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Research Article

# Prevalence and Causes of HIV/AIDs Infection Among Out-of-School Children in Ibadan

**Babatunde Ezekiel Olusegun**[*] ⓘD

Institute of Education, University of Ibadan, Ibadan, Nigeria

## Abstract

Children who are vulnerable to sexual exploitation are also vulnerable to HIV infection because they live on the margins of society and outside of the health system. As a result, they may be infected without knowing their HIV status and will not access the health system when they develop an opportunistic infection related to AIDS. The prevalence of HIV/AIDs in Nigeria especially in Ibadan among the out-of-school children has become a great public health concern. This study therefore mitigated prevalence and causes of HIV/AIDs infection among out-of-school children in Ibadan, Oyo State. Nigeria. This study is anchored on explanatory mixed method of QUAN+qual research design. A random sampling technique was employed in sampling 100 participants for the study. Three instruments: Out-of-school children HIV Risk and Infection Questionnaire (OHRIQ) and HIV/AIDs Rapid Test Kit (HARTK) were used to elicit quantitative information from participants and KII to collect qualitative data from the participants about their status. Data collected was analysed using Descriptive and Multiple Regression while ATLAS ti was used for qualitative data. Results revealed that Home and Street life has a moderate positive correlation and was significant with HIV infection among out-of-school children (r = .16; p=<0.01). Survival activities have very strong positive significant correlation with HIV infection. Sexual behaviour has low positive significant (r=.00, p<0.01) correlation and Marginalization has a low negative significant correlation (r=-.07, p<0.01). The study therefore recommends that parent should endeavor to send their children to school and take full responsibility on their wellbeing to avoid being infected with HIV.

## Keywords

HIV, Out-of-School-Children, Opportunistic Infection, Sexual Behavior, Survival Activities

## 1. Introduction

Acquired immune deficiency syndrome (AIDs) is the most severe phase of human immunodeficiency virus infection (HIV). People with acquired immune deficiency syndrome have such badly damaged immune systems that they get an increasing number of severe illnesses, called opportunistic infection. Without treatment, Human immunodeficiency virus advances in stages, overwhelming the immune system and getting worse over time. New human immunodeficiency virus infections among children in Africa are not declining as quickly as among other age group. Adolescent females and young women aged 15years are at a higher risk of human immunodeficiency infections, contributing 25% of all new infections among adults in Africa in 2015. Similarly, trends have been documented regarding acquired immune deficiency

syndrome related mortality especially in Africa where access to human immunodeficiency virus testing, care and treatment services by young people is still a challenge. Every hour, 26 children get infected, with close to 2 million living with Human immunodeficiency virus worldwide. This is compounded by low Hunan immunodeficiency virus-related knowledge. Only 26% of girls and 32% of boys 15-19 years in Nigeria know how HIV is transmitted and how it can be prevented [16].

Nigeria is one of the countries in the world with the highest number of people living with Human Immunodeficiency Virus (HIV). Over the past two-decades, partners in the global AIDS response have intensively supported Government and institutions, as elsewhere, to scale up prevention, treatment, care and support, with a concomitant synergic impact on a vast range of interrelated public health and development challenged. Nonetheless, HIV/AIDS remains a leading contributor to the burden of disease and a significant public health threat for our country. However, children and young people are a critical focus population in prevention and treatment and particularly important in the attainment of the global target towards elimination of human immunodeficiency and acquired immune deficiency virus by 2030 [11, 13].

The education deprivation in Nigeria is driven by various factors, including economic barriers and socio-cultural norms and practices that discourage attendance in formal education, especially for girls. Ensuring educational provision in predominantly rural areas and the impact of insurgency in the northeast present significant challenges. In North-Eastern and North-Western states, 29 percent and 35 percent of Muslim children, respectively receive Qur'anic education, which does not include basic skills such as literacy and numeracy. The government considers children attending such schools to be officially out-of-school [10]. A survey has shown that the population of out-of-school children in Nigeria has risen from 10.5 million to 13.2 million in 2015.

Over the last few years, Nigeria has been besieged by Boko Haram and lots of children have been put out-of-school. The increase has affected the socio-economic progress of the country. This is equally affecting the implementation of some education treaties that Nigeria is a signatory to. The number of out-of-school children calls for serious concern. Nigeria should take on the challenge of reducing out-of-school children. Nigeria accounts for more than one in five out-of-school children and 45 percent of out-of-school children in West Africa. Nigeria is one of the countries in the world with the highest number of people living with Human Immunodeficiency Virus (HIV). Over the past two-decades, partners in the global AIDS response have intensively supported Government and institutions, as elsewhere, to scale up prevention, treatment, care and support, with a concomitant synergic impact on a vast range of interrelated public health and development challenges [18]. Nonetheless, HIV/AIDS remains a leading contributor to the burden of disease and a significant public health threat for

our country. However, children and young people are a critical focus population in prevention and treatment and particularly important in the attainment of the global target towards elimination of human immunodeficiency and acquired immune deficiency virus by 2030.

According to [17, 10] data, 670,005 out of 2.1 million (31.9%) new infections by 2015 were young among people aged 15-24 years. These included 250,000 infections among adolescents age 15-19years. Moreover, Nigeria realizes the devastating effects of Hunan immunodeficiency virus and Acquired immune deficiency syndrome on her people, health, economic, and social progress fairly recently. It is estimated that about 3, 229, 757 people live with Human immunodeficiency Virus in Nigeria and about 220, 393 new Hunan immunodeficiency virus and 210,031 died from Acquire immune deficiency syndrome related cases [13]. People practicing low-risk sex are the driving force of Human immunodeficiency virus epidemic in Nigeria while the high risk groups involving female sex workers, men who have sex with men and injecting drug users contribute substantially to new infections. In conclusion, Human immunodeficiency virus prevalence among adults in Nigeria is relatively low (3.2%), yet Nigeria is an enormous country where human immunodeficiency virus infection remains an issue that demands a systematic and highly tailored intervention. Most excluded children share the characteristic of having homelessness, deprivation, sexual harassment, vulnerable and marginalized [12].

The study investigated the prevalence and correlates of HIV/AIDS infections among out-of-school children in Ibadan, Oyo State Nigeria. Four research questions that guided the study are:

Research Questions

1. What is the characteristic of out-of-school children in Ibadan Metropolis?
2. What is the extent of prevalence of HIV infection among out-of school-children in Ibadan Metropolis?
3. What is the strength and direction of relationship among vulnerability of sexual behavior, home and street life, survival activities, marginalization and opportunistic infection among out- of-school children with HIV infection in Ibadan?
4. What is the relative and composite effect of sexual behavior, survival activities, home and street life, marginalization, opportunistic infection among out of school children with HIV infection in Ibadan?

## 2. Methodology

This study is anchored on explanatory mixed method of QUAN+qual research design. A random sampling technique was employed in sampling 100 participants for the study. Three instruments: Out-of-school children HIV Risk and Infection Questionnaire (OHRIQ) with r=0.87 and HIV/AIDs Rapid Test Kit (HARTK), (r=0.85) was used to elicit quanti-

tative information from participants and KII to collect qualitative data from the participants about their status which allowed them to tell their stories of how they become out-of-school and their experiences since they abandoned their home and family and live on the street. There was an informed consent before participation. Data collected was analysed using Descriptive statistics of frequency, mean and percentages and inferential statistics of Pearson Product Moment Correlation Coefficient and Multiple Regression for the quantitative data. The qualitative data was analysed thematically using ATLAS ti software.

# 3. Results and Discussion

Research Question 1: What is the characteristic of out-of-school children?

*Table 1. Characteristics of out-of-school children by Age.*

| Age (years) | F | % | Mean | SD |
|---|---|---|---|---|
| 6-8 | 3 | 6 | | |
| 9-11 | 8 | 16 | | |
| 12-14 | 9 | 18 | | |
| 15-17 | 15 | 29 | | |
| Others | 16 | 31 | | |
| Total | 51 | 100 | 3.6 | 1.24 |

Table 1 reveals the age range age of out-of-school in this study. From the table, it was observed that 3 (6%) of the participants fall within the age range of 6-8years. Likewise, 8 (16%) are in the age range of 9-11years. Similarly, 9 (18%) are in the age range of 12-14years while 15 (29%) are in the bracket of 15-17years and other ages are in the study are 16 (31%). Ages 15-17 and above has the highest percentage 60% among out of school children who are with G14 in the age of adolescents, followed by age 12-14years. The implication of the result is that most of the participants who had the virus are above age 15 and these are the future leaders of tomorrow. This study reveals that the highest percentage of out-of-school children falls within the adolescent age. This implies that there are more adolescent that are out-of-school. This study agrees with [11], who opined that new infections were among young people aged 15-24 years. Also, the result is in agreement with the opinion of World Bank [13], affirming that adolescent are at increased risk characteristic such as drop-out. Therefore, there is need for concerted efforts by all stakeholders to mitigate the spread of the virus among this group.

*Table 2. Participants by Gender.*

| Gender | F | % | M | SD |
|---|---|---|---|---|
| Male | 40 | 40 | | |
| Female | 60 | 60 | | |
| Total | 100 | 100 | 1.59 | .497 |

Table 2 present participants by gender. The male participants are 40 (40%) and the female participants are 60 which represent 60% of the sample. It also reveals a mean of 1.59 with the standard deviation of .497. The table reveals that there are more female than male that are out-of-school. This shows that female have begun to stay on the street compared to their male counterpart [4, 5]. The above observations shows that there more female than male out-of-school, this could mean that female are more involved in street activities than their male counterpart.

*Table 3. Participants Educational Level.*

| Level | Frequency | Percentage (%) | Mean | SD |
|---|---|---|---|---|
| Primary | 16 | 16 | | |
| JSS | 30 | 30 | | |
| SSS | 54 | 54 | | |
| Total | 100 | 100 | 2.18 | .888 |

In Table 3, educational level of the participants who are out-of-school children was presented. The table shows that 16 (16%) of the participants dropped out from Primary school, 30 (30%) dropped out of junior secondary school while majority of the participants 54 (54%) dropped out from Senior Secondary. The mean of educational level of out-of-school children that participated in the study was 2.18 and standard deviation was .888. The result shows that there are more Senior Secondary out-of-school children that participated in the study, followed by Junior Secondary (30%) and the least is the Primary school (16%). This study agrees with World Bank OVC Toolkit that defined vulnerable child as being under the age of 18 years who are at increased risk characteristics such as "drop-out from school," More so, [12], data reveals that in spite of great improvement in school enrollment in basic education and lower secondary, many school age children were still out-of-school while upper secondary school face greater barrier to education [9].

Furthermore, the result of the study supports the survey carried out by [6, 11] that affirms that the population of out-of-school children in Nigeria has risen from 10.5 million to 13.2 million. In addition, this result is in agreement with recent study in the Philippines that analysed the situations of

out-of-school children collected through various national data sources in 2008-2009 and revealed that 10% of primary school aged children and 40% of secondary school aged children were out-of-school [1].

| Marital Status | F | % | Mean | SD |
|---|---|---|---|---|
| Single | 13 | 13 | | |
| Married | 7 | 7 | | |
| Separated | 45 | 45 | | |
| Divorced | 23 | 23 | | |
| Widowed | 12 | 12 | | |
| Total | 100 | 100 | 2.65 | 1.32 |

Table 4 reveals the parental marital status of out-of-school children that participated in the study. Majority of the participants 45 (45%) were from separated family, 23 (23%) are from divorced family, while insignificant 7% came from married family. Only 13% and 12% are from single and widowed family respectively. The parental marital status mean is 2.65 with a standard deviation of 1.32. The result shows that majority parents of the out-of-school children are from separated and divorced family followed by the single parenting participants. The implication is that most out-of-school children are found from broken homes and they constitute the larger part of those vulnerable to HIV. This also prove the reasons advanced for out-of-school children being found on the street, as they try to survive for food, clothe and shelter. In agreement with [2] conjecture, family survival for poor households may require income from child labour. This assertion was also supported by [7] that opined that work and school are often combined.

Research Question 2: What is the extent of prevalence of HIV infection among out-of-school children?

*Table 5. HIV Prevalence among Participants.*

| Status | F | % |
|---|---|---|
| No Testing | 2 | 2 |
| Positive | 0 | 0 |
| Negative | 98 | 98 |
| Total | 100 | 100 |

From Table 5, response of the participants to testing to determine their status was presented. Findings shows that of the 100 participants tested, 2 (2%) refused to be tested while the remaining 98 were tested negative. This result reveals that there is no prevalence of HIV infection among out-of-school children in all ages tested. This implies that there is no HIV prevalence among out-of-school in Oyo State probably because of the intensive awareness embarked upon by the agency responsible for the control of HIV/AIDS and possibly because the children are not yet exposed to casual sex as they are involved in how to feed and meet their needs. The result is not in agreement with [8] which reveal that Nigeria account for 41% of HIV infection globally. In addition, the result is not in agreement with [9] conclusion that 35% of children are on retroviral treatment which this study does not cover [18]. The reason may be as a result of concerted efforts of the agency responsible for creating awareness in the state and continuous advocacy visits to parks and markets.

Research question 3: What is the direction and strength of relationship among the vulnerability of sexual behaviour, social activities, homelessness, marginalization and opportunistic infection among out of school children with HIV infection?

*Table 6. Correlation Matrix of variables of high risk behavior.*

| | | HIV/AIDS TEST RESULT | SB | SC | SD | SE | SF |
|---|---|---|---|---|---|---|---|
| HIV/AIDS TEST RESULT | Pearson Correlation | 1 | .161 | .061 | .004 | -.073 | .116 |
| | Sig. (2-tailed) | | .260 | .672 | .977 | .611 | .416 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 |
| SB | Pearson Correlation | .161 | 1 | .172 | -.110 | -.629[**] | -.131 |
| | Sig. (2-tailed) | .260 | | .228 | .440 | .000 | .359 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 |
| SC | Pearson Correlation | .061 | .172 | 1 | .259 | -.193 | -.018 |
| | Sig. (2-tailed) | .672 | .228 | | .066 | .175 | .900 |

|  |  | HIV/AIDS TEST RESULT | SB | SC | SD | SE | SF |
|---|---|---|---|---|---|---|---|
| SD | N | 51 | 51 | 51 | 51 | 51 | 51 |
|  | Pearson Correlation | .004 | -.110 | .259 | 1 | .176 | .114 |
|  | Sig. (2-tailed) | .977 | .440 | .066 |  | .218 | .426 |
| SE | N | 51 | 51 | 51 | 51 | 51 | 51 |
|  | Pearson Correlation | -.073 | -.629** | -.193 | .176 | 1 | -.079 |
|  | Sig. (2-tailed) | .611 | .000 | .175 | .218 |  | .579 |
| SF | N | 51 | 51 | 51 | 51 | 51 | 51 |
|  | Pearson Correlation | .116 | -.131 | -.018 | .114 | -.079 | 1 |
|  | Sig. (2-tailed) | .416 | .359 | .900 | .426 | .579 |  |
|  | N | 51 | 51 | 51 | 51 | 51 | 51 |

**. Correlation is significant at the 0.01 level (2-tailed).

KEY: SB = Home and Street Life, SC = Survival Activities, SD = Social Behaviour,
SE = Marginalization, SF = Opportunistic Infection

A correlation matrix was run on all the independent variables to measure the relationship between vulnerability of sexual behaviour, home and street life, survival activities, marginalization and HIV infection among out-of-school children which was presented in table 6. It was revealed that the relationship between home and street life and HIV result has positive, moderate and significant relationship (r= 16, p<0.01). This means that as home and street life increases by a unit, the HIV result decreases by 16%. Also, the relationship between survival activities and HIV revealed (r= .06, p=0.01). This shows that the relationship is positive, very strong and significant. The relationship between Sexual behavior and HIV result reveals (r=.00, p=0.01). This shows that the relationship is positive, low and significant. While the relationship between marginalization and HIV result reveals (r=-07, p=0.01), this shows that the relationship is negative, low and significant. Furthermore, the relationship between the opportunistic infection and HIV result is (r=.12, p=0.01). This shows that their relationship is positive, low and significant. The result of the HIV result is (r =1, p =0.01), this means that the result is perfect.

This study reveals that the relationship between all the independent variables such as Home and street life, sexual behaviour, survival activities, marginalization and opportunistic infection correlate significantly to the prevalence of HIV. However, home and street life, marginalization and oppor-

tunistic infection that were significant could mean that there is need for children to be monitored by parent thereby recognizing the family as the basic socializing and nurturing institution for children intuitive [15]. General view points revealed that the love and attention that babies and children receive, their sense of security, the encouragement they are given to learn, the intellectual richness of their home environment, and the attention that is devoted to their health and welfare are all critical elements in the development of children who are able and motivated to learn.

This study negates the findings of [14], who opined that children who do not go to school are vulnerable and marginalized. However, it supports the conclusion of [7] that children on the street frequently survived by begging, stealing or working in the informal sectors in low paying jobs and consequently face different challenges while striving for their survival.

Research question 4a: What is the composite effect of the vulnerability of sexual behavior, Survival activities, homelessness, marginalization and opportunistic infection among out of school children with HIV infection?

Table 6 shows the Summary Regression ANOVA, a table indicating prediction of criterion variables of the sexual behaviour, survival activities, homelessness, marginalization and opportunistic infection.

*Table 7. Model Summary and ANOVA.*

| Model | Sum of Squares | df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Regression | 0.99 | 10 | 0.20 | .488 | .784b |

| Model | Sum of Squares | df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Residual | 1.823 | 90 | .041 | | |
| Total | 1.922 | 100 | | | |

R = 0.23
$R^2$ = 0.051
Adjusted R= -05

Table 7 shows the model summary and ANOVA. All independent variables contribute 23%, after adjusting for the variance in the independent variable, all variables contributed1%. The table further reveals that all the independent variables fully predicted HIV in the regression model $F_{(10,90)}$=.488: P<0.05. This shows that the sexual behavior, survival activities, homelessness, marginalization and opportunistic infection fully predicted the HIV infection and this implies that the more out-of-school are exposed to sexual behavior, street life, survival strategy and neglect, the more their chances of being infected with HIV. The study corrob-

orates [11], that concluded that majority of the out-of-school children are found on the street and the problem is a global phenomenon.

Research question 4b: What is the relative effect of the vulnerability of sexual behavior, Survival activities, homelessness, marginalization and opportunistic infection among out of school children with HIV infection?

Table 8 present the coefficients of vulnerability of sexual behavior, survival activities, homelessness, marginalization and opportunistic infection among out-of-school children with HIV infection?

*Table 8. Coefficients\*.*

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig |
|---|---|---|---|---|---|
| | B | Standard Error | Beta | | |
| (Constant) | 1.629 | .326 | | 5.003 | .000 |
| SB | .015 | .013 | .233 | 1.212 | .232 |
| SC | .004 | .015 | .047 | .301 | .765 |
| SD | -.001 | .013 | -.017 | -.111 | .912 |
| SE | .004 | .008 | .098 | .501 | .619 |
| SF | .024 | .023 | .158 | 1.040 | .304 |

Significant at 0.05

This result reveals that Home and Street life significantly predict HIV infection (β=.23, p<0.05). This shows that as home and street life increases, the HIV infection decreases by 23%. This could be that where children lives matters, meeting their basic needs such as provision of food, shelter and other basic amenities including education with love and care will prevent them from roaming the street and try to fend for themselves, exposing them to all kinds of risks. Homeless young people live at the intersection of multiple risk factors especially at the risk for HIV infection [9]. Survival activities, Sexual behaviour, marginalization and opportunistic infection are not significant. Therefore, they do not predict HIV infection, that is, they do not have effect on the HIV infection. This study support the finding of [3] that most studies examine the factors that contributes to the child's vulnerability rather than

measure of prevalence of HIV infection.

## 4. Conclusion

This study investigates the prevalence and causes of HIV/AIDS infection among out-of-school children in Oyo State. Based on the findings of the study, majority of the out-of-school children are above age 15 years and falls within the adolescent age. Majority of the participants are also female. The result of the study also revealed that higher percentage of the participants dropped out of school at the senior secondary class. The result also shows that most of the out-of-school children are from separated and divorced family and the single parenting participants. In view of the result, it

could be concluded that there is low prevalence of HIV infection among out-of-school children in Oyo State. It was revealed that the relationship between home and street life and HIV result has positive, moderate and significant. Furthermore, this study reveals that the relationship between all the independent variables such as Home and street life, sexual behaviour, survival activities, marginalization and opportunistic infection correlate significantly to the prevalence of HIV. Also the factor that could be responsible for their vulnerability is their home and street life which significantly predict HIV infection. Parents are to ensure that their children go to school as they are still in the age range of schooling to avoid unnecessary exposure while government pay attention to the number out-of-school children not only at basic education but at other levels of education as this children are the leaders of tomorrow.

## Abbreviations

HIV: Human Immunodeficiency Virus
AIDs: Acquired Immune Deficiency Syndrome
QUAN+qual: Quantitative Plus Qualitattive
HARTK: HIV/AID Rapid Test Kit
KII: Key Informant Interview

## Author Contributions

Babatunde Ezekiel Olusegun is the sole author. The author read and approved the final manuscript.

## Conflicts of Interest

The author declares no conflicts of interest.

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