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## **A SURVEY OF HIV RISK-RELATED BEHAVIOURS AMONG PRENATAL WOMEN IN SOUTH-SOUTH, NIGERIA**

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## A SURVEY OF HIV RISK-RELATED BEHAVIOURS AMONG PRENATAL WOMEN IN SOUTH-SOUTH, NIGERIA

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### ABSTRACT:

Human Immunodeficiency virus infection is a leading pandemic infectious disease of all races, ages and genders majorly transmitted heterosexually and through mother to child transmission. For its effective control the prevention of HIV risk-related practices among women of reproductive age and mother to child transmission becomes crucial. This study evaluated the HIV-risk-related behaviors among prenatal clinic attendees for effective prevention of its vertical transmission. This was a cross sectional study of 241 HIV prenatal clinic attendees at Niger Delta University Teaching Hospital Okolobiri, Bayelsa State. Data collected from 1st September 2016 to 31st March 2017 was analyzed with EPI INFO software. The mean age of the respondents was  $30.5 \pm 5.2$  years and ranged 18-45 years. Majority of the respondents were of Ijaw ethnicity (57.7%), Christians (97.9%), married (95.4%), attained secondary level of education or below (50.2%) while 25.7% was unemployed. The rate of previous termination of unintended pregnancy was 42.3%, unintended index pregnancy 17.4% and significant among married participants (OR=0.15, P=0.005), non condom use before and during the index pregnancy was 66.4% and significant among the less literate subjects (OR=0.46, P=0.01). Awareness of partners HIV serostatus was 71.0% and significant among the younger participants (OR=0.43, P=0.004), less educated (OR=0.21, P<0.01) and the married (OR=12.47, P<0.03). Sex with multiple sexual partners was 6.6% and significant among those with lower education (OR=4.7, P=0.02) and married (OR=0.16, P=0.03). This data demonstrated significant HIV risk-related behaviors among the prenatal clinic attendees in this setting. This indicated improved prenatal HIV prevention campaign.

**Keywords:** HIV, Risk-related, ehavior, Prenatal, Attendees

### INTRODUCTION:

Heterosexuality is the leading route of HIV acquisition followed by vertical infection of the new-borns from their seropositive mothers. Worldwide, more than 700 children are newly infected daily [1]. For effective control of HIV

infection among other measures the Prevention of Mother to Child Transmission (PMTCT) of HIV is crucial.

Risk and incidence of new infection in the course of gestation is possible and important for effective PMTCT. The HIV risk-related

behaviours and practices by women and their partners in the immediate pre-conception period and during the gestation are therefore crucial in maternal infection and subsequently Mother to Child Transmission (MTCT). Then deeper understanding of the epidemiological factors for new infections in reproductive age women and MTCT will ensure an effective prevention and control strategies of HIV/AIDS.

The Nigerian national demographic health survey of 2013 revealed that 93 - 96% of Nigerians aged 15-49 was aware of HIV/AIDS [2]. It noted some reduced knowledge among rural dwellers, the uneducated and that the women from the South –south region of the country were among those more likely to have multiple sex partners. Consistent use of condom and limiting sexual intercourse to one uninfected partner evidently reduces the risk of heterosexual transmission. Young women mostly in sub-Saharan Africa have lower level of accurate and comprehensive HIV knowledge than men of their age [3]. They are less likely to report use of condom in sex [3], as they have little capacity to negotiate safer sex [3,4], access the services they need and utilize the opportunities for empowerment [4]. This is because women especially in low and middle income countries face significant barriers to accessing services due to economic constraints and gender related discriminations [3]. Awareness of one's HIV serostatus is crucial to the control of the scourge. While those unaware of their HIV serostatus

inadvertently spread new infection, those infected and aware of their infection who engage in high risk behaviours equally pose a significant risk for the spread of the infection. It was reported that about a third of HIV-infected persons in United States of America are not aware of their HIV status [5-6]. High risk behaviour among the HIV positive persons on antiretroviral drugs leads not only to the transmission of HIV but the transmission of drug resistant strains of the virus [7]. It was evident that unprotected sex and heterosexual contact are leading HIV risk behaviour prior to or after awareness of HIV serostatus [5]. Unprotected sex after learning of a positive HIV test result is still common among HIV seropositive persons. This was more widespread among women relative to heterosexual men, sex workers, those aware of their serostatus longer and those who have been on highly active antiretroviral therapy (HAART). These findings were consistent with the contraction or report of diagnosis of STDs by HIV positive persons [5]. For the persons who trade sex for either money or drug, it was evident that the behavior was difficult to change even after testing positive to HIV testing [5, 8] especially when poverty and economic needs are the driving forces. There is the possibility of misconception of the elimination of transmission risk by HAART use and possible improved health of persons receiving HAART with consequent increase of both protected and unprotected sexual activity. Another HIV risk-

related behavior is multiple sex partnership. The larger the number of sex partners either as serial monogamous or polygamous relationship the higher the likelihood to contract the virus. In serial monogamous relationship the spread of HIV infection beyond the couple is not possible unless the relationship is dissolved and a new partnership formed [9] or where it is breached. In contrast, in polygynous e.g. polygamous relationship there is concurrent sexual partnership with its feature of increased number of individuals directly or indirectly sexually connected at any point in time. As a result the HIV is transmitted quickly across the sexual network in any overlapping sexual partnership known biologically to be associated with increased risk of transmitting HIV in high levels of viral load in acute infection of overlapping sexual partnership [9-10]. It is evident that concurrent sexual relationship and HIV prevalence are highest in Africa corroborating concurrency as a major risk factor for HIV spread [11-12]. Prevention of MTCT of HIV is a global interventional program to protect the children from the HIV scourge [13]. The United Nations General Assembly Special Session (UNGASS) on HIV/AIDS identified PMTCT as a key intervention and formulated four-pronged approach for PMTCT in 2001 [13-14]. As the magnitude of various HIV risk -related behaviors among the pregnant women in South-South Nigeria is currently unknown, it is imperative to conduct a study to measure them. Data from the study can then

inform improved PMTCT strategy development and implementation.

#### **METHODOLOGY:**

Niger Delta University Teaching Hospital (NDUTH) is a tertiary hospital at Okolobiri in Bayelsa State in South-South geopolitical region, Nigeria. The hospital offers among other services prevention of mother to child transmission of HIV. Bayelsa State is a riverine or Niger Delta setting. Its total area is 21,110km<sup>2</sup> with the estimated population of about 2 million in 2005. The four main languages spoken in Bayelsa State are Izon, Nembe, Epie-Atissa and Ogbia; these are in line with the four leading ethnic groups in the state. The predominant ethnic group is the Izon (Ijaw); a collection of peoples indigenous mostly to the forest region of Bayelsa, Rivers, Delta, Edo, Akwa-Ibom and Ondo States within the Niger Delta in Nigeria. People from other regions across and outside Nigeria are also resident in Bayelsa State. The state has one of the largest crude oil and natural gas deposits in Nigeria. She is therefore one of the major oil producing states in the country. The main native occupations are fishing and farming. The neighbouring states are Delta to the north, Rivers to the west and the Atlantic Ocean to the east and south.

This was a cross sectional descriptive study on participants recruited from 1st September 2016 to 31st March 2017. The study population was antenatal clinic attendees at NDUTH. Antenatal

attendees who were sero-negative to HIV testing at booking were recruited for the study. The eligible antenatal clinic attendees who declined consent to participation in the study were excluded.

Sample size of 241 attendees was calculated using the formula  $(n = z^2pq/d^2)$  by Cochran [15]; the HIV sero-prevalence rate used was 3.9% [16].

*{Where  $p$  = maximum known proportion of the relevant variable, here expressed as the proportion of HIV sero-negative antenatal care clients found to be sero-converted at delivery at term. In this study  $p=3.9%$  (or 0.039);  $q=1-p$  (proportion of HIV sero-negative antenatal care women at booking who remained so at delivery). This was  $1-0.039$  or  $0.961$ ;  $d$ =Allowable error margin of estimate (precision) thus  $d= 0.03$  since the  $p$  is less than 10% [17].  $z$ =this is Z statistic for 95% confidence level (value for selected alpha level  $\alpha=0.05$  which is 1.96.)}*

All the eligible attendees who registered for prenatal care and gave consent for the study were selected at term or in labour at term. A structured pretested quantitative questionnaire with sections on independent and dependent variables was used for data collection. The instrument was used by the researchers and two assistants to collect the data. This was done during the antenatal clinic periods or in labour on one-on-one basis.

Statistical analyses were done with EPI INFO Version 7.1.4.0 developed by Centre for

disease control and prevention (CDC) in Atlanta Georgia USA released 11 July 2014 and INSTAT software. The outcomes measured from the primary data included the proportion of the participants involved in HIV risk behaviours in the gestational period; the rate of unintended pregnancy, unprotected sexual intercourse, previous termination of unintended pregnancy, awareness of male partner's serostatus and multiple sexual partners. These were each stratified by the independent variables (sociodemographic characteristics). Statistical testing was done with Fisher's exact test using 2x2 contingency tables. The statistical significance was set at 95% confidence interval excluding nullity of one or  $p<0.05$ . The hospital Research and Ethical Committee (REC) gave approval for the study. Informed consent for the research was sought and obtained from each participant.

## RESULTS:

Table 1 is a display of the socio-demographic characteristics of the participants. Their mean, range and modal age were  $30.5\pm 5.2$  years, 18-45 years and 30-34 years (37.8%) respectively. About 9 out of every 10 participants attained at least secondary level of education. A similar proportion was married. A little over a tenth of the subjects were in polygamous relationship. Most (97.9%) of the participants were Christians. The mean gestational age at booking and first HIV testing was  $16.8\pm 4.2$  weeks with the range of 5-28 weeks. The

corresponding values at data collection were  $38.6 \pm 1.4$  and 36-42 weeks respectively. From the same table 1, about 7 (74.3%) and 3 (25.7%) out of every 10 participants were gainfully employed and unemployed

respectively. Most (80.9%) of the participants have had at least a previous childbirth with a range of 0-12 deliveries. Majority of the participants were Christians with over half of them 139/241 (57.7%) of Ijaw ethnicity.

Table 1: Socio-demographic Characteristics of Participants

Characteristic	Variable	Participants N=241 (%)
Age range (years)	<20	2 (0.8)
	20-24	27 (11.2)
	25-29	73 (30.3)
	30-34	91 (37.8)
	$\geq 35$	48 (19.9)
Marital status	Married	230 (95.4)
	Unmarried	11 (4.6)
Parity	0	46 (19.1)
	$\geq 1$	195 (80.9)
Educational level	Nil	7 (2.9)
	Primary	26 (10.8)
	Secondary	88 (36.5)
	Tertiary	120 (49.8)
Occupation	Civil servant	61 (25.3)
	Private Org.	22 (9.1)
	Self employed	96 (39.8)
	Unemployed	54 (22.4)
	Student	8 (3.3)
Type of relationship	Polygamous	25 (10.4)
	Monogamous	216 (89.6)
Religion	Christianity	236 (97.9)
	Islam	4 (1.7)
	Others	1 (0.4)
Ethnic Groups	Ijaw	139 (57.7)
	Igbo	41 (17.0)
	Urhobo	16 (6.6)
	Isoko	14 (5.8)
	Ogbia	3 (1.2)
	Yoruba	3 (1.2)
	Nembe	2 (0.8)
	Epie	2 (0.8)
	Hausa	2 (0.8)
	Others	19 (7.9)

Table 2 shows the previous pregnancy termination prior to the index pregnancy among the participants stratified by the socio-demographic characteristics. About two of every five 102/241(42.3%) of the participants has had at least a previous termination of unintended pregnancy. The married participants were slightly less likely (OR=0.88, P=1.00) to have had at least a previous termination of pregnancy. The observed difference was not statistically significant. The participants from Ijaw ethnic group were more (OR=1.25, P=0.43) likely to have had at least a previous termination of pregnancy compared to other participants. The observed difference was not statistically significant. The nulli-parous participants were about 27% more likely to have had at least a previous termination of pregnancy. This however, was not statistically significant. The participants who used condom were some 40% less likely to have had termination of unintended pregnancy.

Table 3 shows the unintended index pregnancy stratified by the socio-demographic characteristics of the participants. About one out of every five 42/241 (17.4%) participants had unplanned index pregnancy. Participants less than 30 years of age were less than 20% (OR=0.81, P=0.61) less likely to have unplanned index pregnancy compared with their older counterparts. The observed difference however was not statistically significant. Married participants were comparatively more than 80% less likely to

have unplanned pregnancy. The observed difference was statistically significant (P=0.01). Similarly those who used condom 12 months prior to this interview were statistically similar to those who did not use in unplanned index pregnancy. The employed participants were about 40% less likely to have unplanned index pregnancy while the less literate group were more likely to by same proportion.

Table 4 shows the results of condom use by the participants during the index pregnancy stratified by the socio-demographic characteristics. A majority 160/241 (66.4%) of the participants indicated non condom use in the twelve months preceding the interview. Participants who were younger than thirty years of age were 25% less likely to use condom around and during the pregnancy compared with their older counterparts (OR=0.75, P=0.34). The observed difference was not statistically significant. The married participants were more than twice more likely not to use condom during their index pregnancy (OR=2.48 P=0.19). The difference was not statistically significant. Relative to those who attained tertiary level of education, the participants with secondary level of education or less were significantly less likely not to (OR=0.46, P=0.01) use condom during the index pregnancy. The participants on gainful employment were less likely (OR=0.55, P=0.09) not to use condom in this pregnancy. The observed difference however, was not statistically significant.

Table 2: Previous Termination of Unintended Pregnancy among Participants vs. Socio-demographic Characteristics

Variables	Category, N (%)	Previous Termination of Unintended Pregnancy		OR (95% CI)	P-value
		N = 241			
		Yes: N (%)	No: N (%)		
Age groups	≤ 29yrs: 102 (42.3) ≥30yrs: 139(57.7)	45 (44.1) 57 (41.0)	57 (55.9) 82 (59.0)	1.14 (0.68-1.9)	0.69
Marital status	Married: 230 (95.4) Unmarried: 11 (4.6)	97(42.2) 5 (45.5)	133 (57.8) 6 (54.5)	0.88 (0.26-3.00)	1.00
Type of Relationship	Polygamous: 25 (10.4) Monogamous: 216 (89.6)	11 (10.8) 91 (89.2)	14 (10.1) 125 (89.9)	1.08 (0.47-2.49)	1.00
Occupation	Employed: 179 (74.3) Unemployed: 62 (25.7)	73 (40.8) 29 (46.8)	106 (59.2) 33 (53.2)	0.78 (0.44-1.40)	0.46
Educational level	≤ Secondary: 121 (50.2) >Secondary: 120 (49.8)	47 (38.8) 55 (45.8)	74 (61.2) 65 (54.2)	0.75 (0.45-1.25)	0.30
Parity	0: 46 (19.1) ≥1: 195 (80.9)	19 (56.0) 83 (42.6)	27 (44.0) 112 (57.4)	1.27 (0.53-3.04)	0.66
Ethnic Group	Ijaw: 139 (57.7) Others: 102 (42.3)	62 (44.6) 40 (39.2)	77 (55.4) 62 (60.8)	1.25 (0.74-2.10)	0.43
Condom use in the last 12 months	Used: 81 (12.1) Not used: 160 (87.9)	28 (34.6) 74 (46.3)	53 (65.4) 86 (53.7)	0.61 (0.35-1.07)	0.10

Table 3: Unintended index Pregnancy among Participants vs. Socio-demographic Characteristics

Variables	Category, N (%)	Unintended Index Pregnancy		OR (95% CI)	P-value
		Yes	No		
	N = 241				
Age groups	≤ 29yrs: 102 (42.3) ≥ 30yrs: 139 (57.7)	16 (15.7) 26 (18.7)	86 (84.3) 113 (81.3)	0.81 (0.41-1.60)	0.61
Marital status	Married: 230 (95.4) Unmarried: 11 (4.6)	36 (15.7) 6 (54.5)	194 (84.3) 5 (45.5)	0.15 (0.04-0.53)	0.005
Type of Relationship	Polygamous: 25 (10.4) Monogamous: 216 (89.6)	11 (44.0) 31 (14.4)	14 (56.0) 185 (85.6)	4.69(1.95-11.27)	0.001
Occupation	Employed: 179(74.3) Unemployed: 62(25.7)	27(15.1) 15(24.2)	152(84.9) 47(78.0)	0.56 (0.27-1.13)	0.12
Educational level	≤ Secondary: 121(50.2) >Secondary: 120(49.8)	24(19.8) 18(15.0)	97(80.2) 102 (85.0)	1.4 (0.72-2.74)	0.40
Parity	0: 46 (19.1) ≥1: 195 (80.9)	7(15.2) 35(17.9)	39 (84.8) 160 (82.1)	0.82 (0.34-2.00)	0.83
Ethnic Group	Ijaw: 139(55.3) Others: 102(44.7)	25(18.0) 17(16.7)	114(82.0) 85 (83.3)	1.10(0.56-2.16)	0.86
Religion	Christianity: 236(97.9) Islam: 5 (2.1)	41(17.4) 1(20.0)	195 (82.6) 4 (80.0)	0.84(0.09-7.73)	1.00
Condom use in the last 12 months	Used: 81(12.1) Not used: 160(87.9)	14(17.3) 28(17.5)	67(82.7) 132 (82.5)	0.99 (0.49-2.00)	1.00



Table 4: Non-Condom Use among Participants in index Pregnancy vs. Socio-demographic Characteristics

Variables	Category; N (%)	Non-Condom Use		OR (95% CI)	P value
		Non-use: N (%)	Use: N (%)		
	<b>N = 241</b>				
Age groups	≤ 29 yrs: 102 (42.3) ≥ 30 yrs: 139 (57.7)	64 (62.7) 96 (89.2)	38 (37.3) 43 (10.8)	0.75 (0.44-1.2)	0.34
Marital Status	Married: 230 (95.4) Unmarried: 11 (4.6)	155 (67.4) 5 (45.5)	75 (32.6) 6 (54.5)	2.48 (0.73-8.39)	0.19
Type of Relationship	Polygamous: 25 (10.4) Monogamous: 216 (89.6)	13 (52.0) 147 (68.1)	12 (48.0) 69 (31.9)	0.51(0.22-1.17)	0.12
Parity	0: 46 (19.1) ≥1:195 (80.9)	28 (60.9) 132 (67.7)	18 (39.1) 63 (32.3)	0.74 (0.38-1.44)	0.39
Educational level	≤ Secondary: 121(50.2) >secondary: 120 (40.8)	70 (57.9) 90 (75.0)	51 (42.1) 30 (25.0)	0.46 (0.26-0.79)	0.01
Occupation	Employed: 179 (74.3) Unemployed: 62 (25.7)	113 (63.1) 47 (75.8)	66 (36.9) 15 (24.2)	0.55 (0.28-1.05)	0.09
Ethnic Group	Ijaw: 139 (57.7) Other: 102 (42.3)	88 (63.3) 72 (70.6)	51 (36.7) 30 (29.4)	0.72 (0.42-1.24)	0.27

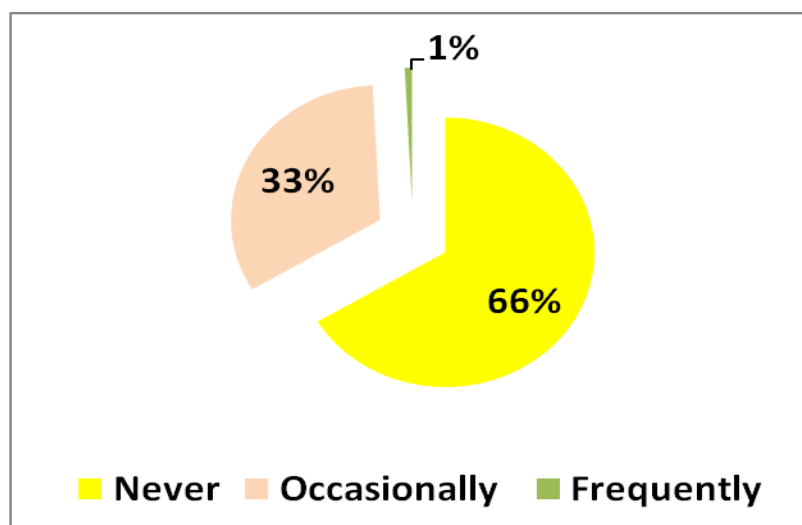


Figure 1: Pattern of Participants Use of Condom in the last 12 Months {N = 241 (%)}. A further subgroup analysis showed that 66%, 33% and 1% of the participants never, occasionally and frequently respectively used male condom during the gestational period or in the previous twelve months from the time of interview (Figure 1).

Table 5: Multiple Sexual Partners in Index Pregnancy vs. Participants Characteristics

Variables	Category, N (%)	Multiple Sexual Partners		OR (95% CI)	P-value
		Yes: N (%)	No: N (%)		
	<b>N = 241</b>				
Age groups	≤ 29 yrs: 102 (42.3) ≥ 30 yrs: 139 (57.7)	5 (4.9) 11 (7.9)	97 (95.1) (43.1) 128(92.1)	0.60 (0.20-1.78)	0.44
Marital status	Married: 230 (95.4) Unmarried: 11 (4.6)	13 (5.7) 3 (27.3)	217 (94.3) 8 (72.7)	0.16(0.04-0.67)	0.03
Type of Relationship	Polygamous: 25 (10.4) Monogamous: 216 (89.6)	12 (48.0) 4 (1.9)	13 (52.0) 212 (98.1%)	48.92(13.84-173.0)	<0.001
Occupation	Employed: 179 (74.3) Unemployed: 62 (25.7)	13 (7.3) 3 (4.8)	166 (92.7) 59 (95.2)	1.54(0.42-5.60)	0.77
Educational level	≤Secondary: 121(50.2) >Secondary: 120 (49.8)	13(10.7) 3(2.5)	108(89.3) 117(97.5)	4.69(1.30-16.93)	0.02
Parity	0: 46 (19.1) ≥1: 195 (80.9)	1(2.2) 15(7.7)	45(97.8) 180(92.3)	0.27 (0.03-2.07)	0.32
Ethnic Group	Ijaw: 139 (57.7) Others: 102 (42.3)	11(7.9) 5(4.9)	128(92.1) 97(95.1)	1.67 (0.56-4.96)	0.44

Table 6: Participants Awareness of Partners' HIV serostatus vs. Sociodemographic Characteristics

Variables	Category; N (%)	Aware of Partner's Sero-status		OR (95% CI)	P-value
		Yes: N (%)	No: N (%)		
Age groups	≤29 yrs: 102 (42.3) ≥30 yrs: 139 (57.7)	62 (60.8) 109 (78.4)	40 (39.2) 30 (21.6)	0.43 (0.24-0.75)	0.004
Marital status	Married: 230 (95.4) Unmarried: 11 (4.6)	169(73.5) 2(18.2)	61(26.5) 9(81.8)	12.47 (2.62-59.35)	0.0003
Type of Relationship	Polygamous: 25 (10.4) Monogamous: 216 (89.6)	10 (40.0) 161	15 (60.0) 55	0.23 (0.10-0.54)	<0.001
Occupation	Employed: 179 (74.3) Unemployed: 62 (25.7)	131 (73.2) 40 (64.5)	48 (26.8) 22 (35.5)	1.50 (0.81-2.78)	0.20
Educational level	≤ Secondary: 121 (50.2) >Secondary: 120 (49.8)	68 (56.2) 103 (85.8)	53 (43.8) 17 (14.2)	0.21 (0.11-0.40)	<0.001
Parity	0: 46 (19.1) ≥1: 195 (80.9)	36 (78.3) 135 (69.2)	10 (21.7) 60 (30.8)	1.60 (0.75-3.44)	0.28
Ethnic Group	Ijaw: 139 (57.7) Others: 102 (42.3)	100 (71.9) 71 (69.6)	39 (28.1) 31 (30.4)	1.12 (0.64-2.00)	0.77

Table 5 shows the results of multiple sexual partners by the participants stratified by the sociodemographic characteristics. About 16/241 (6.6%) of the participants had multiple

sexual partners during the period of the study. The married participants were significantly more than 80% less likely to have multiple sexual partners.(OR=0.16, P=0.03). On the

other hand, those with secondary education and below were statistically significant close to fivefold (OR=4.69, P=0.02) more likely to have multiple sexual partners in the index pregnancy. The participants of Ijaw ethnic group and their employed counterparts were about twice respectively more likely to have multiple sexual partners. However, none of the observed differences was statistically significant.

From Table 6 the results of participants awareness of their male partners HIV-serostatus stratified by socio-demographic characteristics were shown. About three out of every ten 70/241 (29.0%) of the participants were not aware of their male partners HIV serostatus. Those participants younger than 30 years of age were about 60% less likely to know the serostatus of their partners (P=0.03). The observed difference was statistically significant. Similarly, those with secondary level of education and less were about 80% less likely to know the serostatus of their partners (OR=0.21, P= <0.01). The observed difference was statistically significant. On the contrary, the married ones were significantly more than 12 folds (OR=12.47, P=0.003) more likely to know the HIV serostatus of their male partners. The nulliparous participants compared with their parous counterparts were close to twice (OR=1.6, P=0.28) more likely to know the serostatus of their male partners. However, the observed difference was not statistically

significant. About 71% of the subjects knew the serostatus of their spouses while 29% did not (Table 6).

#### **DISCUSSION:**

This data demonstrated a high incidence of previous termination of unintended pregnancy (42.3%), unintended index pregnancy (17.4%) significant among those in polygamous relationship and non-condom use (66.4%) significant among more literate participants. Others are sex with multiple partners (6.6%) worst among the polygamous participants, poorly educated and the unmarried while lack of awareness of spouse HIV serostatus (29.0%) mostly the polygamous participants, the younger, the unmarried and the less educated.

Earlier reports in the literature noted high risk sexual behaviours among pregnant women in some parts of Africa predisposing them to increased HIV transmission in pregnancy [18]. Women from the south-south region of Nigeria have been associated with increased involvement in multiple sexual partners [19]. The rate of sex with multiple partners in this study was low at 6.6% and could not corroborate this. The incidence of unintended index pregnancy was high in this data. This was significant among those in polygamous relationship and the unmarried. More than one out of every ten of the participants was in polygamous marriage. This is associated with concurrent or overlapping sexual partnership

[9-10]. In a case of an open circuit polygamous relationship, any sexual transmitted infection in one of the partners exposes the entire network in unprotected sexual relationship to the risk of the sexual transmitted infections including HIV.

The rate of previous termination of unintended undesired pregnancy of over 42% was high in this study. This is an indication of increased HIV-related risk behavior of lack of pregnancy planning. Consistent use of condom as demonstrated in this data is effective in preventing unintended pregnancy, its termination and HIV transmission. There is a fairly quality prenatal care with well organized and intense HIV prevention campaign at this study centre. This is expected to have positively influenced the HIV risk behaviour in this population. The 29% proportion of the women that did not know the serostatus of the father of their index pregnancy in this study was significant. The finding is consistent with the report of other researchers [20]. This indicates low rates of HIV serostatus disclosure among sexually active couples [20]. Sexual intercourse with partners of unknown HIV serostatus is one of the confirmed HIV related risk behaviours. Awareness of spousal serostatus has been shown to have the potential of reducing MTCT of HIV by engendering intense and earlier preventive measures [2]. Consistent use of condom and limiting sexual intercourse to one uninfected partner evidently reduces the risk of HIV

transmission [19, 21]. The few participants that occasionally used condom in this study were probably for contraception prior to index pregnancy though this data did not explore the reasons for their use of condom. In addition descriptive observational study has the inherent limitation of exploring the reason for an observed outcome. Condom offers the dual protection from HIV and other sexually transmitted infections and unintended pregnancy making it an effective option for prevention of HIV for both concordant and discordant seropositive partners. Such couples are candidates for correct and consistent use of condom [14, 22], planned pregnancy [14] and semen preparations and assisted reproductive techniques to avert the woman infection and MTCT [23].

The rate of previous termination of unplanned pregnancy in this data was high indicating poor use of contraception therefore increased level of unmet need for contraception. This equally was a reflection of the participants' poor practice of protective sex for prevention of both unintended pregnancy and STI/HIV infection outside pregnancy and the latter during pregnancy. Unplanned pregnancy has been identified as an important risk factor for MTCT and a militating factor against PMTCT of HIV [13-14]. This risk behavior though relatively low in this study; it cut across almost all the categories of the participants.

There was a marked reduction of unplanned pregnancy from about 42% previously to 17% in index pregnancy; a reduction of over 60%. Probably most of the previous unintended pregnancy and the terminations occurred premarital. Again the design of this study did not explore the timing of the previous pregnancy terminations.

The rate of condom use was low among the participants especially among the married ones possibly due to low perception of possible risks. Though the Level of awareness of partners HIV serostatus was relatively low at 71% for HIV scourge prevention, it was particularly high among the older, educationally and economically empowered participants. This confirms the evidence of women empowerment in enhancing their capacity to enquire about their partners and negotiate sex [19, 24-27] and the importance of intimacy of couples in marriage for information sharing.

Currently, there is an emerging practice of HIV testing among intending couples prior to contraction of marriages.

Limitation of this study: This was a hospital based data that might not be generalizable. Again the questions on sexuality are sensitive and involve self-reporting of one's behavior known to be associated with underreporting bias.

## CONCLUSIONS:

There was high rate of unplanned index pregnancy and previous termination of unintended pregnancies signaling huge unmet need for contraception in this setting. The awareness of partners HIV serostatus among the participants was low in this data indicating poor disclosure of serostatus or low HIV testing among the male partners. Protective sex by the use of condom was low in this population; however there was low involvement in sex with multiple partners among the study population. Women educational and economic (employment) empowerment was still inadequate indicating more governmental involvement to stem the socioeconomic role in HIV transmission in order to sustain the campaign against the scourge.

HIV-related risk behavior was significant in this population strengthening the need for quality prenatal care as an effective entry point for prevention of MTCT and by extension prevention of HIV infection.

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