

**PREVALENCE AND PREDICTORS OF RISKY SEXUAL BEHAVIOUR
AMONG ORPHANS AND VULNERABLE ADOLESCENTS IN ORPHANAGES
IN IBADAN OYO STATE, NIGERIA**



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Abstract

Risky sexual behaviour (RSB) and its associated social, physical, and mental health consequences pose a growing public health concern worldwide, particularly among Orphans and Vulnerable Adolescents (OVA) due to their heightened vulnerability. This study aimed to investigate the factors influencing RSB among OVAs residing in orphanages within Ibadan, Oyo State, Nigeria. A cross-sectional study encompassing OVAs from ten orphanages was conducted, employing a total population survey approach. An interviewer-administered questionnaire was utilized to gather data on respondents' socio-demographic characteristics and their engagement in RSB. RSB indicators were identified using the Youth Risk Behavior Study tool, alongside inquiries about drug and alcohol use. The association between categorical variables was assessed using chi-square tests, while predictors of RSB were identified through logistic regression analysis, maintaining a significance level of 5%. The study included 214 respondents, among whom 42 (19.6%) reported ever engaging in sexual activity, with a mean age at first sexual debut of 13.4 years. Approximately 40 (18.4%) of the respondents exhibited at least one of the three RSB indicators. Marital status (unmarried parents; $p=0.005$), lower educational attainment of the respondent ($p=0.004$), alcohol consumption ($p<0.05$), and drug use ($p<0.05$) were significantly associated with RSB in the initial bivariate analysis. However, in the logistic regression model, only a history of alcohol consumption (95% CI=3.6-31.7; $p = 0.00$) remained a significant independent predictor of RSB. This study highlights a noteworthy association between alcohol use and RSB among OVAs residing in orphanages, underscoring the importance of addressing alcohol-related factors in interventions aimed at reducing RSB in this vulnerable population.

Keywords: Risky Sexual Behaviour (RSB), Orphans and Vulnerable Adolescents (OVC), Alcohol use, and Drug use.

Introduction

Risky Sexual Behaviour (RSB) gives rise to various negative health outcomes among adolescents. RSB and its related physical, psychological, and social repercussions, have increased among orphans and vulnerable adolescents. This is fast becoming a public health concern worldwide (Fite and Cherie, 2016). There are an estimated 140 million Orphans and Vulnerable Children (OVC) in the world (UNICEF, 2013). Sub-Saharan Africa is home to approximately 60 million OVC (UNAIDS 2010; UNICEF 2012). In Nigeria, the number of OVCs is estimated to be 20% of the total sub-Saharan OVC population. It is also reported that approximately 25% of an estimated 70 million children in Nigeria, are characterized as vulnerable. As of 2008, Nigeria had an estimated 17.5 million OVC (FMWASD, 2008: Tagurum et al., 2015).

Worldwide although there is no accurate data available, the estimate suggests that 2-8 million children live in orphanages with the majority being in eastern Europe, Latin America, Asia & Africa (USAID, 2009; Human right watch, 1999). In sub-Saharan Africa, the number of children living in orphanages has been increasing, this increase is alarming, and it is attributed to increased natural disasters, war, religious/ political crisis, HIV/AIDs, and poverty (Brown 2009; UNICEF, 2009; Folarinmi, 2015). Moreover, the extent of hardship faced by orphans due to the death of their parents leads to negative consequences for them (Embleton, 2016).

Generally, OVA may be at high risk of early sexual activities. For instance, a study carried out among OVA in Nigeria, found that one in seven OVA is engaged in RSB (Adeniyi, 2008). Also, 5% of male OVAs initiate sexual activity before age 15 compared to 2% of non-OVA (NPC, 2014). Some studies carried out in Africa found that orphan status was linked with having an earlier sexual debut, multiple sexual partners, and transactional sex (Operario et al., 2011). However, some other studies found that orphan status is not significantly linked with increased sexual risk-taking among OVA, but other factors were found to play a significant role in increasing OVA-taking RSB.

Therefore, understanding the magnitude of risky sexual behaviour and exploring its underpinning predictors is pivotal to addressing the needs of orphans and vulnerable children. This will help mitigate the negative outcomes and provide targeted interventions. However, there is a paucity of information in this regard in Nigeria. Therefore, it is the purpose of this study to assess the sexual practices as well as their associated factors among OVC in Ibadan Nigeria. The findings of this study will be significant in improving the orphanage environment, and implementing and shaping policies in Nigeria.

Concept of Risky sexual behavior

Risky sexual behaviour can be defined in a number of ways, the most widely used definition is according to the behaviour itself: unprotected vaginal, oral, or anal intercourse (Charine, 2007). A second definition of risky sexual behavior is having multiple sexual partners, low rates of condom use, high frequency of sexually transmitted diseases, and having sexual intercourse at a young age (Dir *et al.*, 2014; Gillen *et al.*, 2006; Lansford, Dodge, Fontaine, Bates, & Pettit, 2014; Schooler & Ward, 2006; Wingood, Diclemente, Harrington, & Davies, 2002). Risky sexual behavior among adolescents is a major public health concern since it can have serious negative outcomes, such as increased odds of sexually transmitted diseases like chlamydia, HIV, and HPV virus (Kotchick, Shaffer, Miller, & Forehand, 2001; Lansford *et al.*, 2014; Björnsdóttir, 2015). A large body of research has examined the precursors of risky sexual behavior (Aalsma, Fortenberry, Sayegh, & Orr, 2006; Lansford *et al.*, 2014; Shrier, Harris, Sternberg, & Beardslee, 2001). Risky sexual behavior has numerous risk factors, such as substance abuse (Shrier *et al.*, 2001), peer pressure, and delinquency (Lansford *et al.*, 2014). Psychological factors like low self-esteem (Boden & Horwood, 2006; Ethier *et al.*, 2006) and depression (Shrier *et al.*, 2001) also may be important precursors for risky sexual behavior.

Specific risky sexual behaviour common among adolescents

- Too early initiation of sexual activity (Diala *et al.*, 2011)
- Sexual intercourse without the use of contraception (Odeigah *et al.*, 2019)
- Unplanned pregnancy (Kalmuss *et al.*, 2007)
- Multiple sexual partners and sexual intercourse with a partner infected with an STI and HIV/AIDS (Izugbara & Modo, 2007)
- Oral sex (Odeigah *et al.*, 2019)

These behaviours are considered in two broad categories namely:

- Indiscriminate behaviours including having multiple partners; having risky, casual or unknown partners; and failure to discuss risk topics prior to intercourse.
- Failure to take protective actions such as the use of condoms and birth control.

Risky sexual behaviour is the major factor in the rising rate of sexually transmitted infections (STIs) including HIV. Adolescents typically have higher STI rates than other groups with the highest rates of gonorrhoea between the ages of 15-19 years (Aral and Haffner 1995). Risky sexual behaviour is a matter of concern with STIs, as it is now well documented that STIs have a co-factor role in HIV transmission.

Method and Material

The study was conducted in Ibadan, the Capital City of Oyo State Nigeria using a cross-sectional study design.

The study was carried out in ten selected adolescent orphanages in Ibadan the capital of Oyo state. The list of all orphanages (30) in Ibadan was obtained from the Oyo state ministry of women affairs and poverty alleviation. Only ten of the 30 orphanages had adolescents. All 10 orphanages were selected to be a part of this study.

In each of the orphanages, the total sampling of all the available adolescents between the ages of 14-19 was sampled. The range of adolescents in the adolescent orphanages ranged from 7- 55. Therefore, a total sampling was used.

Table 1: List of Orphanage Homes

S/N	Name of orphanage	Number of adolescents in orphanage
1	Jesus' children mission	55
2	Living word mission	36
3	All mighty God compassion home	34
4	Ibadan mercy home	31
5	Galilee foundation	28
6	Oyiza orphanage home	25
7	His Heritage home	14
8	Status Dignus home	8
9	Winnie's castle	7
10	Covenant children mission	7
	Grand Total	245

The study population included orphaned and vulnerable adolescents from orphanages. This study included any orphaned and vulnerable adolescent (an adolescent whose biological parent(s) are absent from their life) aged 14 to 19 years, living in an orphanage setting, regardless of the reason for orphanhood.

Inclusion criterion: Eligible participants were adolescents aged 14- 19 years living in orphanages.

Exclusion criterion: Adolescents living in orphanages that were ill at the time of the study.

The sample size was determined by considering the prevalence of risky sexual behavior among orphans and vulnerable children in a study conducted by catholic relief services and the catholic secretariat of Nigeria in 2008 in eight states of Nigeria. This was found to be 16% (Adeniyi et al., 2008), 95% confidence Interval, a 5% margin of error ($d = 0.05$) and a 10% allowance for non-response rate. Based on this the calculated minimum sample size was 229.

An interviewer-administered questionnaire was used to get information on sociodemographic characteristics and risky sexual behaviour of orphans and vulnerable adolescents in orphanages. The questionnaire was adapted from previous literature.

Risky sexual behaviour was adapted from Youth Risk Behaviour Survey; items were extracted from this tool that indicates risky sexual behaviour such as the number of sex partners in the last year, sex under the influence of alcohol or drug, and have you ever used condoms before during sex. Any respondent who experiences at least one of these is said to have experienced risky sexual behaviour.

Data was collected over a period of four weeks using trained Research assistants. Research Assistants (RAs) were trained over a period of three days on the content and method of administration of the questionnaire and the maintenance of ethical standards. The questionnaire was pre-tested to assess for clarity and sensitivity of questions as well as the understanding of the study participant about the questions. Based on the result of the pre-test, some modifications were made. The reliability of the

section of the questionnaire is as follows: The risky sexual behaviour section of the questionnaire has been validated in Nigeria with a Cronbach alpha score of 0.81 (Ugogi, 2013).

Questionnaires were checked for errors daily, Data was entered, cleaned, and coded manually into the computer. Descriptive statistics were used, and Inferential statistics were done using a chi-square test to determine the associations between variables. Multivariate analysis was also used to determine the independent predictors of risky sexual behaviour which are age, gender, marital status of parents, educational status of respondents, and orphan status using binary logistic regression, and the result was considered for statistical significance ($p < 0.05$).

Ethical approval was sought and obtained from the Ethical Committees of UI/UCH before commencing the study. Permission was sought from the Oyo state ministry of Women affairs/ social development and poverty alleviation. Approval to administer the questionnaires was sought from the management boards of the selected orphanages. Assent was gotten from adolescents below 18 years. Informed consent was gotten from adolescents aged 18-19 years and from the caregivers of each orphanage before administering the questionnaire. Participation in the study was voluntary and information collected from the study participants was kept strictly confidential.

Results and Discussion

Participants

The majority 87.8% ($n=215$) of the 245 individuals invited to participate in the study consented. Only 0.5% ($n=1$) of the questionnaire was excluded from the data analysis as it was incomplete.

Therefore 214 respondents' questionnaires were included in the final data analysis.

Socio-demographic characteristics

Table 2: Socio-demographic Characteristics

Variable	Frequency	Percentages
Age 14-16	152	71.1
17-19	62	28.9
Gender Male	119	55.6
Female	95	44.4
Ethnic group Yoruba	138	64.5
Hausa	19	8.9
Igbo	34	15.9
Others	23	10.7
Residence before placement in orphanage biological parents	129	60.3
Others	85	39.7
Status of parent One parent alive	69	32.2
Both alive	128	59.8

Both dead	17	8.0
Marital status of parent Married	157	73.4
Unmarried	57	26.6
Educational status of respondents' Primary education	47	22
Secondary education	148	69.2
Tertiary education	19	8.8

*Others: Grandparent, Other relatives, Adopted family.

This study included a total of 214 participants with ages ranging from 14-19 years and a mean age of 15.7 ± 1.57 years. Table 2 shows the socio-demographic characteristics of respondents.

More than half (55.6%) of the respondents are male. Majority of the respondents were Yoruba (64.5%). Majority of the respondents (60.3%) resided with their biological parents before placement in the institution and (74.8%) of the respondents still had contact with family members. Majority of the respondents (59.8%) have both parents alive. Most of the respondents (69.2%) are currently in secondary school.

Sexual behaviour among respondents

Table 3: Sexual Behaviour among Respondents'

Variables	Frequencies	Percentages
Ever had sex		
Yes	42	19.6
No	172	80.4
Multiple sexual partners		
Yes	19	8.9
No	195	91.1
No condom use		
Yes	36	16.8
No	178	83.2
Sexual intercourse with drugs or alcohol		
Yes	9	4.2
No	205	95.8

Proportions of OVA in orphanages in Ibadan who are sexually active are being investigated and the result is as presented in table 3. It revealed that 19.6% of the respondents have ever had sex, and 80.4% have never had sex. This established that the majority of the respondents are not sexually active. Of those who reported that they are sexually active, the mean age at first sexual experience was 13.43 years. Adolescents who had never used condoms were reported to be 16.8%. Adolescents who consumed alcohol or used drugs before they had sexual intercourse were revealed to be 4.5%. Adolescents who had multiple sexual partners were reported to be 8.9%.

Table 4: Association between socio-demographic characteristics and risky sexual behaviour

Variables	No risk N (%)	High risk N (%)	X ²	p-value
Age				
14-16	123(80.9)	29(19.1)	0.05	0.82
17-19	51(82.3)	11(17.7)		
Gender				
Male	95(79.8)	24(20.2)		
Female	79(83.2)	16(16.8)	0.39	0.53
Ethnic group				
Yoruba	108(78.3)	30(21.7)	5.67	0.13
Hausa	18(94.7)	1(5.3)		
Igbo	27(79.4)	7(20.6)		
Others	21(91.3)	2(8.7)		
Parent status				
Single/double orphans	69(80.2)	17(19.8)	3.01	0.22
Social orphans	105(82.0)	23(18.0)		
Residence before placement in institution				
Biological parent	108(83.7)	21(16.7)	8.14	0.15
Others	66(77.6)	19(22.4)		
Marital status of parent				
Married	124(86.7)	19(13.3)	7.90	0.005*
Unmarried	50(70.4)	21(29.6)		
Educational status of respondents				
Primary education	30(63.8)	17(36.2)	10.86	0.004*
Secondary education	128(86.5)	20(13.5)		
Tertiary education	16(84.2)	3(15.8)		

*Significant variables, *Others: Grandparent, Other relatives, Adopted family.

Association between socio-demographic characteristics and risky sexual behaviour

More male adolescents (20.2%) compared to female adolescents (16.8%) were engaged in risky sexual behaviours. More adolescents between the ages of 14-16 (19.1%) compared to ages 17-19 (17.7%) were engaged in risky sexual behaviours. More adolescents in the Yoruba ethnic group (21.7%) engaged in risky sexual behaviour as compared with other ethnic groups. Those who are single/ double orphans (19.8%) were engaged more in risky sexual behaviour than social orphans. More adolescents who lived with other relatives (22.4%) before placement in the orphanage compared to those who lived with biological parents engaged in risky sexual behaviour. Adolescents who are in primary education (36.2%) compared to those who are in tertiary (15.8%) and secondary institutions (13.5%) engaged more in risky sexual behaviour with a statistical significance. Adolescents whose parents are unmarried 29.6% engaged more in risky sexual behaviour than those whose parents were married with a statistical significance.

Table 5: Logistic regression on Predictors of Risky sexual behaviour

Age				
14-16	1			
17-19	0.82	0.30	2.17	0.69
Gender				
Male	1			
Female	1.12	0.47	2.65	0.81
Orphan status				
Social orphan	1			
Single/double orphan	0.90	0.36	2.23	0.81
Marital status of parent				
Married	1			
Unmarried	2.22	0.93	5.29	0.07
Ethnic group				
Yoruba	1			
Hausa	0.29	0.03	2.56	0.26
Igbo	1.76	0.58	5.42	0.32
Others	0.49	0.08	2.98	0.44
Residence before placement in institution				
Biological parents	1			
Others	1.28	0.52	3.14	0.58
Educational status of respondents				
Tertiary education	1			
Secondary education	0.53	0.11	2.42	0.40
Primary education	1.63	0.32	8.42	0.56
Alcohol use				
No	1			
Yes	10.65	3.57	31.72	0.00*
Drug use				
No	1			
Yes	1.06	0.34	3.34	0.92

Factors associated with risky sexual behaviour

Table 6 shows the logistic regression analysis of predictors of risky sexual behaviour among OVA. Predictors for risky sexual behaviour were orphan status, educational status, age and gender, marital status of parent, the residence of respondents before placement in an institution, social support, depression, conduct disorder, alcohol use, and drug use.

Respondents who were between the ages of 14-16 were 1.22 times less likely to engage in risky sexual behaviour than adolescents who were between the ages of 17-19 (95% CI=-0.30-2.17). Respondents whose gender is female are 1.1 times more likely to engage in risky sexual behaviour than adolescents who are male (95% CI= 0.47-2.65). Respondents who are single/double orphans are 1.1 times less likely to engage in risky sexual behaviour than those that are social orphans (95% CI=0.36-2.23). Respondents whose parents are unmarried were 2.2 times more likely to engage in risky sexual behaviour than respondents whose parents were married (95% CI=0.93-5.29). Respondents who resided with other relatives were 1.3 times

more likely to engage in risky sexual behaviour than respondents who resided with their biological parents before placement in orphanages (95% CI= 0.52-3.14).

Respondents who are in secondary school are 1.9 times less likely to engage in risky sexual behaviour than those in tertiary education (95% CI=0.11 – 2.42) while those who are in primary school are 1.6 times more likely to engage in risky sexual behaviour than those in the tertiary institution (95% CI=0.32-8.42).

Furthermore, adolescents who used alcohol were 10.6 times more likely to engage in risky sexual behaviour than adolescents who never consumed alcohol (95% CI=3.57-31.72). There was a statistically significant association between alcohol use and risky sexual behaviour. Adolescents who had ever used drugs were 1.1 times more likely to engage in risky sexual behaviour than adolescents who had never used drugs (95% CI= 0.34-3.34).

Discussion

This study tried to add knowledge regarding the magnitude of risky sexual behaviour among OVA and factors which may have an impact on the possibility of participating in such behaviour among this special population.

The overall sexual activity among OVA ages 14-19 years in this study was found to be 19.6%. This study result is consistent with another study carried out in Nigeria among OVA reported 16% (Adeniyi et al., 2008). However, this study result contrasts with other studies carried out in Nigeria among adolescents non-OVCS in which there is higher sexual activity. Therefore, living in an orphanage may appear to independently protect adolescents from sexual activities. This is in line with the findings of a study carried out in western Kenya among orphan adolescents comparing living in institutional care and family-based care setting (Embelton, 2016). The findings of the study confirmed the independent protective effect of caregiver supervision and support, especially as it relates to transactional sex and sexual violence among OVA. The mean age at first sexual debut among this OVA was found to be 13.43 years.

OVA who were single/double orphans and social orphans had almost equal chances of engaging in RSB. There was no statistically significant association between orphan status and risky sexual behaviour. This study was supported by a different study conducted earlier, which reported that orphan status was not significantly associated with increased sexual risk-taking behaviour among OVA, but rather sociocultural psychological, economic, and contextual factors play a significant role in OVA risk-taking behaviour (Juma et al., 2013; Puffer et al., 2012). Furthermore, RSB among OVA has been found to be influenced by the OVA care environment, which in the study is an orphanage setting.

Adolescents whose parents were unmarried engaged more in risky sexual behaviour than those whose parents were married. There was a statistically significant association between the marital status of parents and risky sexual behaviour among OVA in the bivariate analysis. Although from the logistic regression model adolescents whose parents are unmarried are 2.2 times more likely to engage in risky sexual behaviour than those whose parents were married. There was no statistically significant association between the marital status of parents and risky sexual behaviour in the logistic regression model. These findings demonstrate that parental marital stability may play a role in reducing these risks even when the adolescent is not currently residing with their parents.

Moreover, this study declared that alcohol and drug use have a significant influence on the fate of participation in risky sexual activities. From the study, less than a quarter of OVAs had ever used both alcohol and drugs. The bivariate analysis revealed that more than half of adolescents who had ever consumed alcohol and ever used drugs engaged more in risky sexual behaviour than adolescents who had never consumed alcohol and never used drugs. This study is in line with a study conducted among OVA in Kenya by Embleton et al (2016) which stated that alcohol and drug use was strongly associated with increased sexual risk-taking behaviour and exploitation among adolescents. A study carried out by Ramrakha, et al (2000) also revealed a strong association between risky sexual behaviour and drug use.

Also, from the logistic regression model, adolescents who had ever consumed alcohol were 10 times more likely to engage in risky sexual behaviour than adolescents who had never consumed alcohol. In the logistic regression and the bivariate analysis, there is a statistically significant association between alcohol use and risky sexual behaviour. This is in accordance with studies carried out by Natsanet, (2014), Ramrakha et al, (2000), and Embleton, (2017) which stated that alcohol consumption was a significant predictor of risky sexual behaviour for both males and females. Many studies also indicated that alcohol users were more likely to have non-regular sex partners and more likely to engage in risky sexual behaviour (Malhotra, 2008; Kliwer, 2007), such as multiple sexual partners, unprotected sexual intercourse, selecting high-risk partners after drinking alcohol

(Cooper, 2002). However, from the study, there was no statistically significant association between drug use and RSB in logistic regression models.

Conclusion and recommendation

This study revealed that less than a quarter of OVAs were sexually active, this is not significantly high. It was therefore found in this study that overall, living in an orphanage appears to independently protect adolescents from sexual activities. From this study, there is a clear association between lifetime consumption of alcohol and risky sexual behaviour among OVAs in orphanages.

Therefore, Orphanages involved in orphan upbringing should have alcohol prevention education for adolescents.

References

- Adeniyi O. Olaleye, Yinka Anoemuah, Fred Tamen, Ken Polsky and, D. A. (2008). a situational analysis of orphans and vulnerable children in eight states , 1–100.
- Brown, L., Rice, J., Boris, N., Thurman, T., Snider, L., Ntaganira, J., Nshizirungu, E.: Psychosocial benefits of a mentoring program for youth-headed households in Rwanda. Unpublished research summary, 2007, Retrieved from <http://www.popcouncil.org/pdfs/horizons/RwandaPsychOVCImpactSum.pdf>.
- Cooper, D, Hoffman, M, Carrara, H, Rosenberg, L, Kelly, J, Stander, I, Denny, L, Annalise Williamson, A, Shapiro, S, (2007) Determinants of sexual activity and it relation to cervical cancer risk among South African Women. *BMC Public Health*; 7: 341-348.
- Dermen KH, Cooper ML. (1994). Sex-related alcohol expectancies among adolescents: I. Scale development. *Psychol Addict Behav*. 8(3):152–160.
- Diala C, Olujimi S, Harris F, Feyisetan K. (2011). HIV- Related Knowledge, Attitudes, Behaviours and Practices of Young People in Cross River and Kogi State, Nigeria. Washington DC: USAID;. pp. 1–4.
- Embleton, L., H, M. P., Nyandat, J., Ch, M. B. B., H, M. P., Ayuku, D., ... Ph, D. (2016). Sexual Behavior Among Orphaned Adolescents in Western Kenya: A Comparison of Institutional- and Family-Based Care Settings. *Journal of Adolescent Health*. <https://doi.org/10.1016/j.jadohealth.2016.11.015>
- Federal Ministry of Women's Affairs and Social Development (Nigeria). 2008. Key Findings Situation Assessment and Analysis on OVC in Nigeria, 2008. Federal Ministry of Women Affairs and Social Development, Nigeria.
- Fite, A.C. and Cherie, A. (2016). Risky Sexual Behavior and Its Determinants among Orphan and Vulnerable Children in Addis Ababa, Ethiopia. *World Journal of AIDS*, 6, 111-122. <http://dx.doi.org/10.4236/wja.2016.64015>
- Folaranmi, O. O. (2015). Child Detachment as a Correlate of Social Well-Being of Orphaned Children in Ibadan and Abeokuta, Nigeria, 6(3), 113–120. <https://doi.org/10.5901/mjss.2015.v6n3s2p113> Human Right Watch. (1999).
- Izugbara CO, Modo FN. (2007). Risks and benefits of multiple sexual partnerships: beliefs of rural Nigerian adolescent males. *A Jol of Men's Health*; 3(1):197–207.
- Juma, M., Alaii, J., Bartholomew, L. K., Askew, I., & Van den Borne, B. (2013). Risky Sexual Behavior Among Orphan and Non-orphan Adolescents in Nyanza Province, Western Kenya. *AIDS and Behavior*, 17(3), 951–960. <https://doi.org/10.1007/s10461-012-03365>
- Kliwer, W., and Murrelle, L. (2007). Risk and Protective Factors for Adolescent Substance Use: Findings from a Study in Selected Central American Countries. *Journal of Adolescent Health*, 40, 448-455. <https://doi.org/10.1016/j.jadohealth.2006.11.148>
- McKirnan DJ, Ostrow DG, Hope B. (1996). Sex, drugs and escape: a psychological model of HIV-risk sexual behaviours. *AIDS Care*. 8(6):655-669. NDHS. (2013). Nigeria.

- Odeigah L, Rasaki SO, Ajibola AF, Hafsat AA, Sule AG, Musah Y. (2019) High-risk sexual behavior among adolescent senior secondary school students in Nigeria. *Afr Health Sci.* Mar;19(1):1467-1477. doi: 10.4314/ahs.v19i1.20. PMID: 31148974; PMCID:PMC6531970
- Operario, D., Underhill, K., Chuong, C., & Cluver, L. (2011). HIV infection and sexual risk behaviour among youth who have experienced orphanhood: *systematic review and meta-analysis*. Retrieved from <http://www.jiasociety.org/content/14/1/25>
- Pufall, E. L., Eaton, J. W., Robertson, L., Mushati, P., Nyamukapa, C., & Gregson, S. (2017). Education, substance use, and HIV risk among orphaned adolescents in Eastern Zimbabwe. *Vulnerable Children and Youth Studies*, 12(4), 360–374. <https://doi.org/10.1080/17450128.2017.1332398>
- Ramrakha, S., Caspi, A., Dickson, N., Moffitt, T. E., & Paul, C. (2000). Psychiatric disorders and risky sexual behaviour in young adulthood: cross sectional study in birth cohort, 321(July), 263–266.
- Steele CM, Josephs RA. (1990). Alcohol myopia: Its prized and dangerous effects. *Am Psychol.* August;45(8):921-330.
- Tagurum YO, Chirdan OO, Bello DA, Afolaranmi TO, Hassan ZI, Iyaji AU, et al. (2015). Situational analysis of Orphans and Vulnerable Children in urban and rural communities of Plateau State. *Ann Afr Med* 14:18-24.
- UNAIDS. (2010). Report on the Global AIDS Epidemic. UNAIDS, New York.
- UNICEF, Fund UNC. (2006). Africa's orphaned and vulnerable generations: Children affected by aids. New York: UNICEF.
- UNICEF. (2012). The State of the World's Children 2012: Children in an urban World. New York: UNICEF.