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FAMILY PLANNING KNOWLEDGE, ATTITUDES AND PRACTICE AMONG SELECTED POST-PRIMARY SCHOOL STUDENTS IN A CITY IN NORTHERN NIGERIA

By

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ABSTRACT

FAMILY PLANNING KNOWLEDGE, ATTITUDES AND PRACTICE AMONG SELECTED POST-PRIMARY SCHOOL STUDENTS IN A CITY IN NORTHERN NIGERIA

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Forty-eight percent of Nigeria's population is under age 15. The population is expected to double in 25 years. Reproductive health issues and AIDS (Acquired Immune Deficiency Syndrome) are of primary concern to Nigeria and to Africa generally. This study employed a questionnaire to learn the level of reproductive health knowledge, attitudes, and practice among 416 male and female students ages 10 to 16 in a city in northern Nigeria.

The Chi-square statistical procedure was used to compare demographic characteristics with knowledge and attitudes of the pre-teen and teenage youth. Statistically significant ($P < 0.05$) relationships were found between variables such as, knowledge of reproduction, family planning,birth control, and AIDS when each was compared separately to age, gender, living situation while at school, school club memberships, etc. With respect to reproduction and related topics, older teenagers indicated more knowledge than pre-teenagers, girls more than boys, and those living in dormitories more than those living at home or in rented houses.

Television ranked first in terms of students' sources of information on reproduction, pregnancy, birth control,and

AIDS. Newspapers ranked second, radio third, teachers fourth, and parents fifth. Perhaps the most striking data are the "I don't know" responses focusing on AIDS. Thirteen percent had not heard of AIDS, 27% did not know how AIDS is transmitted, 29% did not know the seriousness of AIDS, 37% did not know how to avoid AIDS, and 14% did not know that a mother with AIDS might infect her baby. Recommendations are made for increasing health services and education about reproductive health and AIDS for pre-teen and teenage students.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Nigeria has a population of 122.5 million and is projected to double to 245 million in 25 years. The birth rate is at 44 per 1,000 population with the population increasing at a rate of 2.8 percent annually. The Total Fertility Rate for Nigerian women is 6.2 children with a contraceptive prevalence of 5%. Nigeria has 105.6 million children with 53.4 percent under age 16, and 21.8 percent under age 5. The annual death rate of Nigerian infants under age one year is 119 per 1,000 live births. This rate is 115 for Western Africa, 102 for Africa as a whole, and 14 for the more developed world. (Population Reference Bureau, 1991.)

Studies show the typical causes of infant mortality are low birth weights, births spaced within 18 months of another, and births to very young mothers. The Nigerian maternal mortality data show an annual rate of 800 maternal deaths in 100,000 live births, (Akin, 1986, 1988, and World Population Policies, 1989).

The Nigerian educational system enrolled 94 percent of the male and 70 percent of the female children at the elementary school level in 1983. In 1987 it was reported that an overall total of boys and girls showed 29% of the age group were enrolled, (Oyeka 1986; Gyepi-Garbrah, 1985; Adepoju, 1987). The high enrollment in 1983, may be related to economic reasons. Universal Primary Education (UPE) was introduced in 1976, favored by the oil boom. The decline in education in 1987 was a result of, 1) the fall in oil prices in the world market; 2) mismanagement of oil funds; 3) Nigeria's loan from the International Monetary Fund (IMF) which led to economic austerity; and 4) rapid decline in the purchasing power of the naira, the Nigerian currency. The UPE children's transitional period from the first level (Primary School) to the second level (Junior Secondary School) was in 1982. Studies indicate that the Nigerian government had insufficient classrooms for promotion of the Primary School achievers to the Junior Secondary School level, although some state governments in Nigeria were claiming 100% transition to the Junior Seconcary School level. Although for 1987, the overall education enrollment rate was down from 1983, there was significant progress in increasing literacy among the Nigerian youth. Enrollments of females are significantly higher in recent years (Loma, 1982; Adamchak, 1987). In 1985 UNICEF reported that adult

literacy rate for Nigeria was 54% for males and 31 for females.

In 1986 the Nigerian Government Council of Ministers approved a population policy. The Armed Forces Ruling Council approved the population policy in 1988. According to Kuti, "...the population policy approved in 1988 acknowledges the dangers of rapid population growth and emphasizes child-spacing, delayed marriages, and a limited number of pregnancies per woman in order to break the rate of growth. The major strategies include family planning, maternal and child health, greater male responsibilities in family life, enhancement of women's status, population education and information, intensified rural and urban development, and improved data collection for planning. The goal is to reduce the rate of population growth from 3.3 percent to 2.5 percent by 1995 and to 2.0 percent by the year 2000," (Kuti, 1989, p. 218).

In 1990 the United Nations adopted the Convention on the Rights of the Child giving details for upgrading the lives of children throughout the world. To improve the lives of children in developing countries there is a need 1) to improve child survival, development, and protection; 2) to support women's health, education, and nutrition; and 3) to improve basic education. (UNICEF, 1990, p. 14-16).

The study completed by Gyepi-Garbrah (1985) on the situation for adolescents in Nigeria showed that early

pregnancy is strongly associated with high rates of abortion, stillbirth, and infant and maternal mortality and morbidity. The study also indicated significant school dropout rates among female adolescents and a decrease in economic opportunity for females. These problems of rising sexuality and fertility among the adolescent population were recognized by the health and medical community, (Ladipo, 1986, Spillane (1975). Also the trends pose serious threats to parents and concerns for the institutions and organizations that work with the youth in Nigeria. Gyepi-Garbrah identified 9 reasons for Nigerian adolescents' fertility, these are:

> 1. Most adolescent fertility is marital. Early age at first marriage serves to legitimatize most births among adolescents. However, as age at marriage rises without a commensurate fall in adolescent sexuality, a larger portion of adolescent births will occur out of wedlock. This, especially in the poor urban communities where the traditional extended family support system is crumbling, will generate serious social implication.
>
> 2. As a result of the combined effects of the continuing fall in the age at menarche, decline in adolescent subfecundity, increased sexual activity among adolescents, low contraceptive use rates and the tremendous growth in the size of the adolescent population,the number of adolescent pregnancies, particularly those conceived out of wedlock, continues to increase leading to concomitant increase in abortions.
>
> 3. Most undesired adolescent pregnancies are terminated, usually in a clandestine manner, by inadequately trained individuals under poor hygienic conditions. Only after serious and often fatal complications develop

do adolescents seek medical attention at hospitals.

4. Complications arising from induced abortion constitute one of the major causes of pregnancy related maternal morbidity and mortality among adolescents in Nigeria.

5. Because of general ignorance about the etiology of sexually transmitted diseases, sexual permissiveness among some cultural groups and the general unsatisfactory management and treatment of STDs in Nigeria, the incidence and recurrence of infections and early and late complications of gonorrhea, including subsequent infertility, are common.

6. Complications of STDs are not restricted to adolescent parents, they can affect children. In addition to ophthalmia and congenital syphilis, usually contracted from infected parents, children also contract some forms of STDs from the contaminated bed clothing, underclothing and towels of parents, sisters and housemaids, and in some cases, from precocious sexual intercourse.

7. The diminished sensitivity of some gonococcal strains to penicillin in the country poses a serious threat to the containment of STDs among both adolescents and the overall population. This is again aggravated by the chronicity of STDs and the fact that most of the primary cases of these diseases are inadequately treated by unqualified persons.

8. Early childbirth in Nigeria is associated with severe anaemia, obstructed labor due to cephalopelvic disproportion, preeclampsia, eclampsia, pueperial infection and low birth weight. However, when good antenatal care is provided, many of these complications are diminished considerably.

9. Although age may be a very important factor, there are other equally significant variables that affect adolescent pregnancy related mortality and morbidity. These factors include prenatal and postnatal care, mother's parity, socio-economic status and

marital status at the time of pregnancy (Gyepi-Garbrah, 1985, p. 48).

Based on this researcher's experience as a school administrator in Nigeria, there are high rates of deaths among adolescents girl who, having become pregnant, attempt to abort the pregnancy in order to remain in school. Death often occurs when they attempt the abortion secretly by taking overdoses of medicine often prescribed by their boyfriends, roommates, or quack doctors. They are usually afraid to go to the hospital or clinic where their story could easily be told to the school authorities. The Government's policy on school girls who become pregnant outside of wedlock is dismissal from school. Married girls who become pregnant are forced to take a maternity leave for one year. Only a very small percentage return to school after their maternity leave. Often they become pregnant a second time, about the time they are due back in school.

Purpose of the Study

1. To appraise adolescents' knowledge about reproduction, human biology, and facts about family life.

2. To assess adolescents' knowledge regarding pregnancy and unwanted pregnancy and how they deal with it.

3. To examine adolescents' attitudes toward birth control and their knowledge of contraception.

4. To explore adolescents' knowledge about Acquired Immune Deficiency Syndrome (AIDS).

5. To explore adolescents' knowledge of factors that affect a child's survival before the students are confronted with their own child's survival.

6. To suggest possible policy changes for the schools, and individuals who work with adolescents based on results of the study.

7. To determine whether there is a developmental sequence to students' information levels.

Focus of Present Study

The health of Nigeria's children and their prospects for education are significant to this researcher. As an educator anticipating a return to a position in educational leadership, one can ask, What role can education play in preparing the Nigerian children for the future? What role can education play in implementing the government's population policy calling for fewer births and longer spacing between births? In the face of the AIDS epidemic, how can Nigerian children and youth be protected?

Most educated Nigerians are aware of the link between goals, resources, and the increasing population. This researcher's first inclination was to survey current family heads regarding their knowledge, attitudes, and practice of family planning. However, given the seriousness of the Nigerian population issues and their application to thousands of children being born yearly and those youth already

in school and reaching childbearing age, the spotlight was refocused on the youth in school. If parents and educators so decided, with some baseline information and education, Nigerian adolescents' future career planning for themselves and planning for their future families might be based on more solid information.

The Gyepi-Garbrah (1985) study of Nigeria adolescents focused on sexual practices of female students while a number of other studies focused on mature women. This question followed: Could we obtain more definitive information regarding a younger group of adolescents both males and females, 1) to discover the developmental baseline level of students' knowledge and attitudes regarding pregnancy, contraception, and abortion, and 2) to discover the influences on their information and attitudes of the family and peer group? The results might help educators plan what needs to be introduced in the educational process. For example, could young people learn, 1) to protect themselves and others from AIDS, 2) to prevent unwanted pregnancies, and 3) to learn about child development to help assure a baby's survival before the students are confronted with their own and their child's survival?

Research Questions

1. Are students' personal measures (microsystem) related to measures of their knowledge, attitudes, and

practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

2. Are students' family measures (microsystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

3. Are school related measures (mesosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

4. Are community measures (exosystem) related to family measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

5. Are students' measures of communication with parents and siblings, with teachers and students, and with spouse or boy/girl friend (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

Limitations and Assumptions

Each research design has limitations. The sample size of 416 (202 males and 214 females) respondents out of a population of 12 thousand in the four schools is reasonable. The sample size and school selection should make one cautious regarding generalizing to other schools and other

areas of Nigeria. The study surveyed adolescents' opinions rather observing the behavior. The sample of students, while relatively large was not randomly selected. The parents appear to have more formal education than might be the case in a random sample.

Sexual topics are not freely discussed between adults and adolescents in the Nigerian culture. Cultural barriers and privacy usually accorded human sexuality topics can be limitation. The study was conducted among post-primary school students ages 10 to 16. This population might be naive regarding facts about human sexuality, abortion, contraceptive use, birth control, family planning methods, and AIDS. Data collection was dependent on an honest response to the items in the questionnaire. This method of data collection is subject to limitations. In addition, students may respond with what was uppermost in their minds at the specific time, however, their responses might change rapidly as a result of various factors. Students were tested in English, the language of their classes. However, subjects of the items may be more frequently discussed in other languages, so there could be some misunderstanding. Similarly, individual responses could be biased, depending on students' mood and attitudes.

The deep trust parents accord all ministry of education officials, principals of schools, and school teachers interacting with students in all aspects of school activities,

including teaching of societal and moral values, made the collection of these data possible.

Definitions of Terms

The following terms are defined in the context in which they are used in the research:

Family

Family is commonly known within the Nigerian culture and refers to a group of individuals (father, mother, siblings, uncles and aunts, of both the husband's and wife's or wives' families and their children), those who share resources, common goals, and blood relations. In this study family may be either polygamous or monogamous.

Family Planning

Family planning refers to choices made by sexually active people to limit the number, or to space their children.

Adolescence

Adolescence refers to the transitional period from childhood to maturity in the life cycle. In Nigeria, adolescence was formerly a period marked by ceremonial initiation of males and females into adulthood. This practice is no longer common although there is a desire on the part of some people in some ethnic groups for a cultural revival of the traditional ceremonies inducting adolescents into adulthood.

Sex education

Sex education refers to the teaching of human biology, that is, how the human body works, how reproduction occurs, and about sexual relations and family life. In sex education students are taught about pregnancy, contraceptives, birth control, Acquired Immune Deficiency Syndrome(AIDS) and sexually transmitted diseases (STDs). Adolescents need appropriate knowledge of their physical, mental, and emotional maturing process as related to sex. Education will help reduce fears and anxieties that usually accompany sexual development.

Knowledge of reproduction

Knowledge of reproduction refers to understanding human biology and facts about how life begins, and about how babies are born to a human family.

Knowledge of contraceptive methods

Knowledge of contraceptive methods refers to knowing ways to block or prevent sperm from reaching the ovum, therefore preventing fertilization and pregnancy. The Nigerian community understands contraceptive as medicine for stopping birth usually given by a native doctor when the mother's health is at risk.

Knowledge of Acquired Immune Deficiency Syndrome (AIDS)

AIDS refers to a syndrome characterized by loss of immune function, caused by the human immunodeficiency virus (HIV). AIDS is spread by direct exposure to body

secretions. The disease is currently most commonly spread by sharing infected intravenous needles among drug abusers and by sexual intercourse with an infected individual (Clayman, 1989; Kahn & Holt, 1990). AIDS is commonly known in Nigeria as a foreign disease from Europe and America. It is associated with prostitution, lesbianism, oral sex, and homosexuality. AIDS as a deathly disease is still being denied among many Nigerian communities, according to Kuti, the minister of health for Nigeria. Kuti reported that only 100 cases of AIDS have been reported and 600,000 (HIV) carriers, and that AIDS is being treated in an arcane manner (Kuti, 1991).

Knowledge of pregnancy

Knowledge of pregnancy refers to understanding the condition of carrying a fertilized egg or fetus in the body.

Knowledge of birth control

Knowledge of birth control refers to understanding how to regulate the number and spacing of children. A method to help women prevent unwanted pregnancies. These methods include: injection, Norplant, abstinence, IUDs, R.U. 486, condom, diaphragm, rhythm method, sterilization, vasectomy, and African traditional methods (herbs) which are commonly known as medicine for stopping births (Udjo, 1984).

Traditional method

Traditional method refers to medicine used to block or prevent pregnancy in Nigeria. This is the commonly known local definition.

Safe sex

Safe sex is generally used to describe preventive measures taken to reduce the risk of acquiring sexually transmitted diseases, especially AIDS. The term includes avoiding sexual intercourse before marriage, maintaining a monogamous relationship, avoiding sexual intercourse with known intravenous drug users and those who test positive for the HIV virus, knowing about your partner's sexual background, using condoms as well as a spermicide, and avoiding all possible exchange of bodily fluids.

Native doctor

Native doctor refers to a traditional medicine man or a herbs man or woman who acts like a medical doctor for those who are ill. Apart from his or her practice of medicine the individual may assume the position of a psychologist, counselor, and an adviser on the present and future.

Overview of the Study

This study is organized into five chapters:

Chapter I, Introduction, includes the statement of the problem, purpose of the study, focus of the study, research

questions, limitations of the study, and definitions of key terms used in the study.

Chapter II, Review of the Literature and Theoretical Framework, includes relevant studies and a description of the Bronfenbrenner ecological model as it relates to the study.

Chapter III, Research Design and Methodology, includes the research procedures followed in this study. Described is the sample, the instrument used for data collection, and the procedure used for its administration.

Chapter IV, Presentation and Analysis of Data, includes the analysis of data collected in the study.

Chapter V, Summary, Discussion, Conclusions, and Recommendations, includes a summary of the findings, conclusions, implications of findings, limitations, and recommendations for further research.

CHAPTER II

REVIEW OF LITERATURE AND THEORETICAL FRAMEWORK

This chapter reviews studies that contribute to understanding population issues and adolescents' knowledge, attitudes, and practice of reproduction, pregnancy, birth control, and AIDS. The review also establishes a problem area framework, which does not appear to have been addressed by previous studies. The present study focused on male and female students, ages 10 to 16. This age group equals 40 percent of the people living in developing countries and 53.4 percent of the Nigerian population. Their fertility as adults is projected to be so enormous that it will radically change the world population in the next century (Sadik, 1991, p. 9). Included are current studies on adolescents' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS, especially as related to Africa, and to Nigeria in particular.

Organization of the Literature Review

The first section of the review covers population projections and the use of family planning in general; the second section reports adolescents' attitudes toward reproduction, contraceptive use, and birth control methods; and the third section is on adolescents and AIDS.

Population and Family Planning

Nigeria has the largest population in Africa with a total population of 122.5 million which is projected to double to 245 million in 25 years. Nigeria has 55.1 million children under age 15, this equals 48 percent of the total population. The Nigeria birth rate is 45 per 1,000 population with the population increasing at 2.8 percent annually. The total fertility rate for Nigerian women is 6.2 children with a total contraceptive prevalence of 6% (Population Reference Bureau, 1991).

A review of literature indicates that very little research has been done on adolescent fertility in northern Nigeria. Rehan (1984) measured the knowledge, attitudes and practice of family planning among 500 Hausa married women in Katsina, Nigeria. The age range for those women was 15 to 45 years old, and the results indicated that only 5.2% knew of modern contraceptive methods. The research showed that 71.2% were satisfied with their family size.

What are women's attitudes toward family planning in

general? Peterson stated that world wide, there are about 300 million couples who do not want any more children. Peterson reported that in the third world countries more than 70% of all women do not want more children. She reiterated that the figure does not include women who want to postpone their next child, nor does it include the couples who are using unreliable contraceptive methods or unmarried women. Peterson argued that if African women will have the children they really want, the number of births would fall by 27% (Peterson, (1990); Goller (1989). Jacobson stated,

> **To obtain both health and demographic objectives, governments need to take a reproductive health approach to family planning. This entails encouraging (or removing all roadblocks to) the dissemination of information on and access to the greatest possible array of contraceptive methods. It means providing widespread access to safe abortion services. It also means gauging success on the basis of how many reproductive illnesses and deaths can be prevented rather than how many births can be averted (Jacobson, 1991, p. 51).**

Jacobson made an important observation, saying, health services should come first. Health services will improve the quality of life of people in many third world countries. The next urgent need should be economic development. Many third world countries, particularly African, cannot feed their increasing population. Skills for food production should be the next most important and ineluctable need and must be puissantly pursued.

Comparing reports from many developing countries, it is

indicated that 50 to 80% of married women already want to limit or space future births (Sadik, 1991; Popline 1988).

Abortion is illegal in Nigeria. Abortion accounts for 25% of teenage girls' deaths in Nigeria. Social stigma, sudden need for medical care, and withdrawal from school resulting in limiting educational opportunities and meaningful economic participation for women may be related to secret illegal abortion (Jacobson, 1991; Feyisetan & Pebley (1989).

World wide data indicate that the rates of teenage pregnancy among both married and unmarried girls are high. Peterson reported that it has been estimated that 40 percent of all 14-years-old girls alive today will have been pregnant at least once by the time they are 20. Peterson contended that the reason is because many have no access to family planning information (Peterson, 1991; Essien 1975).

The Nigerian school policy states that teenage girls who become pregnant are to be expelled from school. According to Jacobson (1991), one study reported that 52 percent of the pregnant teenagers were expelled from school in Nigeria. These were girls who allowed their pregnancy to be known. There are teenage girls who would not wait until their school authorities discovered them. They voluntarily and secretly withdraw from school. Furthermore, what happens to those girls who secretly aborted, or withdrew from school completely? According to Althaus (1991), such

teenage girls suffer from ostracism or violence from family members.

Child health is an important issue in third world countries, such as Nigeria. Marshall and O'Haire held that the first child of a teenage mother is 80% more likely to die than the second or third child of a woman age 20 to 24. Children born less than two years after their older brother or sister are 66% more likely to die in infancy. The researchers indicated that children who are unwanted are more likely to be neglected, abused, or abandoned (Marshall and O'Haire 1991; Schofied 1986).

Sadik contends that adolescent girls are at particular risk when health services do not meet their needs. Sadik stated,

> **Maternal deaths among women age 15 to 19 years are up to three times as high as for those age 20 to 24. Up to 80 percent of adolescent pregnancies outside marriage are unwanted (1991, p. 12).**

What about breastfeeding and delaying the next pregnancy? Studies indicate that breastfeeding has direct nutritional benefits, assists child spacing, helps limit the number of children, and enhances child survival. The researchers stated,

> **The potential impact of breastfeeding on fertility is highest in societies with low levels of modern contraception, little supplementation of breast milk, low nutritional status of women, and cultural taboos against sexual relations for the duration of breastfeeding (VanLandingham, Trussell, and Grummer-Strawn, 1991, p. 132).**

Peterson commented that breast milk is nutritionally

ideal and is hygienic. It provides infants with immunity against infectious diseases. The researcher's study indicated that in the third world bottle fed infants are up to 25 times more likely to die of diarrheal disease than infants who are exclusively breast-fed. Breastfeeding benefits a child's health. Breastfeeding also delays the return of fertility after childbirth. However, mothers who breastfeed should also be encouraged to use another contraceptive method to assure spacing of at least two years between births (Peterson, 1991).

Regardless of the official stated educational goals for females in Nigeria, the marriage age for girls in northern Nigeria is still in the early teens. According to Callaway (1986), Due (1989), and Parpart (1985), the average age for marriage for Nigerian Muslim girls is twelve. After marriage, most muslim girls live in seclusion and can only leave their houses at night to visit their relatives and they must be accompanied by a male relative to ensure protection. These customs keep Muslim girls out of school, according to Coles (1983).

According to the estimated world wide figure, as many as 60 per cent, or a total of 105 million girls are excluded from school (Sadik, 1991). Exclusion of girls from school is common in Islamic regions of the world, in Africa, and in particular Nigeria. Many of these girls marry as early as twelve years old. The birth rate is higher in Muslim

regions. Girls with a secondary education are likely to have four children while those with early marriages without secondary education average seven children. Several studies indicate that education has a negative effect on fecundity. That is, girls are likely to marry late and desire less children when they receive an elementary education. Bongaarts and Menken stated,

> **The supply or potential output of children is defined as the number of surviving children a couple would have if fertility were not deliberately limited. In contrast, in many poor developing countries, as well as in historical societies, either the demand for surviving children is close to or exceeds the supply, or the desire for children may not be perceived in demand terms (1983, p. 27).**

Up to the present Nigerians have shown no desire to limit family size. The general view was that children were a blessing from God. Therefore, the more children a family had, the more prosperity and blessings the family received from God. Children were a major resource for labor in the subsistence economy. The more children a family had the more the family was capable of producing in the agrarian economy. Modern medical care was limited. The mortality rates were very high resulting in the high demand for more children to compensate for those who die. The uncertainty of children's survival is one factor that encouraged having large families. The practice of polygamy promotes the taking of additional wives and is seen as increasing labor

and resources for the family. Therefore, the concept of fertility control was never an issue.

Better medical care: immunization, hygiene nutrition classes, oral rehydration therapy, and other services have improved chances of children's survival. However, efforts to control family size have continued to be resisted.

Berelson (1974) at the worldwide conference on the issues of population reports that three positions were presented: 1) The Family Planning Position--that there was a need to reduce the population growth rates, and, hence fertility rates throughout the world, particularly in the developing countries; 2) The Economic Development Position that the major issue was economic development and not population, indicating if people are educated they will develop their natural resources and would correct population problems; and 3) The Academic Critic Position--that the major focus was demography in the study of family planning and development. Sadik (1991), C.D.C (1983), Berelson (1974) and others found that to have effective family planning women's status must be improved. Therefore, better education must be available for girls. Women need equal access to good jobs at equal pay. And women should participate in government and private business.

Witlin and others argue that poor countries should foster economic policies that will include social security, help their citizens to build homes and establish stable

communities, increase agricultural productivity and prices, ensure market prices for goods and services, encourage a reliable job market, guarantee banks for saving and borrowing money, provide access to health services, and develop more education, training, and job opportunities, especially for women. With such improvements fertility will fall and population will not be a problem (Witlin, 1987, Cliquet, 1987 and Isenalume, 1986).

Adolescents' Attitudes Toward Reproduction and Contraception

Rich (1990), completed an adolescent fertility report on Nigeria with special reference to Kaduna state, Nigeria. Rich identified cultural diversity as an obstacle to a uniform adolescent fertility program in Nigeria.

Rich surveyed fertility attitudes among predominantly muslim Hausa and Fulani adolescents in a rural village near Zaria. Rich found they have more babies than other ethnic groups and also have little knowledge about modern contraception methods. This rural population depends on the traditional methods, namely withdrawal, traditional medicine, and abstinence. According to Jaggar (1988), Harter (1961), Hersel (1973), Inkeles (1966), and Hong (1970) the major decision regarding reproduction is made by the men.

Jacobson (1991) reported that women are denied access to critical health care. In Zaria, for example, no matter

how obvious the need for hospital care becomes for the girl who develops obstructed labor, permission can usually be given only by the husband. If he happens to be away from home, those present are often unwilling to accept such responsibility. Termination of pregnancy is not legally permitted whether the woman is married or single. In northern Nigeria the decision to terminate a pregnancy must be approved by the husband. The approval is given only when the woman's life is at risk. Many Nigerian women and sometimes young men do not have autonomy in decision-making, and,therefore, cannot determine family size. Their parents or grand parents make this important decision for them. Akinwumi (1985) indicated that many Nigerian women were not free to practice birth control without the consent of their men. Akinwumi reported that young families need autonomy regarding discussions of family size because their decisions are presently influenced by older relatives and other factors.

Walle and Foster observe fertility trends in Africa and conclude that African fertility is high. They argue that apart from urban elites, ordinary people from the lower class population in Africa continue to have higher fertility rates compared to Latin America and Asia. Africa continues to maintain lower contraceptive use than any continent in the world. In Africa, culture plays a role regarding family fertility. A number of variables explain the high fertility

rate, these are: 1) low level of economic development; 2) less opportunity and access to modern education for African women than for their Asian and Latin American counterparts; 3) the serious general economic decline and low income per African family; and 4) lack of an old age security system (Walle and Foster 1991).

Adolescents and AIDS

According to Kahn (1991), Clayman (1989) the Acquired Immune Deficiency Syndrome (AIDS) attacks the immune function of the human body. The disease is caused by the human immunodeficiency virus (HIV). AIDS, is spread by direct exposure to body secretions. Recent reports indicated that AIDS is now found in every region of the world, and it is commonly found among sexually active people.

AIDS is found in Nigeria. The perceptions of the people regarding the disease are as follows: Dr. Ransome Kuti, the Minister of Health, Federal Ministry of Health, Nigeria said, "Although 600,000 Nigerians are estimated to be HIV positive, fewer than 100 AIDS cases have been reported since 1986. While North America accounts for over half and Africa for only one quarter of reported AIDS cases, the World Health Organization (WHO) estimates that in fact six million of the world's 10 million people infected with HIV live in sub-Saharan Africa." Kuti concluded that the

greatest danger in the spread of AIDS was complacency and denial (Kuti, 1991).

Dr. Michael Merson, the director of WHO's global program on AIDS, said that the developing countries risk seeing the gains of improved health care overshadowed by the long-term social and financial costs of the disease. As the spread of AIDS in Western Europe and North America slows, Merson said that most of the 5,000 people testing positive for the HIV virus each day live in the developing world (Merson, 1991).

Anderson argues in a study conducted in the U.S. regarding HIV/AIDS knowledge and sexual behavior among high school students that,

> **A sizable minority of students continue to hold beliefs that may actually put them at risk i.e., that birth control pills provide some protection against infection or that it is possible to tell whether people have AIDS by looking at them (1991, p. 252).**

It appears that adolescents in the U.S. do not really worry about the consequences of death because they do not believe that it will happen to them. The general perception is only the old die of AIDS, young people do not.

Theoretical Framework

The theoretical framework used in this study is an ecological one as proposed by Bronfenbrenner (1977) who believes that human development research should include an awareness of the environmental systems within which the

subjects are operating. Bronfenbrenner identified four layers of environment in which the developing person operates. These are called, microsystem, mesosystem, exosystem, and macrosystem.

Microsystem. The center of the layer in the diagram of Bronfenbrenner's model which is the individual's immediate context, i.e., physical setting, activities, roles, and relationships. In the present research focusing on a northern Nigerian city, the developing person's immediate surroundings will be defined more inclusively than for western cultures. In many Nigerian cultural settings, the developing person is identified with three settings in which the individual moves back and forth. These are: 1) the parents' home; 2) the grandfather's home; and 3) the grandmother's home. In these immediate settings, the individual assumes full membership. Bronfenbrenner's concept of "dyadic relationships", therefore, is not seen as bi-directional, but in Nigeria is a more elaborated multidirectional form, in which children affect adult behaviors and are affected by many adults.

In rural Nigeria, children's behaviors affect more adult lives than in the modern cities. In the rural areas, any normal adult may correct or discipline a child in the event of wrong doing regardless of the relationship. Similar rights are assumed by adults in the cities, especially

in the neighborhood where such adults are known by the parents and relatives of the child.

The developing person is more vulnerable at the microsystem than any layer in the four systems. In the African concept and view of the child, the assumption is that the child belongs to any normal adult regardless of the child's relationship with the adult. Therefore, the child should be nurtured, protected, provided for, and disciplined by all normal adults in the society.

Mesosystem. Mesosystem refers to the "interactions among settings containing the developing person." This is an extension of microsystem, according to Bronfenbrenner. It is the persons's relationship with settings, such as the home, school, and neighborhood. According to Bronfenbrenner, the child's development is facilitated by and interdependent in these settings. Their older siblings may take care of their younger siblings, or grandmothers or grandfathers may assume the caregiving role. School environment for the developing person is associated with the home. The children are taught to accept their teachers as a parent, a role many teachers are willing to assume. Parental relationships with their children at this layer of development are interrupted by other caregivers because of other adult influences in the life of the child. However, the adolescents in Nigeria may go long distances by present modes of transfer from their family's home to go to secondary school and live in a dormi-

tory or boarding house. Thus, some children are emancipated from their families and are subject to peer group influences.

Exosystem. In the present study the exosystem includes other settings that do not contain children, but do "impinge upon" the developing person. That is, the setting has an effect on the child's experiences. This setting may be identified as parents' workplace, parents' organizational memberships, institutions like the hospital, church, etc. The Nigerian child is actively involved in some of the settings in the community. For example, in the work place, farm, store, etc., the child is required to contribute to help parents and relatives. In other settings, like the club membership of the parents, the child is not allowed to be seen or heard.

Macrosystem. According to Bronfenbrenner, the macrosystem includes the informal and implicit prototypes for the operation of the culture or subculture, that is, the societal ideology, values, laws, regulations, rules, beliefs, and customs of a particular culture. The goal of ecologically oriented research is to transform the system by, according to Bronfenbrenner, "redefining goals, roles, and activities and providing interconnections between systems previously isolated from each other." (Bronfenbrenner, 1977, p.528).

Careful consideration will be given to the macrosystem.

Information on Nigerian local rules, and policies will be applied. Data on Nigerian population growth, ethnicity, religious beliefs, other issues about health, child mortality, maternal mortality, and AIDS will be provided.

This research relates to Bronfenbrenner's ecological theory of the developing person. An analysis of the microsystem, mesosystem, exosystem, and macrosystem of adolescents is made in order to understand the relationships between a sample of Nigerian adolescents and their environments. Adolescents' levels of information concerning contraceptives, health care, human reproduction, desired number of children, and AIDS, will be studied. This research will focus on both male and female adolescents. Few studies are available on males (Whitley, 1986; Kalmus, Lawton, Namerow 1987; Oyeka 1986; and Ladipo, 1986).

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

The main thrust of this study concerns the health of Nigerian youth ages 10 to 16 and possibilities for improving education. Nigerian survival and progress may depend on improved sex and health education. The study is aimed at discovering adolescents' attitudes, the family influences, and the peer group influences concerning future goals and desired family size. The results can help educators plan what needs to be introduced into the educational process. Given the seriousness of the population and reproduction health issues, suggestions are needed that could help with planning health and education programs for Nigeria's children and youth.

The research method is based on knowledge, attitudes, and practice (KAP). KAP survey was used to obtain information from the respondents in this study. According to Berelson (1966), a KAP survey is an attempt to determine the extent of family planning knowledge, attitudes, and practice in a community, religion, or country. This kind of survey is usually based on the description of what people know,

believe, and do with regard to fertility. If a country, for example, desires to understand the pattern of family planning practice within a community and, hence, to predict future trends or to decide where government activities should be directed, the country has to know who is not practicing family planning. Knowledge, attitudes, and practice (KAP) survey methodology was first developed by Pearl, an American researcher in 1931 who used the survey method to study 31,000 American women. KAP survey methodology focuses on issues such as marriage age and duration, pregnancy history, live births, living children, and fecundity (Berelson, 1966).

The present study was based on a questionnaire administered in the school classrooms with the purpose to gain information about knowledge and attitudes of a sample of adolescents in four selected post-primary schools in a northern city in Nigeria regarding family size and reproductive health issues and the extent of information available to students in their community.

Research Subjects

The total number (N) of students surveyed was 416 post-primary school students ages 10 to 16. Table 3.1 shows how the sample was divided among schools and between male and female students.

Table 3.1

Characteristics of Post-Primary School Students Surveyed in 1991

	Male	Female	Total
School 1	52	48	100
School II	42	58	100
School III	53	54	107
School IV	55	54	109
Total	202	214	416

A total of 4 post-primary schools with about twelve thousand students were selected, and 416 students volunteered to participate, 202 males and 214 females. Ages of the participants were 10, 12, 14, and 16. Both boarding and day students were included. Day students were students who lived with parents, relatives, or in rented houses in the city. Boarding students were these who lived in the school dormitories while attending school. Boarding students were the responsibility of the school authorities during and after school hours. The day students were under the school authorities only part of the day and part of the day with their parents, relatives, or on their own (independent).

All letters and permissions are on file and preserved with the records of the research. The University Committee on Research on Human Subjects at Michigan State University approved the research.

Research Procedures A letter was written to the state Ministry of Education by the principal investigator seeking the approval from the Commissioner for Education in the State Ministry of Education in northern Nigeria to survey about 400 students in the schools of a northern Nigerian city.

The commissioner for education approved the request for the study to be conducted in any of the 12 post-primary schools in the city. These 12 schools had students ages 10

to 18. Several criteria were used in selecting the four schools. Schools were desired that 1) had both boys and girls, 2) had both day students and boarding students, 3) were both privately funded and publicly funded, and 4) had principals who would permit the research assistant to administer the tests. The principals' signatures showed their agreement. Thus, the total of 12 schools was reduced to 5 schools where all these criteria were met.

The goal of 400 students was reached in the first four schools enrolling approximately 12 thousand students. All the students volunteered who answered the questionnaire. Confidentiality for the students and for the schools was to protected. The test was administered to 435 students, of which 416 were completed questionnaires. No student was compelled to participate or answer any question against his or her will.

The research assistant remained with the students while they marked their questions. This individual did not know the students nor have any administrative authority over any students surveyed. When questionnaires were all completed the researcher's assistant collected them and mailed them by express mail to the researcher at Michigan State University.

Instrument

A survey questionnaire used in the study was developed by the researcher after an intensive review of literature.

It focused on students' knowledge, attitude, and practice (KAP). Included were four statements expressing knowledge of reproduction, 12 statements on knowledge of contraceptive use, seven statements on knowledge of Acquired Immune Deficiency Syndrome (AIDS), 11 statements on knowledge of problem solving, and 46 questions on demographic and education related information. The students responses were asked to respond according to items focusing on their knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control and AIDS. Demographic data regarding each respondents' parents' level of education, family's size, religious affiliation, and respondents' level of education, marital status, living place, and ethnicity were collected.

Content validity of the questionnaire was checked through a pilot sample of 3 pre-teenage and 3 teenage junior high African students living in the U.S. The pilot testing was done to check the clarity of the items. Also a discussion was held with African students who were fellow researchers to get their feedback on the suitability of the questionnaire for the pre-teenage and teenage post-primary students in Nigeria. Similar consultations were held with the Michigan State University Institute for Public Policy and Social Research to ensure that the instrument would measure what it was intended to measure. The responses from the pilot test, the African researchers, the Institute for Public Policy and Social Research, and the dissertation

committee were all used to refine the questionnaire before it was distributed. Survey questionnaires were mailed to the researcher's assistant in Nigeria. The questionnaires were administered to students by the same researcher's assistant in the four separate schools.

Statistical Measures

The Statistical Package for the Social Sciences (SPSS) was used in analyzing the data for the present study. Simple descriptive statistics in the form of percentages, frequencies, and ranks were used to summarize the results. In addition, the chi-square test of statistical significance was used to test relationships between respondents' responses to items and their demographic characteristics. Because of the nature of the data this form of reporting was adopted to make the study both readable and clear. Frequencies and percentages were used to represent the demographic characteristics of the respondents. The remaining data were analyzed to assess the research questions in the following way.

Data analyses for all questions were based on aggregate mean ratings for each topic. The 0 - 1 point, Likert-type response which ranged from "0 = no response, or not applicable" to 1 = "Yes, I agree."

Variable Descriptions

Each dependent variable is related to a particular question in the questionnaire (Appendix). The questionnaires were coded to preserve the maximum amount of discrete data and to keep qualitative and quantitative data separate. The coding system follows the description of the variables. The specific variables and their related questions follow:

Variable 1: Had reproduction in biology course

Question 1: Have you taken a biology course or other course that teaches students about human reproduction, that is, how babies are born?

Variable 2: Know that teen pregnancy creates health risk for baby

Question 3: From your knowledge, does pregnancy when the mother is a teenager create added health and survival risks for a baby?

Variable 3: Know that teen pregnancy could cause death to a baby or mother

Question 4: From your knowledge, does pregnancy when the mother is teenager at times lead to the death of the baby or the mother?

Variable 4: Health clinic location

Question 5: Do you have a health clinic located near your school residence?

Variable 5: Has attended health clinic

Question 6: Have you ever attended a health clinic since you enrolled in this school?

Variable 6: Received information about pregnancy prevention

Question 7: Have you ever received from your health clinic, doctor, or health care provider information, medicines, or supplies for preventing pregnancy?

Variable 7: Has used birth control

Question 15: Do you use contraceptives, birth control, or family planning?

Variable 8: Know about AIDS

Question 17: Have you heard of the illness called AIDS (Acquired Immune Deficiency Syndrome)?

Variable 9: Know someone with AIDS

Question 19: Do you know someone with AIDS?

Variable 10: Know of seriousness of AIDS

Question 20: How serious an illness is AIDS?

Variable 11: Know how AIDS is transmitted

Question 21: Tell me what you know about how AIDS is transmitted?

Variable 12: Knowledge of ways to protect against AIDS

Question 22: What is the best method for a man or a woman to use to protect himself or herself from getting AIDS?

Variable 13: Knowledge of effects mother with AIDS may have on her baby

Question 23: If the mother has AIDS, what is the effect on her baby?

Research Questions

1. Are students' personal measures (microsystem) related to measures of their knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

Frequencies, percentages, and rankings were used to summarize students' personal measures concerning knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Chi-square tests of statistical significance were used to test the relationship between respondents' perceptions and their demographic characteristics.

2. Are students' family measures (microsystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

Frequencies, percentages, and rankings were used to summarize students' family measures related to students' measures of knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Chi- square tests of statistical significance were used to test the relationship between respondents' perceptions of knowledge, attitudes, and practice of reproduction, pregnancy, birth control, and AIDS.

3. Are school related measures (mesosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

Frequencies, percentages, and rankings were used to summarize students' school related measures and students' measures of knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Chi-square tests of statistical significance were used to test the relationship between school measures of students and their perceptions regarding knowledge of reproduction, birth control, and AIDS.

4. Are community measures (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

Frequencies, percentages, and rankings were used to summarize community measures related to students' measures of knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Chi-square tests of statistical significance were used to test the relationship between students' perceptions and their community measures of knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS.

5. Are students' measures of communication with parents and siblings, with teachers and students, and with spouse or boy/girl friend (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) con

concerning reproduction, pregnancy birth control, and AIDS?

Frequencies, percentages, and rankings were used to summarize students' measures of communication with parents and siblings, with teachers and students, and with spouse or boy/girl friend associated with measures of students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Chi-square tests of statistical significance were used to test the relationship between respondents' perceptions and their measures of communication with parents, siblings, teachers, spouse or boy/girl friend associated with measures of knowledge, attitudes, and practice of reproduction, pregnancy, birth control, and AIDS.

Coding System

The following is an explanation of the coding system used in the dissertation. The coding of items under each category of independent and dependent variable is given in detail. The coding system kept both qualitative and quantitative measures consistent with the research instrument.

Independent Variables

Independent variables in the study were mainly respondents' personal measures, school or educational measures,

ethnicity, and communication measures. They were coded as follows:

Gender

(1) Male

(2) Female

Age: Students gave their present age which were recorded as:

(1) Pre-teen (age 10 through 12)

(2) Teen (age 13 through 16)

Religious Devotion:

(1) Not religious

(2) A little religious

(3) Moderately religious

(4) Very religious

Religious Affiliation:

(1) Muslim

(2) Christian

(3) Traditional and none

Respondents were asked to indicate whether or not they belong to the following clubs and associations: Boy Scouts, Debating Club, Girl Guides, Literary Club, Religious Club, Drama Club, and Others. The response to each of the seven clubs and associations was coded as:

(1) Yes (I belong to club or association)

(2) No (I do not belong to club or association)

Future education, what students want to become when they complete schooling. These were coded as follows:

1) Soldier
2) Pharmacist
3) Medical Doctor
4) Pilot
5) Engineer
6) Dentist
7) Business Person
8) Computer Scientist
9) Farmer
10) Teacher
11) Nurse
12) Other

Grade Level:

1) Form 1
2) Form 2
3) Form 3
4) Form 4
5) Form 5
6) Form 6

Respondents' Living Place:

1) School dormitory
2) Home with parents
3) Home with husband or wife

4) Rent with other tenants

5) Home with relatives

6) Other

Ethnicity

1) Hausa

2) Yoruba

3) Igbo

4) Other

Usage of each of the ten sources of information, Radio, Television, Newspaper, Teachers, Parents, Classmates, Religious groups, Best friends, Older siblings, and Other were coded as:

1) Yes (source of information used)

2) No (source of information not used)

Dependent Variables

1. Had reproduction in a biology course:

1) Yes (had reproduction in a course)

2) No (did not have reproduction in a course)

2. Knowledge that teen pregnancy could be a health risk for baby.

1) Yes (it does)

2) No (it does not)

3. Knowledge that teen pregnancy could cause death to a baby or mother.

    1) Yes (it could)

    2) No (it could not)

4. Health clinic location.

    1) Yes (there is a clinic)

    2) No (there is no clinic)

5. Has attended health clinic.

    1) Yes (attended)

    2) No (not attended)

6. Received information about pregnancy prevention.

    1) Yes (I have)

    2) No (I have not)

7. Has used birth control.

    1) Yes (used birth control)

    2) No (did not use birth control)

8. Know about AIDS.

    1) Yes (I have heard)

    2) No (I have not heard)

9. Know someone with AIDS.

    1) Yes (I know someone with AIDS)

    2) No (I do not know someone with AIDS)

10. Knowledge of the seriousness of AIDS.

    1) Not serious

    2) Somewhat serious but treatable

3) Deathly

4) Don't know

11. Know of how AIDS is transmitted.

1) I don't know

2) Through contacting body fluids

3) Through sexual contact

4) Through dirty needles connected with drugs or with medicines

12. Knowledge of ways to protect against AIDS.

1) No protection

2) Sexual abstinence

3) Used of condom

4) Limit sex to spouse

5) Avoid exchange of needle

6) I don't know

13. Knowledge of effects mother with AIDS may have on the unborn baby.

1) No adverse effect

2) Some adverse effect

3) Baby can be expected to die in a few years.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The study was designed to improve the quality of life for future generations of Nigerians by addressing the research questions presented in Chapter III. In Chapter IV, data analysis and research findings are presented in two sections. The first section describes the demographic characteristics of the respondents who participated in the study. The second section presents the research findings on the five research questions.

Analysis of Respondents' Demographic Characteristics

The data presented in this chapter were sedulously and carefully collected in August, 1991, in a northern city of Nigeria. The respondents were callow adolescents, preteenage and teenage boys and girls who voluntarily participated. They represented boarding and day students, and ethnic groups and minorities in four schools in a northern Nigerian city.

Table 4.1 presents the number and percent of respondents by school, gender, ethnicity, and age.

Table 4.1

Number and Percent of Respondents
by School, Gender, Ethnicity and Age
(number and percent)

	MALE		FEMALE		ALL	
Levels	N	%	N	%	N	%
School 1	52	52.0	48	48.0	100	100
School II	42	42.0	58	58.0	100	100
School III	53	49.5	54	50.5	107	100
School IV	55	50.5	54	49.5	109	100
Ethnic groups						
Hausa	26	52.0	24	48.0	50	100
Yoruba	38	41.8	53	58.2	91	100
Igbo	26	44.1	33	55.9	59	100
Others	55	47.0	62	53.0	117	100
Age groups						
Pre-teenage	119	50.2	118	49.8	237	57.0
Teenage	83	46.4	96	53.6	179	43.0

From Table 4.1 it is shown that School 1 had 52 boys and 48 girls totaling 100 respondents; School II had 42 boys and 58 girls totaling 100 respondents; School III had 53 boys and 54 girls totaling 107 respondents; and, School IV had 55 boys and 54 girls totaling 109. The total number of boys was 202, girls 214. A total of 416 boys and girls participated in the study.

Ethnicity and religion were the two demographic characteristics used to relate to respondents' perception of family planning. The break down of respondents by ethnicity and gender was as follows: There were 50 Hausa respondents, 91 Yoruba, 59 Igbo, and 117 from other ethnic groups. Of the total 50 Hausa respondents, 26 (or 52%) were male, and 24 (or 48%) were female. In the case of Yoruba, out of the total 91 respondents, 38 (or 41.8%) were male and 53 (or 58.2%) were female. Out of a total of 59 Igbo respondents, 26 (or 44.1%) were male and 33 (or 55.9%) were female.

The Others category included 117 minority and expatriate children. There were 2 Indians and 4 Ghanian totaling 6 (or 1.4%) children of expatriates. The Nigerian minority respondents totaled 55 (or 47%) males, and 62 (or 53%) females.

Ages of respondents ranged from 10 to 16. For purposes of analysis, age was coded as follows: 1) pre-teenage group (N = 237) 10 to 12 years; and 2) teenage group (N = 179) 13 to 16 years old. In the preteen group, there were 119 (or

50.2%) pre-teenage males, and 118 (or 49.8%) pre-teenage females, out of a total of 237 (or 57%) pre-teenage respondents. In the teenage group, there were 83 (or 46.4%) teenage males, and 96 (53.6%) teenage females, with an overall total of 179 (or 43.0%) teenage respondents.

Table 4.2 presents the reported numbers and calculated percentages of parents at various educational levels.

Table 4.2

Parents' Educational Levels

(number and percent)

	Father		Mother	
Educ. Level	N	%	N	%
Primary School	18	4.5	32	7.8
Junior Sec. School	10	2.5	9	2.2
Senior Sec.form 5	14	3.5	23	5.6
Senior Sec.form 6	9	2.2	24	5.9
Teacher II	9	2.2	31	7.6
Polytechnic	28	6.9	35	8.6
Univ.Degree	106	26.2	79	19.4
Grad.Prof.	100	24.8	77	18.9
Don't Know	102	25.2	79	19.4

Numbers and percentages shown in Table 4.2 indicate that many respondents came from educated families. There were 206 fathers with degrees, and 156 mothers with degrees. Overall, 362 parents had degrees. This makes the sample very advantaged and this is unusual. Both school I and II are considered high quality publicly funded schools. If these two schools were not available, graduate

professionals, educated, and well-to-do families would likely send their children to private schools that would provide better care and education for their children.

Table 4.2 also shows that mothers generally had lower educational levels than fathers. The data indicated that a total of 106 (or 26.2%) fathers had their first degrees compared to 79 (or 19.4%) mothers who had their first degrees. Also, a total of 100 (or 24.8%) fathers were graduate professionals, compared to 77 (or 18.9%) mothers who were graduate professionals. The data show 206 (or 51%) of the fathers had college degrees or professional training and 156 (or 38.3%) of the mothers had college degrees or professional training. These data indicate a sample of parents with an unusually high level of educational attainment compared to Nigeria as a whole. This finding suggests the need for extra caution in interpreting the results of the study.

Table 4.3 shows the number of respondents and the percent in various family size categories. Findings confirmed the general belief that Nigeria has large families.

Table 4.3

Children in the Families of Respondents
Grouped by Family Size
(number and percent)

Number of Children	No. of Respondents	Percent
< 5	113	27.6
5 - 7	182	44.4
8 -10	78	19.0
> 10	36	8.3

Results of the family size grouping in Table 4.3 shows that the largest number 182 of families are in the category of 5 to 7 children. One can note that 295 (or 72%) of the families had no more than 7 children. However, the data showed that 114 (or 27.3%) of respondents had families with 8 or more children.

Table 4.4 shows in an array the number of children in the families of the respondents, ranging in size from one to 33 children. Observing cumulative percentages, one notes that 46% of the respondents are in families of five or fewer children. The most typical family size was five children representing 75 families or 18.3% of the respondents. The average size family is calculated to be 6.6 children (2,712 divided by 409 = 6.6). This average compares to the 6.2 average given by the Population Reference Bureau (1991) as the Nigerian Total Fertility Rate, i.e., average number of children born to a Nigerian woman during her lifetime.

The 6.6 children per family, exceeding 6.2, probably results from the net effect of a combination of factors. For example, some muslim fathers having more than one wife (counts as one family) keeps the 6.6 average higher and is not fully offset by 1) some mothers of these respondents not as yet having completed their childbearing, or, by 2) respondents' families, being in a more highly educated group, choosing a smaller family size.

Table 4.4

Number of Children in the Family

Number of Children	Frequency	Percent	Cumulative Percent	Total No. Children
1	4	1.0	1.0	4
2	7	1.7	2.7	14
3	28	6.8	9.5	84
4	74	18.1	27.6	296
5	75	18.3	46.0	375
6	68	16.6	62.6	408
7	39	9.5	72.1	273
8	46	11.2	83.4	368
9	14	3.4	86.8	126
10	18	4.4	91.2	180
11	3	.7	91.9	33
12	5	1.2	93.2	60
13	7	1.7	94.9	91
14	3	.7	95.6	42
15	2	.5	96.1	30
16	3	.7	96.8	48
17	3	.7	97.6	51
18	3	.7	98.3	54
19	1	.2	98.5	19
20	1	.2	98.8	20
22	1	.2	99.0	22
24	1	.2	99.3	24
28	1	.2	99.5	28
29	1	.2	99.8	29
33	1	.2	100.0	33
0	7 Missing	—		
Total	416	100.0		2,712

Questions were asked regarding the students' responsibilities to their family's household. Findings were not definitive. All are in school and may do more work when it is vacation time. When asked about their own desires for careers, they want higher professional status careers than they perceive their parents desiring for them.

Respondents were asked about the numbers of years needed to complete the education for certain careers. There was the thought that knowing this information might be a measure of their career orientation. Findings show that students have very little accurate information on careers.

Table 4.5

Associations or Clubs of Respondents by Gender, Number, Rank, and Percent

	MALE			FEMALE		
Association or clubs:	N Responding	%	Rank	N Responding	%	Rank
Religious	53	44.9	1	65	55.1	1
Debating Club	38	44.7	2	47	55.3	2
Drama Club	37	48.1	3	40	51.9	3
Boy Scouts	30	90.9	4	-	-	
Literary club	20	31.7	5	43	68.3	4
Girl Guides	-	-		34	94.4	5
Other	15	42.9	6	20	57.1	6

Table 4.5 gives the number of students who indicated memberships in students' associations or clubs. Associations and clubs were ranked according to the number of respondents who participated in each. There were some

associations that were strictly for one gender. The girls seemed to be more interested in clubs and associations than the boys. The distribution indicated that more respondents were in religious associations than any other.

Table 4.6 shows religious affiliation with 65 (or 55.1%) girls and 53 (or 44.9%) boys as members of one of the following religions: Christianity, Islam, or African Traditional Religion.

Table 4.6 presents the number and percent of parents' and respondents' religious affiliations by gender of respondent

Table 4.6

Parents' and Respondents' Religious Affiliation
by Respondents' Gender
(number and percent)

Gender	Respondents' Religion	Parents' Religion					
		Muslim		Christian		African	
		N	%	N	%	N	%
Male	Muslim	56	100.0	-	-		
	Christian	-	-	128	98.5		1.5
	African	-	-	-	-	3	
	ALL	56	29.6	130	68.8	2	1.6
Female	Muslim	64	98.5	-	-		
	Christian		-	134	97.1		
	African	-	-	-	-	1	
	ALL	65	31.9	138	67.6	1	0.5

As one might expect, the data show that respondents and parents nearly always belonged to the same religion. Table 4.6 shows the numbers for the Muslim, Christian and African Traditional religions.

As reported by those of the 416 respondents who answered the question, 65 (or 31.9%) were Muslims, 138 (or 67.6%) were Christians, and 3 (or about 1%) African Traditional Religions. Out of the total 416 respondents only 113 (or 27.2%) identified with a specific religion.

Presentation of Research Findings

The findings in relation to the five research questions now follow. Each research question will be stated and followed by a presentation of the findings related to the research question.

Research Question 1: Are students' personal measures (microsystem) related to measures of their knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

The term "personal measures" refers to students' gender, age, religious devotion, religious affiliation, and their memberships in associations at school. For religious devotion (i.e., Christianity, Islam, African Religions), students chose from four categories from very religious to not religious.

Respondents were presented with questionnaire items intended to seek information regarding their knowledge of

reproduction, consequences of unwanted pregnancy, contraceptive use, and information about AIDS. The responses to these items were used as measures of their knowledge of family planning.

A chi-square test of statistical significance was used to test the relationship between the students' personal measures of knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS by the respondents' age, gender, religious affiliation, religious devotion, and respondents' associations with clubs. The chi-square results are presented in Table 4.7.

According to Table 4.7 respondents' gender was significantly related to has used birth control ($X2 = 11.924$, $P < 0.05$), know of seriousness of AIDS ($X2 = 12.396$, $P < 0.05$), and knowledge of the ways to protect against AIDS ($X2 = 27.775$, $P < 0.05$).

Respondents' gender was significantly related to knowledge of contraceptive use ($X2 = 11.924$, $P < 0.05$), know of seriousness of AIDS ($X2 = 12.396$, $P < 0.05$), and knowledge of ways to protect against AIDS ($X2 = 27.775$, $P < 0.05$).

The results indicated a statistically significant relationship between age and had reproduction in biology course ($X2 = 18.20$, $P < 0.05$), received information about pregnancy prevention ($X2 = 4.25$, $P < 0.05$), know about AIDS ($X2 = 6.109$, $P < 0.05$), know someone with AIDS ($X2 = 10.278$, $P < 0.05$), know how AIDS is transmitted ($X2 = 31.487$,

P < 0.05), knowledge of methods used to help protect against AIDS ($X2 = 16.335$, $P < 0.05$), and knowledge of effects mother with AIDS may have on her baby ($X2 = 9.283$, $P < 0.05$).

Table 4.7

Chi-square Results for the Relationship between Knowledge of Reproduction, Pregnancy, Birth Control, and AIDS with Respondents' Demographic Characteristics

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Had reproduction in biology course				
	Gender	0.047	1	0.828
	Age	18.199	1	0.000*
	Rel. Devotion	1.941	3	0.585
	Rel. Affiliation	12.743	3	0.005*
	Boy Scouts	0.874	1	0.350
	Debating Club	0.002	1	0.949
	Girl Guides	4.138	1	0.042*
	Literary Club	8.296	1	0.004*
	Religious Club	3.289	1	0.070
	Drama Club	0.873	1	0.350
	Others	1.783	1	0.182
Know that teen pregnancy could create health risk for baby				
	Gender	2.832	2	0.243
	Age	0.638	2	0.727
	Rel. Devotion	1.825	6	0.935
	Rel. Affiliation	21.449	6	0.002*
	Boy Scouts	2.509	2	0.285
	Debating Club	2.481	1	0.289
	Girl's Guide	2.353	2	0.308
	Literary Club	2.232	2	0.328
	Religious Club	2.507	2	0.285
	Drama Club	3.726	2	0.155
	Others	0.131	2	0.937

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Know that teen pregnancy could cause death to a baby or mother				
	Gender	0.835	2	0.658
	Age	2.383	2	0.304
	Rel. Devotion	6.084	6	0.414
	Rel. Affiliation	9.522	6	0.146
	Boy Scouts	1.170	2	0.557
	Debating Club	8.880	2	0.012*
	Girl Guides	11.324	2	0.003*
	Literary Club	3.185	2	0.203
	Religious Club	4.308	2	0.116
	Drama Club	0.492	2	0.792
	Others	2.304	2	0.316
Health clinic location				
	Gender	0.835	2	0.658
	Age	2.383	2	0.304
	Rel. Devotion	6.083	6	0.414
	Rel. Affiliation	9.522	6	0.146
	Boy Scouts	0.037	1	0.848
	Debating Club	3.756	1	0.053
	Girl Guides	9.463	1	0.002*
	Literary Club	2.808	1	0.094
	Religious Club	0.206	1	0.649
	Drama Club	0.987	1	0.320
	Others	3.316	1	0.069

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Has attended health clinic				
	Gender	2.329	1	0.127
	Age	0.035	1	0.850
	Rel. Devotion	2.101	1	0.552
	Rel. Affiliation	0.710	3	0.870
	Boy Scouts	0.940	1	0.332
	Debating Club	0.010	1	0.918
	Girl Guides	0.518	1	0.471
	Literary Club	1.602	1	0.205
	Religious Club	0.157	1	0.691
	Drama Club	0.000	1	0.988
	Others	0.000	1	0.977
Received information about pregnancy prevention				
	Gender	0.519	1	0.471
	Age	4.250	1	0.039*
	Rel. Devotion	1.525	3	0.676
	Rel. Affiliation	3.116	3	0.374
	Boy Scouts	0.337	1	0.561
	Debating Club	4.407	1	0.035*
	Girl Guides	0.152	1	0.696
	Literary Club	0.003	1	0.951
	Religious Club	0.682	1	0.409
	Drama Club	1.865	1	0.172
	Others	1.920	1	0.166

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Has used birth control				
	Gender	11.924	1	0.000*
	Age	1.065	1	0.302
	Rel. Devotion	1.423	3	0.700
	Rel. Affiliation	2.719	3	0.437
	Boy Scouts	12.540	1	0.000*
	Debating Club	0.151	1	0.902
	Girl Guides	0.632	1	0.426
	Literary Club	2.876	1	0.089
	Religious Club	0.000	1	0.990
	Drama Club	0.066	1	0.796
	Others	1.700	1	0.192
Know about AIDS				
	Gender	0.412	1	0.520
	Age	6.109	1	0.013*
	Rel. Devotion	0.725	3	0.867
	Rel. Affiliation	8.966	3	0.029*
	Boy Scouts	2.731	1	0.098
	Debating Club	3.522	1	0.060
	Girl Guides	3.307	1	0.069
	Literary Club	2.895	1	0.089
	Religious Club	0.159	1	0.690
	Drama Club	0.463	1	0.496
	Others	3.394	1	0.065

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Know someone with AIDS				
	Gender	0.776	1	0.378
	Age	10.278	1	0.001*
	Rel. Devotion	2.846	3	0.416
	Rel. Affiliation	0.849	3	0.838
	Boy Scouts	0.409	1	0.522
	Debating Club	0.050	1	0.823
	Girl Guides	1.768	1	0.184
	Literary Club	6.101	1	0.014*
	Religious Club	0.250	1	0.617
	Drama Club	0.388	1	0.533
	Others	0.548	1	0.459
Know of seriousness of AIDS				
	Gender	12.396	4	0.015*
	Age	5.042	4	0.283
	Rel. Devotion	14.563	12	0.266
	Rel. Affiliation	11.114	12	0.519
	Boy Scouts	13.728	4	0.008*
	Debating Club	10.570	4	0.032*
	Girl Guides	6.242	4	0.182
	Literary Club	6.366	4	0.173
	Religious Club	3.442	4	0.487
	Drama Club	2.843	4	0.584
	Others	5.059	4	0.281

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Know how AIDS is transmitted				
	Gender	5.217	3	0.156
	Age	31.487	3	0.000*
	Rel. Devotion	11.430	9	0.247
	Rel. Affiliation	24.137	9	0.004*
	Boy Scouts	2.615	3	0.455
	Debating Club	7.138	3	0.067
	Girl Guides	3.161	3	0.367
	Literary Club	9.834	3	0.020*
	Religious club	0.310	3	0.957
	Drama Club	0.504	3	0.918
	Others	2.117	3	0.543
Knowledge of ways to protect AIDS				
	Gender	27.775	5	0.000*
	Age	16.335	5	0.005*
	Rel. Devotion	20.725	15	0.156
	Rel. Affiliation	15.822	15	0.394
	Boy Scouts	2.955	5	0.706
	Debating Club	26.982	5	0.000*
	Girl Guides	6.917	5	0.226
	Literary Club	8.226	5	0.144
	Religious Club	2.419	5	0.788
	Drama Club	4.198	5	0.521
	Others	3.878	5	0.567

* Significance at 0.05 level

Table 4.7 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Knowledge of effects mother with AIDS may have on her baby				
	Gender	1.586	2	0.452
	Age	9.283	2	0.009*
	Rel. Devotion	1.716	6	0.943
	Rel. Affiliation	11.421	6	0.076
	Boy Scouts	0.632	2	0.729
	Debating Club	0.054	2	0.973
	Girl Guides	16.805	2	0.000*
	Literary Club	1.517	2	0.468
	Religious Club	5.074	2	0.079
	Drama Club	3.456	2	0.177
	Others	3.347	2	0.187

* Significance at 0.05 level

Age and grade level were important in understanding the prevention of pregnancy. The older the respondent, the more he or she knew about how to prevent pregnancy.

Religious affiliation was significantly related to had reproduction in biology course ($X2 = 12.743$, $P < 0.05$), know that teenage pregnancy could create health risk for baby ($X2 = 21.449$, $P < 0.05$), know about AIDS ($X2 = 8.966$, $P < 0.05$), and know how AIDS is transmitted ($X2 = 24.137$, $P < 0.05$).

Participation in Boy Scouts was significantly related to has used birth control ($X2 = 12.540$, $P < 0.05$), and to know of seriousness of AIDS ($X2 = 13.728$ $P < 0.05$).

Similarly, participation in debating club was significantly related to know that teenage pregnancy could cause

death to a baby or mother ($X2 = 8.880$, $P < 0.05$), received information about pregnancy prevention ($X2 = 4.407$, $P < 0.05$), and know of seriousness of AIDS ($X2 = 10.570$, $P < 0.05$), and knowledge of methods used to protect against AIDS ($X2 = 26.982$, $P < 0.05$).

Statistically significant relationships were observed between participation in Girl Guides and had reproduction in biology course ($X2 = 4.138$, $P < 0.05$), know that teenage pregnancy could cause death to a baby or mother ($X2 = 11.3-24$, $P < 0.05$), health clinic location ($X2 = 9.463$, $P < 0.05$) and knowledge of effects mother with AIDS may have on her baby ($X2 = 16.805$, $P < 0.05$).

Participation in literary club had a statistically significant relationship with had reproduction in biology course ($X2 = 8.296$, $P < 0.05$), know someone with AIDS ($X2 = 6.101$, $P < 0.05$), and know how AIDS is transmitted ($X2 = 9.834$, $P < 0.05$).

Table 4.7 indicates there was no significant disparity between the males and the females regarding the knowledge of reproduction. There were 145 (or 49%) males and 151 (or 51%) females indicated that they knew how babies were born. The number showed that females were only slightly more informed about reproduction than the males. Age, and grade level were significantly related to reproduction knowledge.

No statistically significant relationships at 0.05 level were observed between the remaining pairs of knowledge

and the independent variables of religious devotion, religious club, drama club, and other.

Regarding AIDS, the results indicated significant levels of information on AIDS among the respondents. Table 4.7 shows that of the 416 respondents, 348 (or 83.7%) had been informed about AIDS.

Respondents answered the question; "Have you taken a biology course or other course that teaches about human reproduction, that is, how babies are born? The results showed that more of the older teenage group had taken courses in biology than had the pre-teenage group. More of the teenage group knew how babies were born than did the pre-teenage group. Taking a class in biology was not based on how old the respondent was, but on the form (grade) level in school. Also, students were not admitted into schools according to their chronological age nor were they placed in class according to their age level; it was based on form (grade) level. Thus, reproductive knowledge is more advanced in the higher forms or grade levels.

Overall, information regarding knowledge of reproduction, pregnancy, birth control, and AIDS had a statistically significant association with respondents' personal measures of age, grade level, etc. These findings are in the expected developmental direction with lower form (grade) and younger age respondents knowing less specific information than older and upper form (grade) respondents.

Research Question 2: Are students' family measures (microsystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

"Family measures" include fathers' and mothers' education, students' perception of fathers' and mothers' desired future educational level for their child, and parents' religion. These measures would be included in the microsystem described by Bronfenbrenner (1977).

A chi-square test of statistical significance was used to assess the relationship between family measures and students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. The chi-square results designated at $P < 0.05$ level are presented in Table 4.8.

The research question was screened with the relationship between parents' education and respondents' knowledge of reproduction. Students' perception of a father's desire for respondents' professional education was significantly related to had reproduction in biology course ($X2 = 11.405$, $P < 0.05$) and knowledge of ways to protect against AIDS ($X2 = 35.13$, $P < 0.05$). A statistically significant relationship was observed between had reproduction in biology course and parents' religion ($X2 = 11.405$, $P < 0.05$); know of seriousness of AIDS, and mothers' education ($X2 = 9.812$, $P < 0.05$) and mothers' desire for respondent's profession

($X2 = 34.268$, $P < 0.05$). No significant relationship was observed between the remaining pairs of variables.

Table 4.8

Chi-square Results for the Relationship between Knowledge of Reproduction, Pregnancy, Birth Control, and AIDS with Respondents' Family Measures

Dependent Variables	Independent Variables	Chi-square Value	DF	P-value
Had reproduction in biology course				
	Father's educ.	1.116	1	0.291
	Mother's educ.	0.131	1	0.717
	Father's desire ed.	9.176	4	0.056
	Mother's desire ed.	7.471	5	0.187
	Parent's religion	11.405	2	0.003*
Know that teen pregnancy could create health risk for baby				
	Father's educ.	0.110	1	0.740
	Mother's educ.	4.025	1	0.044*
	Father's desire Pf.	3.349	4	0.501
	Mother's desire pf.	2.675	5	0.749
	Parent's religion	1.718	2	0.423
Know that teen pregnancy could cause death to a baby or mother				
	Father's educ.	0.842	2	0.656
	Mother's educ.	0.982	2	0.611
	Father's desire pf.	8.777	8	0.361
	Mother's desire pf.	8.395	10	0.590
	Parent's religion	8.261	4	0.082
Health clinic location				
	Father's educ.	2.997	1	0.083
	Mother's educ.	0.342	1	0.558
	Father's desire pf.	3.002	4	0.557
	Mother's desire pf.	6.779	5	0.237
	Parent's religion	1.359	2	0.507

* Significance at 0.05 level

Table 4.8 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Has attended health clinic				
	Father's educ.	0.493	1	0.482
	Mother's educ.	0.461	1	0.497
	Father's desire pf.	1.960	4	0.742
	Mother's desire pf.	3.662	5	0.598
	Parent's religion	1.651	2	0.437
Received information about pregnancy prevention				
	Father's educ.	0.879	1	0.343
	Mother's educ.	3.512	1	0.060
	Father's desire pf.	4.718	4	0.317
	Mother's desire pf.	5.491	5	0.359
	Parent's religion	2.884	2	0.236
Has used birth control				
	Father's educ.	0.112	1	0.738
	Mother's educ	0.085	1	0.770
	Father's desire pf.	4.889	4	0.299
	Mother's desire pf.	8.282	5	0.141
	Parent's religion	2.561	2	0.277
Know about AIDS				
	Father's educ.	0.250	2	0.618
	Mother's educ.	0.375	1	0.540
	Father's desire pf.	5.782	4	0.216
	Mother's desire pf.	4.085	5	0.537
	Parent's religion	5.114	2	0.077

* Significance at 0.05 level

Table 4.8 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Know someone with AIDS				
	Father's educ.	0.288	1	0.591
	Mother's educ.	0.400	1	0.527
	Father's desire pf.	2.639	4	0.619
	Mother's desire pf.	1.729	5	0.885
	Parent's religion	0.285	2	0.866
Know of seriousness of AIDS				
	Father's educ.	5.327	4	0.255
	Mother's educ.	9.812	4	0.043*
	Father's desire pf.	14.858	16	0.535
	Mother's desire pf.	34.258	20	0.024*
	Parent's religion	6.059	8	0.640
Know how AIDS is transmitted				
	Father's educ.	1.795	3	0.616
	Mother's educ.	3.395	3	0.334
	Father's desire pf.	4.143	12	0.098
	Mother's desire pf.	18.245	15	0.250
	Parent's religion	8.663	6	0.193
Knowledge of ways to protect against AIDS				
	Father's educ.	4.832	5	0.436
	Mother's educ.	8.295	5	0.140
	Father's desire pf.	35.130	20	0.019*
	Mother's desire pf.	26.450	25	0.384
	Parent's religion	7.139	10	0.712

* Significance at 0.05 level

Table 4.8 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Knowledge of effects mother with AIDS may have on her baby				
	Father's educ.	1.875	2	0.391
	Mother's educ.	1.391	2	0.498
	Father's desire pf.	7.215	8	0.513
	Mother's desire pf.	5.899	10	0.824
	Parent's religion	8.791	4	0.066

* Significance at 0.05 level

Overall, data indicated that a number of family measures of the microsystem were significantly related to students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. The chi-square results indicated statistically significant relationships between family measures, that is, the parents' religion, mothers' education, mothers' and fathers' desires for a profession for the student, were significantly related to respondents' 1) Had reproduction in biology course; 2) know that teenage pregnancy could create health risk for baby; 3) know of how seriousness of AIDS; 4) and knowledge of ways to protect against AIDS.

Research Question 3: Are school related measures (mesosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

"School related measures" include the students' responses to questions that focused on their future educational goals, present form (grade) level, and present living place. These are measures of the students' mesosystem, according to Bronfenbrenner (1977).

A chi-square analysis was used to assess the relationship and level of significance was set at $P < 0.05$, between the importance and adequacy of students' school related measures and their knowledge, attitudes, and practice regarding aspects of reproduction, pregnancy, birth control, and AIDS. Table 4.9 presents the results of the chi-square test.

From Table 4.9 it is shown that respondents' desired future educational level was significantly related to knowledge of reproduction ($X2 = P < 0.05$); to knowledge of possible death to teenage pregnant girls ($X2 = P < 0.05$); to receive information about pregnancy prevention ($X2 = 3.977$, $P < 0.05$); and has used birth control ($X2 = 7.432$, $P < 0.05$). Know about AIDS was significantly related to future grade level ($X2 = 14.567$, $P < 0.05$), grade level ($X2 = 9.470$, $P < 0.05$) and living place ($X2 = 12.345$, $P < 0.05$). No statistically significant relationship at 0.05 level was observed between the remaining questions and respondents' school measures.

Grade (form) level was significantly related to know how AIDS is transmitted ($X2 = 31.963$, $P < 0.05$), knowledge

of ways to protect against AIDS ($X2 = 49.523$, $P < 0.05$) and knowledge of the effects mother with AIDS on her baby ($X2 = 19.852$, $P < 0.05$). Know how AIDS is transmitted was also related to grade level ($X2 = 8.236$, $P < 0.05$).

Table 4.9

Chi-square Results for the Relationship between Knowledge of Reproduction, Pregnancy, Birth Control, and AIDS with Respondents' School Measures

Dependent Variables	Independent Variables	Chi-square Value	DF	P-value
Had reproduction in biology course				
	Future education	11.495	1	0.000*
	Grade level	13.109	4	0.010*
	Living place	10.069	5	0.069
Know that teenage pregnancy could create health risk for baby				
	Future education	0.707	1	0.400
	Grade level	4.532	4	0.338
	Living place	7.386	5	0.193
Know that teenage pregnancy could cause death to a baby or mother				
	Future education	7.412	2	0.024*
	Grade level	4.372	8	0.822
	Living place	15.126	10	0.127
Health clinic location				
	Future education	0.234	1	0.628
	Grade level	14.427	4	0.006*
	Living place	9.443	5	0.092
Has attended health clinic				
	Future education	0.024	1	0.875
	Grade level	5.416	4	0.247
	Living place	6.002	5	0.306

*Significance at 0.05 level

Table 4.9 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Received information about pregnancy prevention				
	Future education	3.977	1	0.046*
	Grade level	7.845	4	0.097
	Living place	7.939	5	0.159
Has used birth control				
	Future education	7.432	1	0.006*
	Grade level	3.149	4	0.533
	Living place	1.439	5	0.919
Know about AIDS				
	Future education	14.567	1	0.000*
	Grade level	9.470	4	0.050*
	Living place	12.345	5	0.030*
Know someone with AIDS				
	Future education	1.584	1	0.208
	Grade level	7.831	4	0.097
	Living place	8.909	5	0.112
Know of seriousness of AIDS				
	Future education	4.734	4	0.315
	Grade level	14.935	16	0.529
	Living place	31.226	20	0.052

* Significance at 0.05 level

Table 4.9 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Know how AIDS is transmitted				
	Future education	8.236	3	0.041*
	Grade level	31.963	12	0.001*
	Living place	14.218	15	0.509
Knowledge of ways to protect against AIDS				
	Future education	5.772	5	0.329
	Grade level	49.523	20	0.000*
	Living place	19.036	25	0.795
Knowledge of effects mother with AIDS may have on her Baby				
	Future education	1.620	2	0.447
	Grade level	19.852	8	0.010*
	Living place	33.729	10	0.000*

* Significance at 0.05 level

Knowledge of effects mothers with AIDS have on a baby was related to living place ($X2 = 33.729$, $P < 0.05$). Those living in dormitories seemed to be more informed than those living with their parents, relatives, or in rented houses.

Overall, results of the relationship between subjects' school measures and students' knowledge, attitudes, and practice of reproduction, pregnancy, birth control, and AIDS, suggested statistically significant relationships in several areas. The results indicate that respondents were informed about AIDS, but did not know how to protect themselves against AIDS. The upper form (grade) students were

more informed than the lower form (grade) students, age, thus, exposure to information through classes, and having a future educational goal were significant to students' knowledge levels.

Research Question 4: Are community measures (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

A chi-square test was used to evaluate the relationship between community measures and measures of students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS.

The chi-square test showed ethnicity had a statistically significant relationship only with has attended health clinic ($X2 = 12.228$, $P < 0.05$). The Hausa respondents were best informed about the location of health clinics. All other knowledge variables were not statistically significantly related to ethnicity.

Research Question 5: Are students' measures of communication with parents and siblings, with teachers and students, and with spouse or boy/girl friend (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

"Communication measures" combine human and media resources in the students' community that can provide the information and support the student needs. The various groups of people and the available media were the choices from which the students selected those supplying information

on reproduction, pregnancy, birth control, and AIDS. These are part of the exosystem, according to the Bronfenbrenner model (1977).

Respondents were asked to indicate, with selected items, the source (indicating more than one source permitted), of their knowledge on reproduction, pregnancy, birth control, and AIDS.

Table 4.10 shows by gender, the number and percentage of responses for the sources of knowledge. Sources of information were also ranked.

Table 4.10

Respondents' Sources, by Gender, of Information Concerning Reproduction, Pregnancy, Birth Control, and AIDS
(number, percent, and ranks)

	Male			Female			Total		
	N	%	Rank	N	%	Rank	N	%	Rank
Radio	72	57.6	3	53	42.4	3	125	31.0	3
Television	133	53.2	1	117	46.8	1	250	61.9	1
Newspapers	84	53.8	2	72	46.2	2	156	38.5	2
Parents	48	58.5	5	34	41.5	5	82	20.3	5
Classmates	40	58.0	7	29	42.0	6	69	17.1	7
Teachers	59	53.2	4	52	46.8	4	111	27.5	4
Religious group	14	66.7	9	7	33.3	9	21	5.2	9
Best friends	43	60.6	6	28	39.4	7	71	17.6	6
Older siblings	20	51.3	8	19	48.7	8	39	9.7	8
Others	7	77.8	10	2	22.2	10	9	2.2	10

As shown in Table 4.10 the media organizations combined represent the source of most respondents' information regarding reproduction, pregnancy, birth control, and AIDS. Teachers rank as the most important source of information on these topics, if personal contacts are considered, i.e., excluding the media. Respondents were permitted to indicate more than a single source. Television was the most common source of information with 133 (or 53.2%) boys, 117 (or 46.8%) girls, indicating that they got information through the television. The overall total of respondents who got information through the television was 250 (or 61.9%).

The results in Table 4.10 indicated a total of 59 (or 53.2%) males and 52 (or 46.8%) females obtained information through their teachers. Only 5.2 percent of the respondents obtained information on these topics from religious groups and only 20.3% from parents.

Regarding discussions of religion and family matters as related to measures of students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS, Table 4.11 presents the chi-square values and their corresponding P-values for that relationship.

Table 4.11

Chi-square Results for the Relationship between Knowledge of Reproduction, Pregnancy, Birth Control, and AIDS with Respondents' Religious and Family Matters

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Has reproduction in biology course				
	Religious matters	4.113	1	0.042*
	Family matters	16.105	1	0.000*
Know that teenage pregnancy could create health risk for baby				
	Religious matters	1.602	1	0.205
	Family matters	1.813	1	0.178
Know that teenage pregnancy could cause death to a baby or mother				
	Religious matters	3.465	2	0.176
	Family matters	1.787	2	0.409
Health clinic location				
	Religious matters	0.008	1	0.928
	Family matters	0.115	1	0.734
Has attended health clinic				
	Religious matters	4.306	1	0.037*
	Family matters	4.047	1	0.044*
Received information about pregnancy prevention				
	Religious matters	0.231	1	0.630
	Family matters	3.855	1	0.049*

* Significance at 0.05 level

Table 4.11 (continued)

Dependent Variable	Independent Variable	Chi-square Value	DF	P-value
Has used birth control				
	Religious matters	0.399	1	0.527
	Family matters	0.988	1	0.320
Know about AIDS				
	Religious matters	6.991	1	0.008*
	Family matters	0.095	1	0.756
Know someone with AIDS				
	Religious matters	0.512	1	0.474
	Family matters	0.155	1	0.693
Know of seriousness of AIDS				
	Religious matters	5.563	4	0.234
	Family matters	10.848	4	0.028*
Know how AIDS is transmitted				
	Religious matters	5.538	3	0.136
	Family matters	6.160	3	0.104
Knowledge of ways to protect against AIDS				
	Religious matters	6.445	5	0.265
	Family matters	2.465	5	0.781
Knowledge of effects mother with AIDS may have on her baby				
	Religious matters	1.759	2	0.414
	Family matters	0.980	2	0.612

* Significance at 0.05 level

Respondents were asked, "Do you discuss religious matters with students in your school?" Do you discuss family matters with students in your school associations?" These questions were asked to find out if respondents' discussions of religious and family matters at school were related to responses of the respondents to the variables.

Findings in Table 4.11 indicate that statistically discussion of religious matters was significantly related to had reproduction in biology course ($X2 = 4.113$, $P < 0.05$), to has attended health clinic ($X2 = 4.306$, $P < 0.05$), and to know about AIDS ($X2 = 6.991$, $P < 0.05$).

For the other item, discussion of family matters was significantly related to had reproduction in biology course ($X2 = 16.105$, $P < 0.05$), to has attended health clinic ($X2 = 4.047$, $P < 0.05$), to has used birth control ($X2 = 3.855$, $P < 0.05$), and to know of seriousness of AIDS ($X2 = 10.845$, $P < 0.05$). No statistically significant relationship at 0.05 level was observed between the remaining pairs of knowledge variables and discussions of family or religious matters.

Descriptive statistics in Table 4.11 would suggest that students' communication with parents and siblings, with teachers and students is related to students' knowledge, attitudes, and practice concerning reproduction, pregnancy, birth control, and AIDS. Also, students gained information about these topics through the radio, television, and newspapers.

Summarizing Table 4.11, the chi-square test of statistical significance indicated significant relationships between the following specific areas; 1) had reproduction and discussion of religious matters; 2) knowledge of reproduction in biology course and discussion of family matters at school; 3) has attended health clinic and discussion of religious matters; 4) has attended health clinic and discussion of family matters at school; 5) received information about pregnancy prevention and discussion of family matters; 6) know about AIDS and discussion religious matters and 7) know of seriousness of AIDS and discussion of family matters.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

As stated in the introductory chapters, a questionnaire and certain statistical methods were put together to gain information about a selected sample of post-primary students in a northern Nigerian city. The endeavor was designed to find suggestions for improving the quality of life for students and the general public in Nigeria. The most critical concerns, in terms of generally recognized pressing issues of the day, were AIDS, birth control, and rapid population growth.

Summary of the Findings

Research Question 1: Are students' personal measures (microsystem) related to measures of their knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

There was some statistical significance related to the personal measures in 12 of the 13 aspects of knowledge of reproduction, pregnancy, birth control, and AIDS. Each was statistically significant with the specific demographic variables of age, religion, clubs and associations. The

older respondents were the most well informed. They also learned information through clubs and associations. Religion was also significantly related to knowledge, attitude and practices concerning different aspects of sexuality. However, religious groups, as a source of respondents' information, were very low. Few respondents attended health clinics to receive any assistance from health care providers. As many as 37% answered I don't know to one of the questions regarding protection from AIDS.

Research Question 2: Are students' family measures (microsystem) related to measures of students' knowledge, attitudes, practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

A general observation indicated that there were some significant associations with the family measures such as their father's and mother's desire for their offspring's education. Students' perception of their parents' wishes for their child's education and professional goals were reported with statistically significant relationships observed. Respondents desired more prestigious jobs for themselves than their parents presently hold.

Overall observation indicated that a few family measures were related to students' measures of knowledge, attitudes, and practice of reproduction, pregnancy, birth control, and AIDS. The results of chi-square tests indicated statistically significant relationships in the following specific areas; 1) Had reproduction in biology course;

2) know that teenage pregnancy could create health risk for baby; 3) know of seriousness of AIDS; and 4) knowledge of ways to protect against AIDS. Parents' religion is significant only in relation to students' had reproduction in biology course. Parents' religion is not significant in knowledge of teenage pregnancy, pregnancy and teenage death, health clinic location and use, and received information about pregnancy prevention, and AIDS related variables.

Research Question 3: Are school related measures (mesosystem) related to students' measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

A chi-square test revealed statistically significant relationships between respondents' desired level of education and/or grade level in school and the following: knowledge of reproduction, pregnancy and teenage death, location of health clinics, received information about pregnancy prevention, AIDS, how AIDS is transmitted, ways to protect against AIDS, and effects mother with AIDS may have on her baby. Subjects reported that their source of information was mostly from the school environment. A large percentage of the subjects indicated that their knowledge of reproduction in biology course, teenage pregnancy, received information about pregnancy prevention, has used birth control, and AIDS, was obtained from the media, their teachers, classmates, best friends, and school's clubs and associations.

Overall students' school measures in relationship to

their measures of knowledge, attitudes and practice of reproduction, pregnancy, birth control, and AIDS, were statistically significant relationships. Subjects were apparently informed about the deathly disease, AIDS, but did not know how to protect themselves against AIDS. The students' information was obtained largely from the school environment and the media. Their living place was significantly related to their AIDS information, with those living with their parents or relatives or renting houses in the town being less informed. Students living in the dormitories were most informed about AIDS.

Research Question 4: Are community measures (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control, and AIDS?

A chi-square test showed there was a significant relationship between ethnicity and attendance at a health clinic. The Hausa group was the only ethnic group significantly related to the students' knowledge of the location of the health clinics. No statistically significant relationships appeared between ethnicity and all other measures.

Observations suggested that community measures did not appear to have much influence on reproductive health measures. Perhaps this is because sexual topics are generally treated secretly among all ethnic groups in Nigeria. Any of the groups that revealed an interest in reproduction,

abortion, and AIDS could expect to be treated as a pariah and daughters of such identified groups might be ostracized.

Research Question 5: Are students' measures of communication with parents and siblings, with teachers and students, and with spouse or boy/girl friend (exosystem) related to measures of students' knowledge, attitudes, and practice (KAP) concerning reproduction, pregnancy, birth control,and AIDS?

Students were asked to indicate general sources of their information regarding reproduction, pregnancy, birth control, and AIDS. The media was a major source of information. The descriptive statistics showed that 61.9% of students got information regarding pregnancy from television 38.5% from the newspapers. The responses showed the major informants were teachers 40.1%, best friends 28.3%, and classmates 26.1%. Teachers' involvement was probably a result of teaching biology (reproduction), and perhaps, individuals teaching social studies. When sources of information were compared, the respondents learning from adult figures was low. For example, only 20.3% reported parents discussing pregnancy with the subjects, and only 5.2% discussed such topics in religious groups.

The overall results of both chi-square tests and of percentages and ranking suggested that significant measures of communication occur between respondents' and teachers, classmates, best friends, and the media.

In addition, the chi-square test of statistical significance indicated significant relationships between 1) had

reproduction in biology course and religious matters; 2) had reproduction in biology course and discussion of family matters at school; 3) has attended health clinic and discussion of religious matters; 4) has attended health clinic and discussion of family matters at school; 5) has used birth control and discussion of family matters; 6) know about AIDS and religious matters and 7) know of the seriousness of AIDS and family matters.

Discussion

Are there implications from the study for action programs? First, it must be clearly stated that this is a very select group of Nigerian youth. They are in school. Many may be children whose parents are sacrificing for them to be in school. The respondents' parents appear to be far more educated men and women than one might expect in any representative sample of the population. The study can only give hints as to how others might respond.

Observations regarding the students' responses follow: 1) Concerning a developmental sequence to the responses in the questionnaires, there were differences related to age, grade level, and educational level. These difference have a certain basis in Nigeria which should be understood. For example, younger pre-teen students, ages 10 to 12, were in junior forms (grades). This means they had not taken classes in human biology or reproduction, and had little or no

information regarding how babies are born from their families and from the society in general.

Similarly, the older teenage group, age 13 to 16, was more informed than was the pre-teen group. Perhaps at this age parents were prepared to inform them about their sexuality. In addition, older students may be better readers and thus better informed about sexual issues, and, they may have taken more classes in human biology than the pre-teens.

Ages 13 to 16 appear to be more fully aware of their bodies and more sexually active than the pre-teen. The teenagers are more informed about their bodies, and may discuss it with their parents and friends. Girls who do not have opportunity to attend school get married during this period in Nigeria. Among the Hausa group, some could have been married, according to the Islamic law and the school may not be informed.

Given the occurrence of the average age of sexual maturity at 8 to 13 years for girls and at 14 to 16 years for boys, it seems a responsible policy for the schools and health care providers to give sound scientific information about 1) human reproduction, 2) pregnancy prevention for both males and females, 3) the effects of early pregnancy on the girl, the baby, and the family of the future as well as on the students' families, 4) information on parental care to ensure healthy babies, and 5) the effects and prevention of AIDS and sexually transmitted diseases (STD's).

Because the older students understood the questions better than the younger, we can say there is a developmental sequence operating. If sexuality education is introduced about age 10, by repetition, the information should eventually reach and become understood by each student.

2) As to the question of a difference between students living at home with parents and those living in dormitories and elsewhere with less supervision of adults, it appears that there were significant differences in the groups. It appear that living away from the parents contributes to the students information regarding to these topics.

Dormitory living may offer opportunities for education. Perhaps, other students who do not have a social group could be organized to benefit from some aspects of dormitory living.

3) Concerning the question of the effect of club or association membership and their contribution to the knowledge being discussed, it appears that the debating and literary clubs and the Boy Scouts and Girl Guides are the more influential clubs as sources of this information.

It would seem that with guidance the various clubs could become excellent resources of information and leadership for dealing with the topics in this study.

4) The question regarding students' knowledge of careers and the connection with the information in this study shows that there was some connection. It may be that

those students who were more broadly educated, or those with more highly educated parents, knew what career they wanted and how long it takes to achieve the career.

Knowing about careers could also help students have career goals that could supersede momentary sexuality expression goals. Thus, students might see the connection to their future careers of delaying pregnancy or avoiding a risk of pregnancy. With the consideration of AIDS, long-range planning is of the utmost importance.

5) Is there a gender difference in the responses to the questions in this study?

Yes, girls when asked about the topics appear to have knowledge and attitudes that differ from boys of the same age. It is true that boys of the same chronological age as the girls are as much as two or so years more immature sexually than are the girls. Evidence from other studies shows that teen girls are often made pregnant by boys or men older than they are. These facts make educating boys and girls of the same age together problematical.

Boys need long-range goals the same as girls. Boys must be educated to be responsible to girls and for their own fatherhood.

6) Does family communication serve to inform students on these matters?

Analysis shows that teachers and the media are more often used as sources of information than parents.

This finding suggests a promising field for extensive education and information for parents to help their children receive more solid information at home. Parents are the ones to set the child up with a health care provider when enrolling him or her in school. This health care provider can answer questions and give counseling. The school can also see its role as helping the parents make this important connection for their enrolling students. The schools may increase health counseling or even provide health services to students.

7) As to whether the community serves to inform the students about these reproduction related matters, the answer is mixed.

The media are credited by the students with giving them information. These avenues should be encouraged.

From students' responses it does not appear that they are utilizing the health clinics of the community. A logical step is to strengthen the linkages between the health providers, the media, and the students and parents so information and services can be forthcoming that are needed to keep students healthy.

8) Does the government seem to serve the students' needs for information?

Respondents knew that single girls could be expelled from school for becoming pregnant and that it could be a troubling situation for the boys or men who are culpable.

Respondents knew that married girls had to take maternity leaves if they become pregnant and that the chances of returning to school for those on maternity leave were very remote. In reality, at the end of weaning their babies many girls become pregnant again and never return to school.

Of course, there is no penalty for boys who make the girls pregnant, an ancient form of punishment for females. The boys have a few options available to them; 1) they could proclaim marriage with their victims; 2) they could move from one school to another; or 3) they could pay damages to the girl's parents or go prison, if the parents press charges. The last option is often not pursued by the parents' of the girls who become victims.

The school authorities who enforce these rules must have pangs of guilt when expelling a girl, who, once pregnant and a mother, will need her education more than ever. Evidence abounds showing the strength of a family and the children's future achievements are related to the education of the mother. Harsh rules expelling pregnant girls need close scrutiny and revision.

9) Are there ethnic differences in students' responses to the topics under discussion?

Yes. Respondents from the Yoruba, Igbo and minority groups appear to have more information than those from the Hausa group. The Hausa group gives their daughters in marriage earlier than the other ethnic groups. When a Hausa

student becomes pregnant she is immediately placed in the house of the would-be-husband or the already-married husband and does not return to school anymore.

These findings could indicate that families of all ethnic groups should be provided opportunities to gain scientific information on matters related to the health of their families. Further, they should be helped to appreciate the school's and the community health provider's role in disseminating scientific information that protects students' health. With the evidence from the AIDS epidemic, and with as many as one third of the students saying they don't know how to protect themselves from AIDS, it behooves authorities to work with every segment of the community to give information about AIDS and to bring the spread of AIDS and other STDs under control.

With the threat of AIDS, many Nigerians' survival may depend on education. Fertility control will bring about a change in the Nigerian's world view and philosophy of the family. For a reduction in the fertility rate to occur in Nigerian society the following must exist: 1) Nigerians must learn about fertility control and reproductive health; 2) Nigerians should be willing to accept the cultural change related to balancing family size and both national and family resources; 3) Nigerians need modern contraception technology and consistent and reliable supplies; 4) Nigerians must be willing to consider modifying ideal family size

and accepting a smaller family size; and 5) Nigerians must have the will to study objectively their ecological system of resources related to population, applying needed changes at the micro level.

Conclusion

The following conclusions are drawn from the findings of the study:

1) Respondents' knowledge of reproduction increased through education from parents, schools, communities, and media which provided them with information needed to grow in awareness.

2) Respondents agreed that unwanted pregnancy, especially when the mother is pre-teenage and teenage, creates degradation of motherhood when the victim is expelled from school. The girls' education and her future career are endangered. Pregnancy for teens may also bring ill-health and survival risks for the expectant mother, and for the baby.

3) Subjects indicated little knowledge of the location of health clinics. Therefore, respondents probably had no access to contraceptives. When they wanted family planning or an abortion it was probably done in an arcane manner, without the knowledge of parents, health clinic, and school. Information and health services should be available to students.

4) Respondents were largely uninformed about birth control, and family planning methods. Information about these topics was discussed only among best friends and classmates. Probably, when one becomes pregnant, the individual, not knowing what to do, turns to her best friend.

5) Respondents agreed that small family size was the ideal plan for their future, but were uninformed regarding the methods of birth control.

6) Only 5 cases out of 214 females indicated that they had interrupted a pregnancy. The abortion was either discussed with their mother or a best friend. Though only a few cases, no apparent discussion was held with father, teacher, classmate, religious leader, doctor/nurse, or any health care provider during the incidents. From the researcher's knowledge, many clandestine interruptions of pregnancies are done because of the fear of dismissal from school. Thus, adolescents were not likely to seek help from a health clinic. Deaths may result from such abortions.

7) Respondents showed that there was an awareness of Acquired Immune Deficiency Syndrome (AIDS). However, there appears to be little knowledge of how AIDS is transmitted. This is fertile field for continued educational emphasis and more work with teachers, parents, and the media.

8) There is general ignorance among boys and girls regarding sexuality topics and safe sex. Therefore, AIDS will continue to claim more lives now and in the next

decades, unless a cure is found or students learn to avoid exposure.

9) Sex continues to be a mystery to sexually active adolescents. Most adults are not prepared to talk about it. AIDS is going to claim many lives. It behooves all groups to deal more actively with topics of sexuality to prevent AIDS and avoid pregnancy among youth.

10) A curriculum plan is needed immediately for all grade levels in schools from kindergarten to college to teach reproductive health and AIDS education to all students.

11) Family planning education should begin at junior secondary level, or earlier, and continue to college level to educate students about sexually transmitted diseases, family planning, contraception, and AIDS.

12) Adolescents need to be taught the consequences of free sex and to treat the opposite sex with respect.

13) Girls should be given opportunities to be educated and should be encouraged to work in the market economy and delay marriage.

14) Advancement for women can help provide quality mothering for all children. Educated women can achieve dignity and provide their families with many opportunities in all aspects of human endeavor.

15) Boys should be socialized to want women to advance. They can learn to appreciate the male role in fathering

children of high quality.

16) Educating boys in family life and parenting can help them play an active role in developing skills and abilities in their children.

Recommendations

Based on the findings of this research, the following recommendations are offered:

1) Teachers and the media (television, radio, and newspapers) were observed as most influential in students' behaviors regarding their knowledge of reproduction, pregnancy, birth control, and AIDS. It is, therefore, recommended that classroom teachers be involved in cooperative learning or group discussions with students. Teachers, in order to be knowledgeable, should be given short courses on family planning education, substance abuse, sexually transmitted diseases, and AIDS. Teacher education programs and education planners from grade II, Nigerian Certificate of Education (NCE), and Bachelor of Education courses (B. Ed) should include in the curriculum information on human reproduction, family planning education, substance abuse, sexually transmitted diseases (STDs), and AIDS. Also, the media should give more attention to these issues.

2) Subjects' motivational factors and influences were perceived to have much influence on their desire to seek future higher education, including career goals in the

professions, probably because of the prestige and status associated these professions. Large families sent fewer children to school, probably because parents of these families could not afford to send all their off-spring to school. It is, therefore, recommended that connections between family size and education be discussed and that the government's policy of smaller families be encouraged. The government should address the issue of polygamy because it is one of the major factors of large family size. There are some men with four wives or more. The government needs to pass a law that will gradually phase out polygamy. In order for such a law to work in a culture which is dominated by males, women should be educated concerning their welfare and should cooperate with the government to enforce compliance with the law. Men with one wife should be rewarded with various incentives.

3) Findings indicated that education of fathers and mothers was related to a child's desire for higher education and career goals. Students' expectation of participating in future education is related to their understanding of reproduction, pregnancy, birth control, and protection against AIDS. It is, therefore, recommended that the government encourage higher education for girls, as well as boys, also an expansion of family planning education, population education, and AIDS education.

Given that pregnancy has great effects on parents,

daughters, and babies, it is recommended that the law calling for dismissal of pregnant girls from school be repealed. Contacts should be made with the parents who have been victims of their daughters' dismissal from school to learn their feelings on how the situation affected all concerned. These interviews may provide information to help promote better solutions and change the school policy in a way that will help both the students and parents. The inequality of treatment concerning males who are responsible for pregnancies should be studied.

4) Students claimed that their information about AIDS, contraceptive use, birth control methods, information about abortion, and knowledge of teenage deaths from pregnancy and AIDS was obtained mostly in the school environment. Many still lack any knowledge about AIDS.

It is recommended that workshops be organized to train teachers and school administrators on AIDS prevention and on handling human sexuality topics. Teachers and school administrators need counseling skills so that they will be able to work with adolescents in their schools who may have AIDS or HIV. Education on AIDS should help dispel misconceptions people have about the disease. Also, to educate people about AIDS, workshops and media presentations should be organized for community workers such as, hospital staff, clergy, Imams, social workers, village heads, civil servants, army units, youth workers, community nurses and other

opinion leaders in Nigerian society. Family planning education should be included with the AIDS education project.

6) Students' communication with teachers, classmates, spouse or boy/girl friend had a great impact on them. They contended that they learnt much about reproduction, pregnancy, birth control, and AIDS, in associations and clubs through communication with teachers, best friends, and boy/girl friends, rather than from parents and siblings. It is, therefore, recommended that youth clubs and associations, like Girl Guides, Boy Scouts, debating clubs, science clubs, computer science clubs, religious associations, etc., be encouraged and trained to deal with the human sexuality topics and behaviors. Through these clubs and associations AIDS education and family planning education can be discussed among adolescents. All means should be explored that will provide opportunity to reach adolescents with the message that AIDS is a killer disease. Sexually transmitted diseases like herpes, syphilis, chancroid, gonorrhea, human papillomavirus, chlamydia, and trichomoniasis should be discussed with students to ensure that students are well informed of their dangers.

7) Finally, students were not regularly attending health clinics, nor did they know their locations. This may be, because of the rule that with a pregnancy a married girl must go on maternity leave for one year. Single girls who become pregnant are dismissed from school and are never

accepted back in any of the state schools. Such rules need to be reviewed. The pregnant student is already emotionally and psychologically disturbed. The girl has no future because her educational career will be destroyed. The parents will be bitter because of the social implications and because their daughter might never benefit from education. The hopes and dreams parents have for their daughter are terminated. There have been instances of deaths in attempting abortions in arcane manners. This is done usually without the knowledge of either the parents or the school.

Even though illegal, sometimes parents will acknowledge the pregnancy and encouraged an abortion. Health clinic staff and hospital staff are not usually informed, thus death might occur during an attempted abortion. Sometimes parents rush their ill daughter to the hospital only to be told that she has attempted an abortion. This is common knowledge among all educators, parents, and even students themselves. It is, therefore, recommended that the policy makers consider modification of this rule.

When a school girl becomes pregnant she should be given full medical attention and counseling in collaboration with her partner in sex and their parents. Since Nigerians still rely on the extended family, the individual family might be able to find a way of dealing with the situation. Parents should be given the option of a lawsuit against the male partner. Parents are well protected by the civil law on

and should be returned to the classroom to complete their education.

Suggestions for Further Research

This cross-sectional study involved a sample of post-primary male and female adolescents 10 to 16 years old. They were students during the 1990/91 academic year in a northern Nigerian city. Follow up studies are recommended on reproductive information and sexual behaviors among children in other regions of Nigeria in junior and senior secondary schools starting in form (grade) one and continuing through form six. Researchers can monitor the developmental changes that occur and the influences on sexual behaviors. They can determine the best way and time to give students information, counseling, and help to solve students' sexual behavior problems and to adjust family size to current ecological conditions and to the availability of resources needed for improved levels of living.

APPENDIX

MICHIGAN STATE UNIVERSITY
COLLEGE OF HUMAN ECOLOGY
DEPARTMENT FAMILY CHILD ECOLOGY

Date / / 91

QUESTIONNAIRE ON: FAMILY PLANNING KNOWLEDGE, ATTITUDES AND PRACTICES AMONG POST-PRIMARY SCHOOLS IN A NORTHERN NIGERIAN CITY.

THE QUESTIONNAIRE IS DESIGNED TO HELP UNDERSTAND SOME THINGS ABOUT YOU AND YOUR IDEAS ABOUT FAMILY LIFE. PLEASE KNOW THAT ALL RESPONSES WILL BE KEPT CONFIDENTIAL. YOU MAY OMIT ANY QUESTION(S) FOR ANY REASON WITHOUT ANY PENALTY WHATSOEVER. MARK THE SPACE WITH AN X FOR YOUR ANSWER OR WRITE YOUR ANSWER IN THE BLANK PROVIDED ARE YOU READY?

---

1. Have you taken a biology course or other course that teaches students about human reproduction that is, how babies are born?

   1. Yes_____
   2. No_____

2. Check all of the following who have given you information about reproduction, that is, on how babies are born.

   1. Parents_____
   2. Teachers___
   3. Classmates___
   4. Boy/GirlFriend____
   5. Older siblings_____
   6. Movies_____
   7. Reading books/magazines___
   8. Uncle_____
   9. Other/specify:_____

3. From your knowledge, does pregnancy when the mother is a teenager create added health and survival risks for a baby?

1. Yes_____
2. No_____
3. Don't Know_____

4. From your knowledge, does pregnancy when the mother is a teenager at times lead to the death of the baby or the mother?

1. Yes___
2. No____
3. Don't know____

5. Do you have a health clinic located near your school residence?

1. Yes_____
2. No_____
3. Don't Know_____

6. Have you ever attended a health clinic since you enrolled in this school?

1. Yes___
2. No____

7. Have you ever received from your health clinic, doctor, or health care provider information, medicines or supplies for preventing pregnancy?

1. Yes _____
2. No _____

8. Who will have the most responsibility for the decision on whether a girl shall become pregnant? Check one)

1. Girl herself_____ 2. Boy friend or husband
3. Parents _____ 4. Relatives _____
5. Other _____

9. Have you ever discussed pregnancy with...(Check all that apply)

1.	Your parents?	1.	Yes___	2.	No___
2.	Classmates?	1.	Yes___	2.	No___
3.	Teachers?	1.	Yes___	2.	No___
4.	Religious group?	1.	Yes___	2.	No___
5.	Best Friends?	1.	Yes___	2.	No___

6. Older siblings? 1. Yes___ 2. No___
7. Others? 1. Yes___ 2. No____
8. Specify_____

The methods a man or woman can use to prevent or delay pregnancy are called family planning, birth control or contraception.

10. How did you learn about family planning, birth control or contraception? (Check all that apply)

1. Radio 1. Yes___ 2. No___
2. Television (TV) 1. Yes___ 2. No___
3. Newspaper 1. Yes___ 2. No___
4. Your parents? 1. Yes___ 2. No___
5. Classmates? 1. Yes___ 2. No___
6. Teachers? 1. Yes___ 2. No___
7. Religious group?1. Yes___ 2. No___
8. Best Friends? 1. Yes___ 2. No___
9. Older siblings? 1. Yes___ 2. No___
10. None, Did not know about it_____
11. Other / specify 0_____

11. Check all the methods of family planning, birth control, or contraception that you know about.

1. Injection _____ 2. Diaphragm _____
3. Norplant _____ 4. Rhythm method _____
5. Abstinence _____ 6. Traditional methods ____
7. I. U. D. _____ 8. Sterilization _____
9. R.U. 486 _____ 10. Vasectomy _____
11. Condom _____ 12. None _____
13. Other/specify ------

12. With whom have you discussed your future family size? (Check all that apply)

1. Your parents? 1. Yes___ 2. No___
2. Classmates? 1. Yes___ 2. No___
3. Teachers? 1. Yes___ 2. No___
4. Religious group?1. Yes___ 2. No___
5. Best Friends? 1. Yes___ 2. No___
6. Older siblings? 1. Yes___ 2. No___
7. None 1. Yes___ 2. No---
8. Other/specify _____

13. With whom have you discussed family planning, birth control or contraception methods? (Check all that apply).

1. Your parents?	1. Yes___	2. No___
2. Classmates?	1. Yes___	2. No___
3. Teachers?	1. Yes___	2. No___
4. Religious group?	1. Yes___	2. No___
5. Best Friends?	1. Yes___	2. No___
6. Older siblings?	1. Yes___	2. No___
7. No one	1. Yes --	2. No --
8. Other/specify	----------	

14. Where are contraceptives available in this town?

1. Clinic _____ 2. Hospital _____
3. Chemist shop _____ 4. Any shop _____

15. Do you use contraceptives, birth control or family planning?

1. Yes _____
2. No _____

16. With whom have you discussed the interruption of a pregnancy or abortion? (Check all that apply).

1. Your parents?	1. Yes___	2. No___
2. Classmates?	1. Yes___	2. No___
3. Teachers?	1. Yes___	2. No___
4. Religious group?	1. Yes___	2. No___
5. Best Friends?	1. Yes___	2. No___
6. Older siblings?	1. Yes___	2. No___
7. Doctor/Nurse?	1. Yes___	2. No___
8. No one	1. Yes___	2. No___
9. Other/specify	_____	

17. Have heard of the illness called AIDS (Acquired Immune Deficiency Syndrome)?

1. Yes _____
2. No _____

18. Where have you heard about AIDS (Acquired Immune Deficiency Syndrome) and other sexually transmitted diseases? (mark all that apply)

1. Radio	1. Yes___	2. No___
2. Television (TV)	1. Yes___	2. No___
3. Newspaper	1. Yes___	2. No___
4. Your parents?	1. Yes___	2. No___
5. Classmates?	1. Yes___	2. No___

6. Teachers? 1. Yes___ 2. No___
7. Religious group? 1. Yes___ 2. No___
8. Best Friends? 1. Yes___ 2. No___
9. Older siblings? 1. Yes___ 2. No___
10. None, Did not know about it_____
11. Other/specify _____

19. Do you know someone with AIDS?

1. Yes _____
2. No _____

20. How serious an illness is AIDS?

1. Not serious _____
2. Somewhat serious but treatable with drugs _____
3. Deathly _____
4. Don't know _____

21. Tell me what you know about how AIDS is transmitted (Check one):-

1. I don't know _____
2. Through contacting body fluids _____
3. Through sexual contact _____
4. Through dirty needles connected with drugs or with medicine

22. What is the best method for a man/woman to use to protect him/her from getting AIDS? (Check one):

1. There is no protection _____
2. Total sexual abstinence _____
3. Use of condom _____
4. Limit sex to wife (wives)_____
5. Avoid exchange of needles with drugs or medicines _____
6. Don't know _____

23. If the mother has AIDS, what is the effect on her baby? (Check one):

1. There is no adverse effect on the baby _____
2. There is some adverse effect on the baby _____
3. The baby can be expected to die in few years _____

24. From your knowledge does the government recommend that people be at least 18 years old before getting married or given in marriage?

1. Yes___ 2. No____ 3. Don't Know____

Single Girls go to Question ___ 25.
Single boys go to Question ____ 30.

Questions for Girls only: (questions 25 -29)

25. The school policy calls for dismissal when single girl students become pregnant and maternity leave if married students become pregnant. How would you feel if you found out you were pregnant?

1. Sad, crying for help,in tears _____
2. Like dying never wanting to live _____
3. Feel dejected and disappointed _____
4. Accepting and feeling somehow bad _____
5. Delighted, I always looked forward to motherhood _____
6. Glad, I am ready to be a mother _____

26. Do you feel free to discuss sex related topics with your boyfriend or your husband?

1. Yes with boyfriend ____
2. No____
3. Yes with husband____

27. Do you feel free to discuss family planning, birth control, or contraception with your boyfriend or husband?

1. Yes with boyfriend____
2. No_____
3. Yes with husband____

28. Have you had an interruption of pregnancy or abortion?

1. Yes_____Go to question 29.
2. No_____Go to question 35.

29. If yes to Question 28, who among the following did you discuss your interruption of pregnancy or abortion? (Check all that apply)

1. My boyfriend? a) Yes___ b) No___
   a) Doesn't apply___

2. My husband? a) Yes___ b) No___
   c) Doesn't apply___

3. My mother? a) Yes___ b) No___
4. Doctor/Nurse? a) Yes____ b) No___
5. My best friend? a) Yes___ b) No__
7. No one a) Yes____ b) No____
8. My father and mother
   a) Yes_____ b) 2. No _____
9. Other/ specify _____

Questions for Boys only: (Please answer Questions 30-34)

30. The school policy calls for dismissal when single girl students become pregnant. How would you feel if you found out your girlfriend was pregnant?

1. Glad, I will marry her _____
2. Delighted, I always looked forward to fatherhood _____
3. It's okay, I will accept her _____
4. She should have protected herself_____
5. She is responsible, I don't care _____

31. Do you feel free to discuss sex related topics with your girlfriend or your wife?

1. Yes with girlfriend ____
2. No_____
3. Yes with wife____

32. Do you feel free to discuss family planning, birth control, or contraception with your girlfriend or wife?

1. Yes with girlfriend____
2. No_____
3. Yes with wife____

33. Has your girlfriend or wife had an interruption of pregnancy or abortion?

1. Yes_____Go to question 34.
2. No_____Go to question 35.

34. If yes to Question 34, who among the following did you discuss the interruption of pregnancy or abortion? (Check all that apply)

1. My girlfriend? a) Yes___ b) No_____
   c) Doesn't apply___
2. My wife? a) Yes___ b) No___
   c) Doesn't apply___
3. My mother? a) Yes___ b) No___
4. My mother and father? a) Yes___ b) No___
5. Doctor/Nurse? a) Yes____ b) No___
6. My best friend? a) Yes___ b) No__
7. No one?_____ a) Yes_____ b) No_____
8. Other /specify _____

35. Please check the highest level of education your father completed.

1. Primary school___
2. Junior secondary school___
3. Senior secondary school, form 5___
4. Senior secondary school, form 6___
5. Teacher Grade II____
6. Polytechnic____
7. University, Bs or BA___
8. Graduate/Professional School___
9. None____
10. Don't know____

36. Please check the highest level of education your mother completed.

1. Primary school___
2. Junior secondary school___
3. Senior secondary school, form 5___
4. Senior secondary school, form 6___
5. Teacher Grade II____
6. Polytechnic____
7. University, Bs or BA___
8. Graduate/Professional School___
9. None -----
10. Don't know____

37. Mark the highest level of education you want to complete?

1. Junior Secondary___
2. Senior Secondary___
3. Teacher Grade 11___
4. Certificate of Education___
5. Trade School or apprenticeship___
6. Polytechnic Diploma____
7. University degree_____
8. Professional School____
9. Other (specify)____

38. How many children are in your father's family?_____

39 How many brothers do you have? ____

40. How many of your brothers have attended school?____

41. How many sisters do you have? _____

42. How many sisters have attended school?____

43. What is your father's occupational status at work?

1._____
2. He is retired from_____
3. Don't know___

44. What was your father's occupational status at work?

1. _____
2.Don't know _____

45. What is your mother's occupational status at work?

1. Outside the home:_____
2. She is retired from_____
3. She works at home only___
4. She is no longer living___
5. Don't know___

46 What was your mother's occupational status at work?

1. _____
2. Don't know _____

47. What labor or work have you performed at home for your parents on a regular basis?

1. House cleaning _____
2. Selling in the store _____
3. Helping mother with cooking _____
4. Family business _____
5. Farming _____
6. Other/ specify _____

48. Do you expect your children will perform labor or work for you when you are a parent?

1. Yes _____
2. No _____
3. Specify _____

49. What do you want to become when you complete your schooling? _____

50. What does your father want most for you to become after schooling is complete? (write in)

_____

51. What does your mother want most for you to become after schooling is complete? (write in)

_____

The following are questions about careers and how long a student might have to study to enter one of those careers. If you or another student wanted to become one of the following professionals, how many years of education beyond your secondary diploma do you think it would take:

52. Teacher_____years

53. Pilot_____years

54. Medical Doctor_____years

55. Engineer_____years

56. Nurse_____years

57. Modern farmer_____years

If you are Married please answer the following: Remember these answers will not be given to anyone in your school or family.

58. Does the school know you are married?

1. Yes___
2. No___
3. Don't Know___

59. How many years have you been married?

_____

60. Did your parents and relatives approve of your marriage?

1. yes___
2. No___
3. Don't Know___

61. Who made the decision for you to marry? (mark one)

1. I chose freely to get married.___
2. My marriage was arranged by my parents/parents-in-law_____
3. My marriage was arranged by my uncle/relatives___
4. My spouse decided we should marry and I followed____
5. Other/specify____

62. At what age does your father desire that you marry?____

63. At what age does your mother desire that you marry?___

64. What is your ideal age for marriage for a person like you? _____

65. What is the ideal number of children for a person like you? _____

66. (1). Boys: How many wives do you desire?_____

(2). Girls: How many wives do you desire your husband to have? _____

67. What form are you in school? _____

68. When did you enter this school?_____

69. How many kilometers is your school residence from your parents' home? _____

70. As a student, your present local living place is: (Mark One)

1. Dormitory of the school_____
2. Home with your parents_____
3. Home with my husband or wife_____
4. Rent with other tenants_____
5. Home with your relatives_____
6. Other/specify_____

71. Marital Status: 1. Unmarried___
2. Married_____

72. Check all the names of clubs or associations or activities to which you belong and attend while at school.

1. Boy's Scouts _____ 2. Debating club _____
3. Girl's Guide _____ 4. Literary club _____
5. Religious club _____ 6. Drama club _____
7. Other/specify _____

73. What is the religion of your parents: (Check all that apply)

1. Muslim____
2. Christian___
3. Traditional religion___
4. Other/specify_____

74. What is your religious affiliation? (Check all that apply)

1. Muslim_____
2. Christian___
3. Traditional Religion___
4. None _____
5. Other/specify

75. How religious do you see yourself?

1. Not religious _____
2. A little religious _____
3. Moderately religious _____
4. Very religious _____

76. Sex: 1. Male _____ 2.Female _____

77. State your age_____

78. Do you discuss religious matters with students in your school?

1. Yes_____ (Specify group)_____
2. No_____

79. Do you discuss family matters with students in your school associations?

1. Yes____(Specify what matters)_____
2. No_____

80. What is your ethnic background? _____

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