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# Pattern of Condom Usage among Male and Female Youths in Nigeria from 1999 to 2008

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***Authors' contributions***

*This work was carried out in collaboration between all authors. Author BEO designed the study, managed the literature searches and performed the statistical analysis while author DMD supervised the study. Author OAA wrote the first draft of the manuscript, managed the analyses of the study and made necessary corrections on the manuscript. All authors read and approved the final manuscript.*

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## ABSTRACT

Condom usage is one of the most effective strategies for combating the spread of Human Immunodeficiency Virus (HIV). Despite increased sexual knowledge, adolescents in Nigeria are poor condom users. They are less likely than adults to consistently use condoms or other methods of protection that could reduce their chances of infection. The objective of the study was to describe the trend in the condom usage and to determine the association between demographic variables and condom usage among youths aged 15-24 years from1999-2008.

A comparative cross-sectional population based study was carried out in which a secondary data review analyses of Nigeria Demographic and Health Survey (NDHS) 1999, 2003 and 2008 data were done. Statistical package of social science version 17.0 was used for determining frequencies, chi square and the p-values.

There was a significant increase in the usage of condom from 8.2% in 1999 to 9.3% in 2008 to 10.5% in 2008 among the female youths, though the percentages are still very low. There was an

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insignificant increase in condom usage among the male youths from 31.1% in 1999 to 38.7% in 2003 and then a decrease to 36.8% in 2008. There was significant association between the urban dwellers, 20-24 years age group, Christians, literate and single female youths and condom usage over the years while the rural dwellers, single and literate male youths experienced significant increase in condom usage over the years at $p<0.05$.

Condom usage by youths significantly increased over the years. However, the increase is still considered low and not enough to effectively reduce the prevalence of HIV and AIDS. Religion, marital status, age group, education and literacy are variables that influenced condom usage by young people. Campaign on the usage of condom during sexual intercourse among young people at every level of education, urban or rural residence, age group and religion should be intensified.

*Keywords: Condom usage; HIV and AIDS; youths; Nigeria; secondary data analyses.*

## 1. INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is one of the world's serious public health concern, and it poses an enormous challenge to most developing countries. The HIV pandemic is on the increase with young people at a greater risk of infection, due to low risk-perception, hindering their commitment to behavioral change in spite of the fact that knowledge of some aspects of the disease is quite high. Nigerian youths between the age of 15 and 24 years have been found to be the most affected because of their engagement in risky sexual behavior, experimentation with alcohol and drugs, and failure to see that they at the risk of infection due to their poor risk perception [1]. In many regions of the world, young people (15–24 years of age) are heavily prone to new HIV infection and they accounted for 40% of total new HIV infection [2].

According to WHO 2005, the term youth is defined as young people belonging to the age group of 15-24 years. On the other hand, Sexuality involves the entire thoughts and behavior concerning sexual activity. Nearly half of the global population is less than 25 years old [3]. The period of adolescence and youth occupies a unique stage in every person's life. It is a period of transition from childhood to adulthood [4]. Youth has also been described as a stage among human beings where a lot of physiological as well as anatomical changes take place resulting in reproductive maturity in the adolescents [5]. Many adolescents manage this transformation successfully while others experience major stress and find themselves engaging in behaviors (e.g. sexual experimentation, exploration and promiscuity etc.) that place their well-being at risk [4].

Sexual behavior of adolescents is important not only because of the possible reproductive outcomes but also because risky sexual behavior, such as unprotected sex and low and inconsistent condom usage during sexual intercourse have been associated with HIV infection. Early sexual initiation poses health risks for both young men and women. Most young adults who entered into a sexual relationship for the first time did not use any form of contraception and were ignorant of the consequences of their acts leaving them vulnerable to unintended pregnancies and unplanned parenthood [6-8]. There are a lot of socio-demographic factors that had been discovered to have substantial effect on the sexual behavior of the youth and the people at large. In Kenya like other developing countries, rapid urbanization has presented development challenges leading to deteriorating living conditions and growing urban poverty [9]. Young people form a large proportion of those moving from rural to urban areas in search of livelihood opportunities and most find urban slums as the first entry points into the cities. These present enormous challenges faced by most of these urban slums are underserved by health facilities, and challenged by other socio-economic amenities [3]. Because of limited livelihood opportunities and the frustrations of unemployment, many young adults in these settings turn to risky sexual behavior. For example, they seek comfort in prostitution and drug abuse which expose them to HIV. Other behavioral factors that increase young urban women's risk for HIV infection include having older sexual partners, inconsistent condom usage, forced sex, and transactional sex [10].

Condom usage is one of the most effective strategies for combating the spread of HIV. However, opinions on educating young people about condom usage are sometimes diverse, with some people believing it promotes early sexual initiation [11], while others believe it

encourages sexual experimentation. The total number of condoms provided by international donors has been relatively low. Between 2000 and 2005, the average number of condoms distributed in Nigeria by donors was 5.9 per man, per year [12]. Restrictions on condom promotion have hampered HIV prevention efforts. In 2001, a radio advertisement was suspended by the Advertising Practitioners Council of Nigeria (APCON) for promoting messages suggesting that it is acceptable to engage in premarital sex as long as a condom is used. Premarital sex engagement predisposes an individual to high risk of HIV and other sexually transmitted diseases. Hence, the promotion of condom usage is highly encouraged. In 2006, APCON also started to enforce stricter regulations on condom advertisements that might encourage increased engagement in unprotected sexual relationship [12].

In some African countries, qualitative interviews were carried out about the misconception people have about condom usage. Different beliefs appear to influence some men's behavior. For example, some men in the primary survey said that they did not use condoms because condoms were infected with 'AIDS worms.' Qualitative interviews in Namibia revealed the key spiritual and genocidal beliefs that HIV is a punishment from God and that condoms cannot be trusted e.g. manufacturers put holes in condoms; condoms spread disease and government condoms are of low quality [13].

Despite increased sexual knowledge, adolescents in Nigeria are poor contraceptive users [14]. They are less likely than adults to consistently use condoms or other modern methods of contraceptives that could reduce their chances of infection [4]. Neither specific teaching about contraception nor improving the contraceptive service consistently increases effective contraceptive use by the youth [5]. Some other misconceptions harbored by many young people includes, the belief that mosquitoes can transmit HIV infection, false claims that use of contraceptives can cause infertility, and contracting HIV through hugging, holding of hands and sharing of a spoon of an infected person [11].

The Nigerian HIV and AIDS Emergency Action Plan (HEAP) brought to light the lack of support for non-schooling (Never been to school and out of school) youth [15]. There seems to have been an increase in the exposure to risks of sexually transmitted infections including HIV and AIDS, amongst these young people and this is often based on their risky behaviors and sexual interactions with high-risk groups [16-18]. Non-schooling youths are young people that have never been to school or have been out of school and they mostly engage in multiple sexual partners and unprotected sexual activities [19,20]. Very few percentage of unmarried young people use condom at sexual debut, while those that use it do so inconsistently [21]. A study in Republic of Benin have recorded figures of condom usage with a recent non- regular partner as low as 20% amongst men with no formal education, 18–19% in those with primary education and 39% in those with secondary education and above [22]. This clearly shows that while young people already own their sexual conduct [23] the capacity to take definite decisions to protect themselves from harmful consequences of unprotected sex is still generally lacking.

Despite series of strategies to improve condom usage among the young people, the proportion of youth that embraced condom usage during sexual intercourse is still low. Futhermore, the pattern of condom usage in Nigeria cannot be ascertained. Therefore, this study is carried out to describe the trend of condom usage among male and female Nigerian youths between 15-24 years age group over the years from 1999 to 2008. The study also identifies and describes some socio-demographic factors that could have significant association with usage of condom among the youths.

## 2. METHODOLOGY

### 2.1 Study Area

The primary survey, a national study (NDHS 1999, 2003 and 2008) for Nigeria was used. Nigeria is made up of 36 states and a Federal Capital Territory (FCT), grouped into six geopolitical zones: North Central, North East, North West, South East, South South, and South West. There are also 774 constitutionally recognized local government areas (LGAs) in the country. There are about 374 identifiable ethnic groups in Nigeria with the Igbo, Hausa, and Yoruba as major groups.

### 2.2 Study Population

The population covered by the 2003 and 2008 NDHS is defined as the universe of all men and women aged 15-49 years in Nigeria.

## 2.3 Unit of Enquiry

For this study, the study unit of enquiry was the young men and women aged 15-24 years from the study population of the 1999, 2003 and 2008 NDHS. According to the United Nations, 'youth', were defined as those persons between the ages of 15 and 24 years, thereby ensuring statistical consistency [24].

## 2.4 Study Design

This is a comparative cross-sectional population-based study. It is a secondary data analysis of data from 1999, 2003 and 2008 NDHS. For this study, condom usage by young people aged 15-24 years in Nigeria and the outcomes on the burden of the scourge were compared using the 1999, 2003 and 2008 NDHS.

## 2.5 Sampling Technique

The sampling technique used for 1999, 2003 and 2008 NDHS was a stratified two-stage cluster design [11]. The primary sampling unit (PSU) also known as cluster for the 2003 and 2008 NDHS is defined on the basis of Enumeration Areas, EAs from the 1991 and 2006 EAs census frames.

## 2.6 Sampling Frame

The sample frame for this survey was the list of enumeration areas (EAs) developed for the 1991 Population Census. Administratively, at the time the survey was planned, Nigeria was divided into 36 states and the Federal Capital Territory (FCT) of Abuja. Each state was subdivided into local government area (LGA) units and each LGA was divided into localities. In addition to these administrative units, for implementation of the 1991 Population Census, each locality was subdivided into enumeration areas (EAs). The list of approximately 212,080 EAs, with household and population information (from the 1991census) for each EA, was evaluated as a potential sampling frame for the 1999, 2003 and 2008 NDHS. The EAs are grouped by states, by LGAs within a state, and by localities within an LGA, stratified separately by urban and rural areas. For NDHS 2008, at the time of survey implementation, the list of EAs of 2006 population census used did not have census information for households and the population because the census frame is under segmentation revision. Therefore, no household or population information was available at the EA level. Therefore, each EA was approximately classified as urban or rural.

## 2.7 Stratification

In the current preliminary census frame, the EAs are grouped by states, by LGAs within a state, and by localities within an LGA. The EAs are stratified separately by urban and rural areas. Any locality with less than 20,000 populations in each LGA constitutes the rural area in the LGA.

## 2.8 Sample Selection

The NDHS sample was selected using a stratified, two-stage cluster design consisting of a total of 365 clusters, 165 in urban and 200 in rural areas for 2003 survey and 888 clusters, 286 in the urban and 602 in the rural areas selected in 2008 survey.

## 2.9 Sample Size

A total of 7,864 households and 36800 households were recruited in 2003 and 2008 NDHS respectively. The 2008 NDHS sample was selected using a stratified two-stage cluster design [11] consisting of 888 clusters, 286 in the urban and 602 in the rural areas1. A representative sample of 36,800 and 7,864 households was selected for the 2008 and 2003 NDHS survey respectively, with a minimum target of 950 completed interviews per state. In each state, the number of households was distributed proportionately among its urban and rural areas. About 734, 879 and 4910 men of age 15-24 years were interviewed in 1999, 2003 and 2008 NDHS while 2482, 3210 and 12626 women of age 15-24 years were interviewed in 1999, 2003 and 2008 NDHS.

## 2.10 Data Management

For the purpose of this study, the secondary data was analyzed using SPSS statistical package 17.0 and Epi-info package. Different changes such as dataset merging, variables recoding and removal of some missing data were carried out. Dependent variables used in the analysis included last intercourse used condom while independent variables include: region, place of residence, educational attainment, marital status, literacy and religion. Different recording and computation was carried out. Descriptive statistics such as frequencies and percentages were used to summarize socio-demographic characteristics and dependent variables while cross-tabulations and proportions were used to

summarize dependent variables with respect to the socio-demographic properties of the respondents. Chi-square and significance obtained using StatCalc of Epi-Info statistical software was used for to investigate trends and associations between dependent and independent variables. All analyses were done at the 5% level of significance and 95% confidence interval.

Ethical approval was from the ethical review committee for the research work. Additional approval and consent was given by the National Demographic and Health Survey (NDHS) for the release of the data regarding condom usage among young people.

## 3. RESULTS

Table 1 shows the distribution of the socio-demographic characteristics of female and male youths aged 15-24 years. About 53.7%, 54.4% and 51.9% of female youths involved in the study are within the age group 15-19 years for 1999, 2003 and 2008. Young women that live in the urban residence ranges between 31% to 40% and higher percentage (60% to 68%) of these young women reside in the rural residences. Higher proportion of female youth had secondary education while about 5% of the respondents were able to attain higher level of education. More proportion of Christian female youths were interviewed in the course of the three surveys compared to the Muslim respondents. Over 50% of the respondents interviewed during the surveys were singles while only about 2% of the respondents were divorced.

A higher percentage (51.7% to 62%) of male youths enrolled in 1999, 2003 and 2008 in the study are within the age group 15-19 years. About 54.4% to 66.4% of the male respondents live in the rural residence. In the aspect of education, higher proportion (>60%) of male respondents had secondary education as their highest level of education attainment at the time of survey. About 61.2%, 55.1% and 55.2% of the male youths in 1999, 2003 and 2008 studies respectively are Christians. Over 90% of the male respondents are single.

Table 2 shows that among the female youths, there was an increase in the usage of condom from 8.2% in 1999 to 9.3% in 2008 to 10.5% in 2008, though the percentages are still very low. There was an increase in condom usage among the male youths from 31.1% in 1999 to 38.7% in 2003 and then a decrease to 36.8% in 2008.

Table 3 describes the relationship between the socio-demographic characteristics and condom usage among female youths. There was a statistically significant increase ($X^2$=19.85, P=0.00001) of condom usage during last intercourse among the youths that reside in the urban areas. There was a slight reduction in the proportion of female youth living in the rural environments, that used condom during last intercourse from 1999 to 2003 and increase from 2003 to 2008 though not statistically significant ($X^2$=1.36, P=0.244).

There was significant increase ($X^2$=16.75, P=0.00004) in condom usage among respondent at the secondary level from 1999 to 2008 but there was statistical decline($X^2$=3.94, P=0.04715) from 1999 to 2008 for respondent at the primary level of education. There was no significant increase in the usage of condom among those that had no formal education and higher education.

All geo-political zones in Nigeria showed an insignificant increase in condom usage except the youth in the South South region that had significant increase ($X^2$=23.08, P=0.00001) in the proportion of youth that used condom in their last intercourse from 1999 to 2008. There was a statistical and steady increase ($X^2$=32.60, P=0.00001) of condom usage of among the literate female youths from1999 to 2008.

Table 4 describes the relationship between the socio-demographic characteristics and condom usage among female youths. There was a steady increase in the usage of condom among male youths both in the urban and rural residences from 1999 to 2008 though there was only significant increase ($X^2$=41.65, P=0.00001) among the respondents in the rural areas from 1999 to 2008. There was no significant increase in the proportion of young male youths that used condom during their last intercourse for the three years.

There was a significant increase($X^2$=0.54, P=0.0331) in the proportion of male youths in the South East regions from 1999 to 2008.There is no significant increase in proportion among those in the other regions. The proportion of young male respondents that used condom during the last intercourse significantly increased ($X^2$=19.15, P=0.00001) from 1999 to 2003 but slightly declined in 2008. The proportion of young men that are literate is highest in the three years.

**Table 1. Socio-demographic characteristics of female and male youths**

| Variables | 1999 | 2003 | 2008 | 1999 | 2003 | 2008 |
|---|---|---|---|---|---|---|
| | Female | | | Male | | |
| | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) |
| **Age group** | | | | | | |
| 15-19 years | 1774 (53.7) | 1749 (54.4) | 6591 (51.9) | 513 (62.0) | 453 (50.7) | 2571 (51.7) |
| 20-24 years | 1528 (46.3) | 1464 (45.6) | 6103 (48.1) | 315 (38.0) | 441 (49.3) | 2399 (48.3) |
| Total | 3302 (100.0) | 3213 (100.0) | 12694 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |
| **Residence** | | | | | | |
| Urban | 1095 (33.2) | 1282 (39.9) | 4028 (31.7) | 285 (34.4) | 408 (10.6) | 1671 (33.6) |
| Rural | 2207 (66.8) | 1931 (60.1) | 8666 (68.3) | 543 (65.6) | 486 (54.4) | 3299 (66.4) |
| Total | 3302 (100.0) | 3213 (100.0) | 12694 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |
| **Education** | | | | | | |
| No formal Education | 956 (29.0) | 901 (28.0) | 3831 (30.2) | 106 (12.8) | 95 (10.6) | 732 (14.7) |
| Primary | 691 (20.9) | 646 (20.1) | 1938 (15.3) | 184 (22.2) | 200 (22.4) | 723 (14.5) |
| Secondary | 1523 (46.1) | 1520 (47.3) | 6260 (49.3) | 504 (60.9) | 544 (60.9) | 3194 (64.3) |
| Higher | 132 (4.0) | 146 (4.5) | 665 (5.2) | 34 (4.1) | 55 (6.2) | 321 (6.5) |
| Total | 3302 (100.0) | 3213 (100.0) | 12694 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |
| **Region** | | | | | | |
| North-Central | 594 (18.0) | 521 (16.2) | 2484 (19.6) | 164 (19.8) | 166 (18.6) | 1077 (21.7) |
| North East | 413 (12.5) | 547 (17.0) | 2361 (18.6) | 103 (12.4) | 124 (13.9) | 821 (16.5) |
| North West | 717 (21.7) | 710 (22.1) | 2580 (20.3) | 112 (13.5) | 205 (22.9) | 945 (19.0) |
| South East | 401(12.1) | 498 (15.5) | 1456 (11.5) | 94 (11.4) | 114 (12.8) | 502 (10.1) |
| South South | 614 (18.6) | 433 (13.5) | 1832 (14.4) | 183 (22.1) | 129 (14.4) | 856 (17.2) |
| South West | 563 (17.1) | 504 (15.7) | 1981 (15.6) | 172 (20.8) | 156 (17.4) | 769 (15.5) |
| Total | 3302 (100.0) | 3213 (100.0) | 12694 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |
| **Religion** | | | | | | |
| Christianity | 1848 (56.0) | 1754 (54.6) | 6853 (53.9) | 506 (61.2) | 493 (55.1) | 2739 (55.1) |
| Islam | 1409 (42.6) | 1432 (44.6) | 5618 (44.3) | 310 (37.4) | 394 (44.1) | 2165 (43.6) |
| Others | 45 (1.4) | 27 (0.8) | 223(1.8) | 12 (1.4) | 7 (0.8) | 66 (1.3) |
| Total | 3302 (100.0) | 3213 (100.0) | 12694 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |
| **Marital Status** | | | | | | |
| Single | 1831 (55.5) | 1836 (57.1) | 6747 (53.2) | 759 (91.7) | 827 (92.5) | 4537 (91.3) |
| Married | 1418 (42.9) | 1310 (40.8) | 5773 (45.5) | 57 (6.9) | 59 (6.6) | 414 (8.3) |
| Divorced | 53 (1.6) | 67 (2.1) | 173 (1.4) | 12 (1.4) | 8 (0.9) | 19 (0.4) |
| Total | 3302 (100.0) | 3213 (100.0) | 12693 (100.0) | 828 (100.0) | 894 (100.0) | 4970 (100.0) |

**Table 2. Condom usage among female and male youths**

| Variables | | 1999 | 2003 | 2008 |
|---|---|---|---|---|
| | | n (%) | n (%) | n (%) |
| Last intercourse | Yes | 146 (8.2) | 169 (9.3) | 796 (10.5) |
| Used condom | No | 1626 (91.8) | 1640 (90.7) | 6780 (89.5) |
| **(Female)** | Total | 1772 (100.0) | 1809 (100.0) | 7576 (100.0) |
| Last intercourse | Yes | 104(31.1) | 126(38.7) | 623 (36.8) |
| Used condom | No | 230 (68.9) | 200(61.3) | 1072 (63.2) |
| **(Male)** | Total | 334(100.0) | 326(100.0) | 1695 (100.0) |

**Table 3. Association between sociodemographic factors and condom usage among female youths**

| | 1999 | 2003 | 2008 | Chi square | P value |
|---|---|---|---|---|---|
| | Yes (%) | Yes (%) | Yes (%) | | |
| **Age group** | | | | | |
| 15-19 | 53(8.3) | 69(9.5) | 246(8.7) | 0.006 | .94 |
| 20-24 | 93(8.2) | 100(9.2) | 550(11.6) | 13.25 | .00027* |
| Total | 146(8.2) | 169(9.3) | 796(10.5) | 9.15 | .0025* |
| **Residence** | | | | | |
| Urban | 67(12.5) | 105(16.1) | 410(20.3) | 19.85 | 0.00001* |
| Rural | 79(6.4) | 64(5.5) | 386(6.9) | 1.36 | 0.24 |
| Total | 146(8.2) | 169(9.3) | 796(10.5) | 9.15 | 0.0025* |
| **Education** | | | | | |
| NoFormal Education | 6(0.9) | 2(0.3) | 23 (0.7) | 0.007 | 0.96 |
| Primary | 24(6.5) | 17 (5.0) | 47 (4.0) | 3.94 | 0.047* |
| Secondary | 89(13.3) | 118(18.4) | 560(20.4) | 16.75 | 0.00004* |
| Higher | 27(30.7) | 32(43.8) | 166(40.6) | 1.99 | 0.16 |
| Total | 146(8.2) | 169(9.3) | 796(10.5) | 9.15 | 0.0025* |
| **Region** | | | | | |
| North Central | 35(11.3) | 29(10.8) | 128(10.3) | 0.27 | 0.60 |
| North East | 7(2.9) | 3(0.8) | 45(2.7) | 0.58 | 0.45 |
| North West | 4(0.8) | 4(0.7) | 11(0.5) | 0.69 | 0.40 |
| South East | 29(22.1) | 30(17.1) | 141(26.3) | 2.87 | 0.090 |
| South South | 43(12.6) | 42(16.7) | 207(24.5) | 23.08 | 0.000001* |
| South West | 28(10.4) | 61(32.4) | 264(21.4) | 7.70 | 0.0055* |
| Total | 146(8.2) | 169(9.3) | 796(10.5) | 9.15 | 0.0025* |
| **Marital Status** | | | | | |
| Single | 122(22.1) | 143(28.1) | 655(32.4) | 22.28 | 0.000001* |
| Married | 21(1.8) | 22(1.8) | 129(2.4) | 2.33 | 0.13 |
| Divorced | 3(6.1) | 4(8.0) | 12(10.9) | 1.02 | 0.31 |
| Total | 146(8.2) | 169(9.3) | 796(10.5) | 9.15 | 0.0025* |
| **Religion** | | | | | |
| Christians | 122(14.0) | 139(18.0) | 675(20.2) | 17.47 | 0.00003* |
| Islam | 23(2.6) | 29 (2.8) | 110(2.7) | 0.000 | 0.99 |
| Others | 1 (5.3) | 1 (10.0) | 8(7.4) | 0.054 | 0.82 |
| Total | 146(8.3) | 169(9.3) | 793(10.5) | 9.15 | 0.0025* |
| **Literacy** | | | | | |
| Illiterate | 10(1.3) | 12 (1.3) | 44(1.1) | 52.89 | 0.000001* |
| Partly literate | 15(7.9) | 5 (5.7) | 14(4.5) | 2.39 | 0.12 |
| Literate | 120(14.8) | 152(19.5) | 733(22.4) | 32.604 | 0.000001* |
| Total | 145(8.2) | 169(9.5) | 791(10.5) | 9.17 | 0.0025* |

**= Significance at P<0.05*

## 4. DISCUSSION

Over 10% of the world population is affected by the scourge of HIV and AIDS [2]. In 2006, UNAIDS stated that young people of age 15 and above account for about 40% of new HIV infections. The future course of the national response to the HIV and AIDS epidemic in

Nigeria had shown to greatly depend on a number of factors including levels of HIV and AIDS-related knowledge among the general population; social stigmatization; risk behavior modification; risk perception; access to quality services for sexually transmitted infections (STI); correct and consistent condom usage; provision and uptake of HIV counseling and testing; and access to care and anti-retroviral therapy (ART) [11].

Adolescence is a transition period between childhood and adulthood and this is a time when many youth experience critical life-defining changes, such as their first sexual experience, marriage, pregnancy, and parenthood [7]. Initiation of sexual intercourse has been described as a milestone in the physical and psychological development of men and women in all societies [25].

**Table 4. Association between demogrhaphic characteristics and condom usage among male youth**

| Variables | 1999 | 2003 | 2008 | Chi square | P value |
|---|---|---|---|---|---|
| | Yes (%) | Yes (%) | Yes (%) | | |
| **Age group** | | | | | |
| 15-19 | 34(25.4) | 28(31.1) | 141(31.8) | 1.83 | 0.18 |
| 20-24 | 70(35.0) | 98(41.5) | 482(38.5) | 0.25 | 0.62 |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |
| **Residence** | | | | | |
| Urban | 50(45.9) | 74(51.4) | 291(53.8) | 2.23 | 0.14 |
| Rural | 54(24.0) | 52(28.6) | 332(28.8) | 41.65 | 0.000001* |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |
| **Education** | | | | | |
| No Formal Education | 1(2.4) | 0(0.0) | 6(2.8) | 0.145 | 0.70 |
| Primary | 14(17.1) | 10(14.3) | 32(16.8) | 0.001 | 0.97 |
| Secondary | 74(39.4) | 97(47.3) | 466(41.8) | 0.001 | 0.97 |
| Higher | 15(68.2) | 19(79.2) | 119(68.8) | 0.116 | 0.73 |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |
| **Region** | | | | | |
| North Central | 17(24.3) | 29(42.0) | 128(32.5) | 0.47 | 0.50 |
| North East | 7(17.5) | 8(17.0) | 32(12.7) | 0.99 | 0.32 |
| North West | 4(13.8) | 4(8.5) | 12(8.7) | 0.50 | 0.48 |
| South East | 16(40.0) | 20(51.3) | 92(58.6) | 0.54 | 0.033* |
| South South | 22(27.5) | 23(41.8) | 162(39.2) | 2.95 | 0.086 |
| South West | 38(50.7) | 42(60.9) | 197(57.6) | 0.70 | 0.40 |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |
| **Marital Status** | | | | | |
| Single | 97(36.5) | 122(46.7) | 592(46.4) | 6.85 | 0.009* |
| Married | 2(3.6) | 3(5.2) | 27(6.7) | 0.93 | 0.33 |
| Divorced | 5(41.7) | 1(14.3) | 4(28.6) | 0.46 | 0.50 |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |
| **Religion** | | | | | |
| Christians | 80(37.7) | 89(45.6) | 160(24.8) | 21.03 | 0.000001* |
| Islam | 23(19.7) | 37(28.9) | 12(8.7) | 5.75 | 0.016* |
| Others | 1(20.0) | 0(0.0) | 92(58.6) | 5.22 | 0.022* |
| Total | 104(31.1) | 126(38.7) | 264(28.1) | 3.29 | 0.070 |
| **Literacy** | | | | | |
| Illiterate | 3(3.9) | 4(8.7) | 15(5.5) | 3.01 | 0.083 |
| Partly literate | 6(13.3) | 3(14.3) | 13(14.9) | 0.062 | 0.80 |
| Literate | 95(40.6) | 119(46.8) | 590(44.5) | 19.15 | 0.00001* |
| Total | 104(31.1) | 126(38.7) | 623(36.8) | 2.36 | 0.12 |

**= Significance at P<0.05*

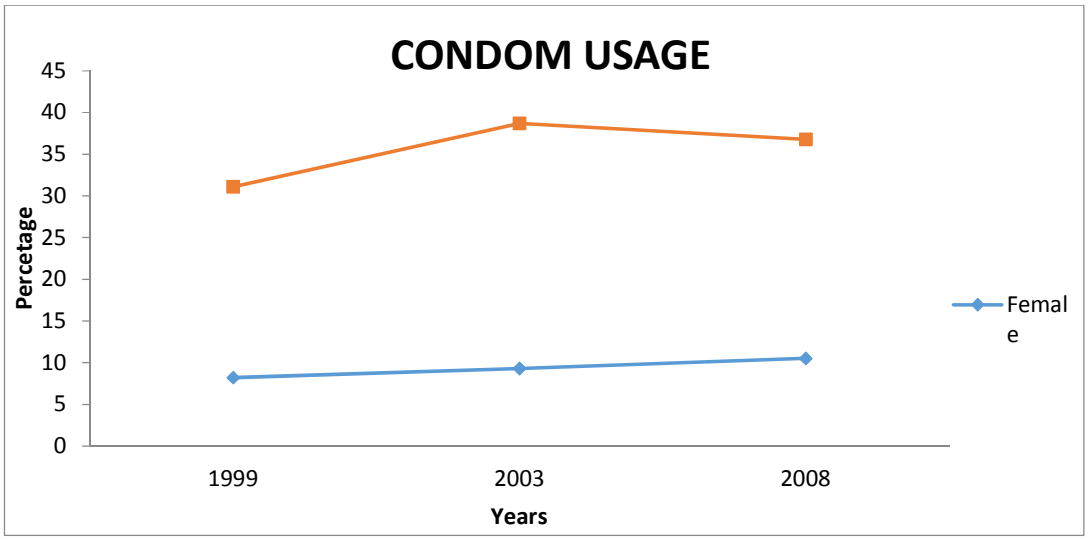


**Fig. 1. Chart of condom usage among female and male youths**

This study reported a pattern with about 8.2% to 10.5% of female youths and 31.1% to 38.7% of male youths used condom during their last sexual intercourse. Increase in the usage of condom among the female youths explains that young women are now getting more aware of the importance of condom usage to prevent unwanted pregnancy and sexually transmitted diseases (STIs). This result is supported by the result of a study of adolescent sexuality in Peru which showed that 38% of male youths used condom at the time of first intercourse [6]. This low proportion might be due to the belief that educating young people on condom usage may lead to early initiation into sex among the youths. Also in this study, it was observed that there was an overall improvement in condom usage among male youths through the years from 1999 to 2003 and a slight decrease in 2008. This could be as a result of poor compliance in the usage of condom during sex by the male respondents. The increase appears to be accounted for by the early adults aged 20-24 years living in the urban residence and those that were Christians, never married and at their secondary level of education. This means that the early adults have adequate knowledge about condom usage while young people between 15-19 years of age are more likely to be infected with HIV, thereby increasing the burden of HIV and AIDS in Nigeria.

Conversely among the female youths, the pattern appears different as female youth in the rural area shows significant increase in condom usage during their last intercourse while those in the urban shows an increase over the years but was not significant. This shows that most rural dwellers do not have adequate information about condom usage. They are more likely to have higher burden of HIV compared to the female youths living in the urban areas. Therefore, residence plays an important role in describing predictors of the trend of condom usage. The result above is also supported by a study that indicated that 42% of adolescent girls in a rural community of Rivers state had had induces abortion or STIs, including gonorrhea because of lower contraception usage [26]. The proportion of young women that use condom was considerably low compared to their male counterpart because the sexual act might be unplanned or preference of sexual enjoyment over protection against HIV and other STIs. Even though there was an increase in the proportion over the years but the increase was marginal. In a related study carried out among out of school youths in a local government area in Nigeria [27], higher proportion of male youths (44.7%) uses condom during their last sexual intercourse compared to female youths (29.7%). Comparatively, in a study carried out in 2012 [28], the proportion of urban youths that used condom during sexual intercourse was higher than those that reside in the rural area. A closely related finding was observed among South African citizens [29], 8% and 11% of men and women respectively living in rural residence and less educated used condom during their last intercourse compared to 29% and 34% of men and women living in urban and more educated. Some of the observed facts show the success of some of the programs and

intervention targeted towards enlightening people, especially the young individuals about condom usage. Effort is expected to be geared towards increasing condom usage among youths (aged 15-24 years) especially the female youths and those living in the rural areas.

Also from this study, about 2.4-2.8% of young men that have no formal education, 14.3-17.1% of those with primary education and about 39.4 % of those with secondary education used condom during their last sexual intercourse. This is in accordance with a study in Benin Republic in 2000 [22], the study showed that 20% of men with formal education, 18-19% of those at primary school, about 39% of those in secondary school and above of non regular young used condom during sexual intercourse. This observed fact was further buttressed by the study carried in Nigeria [27], higher proportion of respondent that had secondary level (53.4%) of education used condom compared to those with no formal education (15.4%), and thereby showing that education is an important factor that could influence condom usage. The percentage of respondents in this study at the secondary and higher level of education increased from 1999-2003 but declined in 2008. This could be because of the programs geared towards educating young people at this level of education seem to be failing in recent times.

This study also shows higher proportion of female and male youths between age 15-24 years that have never married used condom during their last sexual intercourse compared to those that are married or divorced. This means that the singles have high sense of responsibilities of preventing themselves from contracting HIV or other STIs during sex because they are not sure if their partners have multiple sexual partners which might increase the odds of having HIV. However, the married youths have the belief that they don't have to use condom with their partners because they believe that they are the only sexual partners they have. Some of the married respondents also believe it's absurd to be using condom with their partners. The study may not be entirely different from what is known in a study carried out in South Africa [29] in which 15% and 18% of married women consistently and occasionally used condom, and which is considered low compared to the proportion of singles that use condom with their partners during sex. This contributes that marital status is an essential factor that can determine or influence condom usage among the youths.

## 5. CONCLUSION

Young people between the ages 15 to 24 years have accounted for about 40% of new HIV infection and the positive response to this scourge can only be successful if they adopt behaviors that will protect them from the infection and increase their comprehensive knowledge about the mode of transmission, condom usage, means of contracting the infection. Low proportion of young men and women used condom in their last sexually intercourse. Condom usage by women significantly increase from 8.2% in 1999 to 10.5% in 2008, this little change over 10 year period is not enough to effectively reduce the prevalence of HIV/AIDS. Likewise, religion, marital status, age group and education are variables that influence the condom usage by young people. Higher percentage of Christians use condom compared to the Muslims, which calls for further investigation on why Muslim respondents don't use condom. Also higher percentage of respondent that are never married and that are within age group 20 to 24 uses condom during sexual intercourse.

## 6. RECOMMENDATION

Effort should be made by the government and various HIV control organizations towards increasing condom usage among young people which have always been very low. Campaign on the usage of condom during sexual intercourse among young people at every level of education especially at the higher education. Rural dwellers should also be sensitized more on the benefits of condom usage during sex. Emphasis should be on the benefit of its usage and implication of its non usage during sexual intercourse. Condom usage among the married youths should not only be positioned in contraception during family planning but also in preventing the contraction of HIV and AIDS which is important in the reduction of the prevalence of the disease.

Conclusively, more work should be done on examining the trend of condom usage beyond 2008 and to monitor the effectiveness of programs and campaign that had been targeted towards increasing the knowledge over time and possibly change their strategies if need be. Also, it will add to knowledge and help our policy making if a work is done on comparing the trend of comprehensive HIV and AIDS knowledge and condom usage among young men and women. Therefore, policy makers should integrate

education on HIV and AIDS prevention in schools and religious organizations in order to increase awareness of possible health burden of HIV and AIDS on the socio-economic characteristics of individuals and the country.

## 7. LIMITATION

The only limited observed in the study is the fact that the study is secondary data analysis. We didn't meet the respondents used for the original survey in order to be able to obtain other vital information about their condom usage over the years. Futhermore, the study was carried out in the year 2012 and was only able to review three surveys (1999, 2003 and 2008). We couldn't include 2013 survey in the study of the pattern of condom usage among the young people over the years. Therefore, researchers should extend the investigation of the trend of condom usage beyond 2008.

## CONSENT AND ETHICAL APPROVAL

Ethical approval was from the ethical review committee for the research work. Additional approval and consent was given by the National Demographic and Health Survey (NDHS) for the release of the data regarding condom usage among young people.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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