2. Percentage distribution of male physically impaired by ethnic group.**

Table 3 shows the ethnic background of male physically impaired children in schools in Bauchi state according to age range of population. Figure 2 compares the percentage distribution of age range of population. Figure 2 shows that distribution of the population is highest among Hausa ethnic group at 6-9 years and 18 above years having 26.09% each. Also, Hausa has the next higher percentage at 10-13 year and 14-17 years each with 21.74% Sayawa ethnic group follows with 66.67 of her population at 6-9 years and only 33.33% at 14-17 years.

It is worth noting that the highest percentage concentration of physically impaired is at the age ranges of 6-9 and 14-17 with 26.65% each, this is followed by 18 and above years which has a total of 23.33%. the least is that of 10-13 years which has 20%.

**Table 4 Age range distribution of male impaired children by ethnic group**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Tangale | | Basayi | | Waje | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | |
| 6-9 years | 5 | 17.86 | 1 | 6.25 | 1 | 16.67 | | | 4 | 66.67 | 1 | 33.33 | | | 12 |
| 10-13 Years | 6 | 21.43 | 1 | 6.25 | 1 | 16.67 | 2 | 40 | | | 2 | 66.67 | 2 | 66.67 | 14 |
| 14-17 years | 11 | 39.29 | 3 | 18.75 | 1 | 16.67 | | | | | | | | | 15 |
| 18 and above | 6 | 21.42 | 11 | 68.75 | 3 | 50 | 3 | 60 | 2 | 33.33 | | | 1 | 33.33 | 26 |
| Unknown | | | | | | | | | | | | | | | |
| TOTAL | 28 | 100 | 16 | 100 | 6 | 100.01 | 5 | 100 | 6 | 100 | 3 | 100 | 3 | 100 | 67 |

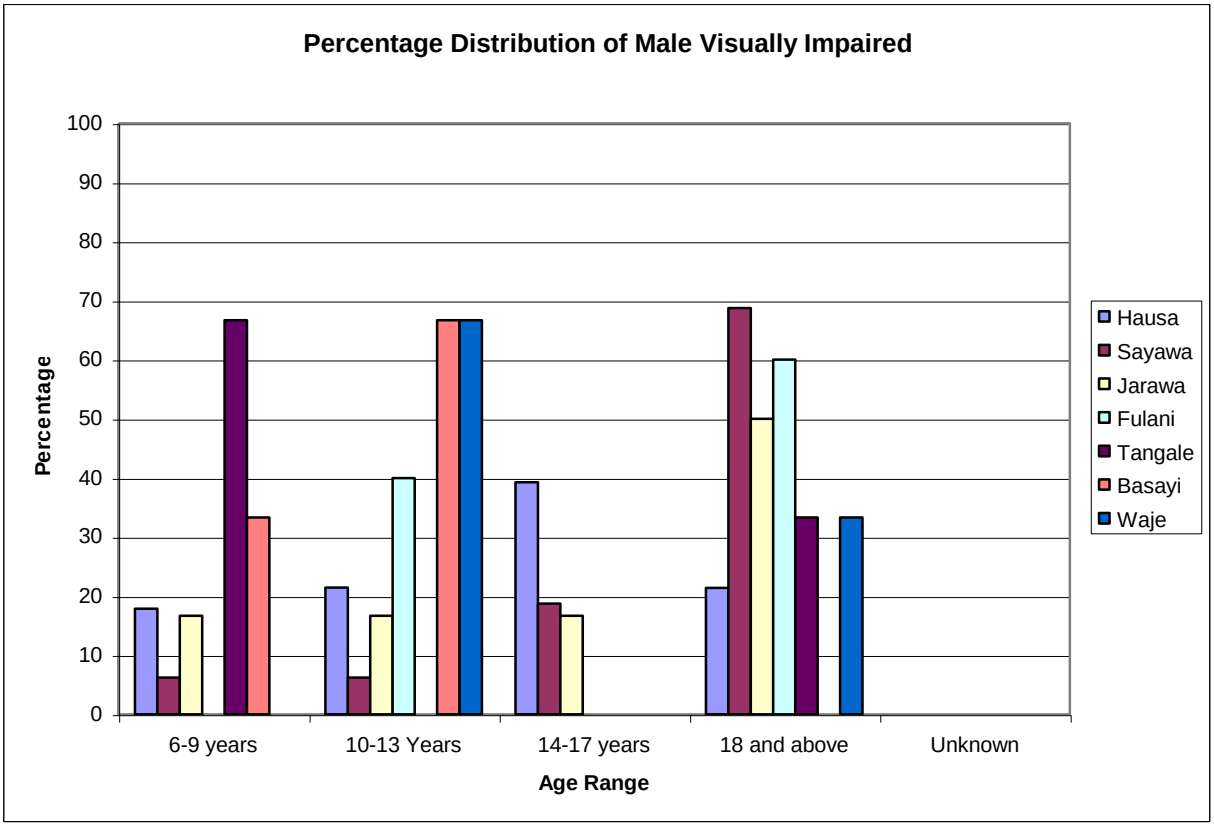



**Figure 3 Percentage distribution of age range of male visually impaired by ethnic group**

Table 4 shows the ethnic breakdown of male visually impaired children in schools. This shows how this population is distributed according to age range along ethnic line. Figure 3 compares the percentage distribution of age range of population of this category of handicapped children. It clearly indicates that the Hausa ethnic group has population distributed as follows: 6-9 years 17.86%, 10-13 years 21.43%, 14-17 years 39.29% and 18 and above years has 21.43%. sayawa is shown to have 6-9 years 6.25%; 14-17 years 18.75% and 18 and above years 68.75%. the next ethnic groups are Jarawa and Fulani each with her highest percentage of population of 50% at 18 and above years. In the case of Tangale ethnic group, her highest population of 66.67 is concentrated at age range 6-9 years.

It could be clearly observed that the highest prevalence of visually impairment is at the age range of 18 and above years and this has 29.55% of the population, followed 10-13 years with 18.18%, and the least percentage of 13.64 is found at 6-9 years age.

**Table 5 Age range distribution of female auditory impaired by ethnic group.**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Igbo | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | |
| 6-9 years | 4 | 26.7 | 1 | 16.7 | 1 | 50 | | | | | 6 |
| 10-13 Years | 5 | 33.3 | 1 | 16.7 | | | 1 | 33 | 1 | 50 | 8 |
| 14-17 years | 1 | 6.67 | 3 | 50 | | | 2 | 67 | 1 | 50 | 7 |
| 18 and above | | | 1 | 16.7 | 1 | 50 | | | | | 2 |
| Unknown | 5 | 33.3 | | | | | | | | | 5 |
| TOTAL | 15 | 100 | 6 | 100 | 2 | 100 | 3 | 100 | 2 | 100 | 28 |

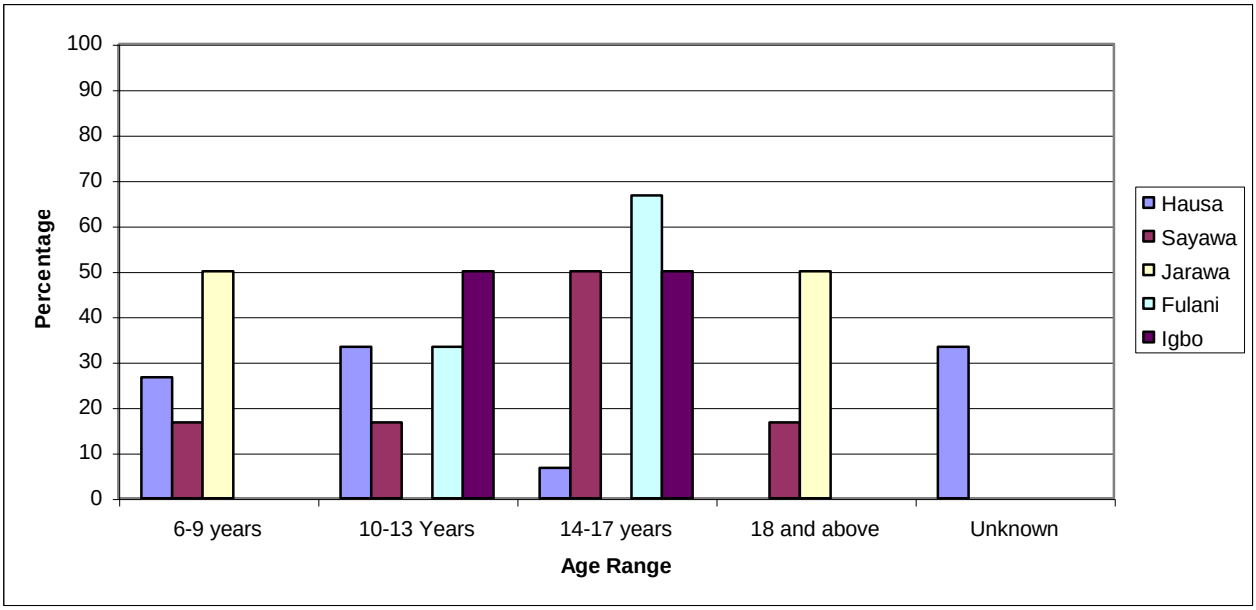



**Figure 4 Percentage age range female auditorily impaired by ethnic group**

Table 5 indicates the ethnic breakdown of female auditorily impaired children according to age range of population. Figure 4 clearly makes percentage comparison of ethnic distribution of the population according to age range. It shows that the Hausa group has the highest female population of 33.33% at 10-13 years, and this is followed by 6-9 years with 26.67%. The Sayawa and Fulani ethnic groups have their highest population of 50% and 66.6% respectively at 14-17 years. Therefore, the highest percentage population of the female handicapped children is at the range of ages of 10-13 (28.57%) and 14-17 years (24.99%). However, figure 4 reveals that age of 33.33% of the Hausa ethnic group could not be known.

**Table 6 Age range distribution of female physically impaired.**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Waje | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | |
| 6-9 years | 3 | 37.5 | | | 1 | 100 | | | | | 4 |
| 10-13 Years | 1 | 12.5 | | | | | 1 | 100 | | | 2 |
| 14-17 years | 2 | 25 | | | | | | | | | 2 |
| 18 and above | 1 | 12.5 | | | | | | | | | 1 |
| Unknown | 1 | 12.5 | 1 | 100 | | | | | 1 | 100 | 3 |
| TOTAL | 8 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 12 |

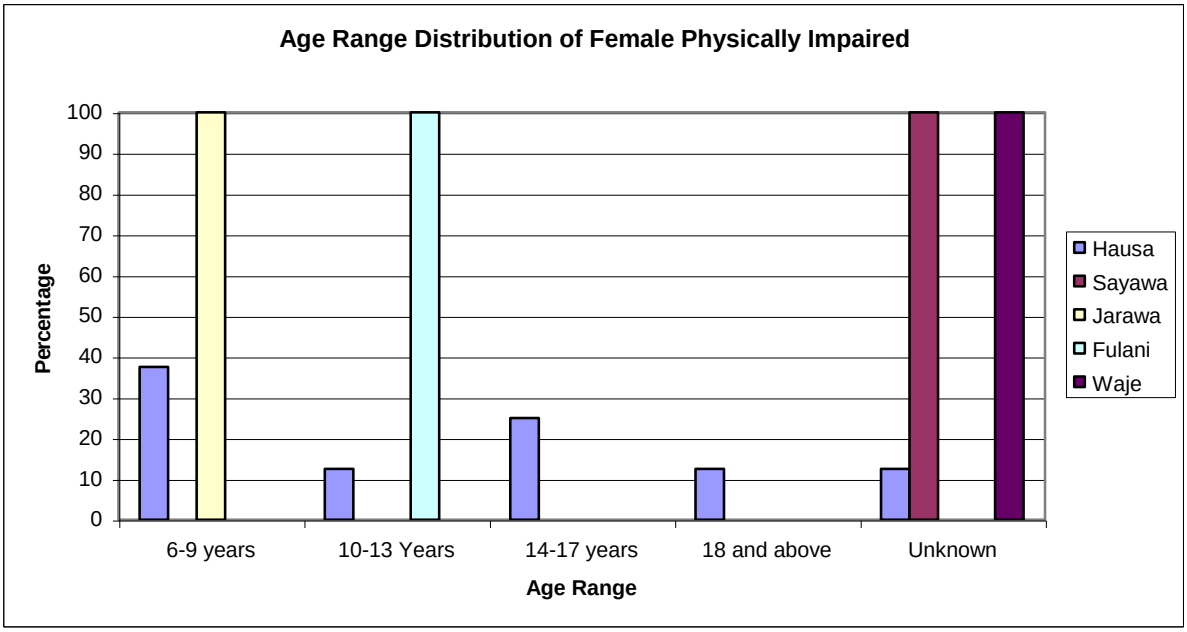



**Figure 5 Percentage Age Range Distribution of Female Physically Impaired By Ethnic Group**

Table 6 indicates the ethnic distribution of female physically impaired according to age range of population. Figure 5 clearly compares the percentage distribution by each ethnic group and reveals that Hausa ethnic group has all the female physically impaired except the Fulani group with only one female impaired child of age range of 10 – 13 years. The highest percentage of Hausa is at 6-9 years with 37.5% of the population.

**Table 7 Age range distribution of female visually impaired by ethnic group.**

| Age Range | Hausa | | Sayawa | | Jarawa | | Fulani | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | |
| 6-9 years | 1 | 11.1 | 1 | 50 | | | 1 | 25 | 3 |
| 10-13 Years | 2 | 22.2 | 1 | 50 | 1 | 16.67 | 1 | 25 | 5 |
| 14-17 years | 3 | 33.3 | | | 1 | 16.67 | | | 4 |
| 18 and above | 2 | 22.2 | | | 3 | 50 | 1 | 25 | 6 |
| Unknown | 1 | 11.1 | | | 1 | 16.67 | 1 | 25 | 3 |
| TOTAL | 9 | 100 | 2 | 100 | 6 | 100 | 4 | 100 | 21 |

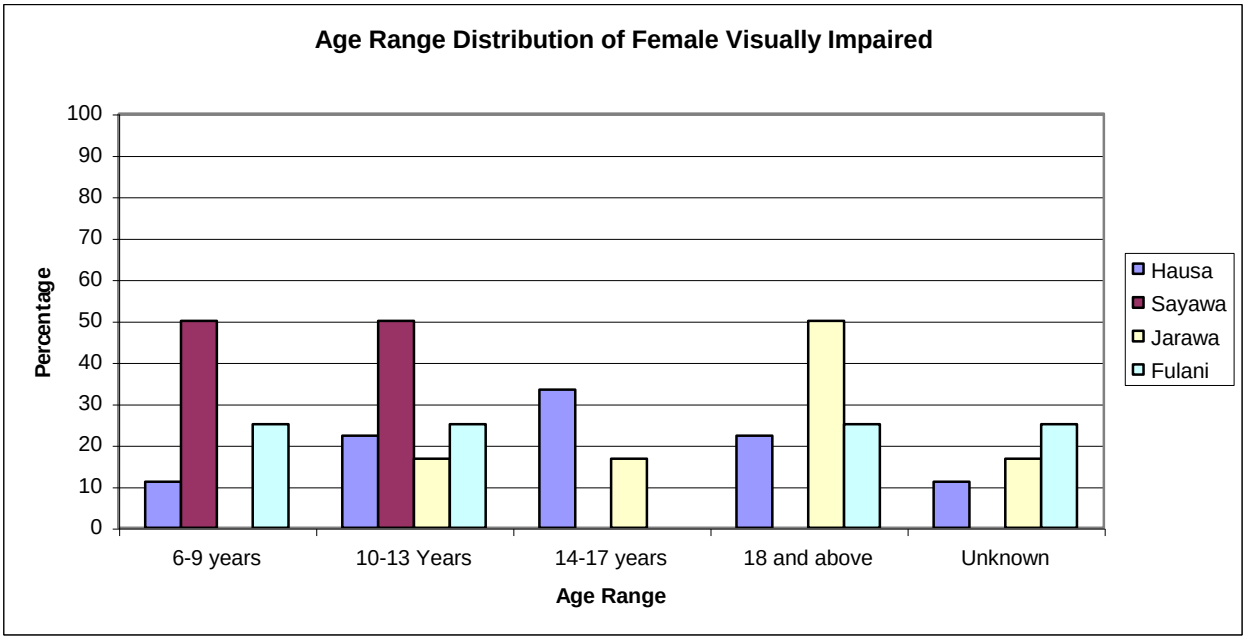



**Figure 6 Percentage Age Range Distribution of Female Visually Impaired By Ethnic Group**

Table 7 describes the ethnic distribution of the female visually impaired in the school population according to age, figure 6 clearly compares the percentage distribution and shows that the highest percentage of the female population of 33.33% of Hausa ethnic group is found at 14-17 years and 50% of Jarawa population at 18 and above years. It is generally observed that the highest percentage is at 18 years and above. The least population is at 6-9 years, meaning that very few female impaired are between six and nine years.

**Research Questions 3: What were the possible causes of each impairment condition of those in schools?**

**Table 8 Causes of various categories of impairment of children in the schools by percentage.**

| CAUSE | AUDITORY IMPAIRED | | VISUAL IMPAIRED | | PHYSICAL IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Measles | | | 22 | 25 | | |
| Maternal Rubela | 11 | 9.65 | | | | |
| Trauma at birth | 6 | 5.26 | 8 | 9.09 | | |
| High fever | 25 | 21.9 | | | | |
| Poliomylitus | | | | | 17 | 40.48 |
| Mumps | 6 | 5.26 | | | | |
| Blow to the head | 4 | 3.51 | | | | |
| Meningitis | 36 | 31.6 | | | | |
| Poisoning | | | | | 4 | 9.52 |
| Side effect drugs | 4 | 3.51 | | | | |
| Congenital | 7 | 6.14 | 7 | 7.95 | 9 | 21.43 |
| Accident | | | 11 | 12.5 | 10 | 23.81 |
| Malnutrition | | | 7 | 7.95 | | |
| Onchocerciasis | | | 16 | 18.2 | | |
| Unknown | 8 | 7.02 | 17 | 19.3 | 2 | 4.76 |
| Data not available | 7 | 6.14 | | | | |
| TOTAL | 114 | 100 | 88 | 100 | 42 | 100 |

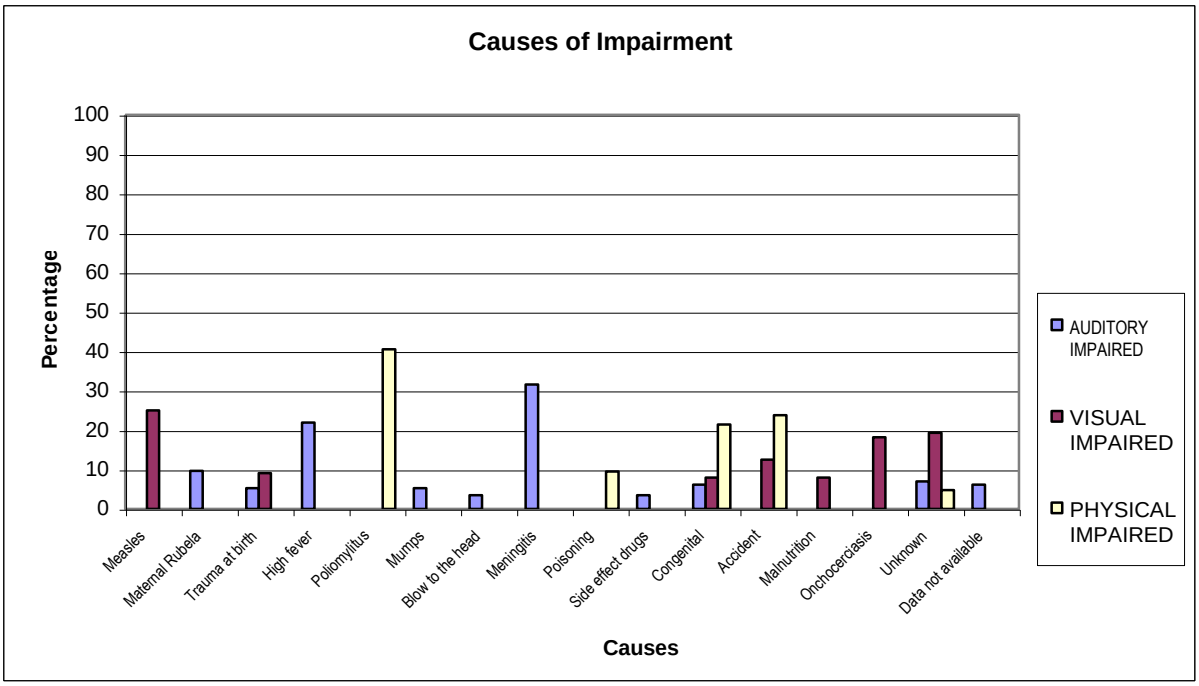



**Figure 7 Bar-chart showing the causes of various handicapping conditions in the schools**

Table 8 figure 7 above show the possible causes of the handicapping conditions of the pupils in the school. In the three impairments represented, which are auditorily impaired, visually impaired and physically impaired by the cause that ranked highest for the auditory impaired is meningitis (31.15%) followed by high-fever (21.93%) and then maternal rubella (9.62%). The least identifiable cause of auditorily impaired population is blow to the head.

In the case of visual impairment the following factors were indicated as follows; measles 22 (25%), onchocerciasis 16 (18.18%), accidents 11 (12.5%), trauma at birth 8 (9.09%), congenital and malnutrition 7 (7.95%), 7 (7.95%) each.

Physical impairment as shown in the above table and chart, has factors as poliomyelitis 17 (40.48%), congenital 9 (21.43%), and poisoning 4 (9.52%).

A major consideration regarding auditory impairment and visual impairment is that a significant position of the population did not indicate or know the cause of the impairment. Of all the children on whom data were reported the cause is unknown or unreported on 8 (7.01%) for the auditory, 17 (19.32%) for the visual impairment and 2 (4.76%) for the physically impairment. When all the factors are compared, the following results emerged:

1. Meningitis ranked highest as a cause of auditory impairment,
2. Measles is the highest ranking factor to cause visual, impairment; and
3. Poliomyelitis is the highest for physical impairment;
4. Two factors trauma at birth and congenital factors are causes that were indicated for causing auditorily impairment as well as visual impairment.

**Research Questions 4: What is the percentage of children with blindness versus children with usable vision?**

**Table 9 Deaf Children versus children with low hearing level.**

| AGE RANGE | DEAF | | LOW HEARING LEVEL | |
|---|---|---|---|---|
| | N | % | N | % |
| 6-9 years | 7 | 6.14 | 1 | 0.88 |
| 10-13 Years | 10 | 8.77 | 5 | 4.39 |
| 14-17 years | 25 | 21.9 | 12 | 10.5 |
| 18 and above | 34 | 29.8 | 13 | 11.4 |
| Unknown | 4 | 3.51 | 3 | 2.63 |
| TOTAL | 80 | 70.2 | 34 | 29.8 |

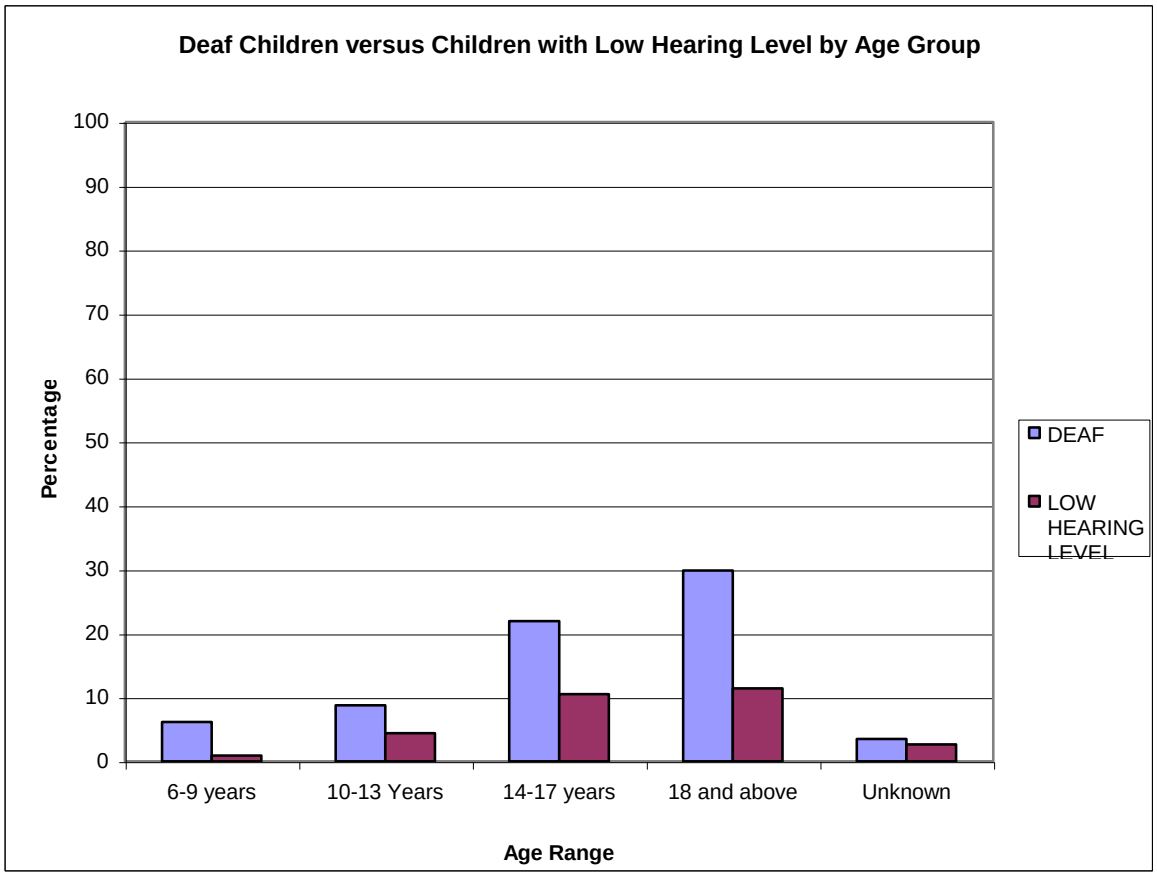



**Figure 8 Bar chart showing number and percentage distribution according to age range of the population.**

The number and percentage of the population with deafness versus children with low hearing level was based on data of both sexes. Table 9 and figure 8 present and compare the percentage of deaf with low hearing level according to age of population. As indicated in the figure, the deaf has a total of 80 (70.16%) while low hearing level has 34 (29.82%). The age range of 18 and above years has the highest number and percentage of 34 (29.82%) for the deaf and 13 (11.40%) for the low hearing level. This is followed by 14 – 17 age range with deaf 25 (21.93%) and low hearing level 12 (10.53%).

Data as presented by figure 8 shows that a significant population of low hearing level children exists in the schools where they receive the same special education programme with the completely deaf children.

**Research Question 5: What is the percentage of children with Total Blindness versus children with Usable Vision?**

**Table 10 Number and percentage of children with total blindness versus low vision.**

| AGE RANGE | BLIND | | LOW VISION | |
|---|---|---|---|---|
| | N | % | N | % |
| 6-9 years | 10 | 11.4 | 5 | 5.68 |
| 10-13 Years | 13 | 14.8 | 6 | 6.82 |
| 14-17 years | 15 | 17.1 | 4 | 4.55 |
| 18 and above | 24 | 27.3 | 8 | 9.09 |
| Unknown | 1 | 1.14 | 2 | 2.27 |
| TOTAL | 63 | 71.6 | 25 | 28.4 |

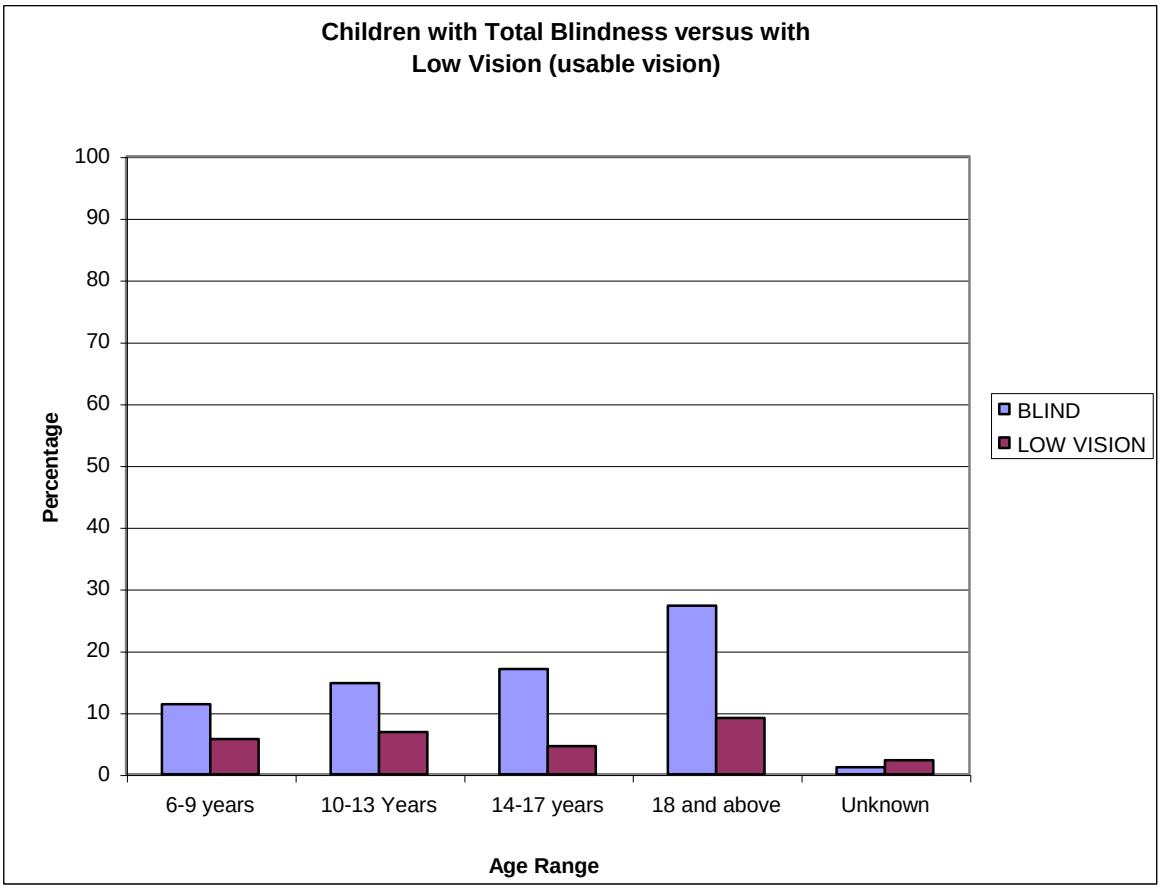



**Figure 9 Percentage distribution of total blind and low vision children**

Table 10 and figure 9 show the number and percentage of the population with total blindness versus low vision (usable vision). They show a total of 63 (71.59%) of children with total blindness while low vision (usable vision) children constitute 25 (28.41%) of the population. Table 10; figure 9 further shows the various age ranges of population and how the percentage is distributed. The age range of 18 and above years has the highest population of 27.27% for the blind and 9.09% for the low vision. This is followed by 14-17 years for the blind that has 17.06% and 10-13 years for the low vision with 6.82%. However, 1.14% and 2.27% of the low vision were not known. Therefore, the table 10 and figure 9 show a significant number of the low vision (usable vision) existing in the special schools.

**Research Question 6: What was the age at one set of the impairment?**

**Table 11 Age at onset of impairment.**

| AGE RANGE | AUDITORILY IMPAIRED | | VISUALLY IMPAIRED | | PHYSICALLY IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| At birth | 16 | 14 | 22 | 25 | 9 | 21.43 |
| 1-5 years | 5 | 4.39 | 17 | 19.3 | 16 | 38.09 |
| 6-9 years | 28 | 24.6 | 19 | 21.6 | 10 | 23.81 |
| 10-13 Years | 9 | 7.89 | 9 | 10.2 | 3 | 7.14 |
| 14-17 years | 10 | 8.77 | 9 | 10.2 | 2 | 4.76 |
| 18 and above | 10 | 8.77 | 4 | 4.55 | 2 | 4.76 |
| Unknown | 9 | 7.89 | 8 | 9.09 | | |
| Data not available | 27 | 23.7 | | | | |
| TOTAL | 114 | 100 | 88 | 100 | 42 | 99.99 |

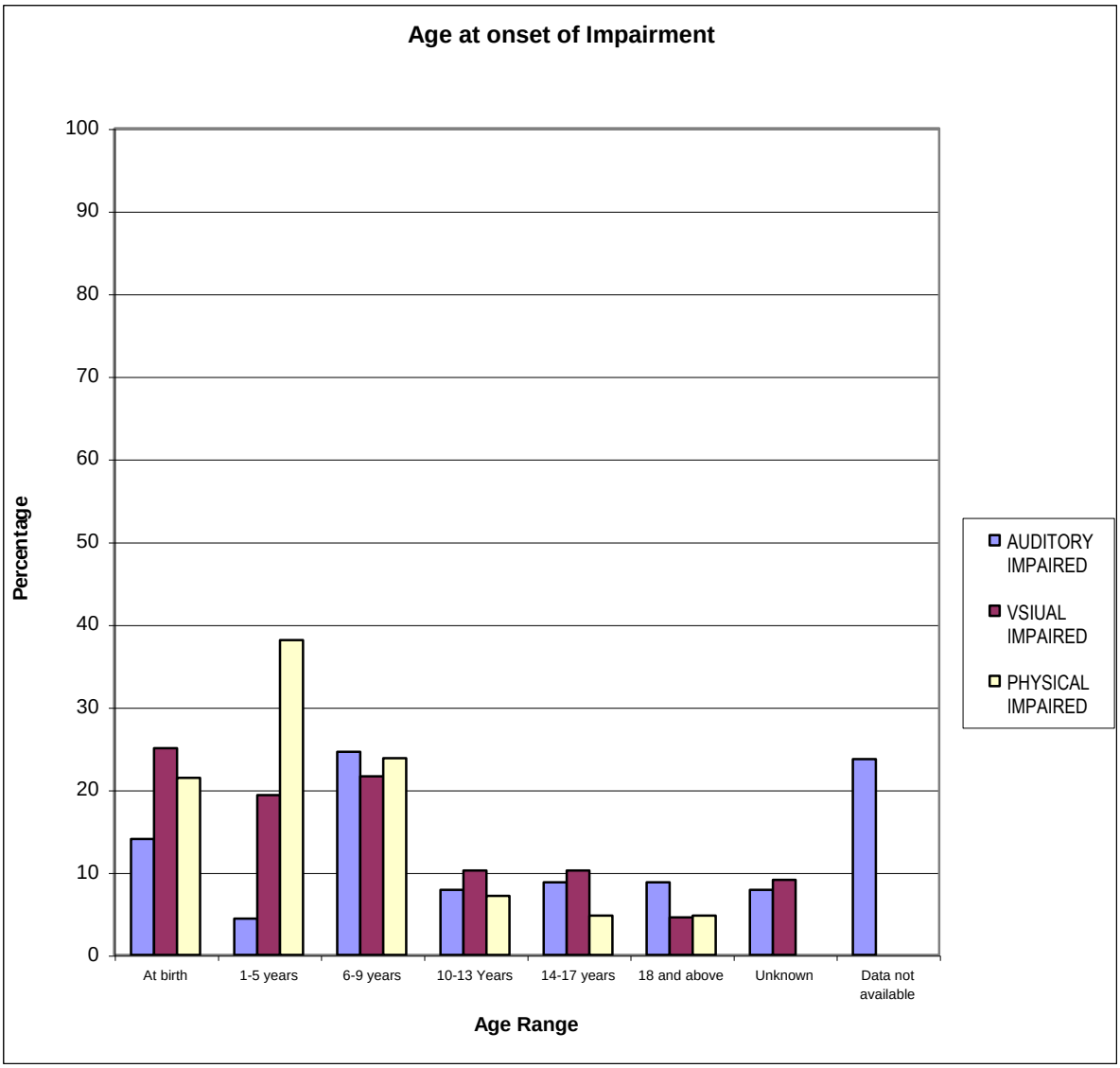



**Figure 11 Age at onset of impairment percentage**

Table 11 and figure 10 above give information on the age at on-set of the impairments. The specific age range at on-set was unknown for 9 (7.89%) and 8 (9.09%) of auditory and visual impairment respectively. Figure 11 presents percentage distributions for these children whom information on this item was got. Among the categories of impairment, visual impairment has the highest percentage of candidates whose onset at birth was 22 (25%), and physical impairment the lowest percentage of 9 (21.43%), with auditorily impaired having 16 (14.04%), the age range that has the highest number and percentage for each category is 6-9 years with 28 (24.56%) for Auditorily impaired 1-5 years with 16 (38.095). the figure shows that the greatest percentage and number have the impairment set in early from birth to age 9. The least number of the children had the impairment set in at age 18 and above. There is indication that more children are affected by the impairment early than later children and adolescents.

**Research Question 7. Ascertain prevalence rate of the various handicapping conditions.**

**Table 12 Prevalence rate of various categories of handicapping conditions according to sex in schools**

| TYPE | MALE | | FEMALE | |
|---|---|---|---|---|
| | NO | RATE | NO | RATE |
| Auditory Impairment | 86 | 0.0048 | 28 | 0.0016 |
| Physical Impairment | 30 | 0.0017 | 12 | 0.0007 |
| Mentally Impairment | 21 | 0.0012 | 9 | 0.0005 |
| Visual Impairment | 61 | 0.0033 | 21 | 0.0012 |

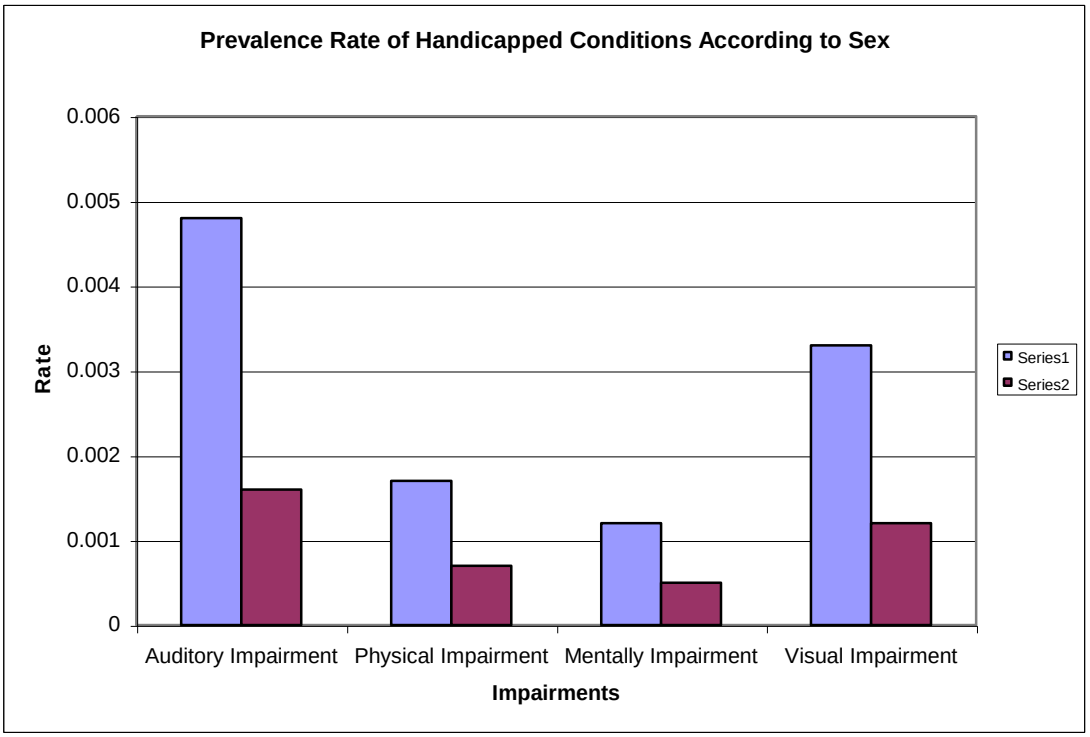



**Figure 11 Prevalence rate of various categories of handicapping conditions according to sex.**

Table 12 and figure 11 indicate that auditory impairment has the highest male prevalence rate of 0.0048 and highest prevalence of 0.0016 in all the categories of handicapping conditions. All the conditions, prevalent rates for males were higher than those of the females.

**Table 13 Prevalence rate of various categories of handicapping conditions in Bauchi.**

| TYPE | NO | Total Population | Rate |
|---|---|---|---|
| Auditory Impairment | 114 | 18,000 | 0.006 |
| Physical Impairment | 42 | 18,000 | 0.002 |
| Mentally Impairment | 30 | 18,000 | 0.017 |
| Visual Impairment | 88 | 18,000 | 0.005 |

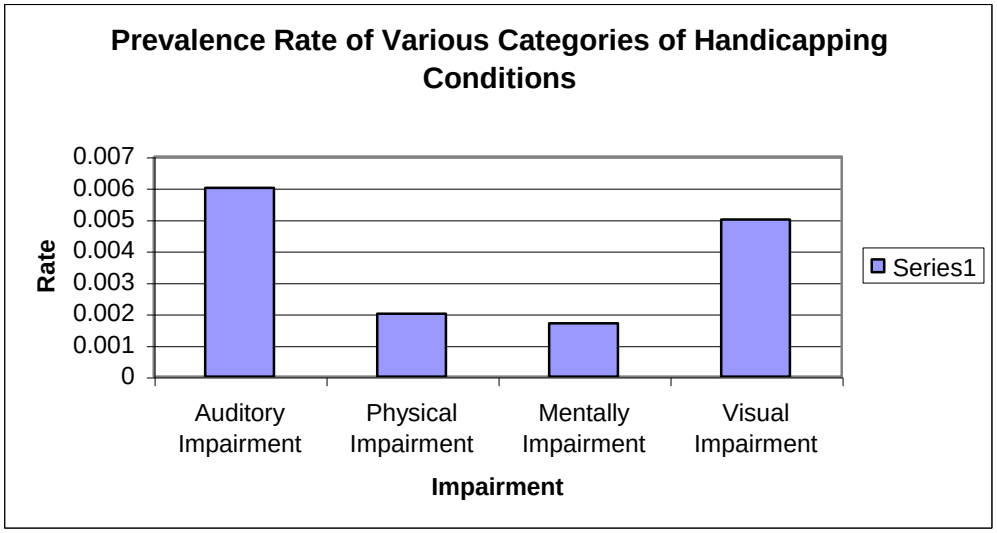



**Figure 12 Prevalence rate of various categories of handicapping conditions.**

Table 13 and figure 12 indicate the prevalence rate of handicapping conditions in the schools. It can be observed that auditory impairment has the highest rate of 0.006 followed by the visual impairment with 0.005, then physical impairment with 0.002 and lastly, multiple impairment with the lowest rate of 0.0017. By this finding, the auditory impaired and visual impaired constitute the major groups that need special educational services.

**Research Question 8: What are the Educational Placements of the children in the schools?**

**Table 14 Educational placements of auditorily, visually and physically impaired?**

| | AUDITORY IMPAIRED | | VISUAL IMPAIRED | | PHYSICAL IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Residential | 93 | 81.6 | 50 | 56.8 | 24 | 57.14 |
| Day | 21 | 18.4 | 38 | 43.2 | 18 | 42.86 |
| Sub-Total | 114 | 100 | 88 | 100 | 42 | 100 |
| Full time special education classes | 104 | 91.2 | 71 | 80.7 | 10 | 23.81 |
| Part time special education classes | 5 | 4.39 | 10 | 11.4 | 14 | 33.33 |
| Regular class and resource room | 5 | 4.39 | 7 | 7.95 | 18 | 42.86 |
| Sub-Total | 114 | 100 | 88 | 100 | 42 | 100 |

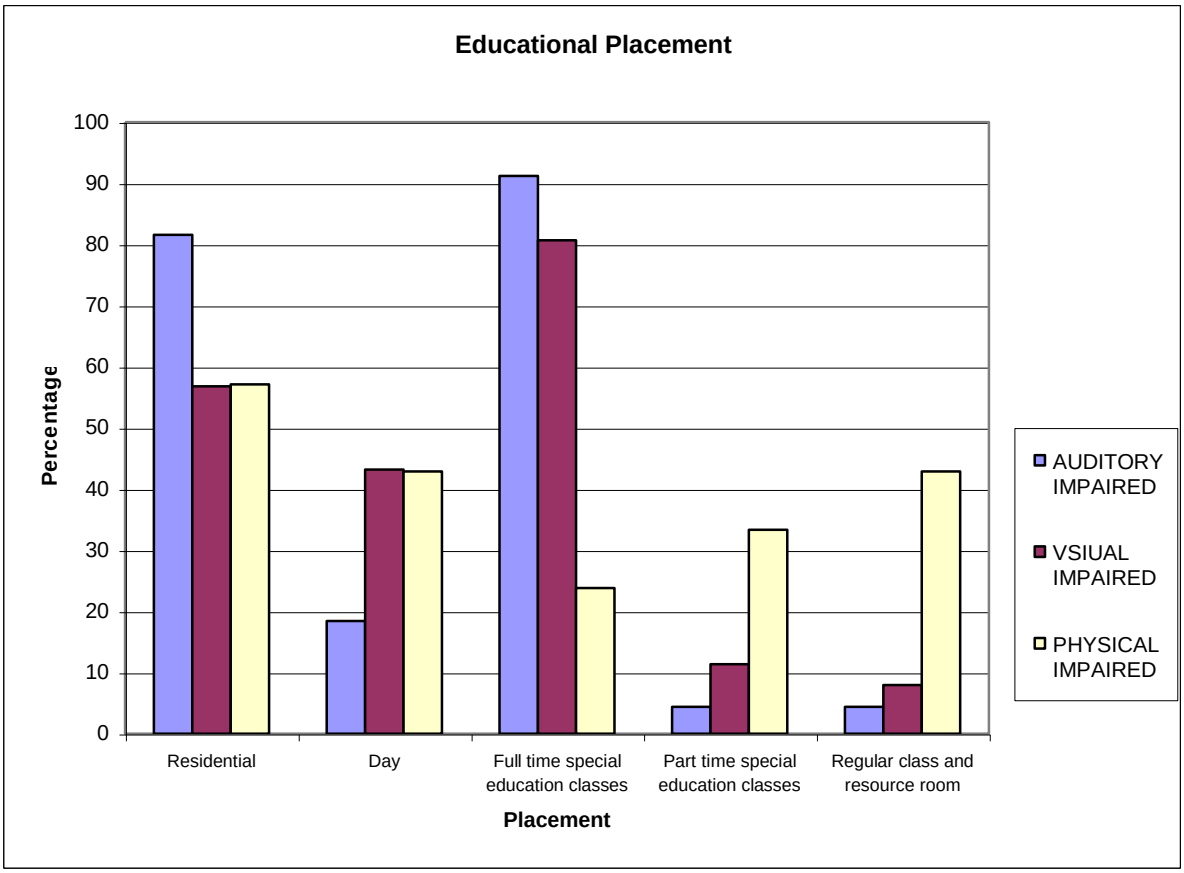



**Figure 13 Percentage of educational placement of the auditorily, visually and physically impaired.**

Table 14 and figure 13 show the number and compare the percentage of placement of the categories of impaired children in the schools. Table 14 and figure 13 show that 93 (81.58%) of the auditorily impaired population are in residential setting while 12 (18.42%) are in day or non-residential program. This is followed by visually impaired constituting 50 (56.82%) of the population in residential setting and 38 (43.18%) in day or non-residential and 18 children is manifested among physically impaired population.

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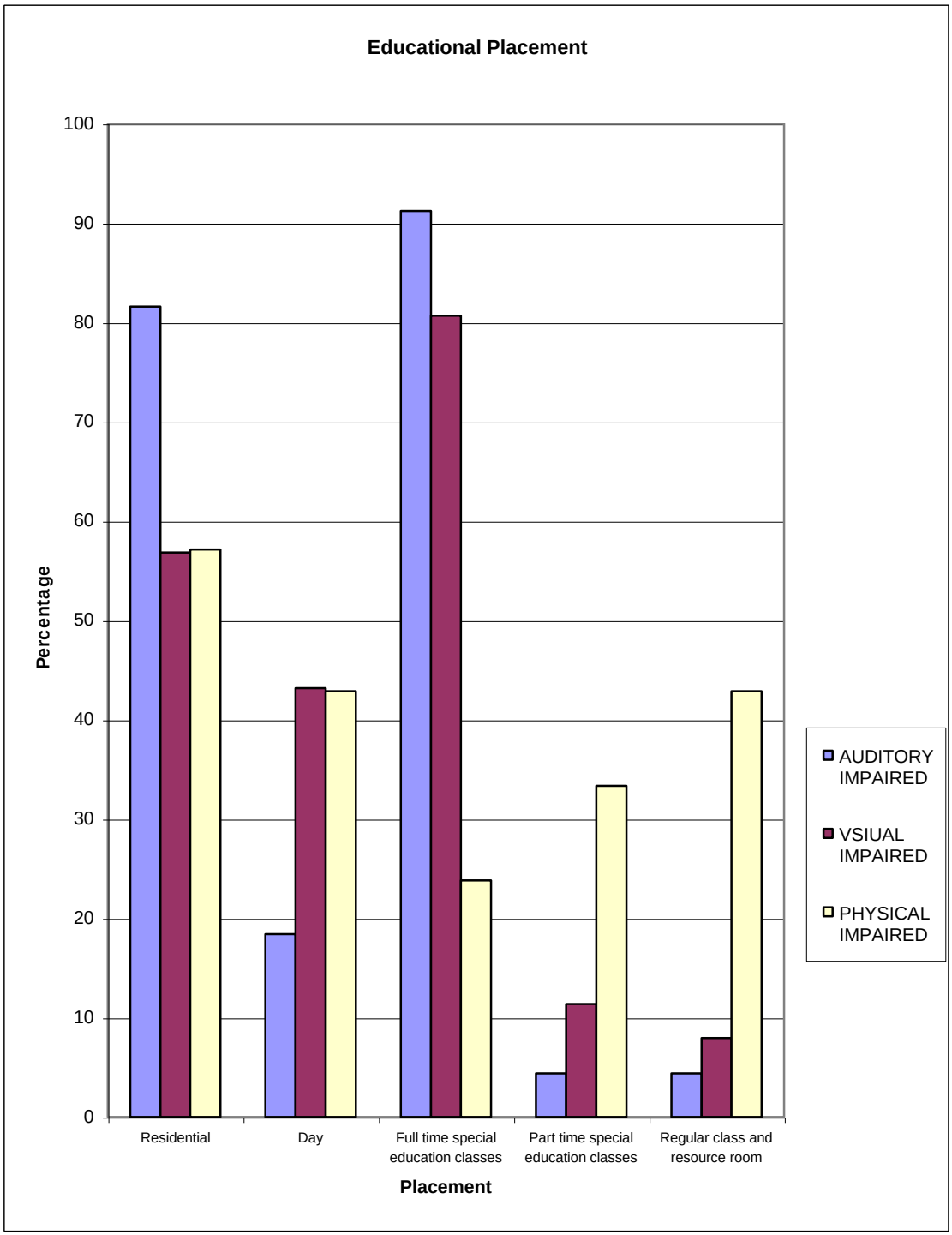


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The highest number and percentage 104 (91.23%) show full-time special Education of auditorily impaired while visually impaired has 71 (80.68%) of the population in the programme.

The data above indicate that a very low percentage of the population of auditorily impaired and visually impaired were in part-time special education classes and regular class and resource room. The majority of physically impaired were receiving services in part-time and regular class and resource room (integrated placement).

**Research Question 9: At what age did the child start receiving special education?**

**Table 15 Age started education**

| AGE RANGE | AUDITORILY IMPAIRED | | VISUALLY IMPAIRED | | PHYSICALLY IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| 1-5 years | 8 | 7.02 | 11 | 12.5 | 8 | 19.05 |
| 6-9 years | 20 | 17.5 | 22 | 25 | 14 | 33.33 |
| 10-13 Years | 38 | 33.3 | 35 | 39.8 | 13 | 30.95 |
| 14-17 years | 29 | 25.4 | 11 | 12.5 | 4 | 9.52 |
| 18 and above | 5 | 4.39 | 7 | 7.96 | 2 | 4.76 |
| Data not available | 14 | 12.3 | 2 | 2.27 | 1 | 2.38 |
| TOTAL | 114 | 100 | 88 | 100 | 42 | 99.99 |

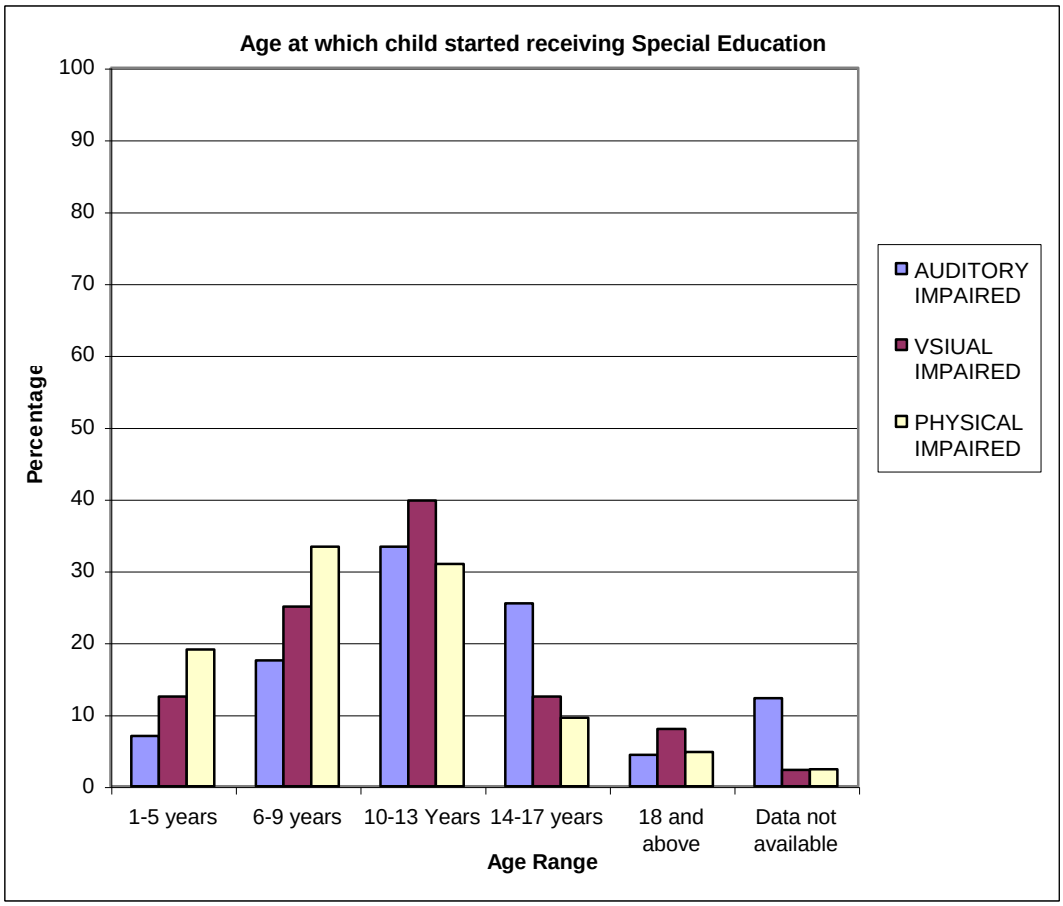


**Figure 14 Percentage distribution of age started special education**.

Table 15 indicates the age range of the population of the auditorily, visually and physically impaired children when started receiving special education. Figure 14 shows that the highest percentage of auditorily impaired (33.33%) started their education at age range of 10-13 years, while that of physically impaired the highest percentage started at 6-9 years. It is worth noting that a majority percentage (76.31%) of the auditorily, visually impaired students started education from the ages of 6-17 years of age indicating that they started receiving education services late after they had been affected by the predicament. However, majority of the physically impaired students started fairly early enough as indicated by the figure that 83.32% of them started receiving education from the ages of 1-13 years.

For this variable, information was not available for 14 (12.28%) of the auditorily impaired, 2 (2.27%) of the visually impaired and only 1 (2.38%) of the physically impaired.

**Research Question 10: What related services other than academic oriented programmes are made available children in schools.**

**Table 16 Related services available in schools, N=3.**

| Educational Services | Number | % |
|---|---|---|
| Transportation | 1 | 33.33 |
| Audiology | 1 | 33.33 |
| Vision Correction | 0 | 0 |
| Speech Language therapy | 1 | 33.33 |
| Adapted physical therapy | 0 | 0 |
| Physiotherapy | 0 | 0 |
| Vocational Rehabilitation | 0 | 0 |
| Mental health | 0 | 0 |
| Counseling | 0 | 0 |
| Screening/diagnosis | 0 | 0 |
| Mdeical/clinic | 1 | 33.33 |
| Computer services | 0 | 0 |
| Recreational/sports | 0 | 0 |

Table 16 indicates that a greater number of related education services were not provided for the handicapped children in the schools. It is only transportation audiology, speech therapy and medical/clinic services that were provided and each scored 33.33%, thereby revealing the absence of many other services in the schools.

It can be inferred that the schools significantly lack support services to supplement special education programmes. Supportive services such as transportation, speech language therapy, audiology, counseling, vocational therapy, physical education or recreation, screening, vision correction and diagnostic medical services facilitate learning and enhances the well being of the handicapped children (Meyen, 1996).

**Research Question 11: What are the vocational and alternative-living Potentials of Handicapped children?**

**Table 17 Vocational Alternative-Living situation after school**

| AGE RANGE | AUDITORILY IMPAIRED | | VISUALLY IMPAIRED | | PHYSICAL LY IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Independent apartment | 13 | 11.4 | 20 | 22.7 | 4 | 9.52 |
| Minimally supervised apartment/home | 3 | 2.63 | 13 | 14.8 | 3 | 7.14 |
| minimally supervised group apartment | 6 | 5.26 | | | 5 | 11.9 |
| Maximally supervised group apartment | 8 | 7.02 | | | | |
| At home with family | 84 | 73.7 | 55 | 62.5 | 30 | 71.43 |
| TOTAL | 114 | 100 | 88 | 100 | 42 | 99.99 |

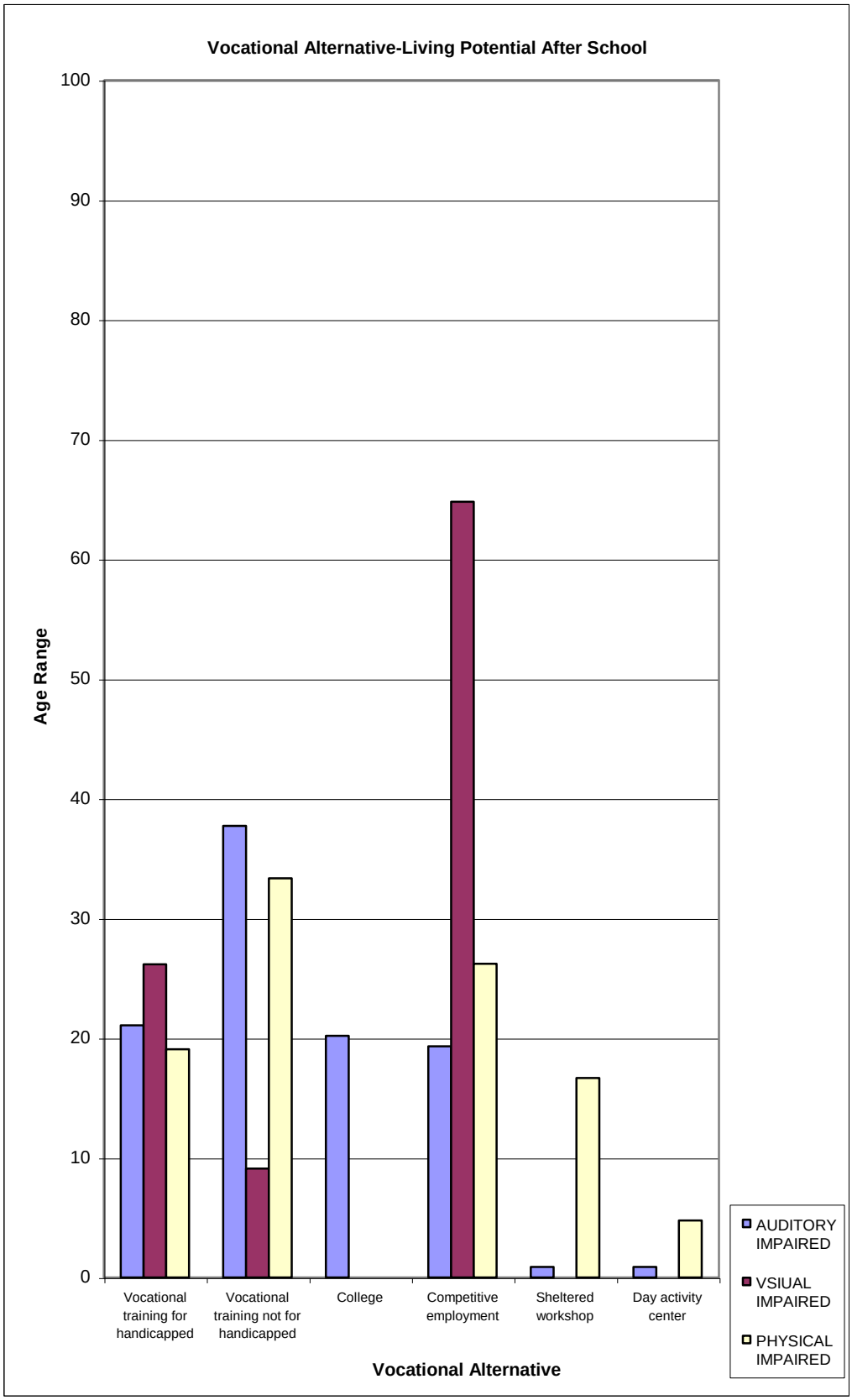


**Figure 15 Bar chart showing percentage distribution of vocational alternatives.**

Table 17 shows the number of the vocational alternatives of the population of the categories after living school. Figure 15 compares the percentage of the entire alternatives according to categories. The percentage of the categories needing the various work is presented clearly in figure 15.

Figure 16 indicates that the highest percentage (37.72%) of the auditorily impaired will enter vocational training not for the handicapped; for the visually impaired 64.77% will enter competitive employment. Also, the highest percentage (33.33%) of the physically handicapped will enter vocational training not for the handicapped persons. The figure also indicates that an insignificant percentage (.008%) of the auditorily impaired will not be productive members of the workforce after completing school. All the visually impaired as indicated will be all productive members of the workforce after school. However, a significant percentage of (21.42%) of the physically impaired will remain unproductive workforce after school.

**Table 18 Alternative Living Situation**

| AGE RANGE | AUDITORILY IMPAIRED | | VISUALLY IMPAIRED | | PHYSICALLY IMPAIRED | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Independent apartment | 13 | 11.4 | 20 | 22.7 | 4 | 9.52 |
| Minimally supervised apartment/home | 3 | 2.63 | 13 | 14.8 | 3 | 7.14 |
| minimally supervised group apartment | 6 | 5.26 | | | 5 | 11.9 |
| Maximally supervised group apartment | 8 | 7.02 | | | | |
| At home with family | 84 | 73.7 | 55 | 62.5 | 30 | 71.43 |
| TOTAL | 114 | 100 | 88 | 100 | 42 | 99.99 |

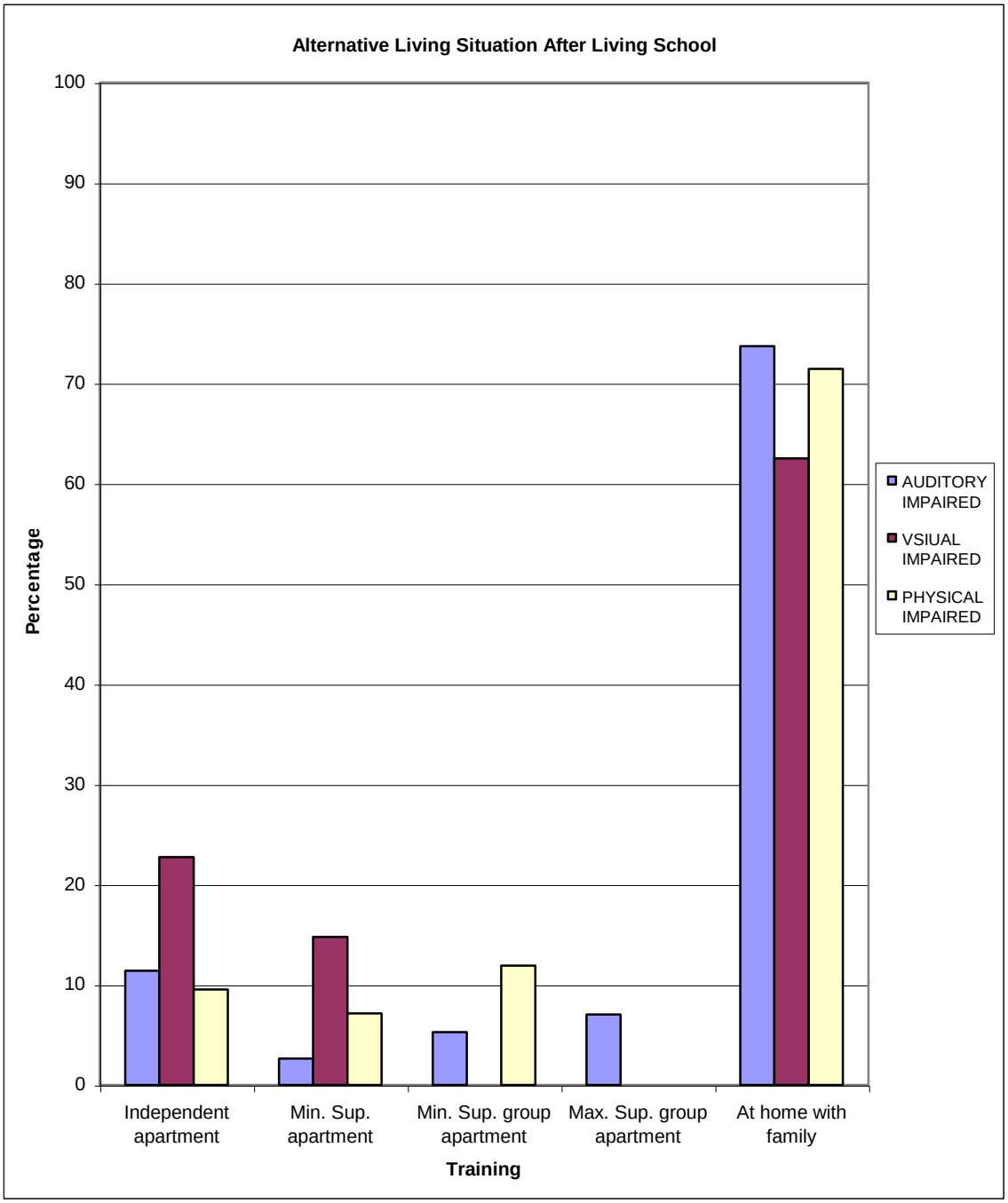


**Figure 16 Percentage of the population after completing college or vocational training.**

Table 18 and figure 16 indicate that majority of the auditory impaired 73.68% visual impaired 62.50% and physically impaired 71.43% is expected to live at home with family; 11.40% of auditorily impaired, 22.73% of the visual impairment, and only 9.52 percent of the physically impaired will live in independent apartment.

Table 18 and figure 16 also indicate that a significant percentage 14.77% of visually impaired is expected to live in a minimally supervised group apartment. Maximally supervised group apartment is expected to attract 5.26% of the auditorily impaired and 11.90% of the physically impaired.

## 4.5 SUMMARY OF FINDINGS

From the result of data analysis and discussions of results, the following conclusions were made.

1. There are various categories of handicapped children existing in the schools in the state and out of which auditorily impaired is most prevalent, the least being that of multiple impaired.
2. Most of the handicapped in the schools are of Hausa ethnicity consisting 56.57% of the entire population. This is followed by the Sayawa having 14.60% and Basayi with the least percentage of the population of only 1.09%. it was noted that the handicapped children come from a total of nine ethnic groups found in the state. These include the Hausa, Sayawa, Fulani, Jarawa, Igbo, Tagula, Wage, Ngas and Basayi.
3. The causes of the various categories of impairment of children in the schools, among others, include the following factors which ranked highest: Meningitis for auditorily impaired, measles for the visually impaired and the physically impaired had poliomyelitis as the most frequent factor.

4. It was also discovered that both deaf children and children with low hearing were educated in the schools. A significant number of children with low hearing level which could otherwise benefit in the visual normal education programme were educated in the Special Education schools for the handicapped.
5. Also, a significant number of children with low vision (usable vision) were also found in the same programme with blind children.
6. There is indication that more children were affected by various categories of impairment early in life, at age range of birth to nine years. The least number of children had the impairment set in at age eighteen years and above.
7. The schools operate both residential and non-residential programme. However, a very high percentage of each category of the impaired children were residential students. Also a high percentage of the auditorily and visually impaired children were in full-time special education programme while a majority of physically impaired were receiving services in part-time and regular class as well as resource room.
8. The highest percentage of auditorily impaired and visually impaired started school at age range of 10-13 years, while that of the physically impaired 33.33% started at 6-9 years. It was generally noted that majority of the impaired children started receiving education late after they had been inflicted by the impairments.
9. A high percentage of the population will enter into competitive employment and vocational training not for the handicapped. This means that very low percentage of the population will not be productive members of workforce after school.

Also, most of the children would be able to live independently at home with family. However, a significant percentage of visually impaired and physically impaired is expected to live in minimally supervised group apartment and maximally supervised apartment respectively.

## 4.6 IMPLICATION OF THE FINDINGS FORE EDUCATION SERVICE PROVISION.

These findings have important implications in the provision of education service for the handicapped children in the schools. For example, the5 handicapped children in the schools represent various ethnic groups found in the state but a greater percentage of the number is found among a Hausa ethnic group. This indicates that special education services should be targeted on this ethnic group more important expectation is the provision of precurtive special education services for this group so as to reduce to the barest minimum the prevalence of handicapping conditions in the area.

The finding indicates that meningitis; measles and poliomyelitis were the highest prevalent causes of auditory impairment visual impairment and physical impairment respectively. This has implication on the type of special education that should be provided in the schools. The knowledge of this suggests that special education programme in the schools should cognisance of the above to adequately enrich these areas since the population has a greater percentage number of handicapped children as victims of the diseases mentioned above.

The data that 287.41 percent of the visually impaired had useable vision indicate a need to emphasise visual assessment, stimulation and alternative approaches to training of children who have low vision. The same goes for the auditorily impaired children with low hearing level. There is also the need for services and mainstreaming approach to give the children the opportunity to attain their full potential.

Similarly, the age at which a disability is detected has important educational implication. The earlier, for example, the auditory or visual impairment is detected and early intervention programme instituted the less the effects of the associated problem of disability (Shown, 1990). The finding indicates that a good number of the handicapped children impairment was detected early in life. Therefore education services for them should

start early ass soon as detected. However, for the fact that adequate information exists on the age at which a reasonable number of the impairment was detected implies that no serious attention has been paid to the importance of early detection of the problems and early provision of education services for the various handicapped children in the area. With high percentage of the population in the residential school with existing facilities would be likely centres for programmes emphasising functional academic, prevocational, vocational and daily living skills training. These schools could offer special summer programmes for pupils educated in other settings who do not have such programmes available to them.

Data from the study indicate a need for more daily living skills, training and functional vocation related to practical living and work situation.

## 4.7 CONCLUSION

It would appear that the pilot study has relevance for the main study. It served the main purpose of validity and redesigning of the research instrument. For instance, the result of the pre and post validation guided the modification of the Demographic Survey Instrument (DSI).

Also, the results obtained from the analysis of data provided enough evidence to conclude tentatively that the main study is suitable, relevant and can be carried. However, the results obtained in the pilot study may hold true or not for the main study because the results of the main study, which would use a larger data, may most probably be different.

The overall promise of the pilot conducted showed that the design and methodology chosen for the main study would be adequate and viable.