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Research Article

Knowledge of HIV/AIDS and Sexual Behaviour among Fisherfolks in Ajaokuta and Lokoja, Kogi State, Nigeria

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ABSTRACT

Fisherfolks are known to be vulnerable to HIV infection because of their involvement in risky sexual practices. Therefore, this study was conducted to assess the knowledge of HIV and AIDS as well as sexual behaviour of fisherfolks in Ajaokuta and Lokoja, Kogi State, Nigeria. This study was a cross sectional study in design. Systematic random sampling was used to select and allocate 208 respondents in which there were 103 respondents in Ajaokuta and 105 respondents in Lokoja LGAs, Kogi State, Nigeria. Data were collected using a pretested interviewer administered questionnaire which included questions for eliciting the following information: socio-demographic characteristics; sexual behaviour; a 21-point HIV and AIDS knowledge that has scores of <10, ≥10-15 and >15 which were categorized as poor, fair and good respectively. Ages of respondents in Ajaokuta and Lokoja were 35.6±11.7 and 28.4±8.1 years respectively. There were 89.3% and 92.4% males in Ajaokuta and Lokoja respectively. Knowledge of fisherfolks about HIV and AIDS were 5.80±5.60 and 11.81±7.10 in Ajaokuta and Lokoja respectively with respondents in Lokoja having higher knowledge of HIV and AIDS than their counterpart in Ajaokuta. Fisherfolks that had two or more sexual partners apart from their spouses were 32.0% and 21.0% in Ajaokuta and Lokoja respectively. The study revealed that the fisherfolks in Ajaokuta had poor knowledge of HIV and AIDS. Also, the fisherfolks were involved in risky sexual practices while some of them were not using condom. HIV and AIDS prevention intervention are recommended to improve knowledge about HIV/AIDS and reduce risky sexual activities in this population.

Keywords: *HIV/AIDS, Knowledge, Sexual Behaviour, Fisherfolks, Nigeria*

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INTRODUCTION

Since the first case was reported in 1981, AIDS has remained a global public health challenge (EAC, 2010). In underdeveloped and developing countries, HIV and AIDS have reversed many of the health and developmental gains as reflected by indices such as life expectancy at birth and infant mortality rate among others (FMOH, 2010). A total of 36.9 million people was living with HIV in the world at the end of 2017. However, there had been reduction in HIV new infections as there were 1.8 million new infections in 2017 compared with 3.4 million in 1996. Also, there had been an improvement in the number of people on HIV treatment as 21.7 million people living with HIV were accessing antiretroviral therapy, an increase of 2.3 million since 2016 and also an increase from 8 million in 2010 (UNAIDS 2018). Furthermore, AIDS-related deaths had significantly reduced from 2.1 million in 2004 to an estimated 1.8 million deaths in 2009. This has been attributed to intervention through effective prevention and treatment of HIV infection with antiretroviral therapy (ART) which are now available even in countries with limited resources (NACA, 2010).

In Nigeria, HIV and AIDS is a health problem affecting people in various strata of the population (Olowosegun *et al*, 2008). As at 2016, there were approximately 3.2 million people living with the virus in the country. However, the HIV prevalence rate in the country now is 2.9% and since 2005, the number of annual AIDS- related deaths had been minimal (NACA 2015; UNAIDS, 2017). Although HIV/AIDS infection is a generalized health problem in the population, fisherfolks are a group of persons very vulnerable to HIV infections. Studies of high-risk sexual behaviour in fishing communities and health service project on fisherfolks suggest that this population are significantly more at risk of HIV infection (Allison and Seeley 2004; Merten, 2006; Lampinen *et al*, 2005; Markussen, 2002; Husken and Heck, 2012). Also,

surveys conducted since 1992 in ten low or middle income countries in Africa, Asia and Latin America revealed that HIV and AIDS prevalence among fisherfolks are between 4 and 14 times higher than the national prevalence (Olowosegun *et al*, 2013). Fisherfolks make important contribution to household and boost food security by providing a healthy diet to the people. (Global Fish Alliance, 2010). But the spread of HIV and AIDS in fishing communities may undermine this important role they play in the food production system and adversely impacting on local economies (Ajani, 2008).

There are many factors that are responsible for the vulnerability of fisherfolks to HIV infection. Fisherfolks are very mobile and spend considerable time away from their homes. Many fisherfolks have access to daily cash which they may use for the purchase of alcohol and sexual services. The other concern is that mobility of fisherfolks may make them to miss out on access to HIV prevention, treatment and care (Olowosegun *et al*, 2013).

The practice of transactional sex popularly called "fish for sex" is common in fishing communities. Fish for sex is a situation in which female fish sellers trade sex with men in exchange for fish. In Kenya, for example, female fish traders regularly buy fish from specific fishermen and in the process develop relationship which is locally called "Jaboya" in Luo language in Kenya (a customer who is also a lover) (Plus News, 2005).

We present in this article results of a survey on knowledge, attitude and sexual behaviour among fisherfolks in two fishing communities in Nigeria. This study is significant because the findings would be useful in the formulation of HIV and AIDS prevention among fisherfolks in Nigeria.

MATERIALS AND METHODS

The Setting: The study was a cross sectional survey conducted in Ajaokuta and Lokoja; two fishing communities in Kogi state, north central Nigeria. The study population consisted of all the fisherfolks in these communities. The bulk of people in these fishing communities catch fish for a living on the Niger River. A few of the people in this area are involved in subsistence farming as additional occupation. The crops grown include ground nut, maize and other crops on the banks of river Niger particularly during the dry season when the water level of the river goes down. The estimated population of people living in these communities is 8500.

Sample size and Sampling procedure: The sample for the study was calculated to be 200. There were estimated 350 fisherfolks in Ajaokuta fishing community in Geregu as at May-June 2016 when the research was conducted: of this number, 35 (10%) were women. Proportionate sample allocation was used to determine the number of male fisherfolks and female fisherfolks that participated in the study which gives 10 female fisherfolks and 90 male fisherfolks. Equally, there were estimated 550 fisherfolks in Lokoja fishing community as at the time of the research of which 40 of them were women fisherfolks while the remaining 510 were men fisherfolks. Using proportionate sample allocation to determine the number of male and female fisherfolks that participated in the study as it was done for fisherfolks in Ajaokuta fishing community, 7 female fisherfolks and 93 male fisherfolks were sampled for the study in Lokoja fishing community. To select the 10 women and 90 men fisherfolks that participated in the study in Ajaokuta, the list of all the 35 women fisherfolks and 315 men fisherfolks were compiled which serve as sampling frame. Sampling interval was determined with the use of these lists. Thus, the sampling interval for male fisherfolks was: $\frac{315}{} = 4$; that of female fisherfolks was: $\frac{35}{} = 4$.

A simple random sampling technique was used to select the first respondent. Since the sampling interval was K = 4, a random number between 1 and 4 was selected. The corresponding name on the sampling frame using the random number was the first respondent. With the use of the sampling interval, 90 male and 10 female fisherfolks were systematically selected. The same method was adopted in selecting the 7 females and 93 males fisherfolks in Lokoja.

Instrument for Data Collection: A 55-item questionnaire was used for data collection. The questionnaire was divided into 5 sections to ensure ease of administration. Section A focused on socio-demographic information; while section B explored the sources of information on HIV and AIDS. Section C assessed knowledge about HIV and AIDS. Section D focused on behaviour that favour the spread of HIV and AIDS while section E elicited responses from the fisherfolks about their opinion on prevention and control of HIV and AIDS.

Data Collection Procedure: Before the commencement of the research, advocacy visits were paid to the community leaders: the chairman and other executive members of fishermen association of both communities to inform them about the research and to solicit their co-operation. Trained research assistants conducted face-to-face interviews with study participants using the questionnaire. Interviews were conducted in Nupe, the language widely spoken in the study areas. The training contents consisted of the purpose of the research, interview technique, inter-personal communication and ethical issues.

Validity and Reliability: A draft of the questionnaire was pre-tested for reliability among fisherfolks in Idah, a comparable fishing community in Kogi state prior to the commencement of data collection. The Cronbach's Alpha value was 0.783. Revisions were made on the draft questionnaire following the pre-test.

Data Management and Analysis: Each of the questionnaire administered were checked in the field for completeness and serial numbers were given to them. Coding guide was developed from the questionnaire and open-ended sections were coded and fed into the computer. Collated data from the questionnaire were entered into computer and the results were analyzed into frequency tables and simple percentages using Statistical Package for Social Science (SPSS). Knowledge of HIV and AIDS was assessed on a 21 question items. The first eight (8) questions were based on what causes AIDS and mode of transmission of HIV. The next four (4) questions were about treatment of HIV. The remaining nine (9) questions

were on prevention of HIV. In each of the questions, respondents were requested to select from the options: "True", "False" or "I don't know". The knowledge questions were assigned a score of one point for every correct answer and 0-point for every wrong answer: making up a 21-point knowledge scale with scores <10, ≥10-15 and >15 which were categorized as poor, fair and good, respectively. Fisherfolks were asked to indicate True or False or I don't know to some questions about mode of transmission of HIV. The same for questions on treatment of HIV and HIV prevention.

Sexual behaviour was assessed based on the questions under the section of sexual behaviour. Some of the questions were on sexual behaviour, preventive methods of HIV, condom use and transactional sex among others.

Ethical Issues/Approval: The Ethics Committee of the Kogi State Ministry of Health approved the study protocol. The investigators sought for informed consent from the fisherfolks making them to fill the informed consent form after they had been informed about the objectives of the study, that the data collected will be used for research purposes, that confidentiality will be maintained and that participation was voluntary.

RESULTS

Socio-demographic data: A total of 103 and 105 fisherfolks were interviewed in Ajaokuta and Lokoja respectively. Almost half (48.7%) of respondents in Ajaokuta and 70.4% in Lokoja were between ages 21-40 years. Less than half, (45.7%) and (73.4%) of the fisherfolks had primary and secondary education in Ajaokuta and Lokoja respectively. Majority, (91.3%) and (94.3%) of the fisherfolks in Ajaokuta and Lokoja respectively, practiced Islamic religion. More than half of the fisherfolks (64.1%) and (59.0%) in Ajaokuta and Lokoja respectively, were married. Forty percent of the fisherfolks in Ajaokuta were of Bassa ethnic group while half (51.4%) of the fisherfolks in Lokoja were Nupes. Chi-square analysis revealed that there was no significant difference in ages, educational qualifications and ethnic groups of the fisherfolks. Also, there was no significant difference in the mean age and religion of the respondents in Ajaokuta and Lokoja. Details of the socio-demographic characteristics of fisherfolks in Ajaokuta and Lokoja are presented in Table 1.

Table 1:
Socio-demographic Characteristics of fisherfolks (N = 208)

Demographic characteristics	**Ajaokuta (n=103) No (%)**	**Lokoja (n=105) No (%)**	**Total**	**X^2 (Fishers Exact test)**	**p-value**
Age					
Less or equal to 20 years	14 (13.4)	24 (22.9)	38	4.80	0.000
21- 30	24 (23.5)	41 (39.0)	65		
31- 40	26 (25.2)	33 (31.4)	59		
41- 50	31 (30.1)	7 (6.7)	38		
51 and above	8 (7.8)	0 (0.0)	8		
Mean age	35.9±11.7	28.4±8.1			
Sex					
Male	92 (89.3)	97 (92.4)	189	0.76	0.479
Female	11 (10.7)	8 (7.6)	19		
Educational Qualification					
No formal education					
Primary school	41 (39.8)	12 (11.4)	53	2.32	0.000
Secondary school	18 (17.5)	28 (26.7)	46		
Vocational/Tertiary	29 (28.2)	49 (46.7)	78		
	15 (14.5)	16 (15.2)	31		
Marital status					
Single/never married	27 (26.2)	38 (36.2)	65	1.56	0.071
Married	66 (64.1)	62 (59.0)	128		
Divorced	7 (6.8)	2 (1.9)	9		
Separated	1 (1.0)	2 (1.9)	3		
Widower	2 (1.9)	1 (1.0)	3		
Ethnic group					
Bassa	38 (36.9)	10 (9.5)	48	4.47	0.000
Hausa	24 (23.3)	15 (14.3)	39		
Nupe	19 (18.4)	54 (51.4)	73		
Others*	22 (21.4)	26 (24.8)	48		
Religion					
Islam	94 (91.3)	99 (94.3)	193	0.28	0.599
Christianity	7 (6.8)	5 (4.7)	12		
Traditional	2 (1.9)	1 (1.0)	3		

**Others include Yoruba, Igbo, Ebira, Igbira-koto and Igala.*

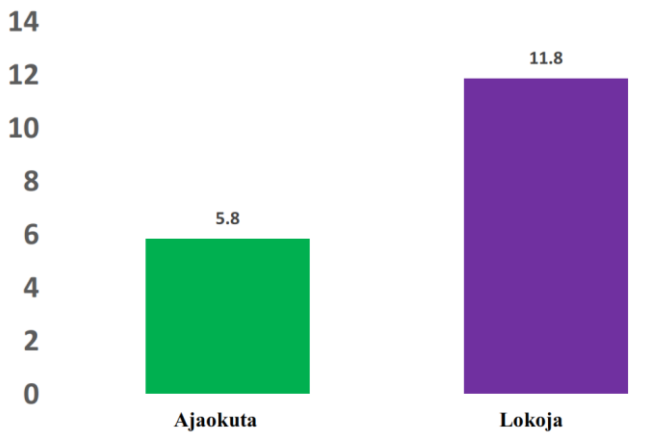

Figure 1:
Fisherfolks overall HIV and AIDS knowledge scores obtained for Ajaokuta and Lokoja.
t-value = 6.24 *p-value = 0.000* *Mean difference = 4.710*

Table 2:
Comparisons of fisherfolks' HIV and AIDS knowledge score by domain

Variables	Groups		t-value	p-value	Remark
	Ajaokuta (n=103) $\bar{X}$±SD	Lokoja (n=105) $\bar{X}$±SD			
Mode of HIV transmission	2.22 ±2.10	4.36 ±2.70	5.72	0.000	Significant
Treatment of HIV	0.97 ±2.10	1.80 ±1.31	4.76	0.000	Significant
Prevention of HIV	2.60 ±2.01	5.65 ±3.42	6.59	0.000	Significant

Knowledge about HIV and AIDS: Fisherfolks' knowledge about HIV and AIDS was assessed from questions in the questionnaire on knowledge of HIV and AIDS. The mean knowledge scores of fisherfolks on HIV and AIDS was significant for fisherfolks in Ajaokuta and Lokoja with mean values of 5.80±5.60 and 11.81±7.10 with p-value of 0.000 respectively (Figure 1).

Three main domains were assessed under knowledge of HIV and AIDS. These were: mode of HIV transmission, treatment of HIV and AIDS and prevention of HIV and AIDS. The mean knowledge score of the fisherfolks according to the three main domains were all significant among the fisherfolks in Ajaokuta and Lokoja with fisherfolks in Lokoja being more knowledgeable than their counterparts in Ajaokuta (Table 2).

Sexual Behaviour: Sexual behaviour of the study participants is shown in Table 3. Ninety one percent and 86.7% of the fisherfolks in Ajaokuta and Lokoja respectively were sexually active six months preceding the study. Thirty eight percent of fisherfolks in Ajaokuta and 40.0% of fisherfolks in Lokoja had more than two sexual partners six months before the study while 33.0% of the sexually active fisherfolks in Ajaokuta and 23.0% of fisherfolks in Lokoja had not used condom. Involvement of fisherfolks in unprotected sex by educational background is presented in table 4. More than thirty five percent of fisherfolks in Ajaokuta and 66.7% of fisherfolks in Lokoja that had no formal education had unprotected sex with 2 and more people 12 months before the study. But only 1.1% of fisherfolks in Ajaokuta and 1.1% fisherfolks in Lokoja that attended tertiary/vocational institutions had unprotected sex with 2 and more people during the same period.

Table 5 shows knowledge of HIV/AIDS and use of condom by fisherfolks. Fifty seven percent of fisherfolks in Ajaokuta that had fair knowledge of HIV/AIDS used condom always. Also, 58.2 of fisherfolks in Lokoja that had good knowledge of HIV/AIDS used condom sometimes. However, only 23.8% of fisherfolks in Lokoja that had poor knowledge of HIV/AIDS used condom always.

Table 3:
Sexual behaviour of fisherfolks' in Ajaokuta and Lokoja communities.

Variable	(N=208)	
	Ajaokuta (n=103) Freq (%)	Lokoja (n=105) Freq (%)
Ever had sex		
Yes	94 (91.3)	91 (86.7)
No	9 (8.7)	14 (13.3)
No of non primary sexual partner		
≤ 1	33 (62.2)	52 (60.5)
2-3 and above	20 (37.8)	34 (39.4)
Ever used condom		
Always	25 (26.6)	28 (30.8)
Sometimes	38 (40 4)	42 (46.2)
Not at all	31 (33.0)	21 (23.1)
Used condom with sexual partner/ spouse		
Yes	51 (54.3)	62 (68.1)
No	43 (45.7)	29 (31.9)
Reasons for using condom		
To prevent STD/HIV infections	43 (68.3)	56 (80.0)
To prevent pregnancy	14 (22.2)	12 (17.1)
Partner requested	3 (4.8)	2 (2.9)
Others	3 (4.8)	0 (0.0)

DISCUSSION

Fisherfolks in Lokoja had superior knowledge of HIV and AIDS than their counterparts in Ajaokuta. The poor knowledge of fisherfolks in Ajaokuta may be as a result of their low and no formal education which is consistent with other researches. The poor knowledge of HIV and AIDS in Ajaokuta is similar to results by Yahaya (2000) who found that 94.0% of the respondents in the study had heard about the disease but did not know what causes the disease and how it can be prevented. This is also in line with the findings of Olowosegun *et al*, (2013) in their study on knowledge attitude and practices of HIV and AIDS in selected fishing communities of Kainji Lake Basin in which their findings revealed that 98.4% of the fishers were aware of HIV and AIDS but lacked knowledge on mode of transmission and prevention of the disease.

Table 4
Number of people fisherfolks had unprotected sex with in the last 12 months by educational background.

Educational background	Group	No of people you had unprotected sex with		Total	Fishers Exact X^2	p value
		1 N (%)	2 and above N (%)			
No formal education	Ajaokuta	11(64.7)	6 (35.2)	17	6.54	0.59
	Lokoja	2(22.2)	7 (66.7)	9		
Primary school	Ajaokuta	8(80.0)	2 (20.0)	10		
	Lokoja	10(58.8)	5 (29.4)	15	1.43	0.15
Secondary school	Ajaokuta	8(50.0)	8 (50.0)	16		
	Lokoja	15(50.0)	15 (61.8)	30	8.08	0.060
Tertiary/vocational	Ajaokuta	5(83.3)	1 (1.1)	6		
	Lokoja	5(50.0)	1 (1.1)	6	4.75	0.72

Table 5:
Knowledge of HIV/AIDS and use of condom by fisherfolks

Location	Respondents' knowledge category	Have you used condom before?			Total	Fishers Exact X^2	p value
		Always N (%)	Sometimes N (%)	Not at all N (%)			
Ajaokuta	Poor knowledge (scores <10)	9 (16.4)	20 (36.4)	26 (47.3)	55		
	Fair knowledge (scores≥10-15)	12 (57.1)	8 (38.1)	1 (4.8)	21	1.000	0.526
	Good knowledge (scores >15)	4 (22.2)	10 (55.6)	4 (22.2)	18		
Lokoja	Poor knowledge (scores <10)	5 (23.8)	7 (33.3)	9 (42.9)	21		
	Fair knowledge ≥10-15)	7 (46.7)	3 (20.0)	5 (33.3)	15	0.985	0.379
	Good knowledge (scores> 15)	16 (29.1)	32 (58.2)	7 (12.7)	55		

Also in the study of Jim-Saiki *et al*, (2016), it was discovered that formal education facilitated the knowledge of the respondents about causes of HIV and AIDS. Similarly, high level of education facilitated knowledge of the respondents about the use of condom to prevent the infection of the disease.

Majority of the fisherfolks in Ajaokuta and Lokoja were sexually active. This is expected since they are mostly in marital relationships. Despite being married, half of the sexually active fisherfolks in the two groups were involved in risky sexual activities including unprotected sex and sex with multiple sexual partners. This is in line with the study of Olowosegun *et al*, (2009A) in which 22.5% of the respondents said it is impossible to keep to a sexual partner. Also, Olowosegun *et al*, (2009B) in their study on prevalence of transactional sex in selected fishing communities of Kainji Lake Basin, it was discovered that majority of the respondents encouraged multiple relationships. Furthermore, majority of the respondents said that in the twelve months preceding the study, their involvement in sex with multiple sexual partners did not involve the use of condom. This behaviour increases the risk of acquiring HIV and other sexually transmitted infections which may be transmitted to their spouse.

However, fisherfolks in the two fishing communities that were educated were less involved in risky sexual behaviour (Table 4). Equally, knowledge of fisherfolks about HIV/AIDS influenced their condom use as fisherfolks with good and fair knowledge of HIV/AIDS used condom more than their colleagues that had poor knowledge of the disease (Table 5). Since level of education normally increase knowledge of HIV and AIDS, this might have influenced their less involvement in risky sexual practices thereby making them to adopt safe sex practices as well as modalities for avoiding the disease.

Implication for HIV/AIDS Prevention Intervention: The results of the study clearly shows the need to conduct HIV/AIDS prevention intervention for the people in the study area particularly fisherfolks in Ajaokuta fishing community through health promotion and education strategies. Health education involves communication directed at individuals. Health promotion empowers people to take care of their health and prevent occurrence of diseases. Therefore, combining the concepts of HIV/AIDS prevention education (as stated in Minimum Prevention Package Intervention MPPI) and health promotion, the need to use the components of health promotion to improve the reproductive health and its determinants which is community mobilization and participation must be considered in the planning for HIV/AIDS prevention intervention for the people in the fishing communities.

In conclusion, this study has documented knowledge of HIV and AIDS as well as sexual behaviour of fisherfolks in Ajaokuta and Lokoja fishing communities. Knowledge of HIV and AIDS was very low among the fisherfolks in Ajaokuta fishing community. Fisherfolks in Ajaokuta also have low level of education. This might have accounted for

their poor knowledge of HIV and AIDS as literature had revealed that people that are educated do have good knowledge of the disease. Also, most of the fisherfolks are involved in multiple sexual practices while some of them are involved in unprotected sex. The study also revealed the areas intervention need to be conducted for the fisherfolks. The following are recommendations from the outcome of this study:

- Intervention needs to be conducted for the fisherfolks particularly fisherfolks in Ajaokuta fishing community on knowledge of HIV and AIDS as well as sexual behaviour.
- Specific services such as mobile HCT and HIV services should be initiated to address the mobile lifestyle and migratory pattern of the fisherfolks through boats and canoes.
- Effort should be made by relevant stakeholders to incorporate HIV and AIDS education for fisherfolks into the Nigerian National Fisheries Policies.
- Also, efforts should be made to include HIV and AIDS Education for fisherfolks in the Minimum Prevention Package Intervention (MPPI). HIV and AIDS education for fisherfolks is not included in this package. Equally, emphasis should be made about the need for researchers and organizations involved in HIV and AIDS activities to focus more on prevention of HIV and AIDS among fisherfolks.

REFERENCES

Ajani K (2008): "Sustainable Fish Production, Processing and Marketing". Food Production and Food Security- The Role of Local Government Councils and the Rural Farmers in Agriculture, Food Production and Food Security.*NUJ Jn* 8:140-189 pp.

Allison E.H and Seeley J.A (2004): "HIV/AIDSamong fisherfolk.A threat to responsible fish and fisheries.*Int Journal of Fisheries* 5: 215-234.

EAC/Amref Lake Victoria Partnership (EALP) Programme (2010): HIV and AIDS Baseline Sero-behavioural study among fishing communities in Lake Victoria Kenya.

Federal Ministry of Health, Nigeria (FMOH) (2010): National HIV sero-prevalence sentinel survey department of public health. National AIDS/STI control programme .4-13.

Global Fish Alliance (2010: A United States Agency for International Development Publication.124-260.

Husken S.M.C and Heck S (2012): The 'Fish Trader+' model: reducing female fish traders' vulnerability to HIV. *African Journal of AIDS Research*, 11: 17-26.

Jim-Saiki L.O., Obatola P.O., Giwa E.J., Tanko A., Adeogun O.A., Ogunbadejo H.K., Awosanya F.N and Adeyemo A.M **(2016):** Knowledge, attitude and practices of artisanal fisherfolks about HIV/AIDS in Lagos State. *Sky Journal of Agricultural Research* 5: 15-21.

Joint United Nations Programme on HIV/AIDS (UNAIDS) (2017): UNAIDS Global Report 2017. Joint United Nations Programme on HIV/AIDS (UNAIDS) 2018. Fact sheet July 2018.

Lampinen T.M., Chan, K and Chan, K (2005):."Sexual risk behaviour of Canadian participants in the first efficacy trial of a preventive HIV-1 vaccine," *Canadian Medical Association Journal.*175: 479-483.

Markussen, M (2002): "Coping with uncertainty women in the informal fish processing and marketing sector of Lake Victoria" NIBR work paper.

Merten. S. (2006): "Fish for sex" exchange in the Kafue flats: risky opportunities of rural women", in proceedings of the International Workshop on "Responding to HIV and AIDS in the fishery sector in Africa," *World fish centre*, 97: 45-98.

National Agency for the Control of AIDS (NACA), (2010): Update on the HIV/AIDS Epidemic and Response in Nigeria. NACA Publication.

National Agency for the Control of AIDS (NACA) (2015): Nigeria GARPR 2015.

Olapade O, J and Zahara F.C (2014): Benefit Related Relationship among artisanal Fisherfolks of Tombo Fishlanding Community Western Sierra Leone.AIDS 210: 64-108.

Olowosegun T., Sule A.M., Sanni O.A., Onimisi H.U., Olowosegun O.M, (2008): Awareness of HIV/AIDS pandemic in selected fishing communities in North central Nigeria.*AIDS* 75: 218-432

Olowosegun T., Akangbe J A., Olowosegun O M., Sule A M., Sanni A O and Ifejika P I. (2009A): Knowledge, Attitude and Practices of HIV/AIDS in Selected Fishing Communities of Kainji Lake Basin.*Nature and Science* 7: 365-420.

Olowosegun T., Akangbe J A., Olowosegun O M., Sule A M and Owena V. (2009B). Prevalence of Transactional Sex in Selected Fishing Communities of Kainji Lake Basin.*Nature andScience* 7:28-98

Olowosegun T, Akangbe J, A, Olowosegun O, M, Iyilade A and Falaki (2013): Sexuality and HIV/AIDS among Fisherfolks in Kainji Lake Basin.*Global Journal of Medical Research Diseases* 13: 4-18

Plus, News, (2005): Fish trade aiding the spread of HIV/AIDS. A UN run news service focusing on HIV/AIDS related issues.

Yahaya, M, K (2000): Indigenous Music Entertainment. Education Lessons from AIDS: Batannaewuzana in Bida Emirate Nigeria. Stirling Hardens Publishers, p: 58.