

*Full Length Research Paper*

# Pattern of condom use and perceived risk of HIV infection among female sex workers in selected Brothels in Ogun State, Nigeria

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**In view of the paucity of empirical data on condom use among female sex workers (FSWs) with their clients and regular/trusted sex partners in Nigeria, particularly Ogun State, this study was conducted to examine FSWs' knowledge and perception about HIV/AIDS and find out their pattern of condom use with their clients and regular/trusted sex partners. One hundred and thirty-one FSWs were interviewed using semi-structured questionnaires in Ogun State, South-West Nigeria. Results showed pervasive consistent condom use (95.4%) with high (74.8%) incidence of condom breakage with clients, inconsistent condom use with regular/trusted partners (75.6%), drug/substance abuse as post-exposure prophylaxis, recent STI experiences, and low self-perceived risk of HIV infection among the FSWs studied. A few (1.5%) respondents who were not using condoms with their clients at all were also not using with their regular/trusted sex partners. Results showed the need for urgent educational interventions on proper condom use particularly targeting FSWs who use no condom or often experience condom breakage with clients and deemed it less imperative to use condom with their regular/trusted sex partners. The programmatic response should emphasise the dangers of substance abuse, their vulnerability to STIs and HIV and becoming vessels of spreading such infections.**

**Keywords:** HIV/AIDS, perceived risk, condom use, female sex workers, Nigeria.

## INTRODUCTION

In Nigeria, about 2.1 million adults and children had died of acquired immune deficiency syndrome (AIDS) by the end of 2010 (Federal Ministry of Health, 2010) with annual AIDS-related deaths estimated to be 217,148 and annual new human immunodeficiency virus (HIV) infections estimated at 388,864 (National Agency for the Control of AIDS, 2012). About 3.14 million people were estimated to be living with human immunodeficiency virus (HIV) by 2010 (Federal Ministry of Health, 2010). Among the mechanisms of HIV transmission, heterosexual contact is the main route of the infection in Nigeria (Ajuwon and Shokunbi, 1994; Jackson, 2002; National AIDS/STDs Control Program, 2002a; National Population

Commission and MEASURE DHS ICF Macro, 2009). This mechanism accounts for 90-95% of HIV infections in the country (National AIDS/STDs Control Program, 2002a) and 70% worldwide (Jackson, 2002). In countries where heterosexual contact is the main mode of HIV transmission, reports showed that the epidemic is usually concentrated initially among female sex workers (FSWs) and their clients before spreading and becoming established in the general population (UNAIDS, 2002a; 2002b). This is because sex work enormously contributes to HIV transmission in sub-Saharan Africa (Ilesanmi and Lewis 1997; Jackson, 2002). In Dakar, for example, 1.7% infection rate was reported among pregnant women and blood donors compared to 10.0% among FSWs. Similarly, 0.12% among pregnant women in contrast to 13.0% among FSWs was reported in Viet Nam (UNAIDS, 2002b). In Nigeria, studies have shown a steadily high prevalence of HIV among FSWs who constitute an impor-

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tant reservoir of HIV infection for continuous transmission to the general population (National AIDS/STDs Control Program, 2002a; 2002b; Ankomah et al., 2011). HIV prevalence among this high risk group has remained high and risen from 17.5% in 1991 through 22.5% in 1993 to 37.4% in 2007 compared to 4.1% among pregnant women (Federal Ministry of Health, 2010). However, the HIV prevalence in the group declined to 27.4% in 2010 (National Agency for the Control of AIDS, 2012). Oladembe et al. (2010) reported that sex workers and their clients account for about 18.0% of all new infections in some states such as Ogun in Nigeria.

Successful HIV/AIDS prevention and care programmes for those involved in sex work use a mixed grid of strategies that include: promotion and availability of sexually transmitted infections (STIs) prevention and care services, capacity-building on sex negotiation skills through outreach programmes, promotion of safer sexual behaviour with condom (for male and female) availability and its correct use (UNAIDS, 2002b). Safe sex approach with condom use remains a highly cost-effective strategy for preventing STIs/HIV particularly among sex workers and their clients (World Bank, 1997; Jackson, 2002; UNAIDS, 2010). Examples of such successful safe sex approach and condom promotion include the a study implemented in Peru (Trujillo et al., 1999) and the 100% Condom Use Programme for commercial sex in Thailand (UNAIDS, 2002b) where condom promotion and improved treatment of STIs reduced the incidence of curable STIs by more than 80% in five years and contributed to the decline of prevalence among FSWs (UNAIDS, 1998; 2000; Kilmarx et al., 1999; Lamptey et al., 2002).

Reports on perceived risk of HIV infection among FSWs showed that a high number of FSWs know that the use of condoms reduce the risk of HIV transmission (UNAIDS, 2002a; Tran et al., 2013). Studies have also showed significant discrepancy between knowledge, perception and practice on condom use among FSWs and their clients. According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), factors that contribute to this gap include limited access to health and social services, limited access to information and prevention means and limited skills and negotiating power. In Indonesia for example, while 78.0% of FSWs knew that consistent condom use prevents HIV infection, only 12.0% consistently used it in commercial sex. Similarly, 78.0% of male clients of FSWs knew about condom in preventing HIV but less than 10.0% consistently use a condom with the FSWs (Family Health International, 2001; UNAIDS, 2002a). In Nigeria, results showed that despite FSWs' high risk sexual activities, many of them have low self-perceived risk of HIV infection (Federal Ministry of Health, 2007; Messersmith et al, 2007). In Nigeria, condom use has been reported to remain high among FSWs with 92.9% using condom with clients and has remained very low at 26.1% using

condom with their boyfriends (National Agency for the Control of AIDS, 2012).

Safe sex with condom use is vigorously being promoted in Nigeria. However, little is known about the true extent and pattern of condom use among FSWs with their clients and regular/trusted sex partners in Ogun State, Nigeria where systematic study on these issues has not been adequately conducted. This is imperative for planning of effective control strategy to mitigate the spread of HIV from these high-risk groups to the general population in the State. This is vital now that the control efforts need to be in place to maintain and further reduce the declining HIV prevalence rate in Ogun State and the country at large. This study was therefore designed to examine FSWs' knowledge and perception about HIV/AIDS and find out their pattern of condom use with their clients and regular/trusted sex partners in view of the paucity of empirical data on pattern of condom use among FSWs with their clients and regular/trusted sex partners.

## METHODS

### Study setting

The study was carried out in five urban communities that included Abeokuta (the State Capital), Ago Iwoye, Ijebu Igbo, Ijebu Ode and Sagamu in Ogun State, South-West Nigeria. Ogun State comprised of typical traditional Yoruba communities with a population of about 3.8 million according to the 2006 National Population Census and a projected population of 4.3 million in 2011 at a growth rate of 3.2% (National Population Commission, 2010). The choice of the study locations based on purposive sampling was informed by their being urban communities in the State. The people in the study communities are predominantly subsistence farmers and traders with large populations of students of secondary and tertiary educational institutions. HIV prevalence rate in Ogun State increased from 2.5% in 2001 (National AIDS/STDs Control Program, 2001) to 3.1% in 2010 (Federal Ministry of Health, 2010). In the selected communities, HIV prevalence rates of 2.7% and 5.0% were reported in Abeokuta and Ijebu Ode respectively with an average urban and rural prevalence rate of 3.9% and 1.7% respectively in 2010 (Federal Ministry of Health, 2010).

### Study Design

This was a cross-sectional study designed to describe female sex workers' (FSWs) knowledge and perception of HIV/AIDS and their pattern of condom use with their clients and regular/trusted sex partners. The regular/trusted sex partners in this context were the regular non-paying sexual partners of the FSWs.

## Data Collection and Sampling Procedures

The study used semi-structured interviewer-administered questionnaires to interview 131 female sex workers (FSWs) in the five selected communities. The sample size of 131 FSWs was derived from the table for a minimum sample size estimate for a population survey with 95% confidence interval (Lemeshow et al., 1990).

The participants were selected using the systematic random sampling method. The compiled list of names of FSWs resident in each of the selected brothel provided by the brothel managers was used as the sampling frame in each of the brothels. In each of the randomly selected brothels, systematic sampling was employed in the selection of FSWs included in the survey as follows; a listing of all FSWs in each brothel visited was provided by the manager and the number of FSWs desired as determined proportionally to number of FSWs working in each brothel was used as the numerator and denominator respectively to determine the sampling interval. The sampling interval was then applied in selecting FSWs from the provided lists by systematic sampling. The respondents were approached for interview during their off-peak period in the day time when they had no or less number of clients.

The questionnaire probed the social background of the respondents, their knowledge and perception of HIV/AIDS, perceived vulnerability to HIV infection, and their sexual behaviour and practices with emphasis on the number of clients per day during the previous week prior to survey, condom use with their clients and regular/trusted sex partners. The questionnaire was pretested in a brothel in Ijebu Igbo but eventually excluded from being selected for the study. The pretested questionnaires were excluded from the analysis because the pretest survey was only conducted to test-run the instrument, trend in the response to its content, the amount of time taken to respond to the questionnaire and survey procedures. Following the pretest, content of the questionnaire was enriched with responses gathered and these were subsequently integrated as response options in the questionnaire used for the main study.

The research assistants recruited to conduct the survey had an average age of 28 years and were all experienced male undergraduates who have administered questionnaire in past surveys. They were trained before the survey. The goal and the general scope of the study as well as the data collection procedures were explained to the research assistants in a two-day workshop. The research assistants were educated on the steps of questionnaire administration for the survey in practical sessions that involve familiarization with the questions in the instrument one after the other and role plays to assess their understanding of the contents of the instrument and ability to perform the tasks expected of them in the field. It needs be emphasized that studies among sex workers in Nigeria have shown that gender of

interviewers made no difference in the data collection process in terms of quality and quantity of information obtained (Chimaraoke, 2007; Ankomah et al., 2011).

The study was carried out in accordance with universal ethical principles. Approvals were obtained from the management of the selected brothels prior to commencement of the study. The respondents' informed consent, in the form of verbal consent was obtained because they were not willing to sign any consent form for fear of the law. This could be attributed to the fact that sex work is illegal in the country. The confidentiality of all information collected in the research were maintained by removing all identifiers of the respondents from the questionnaires. Individuals were identified on the questionnaires and other record forms by code numbers only, with the list linking names to the code numbers being kept separately in a secure place.

Overall, the response rate for the survey was 91.6% as 131 of 143 FSWs approach for interview obliged. The non-response experienced with some of the participants could be attributed to fear of the fact that sex work is illegal in the country as earlier emphasised.

## Data Analysis

Following the data collection, the questionnaires were screened, edited for clarity, completeness and uniformity of the responses, and then coded. The coded data were entered into the computer using EpiInfo 6.04a software developed by the Centers for Disease Control, United States of America in collaboration with the WHO (Smith and Morrow, 1996). Statistical analyses of the data set included univariate analysis to show the relative frequency distribution of each variable on the questionnaire, and bivariate and multivariate analyses that include Chi-Square, regression analysis, and analysis of variance (ANOVA) were performed at 95% level of significance to examine simple and multiple associations between selected independent and dependent variables relative to the study objectives.

## RESULTS

### Respondents' background characteristics

The 131 respondents interviewed were from Ijebu Igbo (20 or 15.3%), Ago Iwoye (9 or 6.9%), Ijebu Ode (56 or 42.7%), Abeokuta (22 or 16.8%) and Sagamu (24 or 18.3%). Their ages ranged from 17 to 40 years with an average and median age of 25.3 and 25 years respectively. Majority of them were Christians and never married. High level of literacy was reported among the respondents with a little over half having secondary education. The respondents became sexually active at an average age of 16.2 years and have been involved in sex

**Table 1.** Background characteristics of the respondents.

<b>Age (years)</b>	<b>Number</b>	<b>%</b>
<20	15	11.5
20-24	47	35.9
25-29	49	37.4
30-34	13	9.9
35-39	6	4.5
≥40	1	0.8
<b>Total</b>	<b>131</b>	<b>100.0</b>
<b>Religion</b>		
Christianity	118	90.1
Islam	12	9.1
Traditional	1	0.8
<b>Total</b>	<b>131</b>	<b>100.0</b>
<b>Education</b>		
None	11	8.4
Primary	44	33.6
Secondary	67	51.1
Tertiary	9	6.9
<b>Total</b>	<b>131</b>	<b>100.0</b>
<b>Marital status</b>		
Never married	87	66.4
Co-habiting	1	0.8
Married	19	14.5
Divorced	17	13.0
Separated	6	4.5
Widowed	1	0.8
<b>Total</b>	<b>131</b>	<b>100.0</b>
<b>Vocational skill</b>		
None	47	35.9
Hair dressing	37	28.2
Sewing	14	10.7
Trading	30	22.9
Catering	3	2.3
<b>Total</b>	<b>131</b>	<b>100.0</b>

work for about 1 to 7 years with an average and median period of 2.4 and 2 years respectively. The number of clients they get daily during the previous week ranged from 2 to 9 with an average of 5 clients daily. The background characteristics of the respondents are presented in Table 1. The respondents had an average of one regular/trusted sex partner.

Table 2 shows the distribution of the respondents according to the number of their regular/trusted sex partners.

### **Respondents' Knowledge of HIV/AIDS and Perceived Vulnerability to HIV Infection**

Most of the women (129; 98.5%) had heard of HIV/AIDS. The respondents' perceived modes of HIV transmission and how HIV infection can be prevented are presented in Table 3. A large number (90.1%) of respondents believed in HIV/AIDS reality, 7.6% did not and 2.3% were indifferent. Only 16.0% had the self-perceived risk of HIV infection. Most (78.6%) did not feel to be at risk of HIV

**Table 2.** Number of regular/trusted sex partners of respondents.

Number regular/trusted partners	of sex	Number	%
None		32	24.4
1		84	64.1
2		12	9.2
3		1	0.8
5		2	1.5
<b>Total</b>		<b>131</b>	<b>100.0</b>

**Table 3.** Respondents' perceived modes of HIV transmission and perceived ways of preventing HIV infection.

Perceived modes of HIV transmission	Number (n = 131)	Percentage
Blood transfusion	12	9.2
Unsterilised sharp objects	63	48.1
Mother-to-child transmission	3	2.3
Unprotected sex	107	81.7
Kissing	4	3.1
Other (sharing toilet/clothes/ cutlery)	3	2.3
Don't know	3	2.3

Perceived ways of preventing HIV infection	Number (n = 131)	Percentage
Consistent use of condom	115	87.8
Abstinence	9	6.9
Avoid sharing sharp objects	46	35.1
Avoid unscreened blood transfusion	4	3.1
Other (avoid kissing/sharing toilet, clothes and cutlery)	4	3.1
Don't know	9	6.9

infection and 5.3% were indifferent. The respondents' knowledge of HIV/AIDS was directly related to their level of education ( $\chi^2 = 27.76$ , df 3,  $p < 0.05$ ). Their belief about HIV/AIDS reality directly influenced their self-perceived risk of HIV infection ( $\chi^2 = 23.93$ , df = 4,  $p < 0.05$ ).

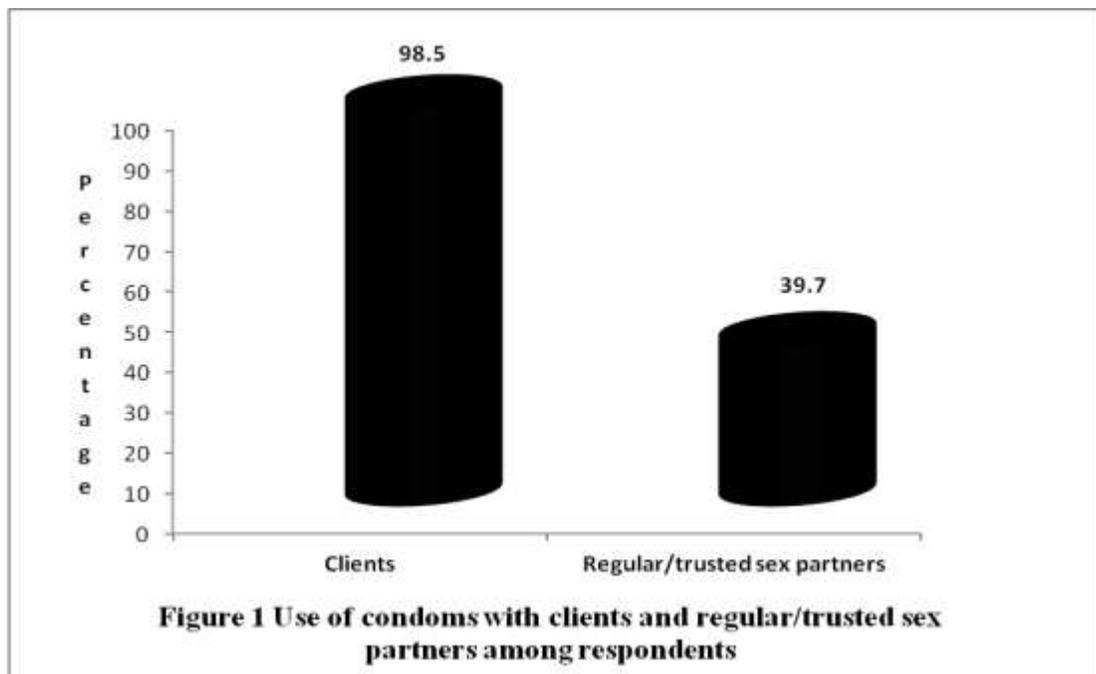
Analysis of variance (ANOVA) showed that those who believed in .compared to 28.8 years for those who did not ( $\chi^2 = 6.88$ , df = 2,  $p < 0.05$ ). Similarly, younger FSWs had

more perceived risk of HIV infection than older FSWs ( $p < 0.05$ ).

Of the cognitive/perceptual factors described above, multiple regression showed that only three variables namely: level of education; condom break experience; and belief in HIV/AIDS reality were ultimately associated with self-perceived risk of HIV infection among respondents as reported in Table 4.

**Table 4.** Factors associated with respondents' self-perceived risk of HIV infection.

Variable	Mean	95% confidence			Std error	Partial F-test
		$\beta$ coefficient	Lower	Upper		
Education	2.565	0.0676	-0.0335	0.1687	0.0511	1.7494
Heard of HIV/AIDS	1.015	0.9112	0.1537	1.6688	0.3828	5.6663
Belief in HIV/AIDS reality	1.122	0.1142	-0.1223	0.3507	0.1195	0.9133
Y-Intercept	0.8318					
Correlation coefficient	$r^2 = 0.13$					
Source		d.f.	Sum of square	Mean square		F-statistic
Regression		4	3.324	0.831		4.52
Residents		126	23.180	0.184		
Total		130	26.504			



#### Pattern of Condom use and STI Experience Among Respondents

All (100.0%) respondents interviewed had used the male condom. This is contrary to only 2.3% who reported to

have ever used the female condom. Analysis of variance (ANOVA) showed that older FSWs with a mean age of 26.0 years were more likely to have ever used a female condom as compared to younger ones with a mean age of 23.8 years ( $\chi^2 = 7.18$ ,  $df = 1$ ,  $p < 0.05$ ). The probability

**Table 5.** Respondents' perceived vulnerability to HIV infection and condom use with clients and regular/trusted sex partners.

	Are you at risk of HIV infection?			Total
	Yes	No	Indifferent	
<b>Use of condoms with clients</b>				
Yes	21 (16.3)	101 (78.3)	7 (5.4)	129 (98.5)
No	0 (0)	2 (100.0)	0 (0)	2 (1.5)
Total	21 (16.0)	103 (78.6)	7 (5.3)	131 (100.0)
$\chi^2 = 0.55$ df=2 p = 0.759				
<b>Use of condoms with regular/trusted sex partners</b>				
Yes	9 (17.3)	42 (80.8)	1 (1.9)	52 (39.7)
No	12 (15.2)	61 (77.2)	6 (7.6)	79 (60.3)
Total	21 (16.0)	103 (78.6)	7 (5.3)	131 (100.0)
$\chi^2 = 2.03$ df=2 p = 0.363				

of having ever used a female condom was directly related to the number of years they have been involved in sex work ( $\chi^2 = 10.71$ ,  $df = 1$ ,  $p < 0.05$ ). The distribution of the respondents according to their use of condoms with clients and their regular/trusted sex partners is illustrated in Figure 1. The few (1.5%) respondents who were not using condoms with their clients at all were also not using with their regular/trusted sex partners. In contrast, a few number (24.4%) of the respondents consistently used condom with their regular/trusted sex partners. A larger proportion (95.4%) of 129 who used condom with clients used it consistently, while 4.6% were inconsistent. Table 5 shows no significant association between self-perceived risk of HIV infection and use of condom with clients and regular/trusted sex partners among the respondents.

Some of the reasons given by respondents for the inconsistent use of condom with their clients and regular/trusted sex partners were "the clients don't like condom" [100.0% ( $n=4$ )], "my boy-friend trusts me and he's the one I'm getting married to" [13.1% ( $n=99$ )] and "my partner does not like condom" [6.1% ( $n=99$ )]. Education of respondents was not significantly related to use of condom with neither the clients nor their regular/trusted sex partners ( $p > 0.05$ ). Multiple regression showed age (25.27), past STI experience (1.77) and self-perceived risk of HIV infection (1.89) as the key factors that had joint effects on consistent use of condom with clients among respondents as shown in Table 6.

Ninety-eight (74.8%) of the 131 respondents reported frequent condom breakage when engaged in sex work with their clients and 78.6% of these had other regular/trusted sex partners with whom they inconsistently have protective sex with. The incidence of

condom breakage with clients among the respondents varied from one locality to another as illustrated in Figure 2 ( $\chi^2 = 20.05$ ,  $df = 4$ ,  $p < 0.05$ ). The duration of respondents' involvement in sex work had no significant influence on the probability of experiencing condom breakage ( $p > 0.05$ ). Post-exposure prophylaxis used by respondents following condom breakage included: antibiotics (52.0%); douching with water and soap only (21.4%); drink water-salt solution after douching (8.2%); drink dry gin after douching (7.1%); and drink lemonade-salt mixture after douching (5.1%). Only 6.1% reported visiting hospital for treatment.

Small proportions (22.9%) of the 131 respondents admitted to have had STIs in the past with 30.0% of these being recurring infections. How long ago the respondents had their last STI experience ranged from: less than 1 month (16.7%); 1-3 months (10.0%); 4-6 months (13.3%); to more than 6 months (60.0%). Twenty-five (83.3%) of the 30 respondents with STI experience had regular/trusted sex partners.

## DISCUSSION

Our data showed that almost half of the FSWs studied were young people aged 24 years and below. This is of concern because some of this young people were minors under the age of 18 who could be regarded as victims of commercial sex exploitation as defined by Patricia and French (2010) for being younger than those between the ages of 18 to 24 defined as legally adults by the United Nations Convention on the Rights of the Child and the Constitution of the Federal Republic of Nigeria. Their young age perhaps make them more vulnerable because

**Table 6.** Factors associated with respondents' condom use with their clients.

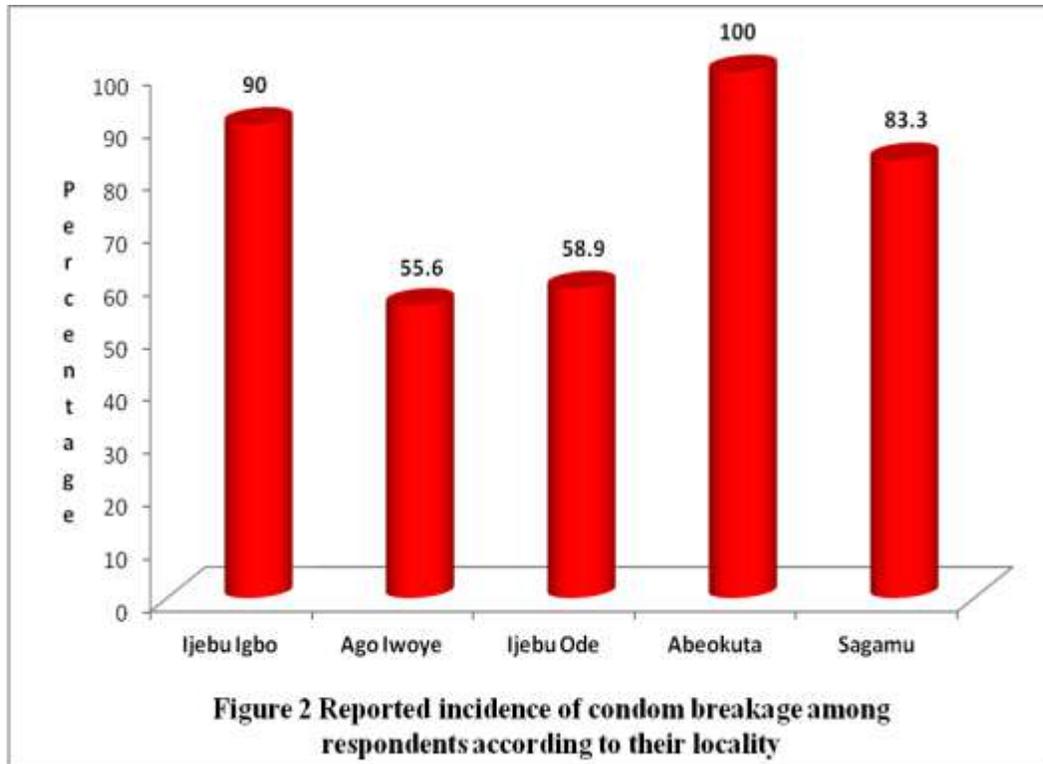
Variable	Mean	95% confidence			Std error	Partial F-test
		$\beta$ coefficient	Lower	Upper		
Education	2.565	-0.0292	-0.0588	0.0003	0.0150	3.8142
Self-perceived risk of infection	1.893	0.0250	-0.0289	0.0789	0.0272	0.8439
Belief in HIV/AIDS reality	1.122	-0.0299	-0.1223	-0.0897	0.0298	0.9834
Locality	3.160	-0.0075	-0.0308	0.0158	0.0118	0.4085
Age	25.3	0.0007	-0.0043	0.0057	0.0025	0.0770
Past STI experience	1.771	0.0052	-0.1380	0.1483	0.0723	0.0051
Duration of sex work	0.725	-0.0043	-0.0461	0.0375	0.0211	0.0418
Ever tested for HIV	1.466	-0.0002	-0.0348	0.0344	0.0175	0.0001
Y-Intercept	1.0767					
Correlation coefficient	$r^2 = 0.05$					
Source		d.f.	Sum of square	Mean square		F-statistic
Regression		8	0.0946	0.0118		0.77
Residents		122	1.8749	0.0154		
Total		130	1.9695			

many lack sufficient knowledge about HIV and skills to negotiate safe sex with condom use, lack the authority or capacity to use the knowledge they have, and lack access to needed prevention services (UNAIDS, 2002a). It is based on this that there is need for coordinated stakeholders' activities to protect this category of girls against child abuse and other forms of exploitation. Actions need be intensified on including extensive girls' education and girls/women empowerment as essential components of development programmes to achieve Millennium Development Goals 2 and 3. In this regard, the FSWs can be economically empowered through vocational/business management training and the provision of start-up equipment because many of them have the potentials of economic independence as they already have acquired vocational skills displayed in Table 1. The education and empowerment of the FSWs can be

achieved through collaboration between the civil society organizations and the Ministries of Health, Education, Women Affairs, Youth Development, Labour and Productivity and Justice in the State.

It is encouraging that the level of awareness and knowledge of HIV among many of the FSWs particularly as it relates to how HIV spreads and how it can be avoided was high. The misconceptions about how HIV spreads and how to avoid it demonstrated by some of the respondents in Table 3 are not encouraging. The results provide insights and an optimistic foundation for planning promotional programmes needed to boost knowledge and perception about HIV/AIDS among the study population.

Results showed pervasive condom use with high incidence of breakage and drug/substance abuse. The reported high incidence of condom breakage in the study



suggest the need to encourage the provision, acceptability and use of female condoms which can be of particular value in STI/HIV prevention among the FSWs considering its benefits as successfully implemented in Brazil, Ghana, South Africa and Zimbabwe (UNAIDS, 2002a; 2004). Further, this finding suggest the importance of enabling the FSWs have information on and access to emergency HIV post-exposure prophylaxis and contraceptive pills as back-up to condom breakage. It is believed that this intervention will reduce the likelihood of HIV infection and pregnancy after potential exposure such as sexual intercourse with condom breakage emphasized by Jackson (2002) and The International Consortium for Emergency Contraception (2004).

The high and low use of condoms with clients and regular/trusted sex partners respectively reported in the study corroborate the Global AIDS response country progress report 2012 for Nigeria (National Agency for the Control of AIDS, 2012). The insignificant association between the FSWs' self-perceived risk of HIV infection and their use of condom with clients and regular/trusted sex partners may perhaps be attributed to financial gains to be derived from having unprotected sex with their clients and regular/trusted sex partners rather than their perceived vulnerability to HIV infection which is low anyway as emphasized by UNAIDS (2002a).

The results on risk perception bias associated with regular/trusted sex partners and incidence of condom

breakage should be taken into account when planning interventions targeting FSWs as emphasized by Kayembe et al (2008). This is important because most of the FSWs who had experience of condom breakage with their clients (the core groups) from our research had other regular/trusted sex partners (the bridging group) who they consistently have unprotected sex with. The implication of this sex chain is that the FSWs will continue to put their regular/trusted partners at risk. Thus, the FSWs and their regular/trusted sex partners may serve as reservoir of continuous HIV transmission to the general population as emphasized by Federal Ministry of Health (2010) and National Agency for the Control of AIDS (2012) considering the fact that heterosexual sex is the main route of HIV transmission in the country (National AIDS/STDs Control Program, 2002a); the sex workers and their clients account for about one-fifth of all new infections (Oladembe et al., 2010); and about 15.0% and 29.3% of men have two or more sex partners and use condom respectively according to the 2008 Demographic and Health Survey in Nigeria (National Population Commission and MEASURE DHS ICF Macro, 2009). Hence, there is need for urgent information, education and communication/behaviour change and communication (IEC/BCC) interventions on proper and consistent condom use particularly targeting FSWs who use no condom or often experience condom breakage with clients and deemed it less imperative to use condoms with their regular/trusted sex partners. Here,

emphasis should be on their vulnerability to STIs/HIV and dangers of self-medication and abuse of drugs/substances.

Future interventions targeting FSWs should not only address personal risk factors but also empower them on correct use of condoms to prevent breakage. This needs to be done with emphasis on the benefits of correct and consistent use of condoms by following instructions on condom use and storage provided in attached leaflets, as well as having other considerations such as storage conditions, expiry date and non-use of grease or jelly with it. It is important to also effectively empower the FSWs with skills on how to effectively negotiate condom use with both their clients and regular/trusted sex partners as advocated by Li et al (2010).

In contrast to the high knowledge and belief in the reality of HIV/AIDS, there was a very low self-perceived risk of HIV infection among the respondents despite their high-risk sexual activities. It is apparent that the respondents seemed not to connect knowledge and risk perception with their behaviour. This confirms the results of similar studies in Nigeria by Messersmith et al. (2000), Federal Ministry of Health (2007) and Ankomah et al. (2011) but contrasts what was reported in most states in southern India by (Jain et al., 2011). The incongruence between the low perception of acquiring HIV, high condom breakage and high unprotected sex with regular/trusted sex partners among the FSWs studied raises serious concern about the vulnerability of the general population to HIV transmission from the FSWs, their clients and regular/trusted sex partners in view of the high HIV prevalence rate that have been documented among these high risk groups. The inconsistent use of condoms with their regular/trusted sex partners is attributable to the fact that young people, who constituted a large proportion of the study population, even when aware of HIV risk often do not consider this risk with steady partners. The results suggest the need for expanded intensive educational interventions targeting the FSWs, their clients and regular/trusted sex partners with messages emphasizing the importance of safe sex using condoms and simultaneously address the contextual barriers to consistent condom use mentioned by some of the respondents. This can be achieved through community prevention work undertaken among FSWs whereby trained peer educators among them will refer others to designated clinics for confidential services that include HIV counseling and testing and health education that will emphasise correct and consistent condom use as successfully implemented in Benin (Alary et al., 2002) and Cote d'Ivoire (Ghys et al., 2002).

In conclusion, the key results of the study highlights the profound need for programmatic response focusing on this sub-population group with emphasis on continuous and effective social marketing of condoms and behavioural change communication activities in raising awareness on how inconsistent use of condoms with both

their paying and non-paying sexual partners by FSWs is inimical to their health and the general population at large.

### Limitations of the Study

Non-response bias was a primary limitation, some of which may be attributed to the population's fear of participating in research for fear of the law probably because sex work is illegal in the country. Moreover the study was only on brothel-based sex workers among a small sample size in some selected urban communities in Ogun State in Nigeria. The results may therefore not be representative and generalisable to all categories of sex workers in Ogun State in particular and the country at large. This, however, does not undermine the validity of the results because further studies need to be carried out using a larger and more inclusive sample.

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