

Health-Seeking Behaviour of Brothel-Based Female Sex Workers in the Management of Sexually Transmitted Infections in Urban Communities of Ogun State, Nigeria

Adeneye AK¹, Mafe MA¹, Adeneye AA², Adeiga AA³

¹Public Health Division, Nigerian Institute of Medical Research, Lagos, Nigeria.

²Department of Pharmacology, Lagos State University College of Medicine, Lagos, Nigeria.

³Microbiology Division, Nigerian Institute of Medical Research, Lagos, Nigeria.

*Corresponding author

Adeneye AK, Public Health Division, Nigerian Institute of Medical Research, Lagos, Nigeria, Tel: +234805 788 7698; E-mail: oakadeneye@yahoo.co.uk

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Abstract

Objective: This study examined the health-seeking behaviour of female sex workers (FSWs) in the management of STIs. **Methods:** One hundred and thirty-one FSWs were interviewed using semi-structured questionnaires in Ogun State, South-West Nigeria.

Results: Most (87.8%) of respondents interviewed knew condom use as the most effective way STIs including HIV can be prevented. About 24.0% and 94.0% of respondents consistently used condom during each round of sex with their regular/trusted sex partners and clients that ranged from 2 to 9 and an average of 5 daily. Low (16.0%) self-perceived risk of STIs/HIV was reported among the FSWs despite their high-risk sexual activity. More than half of the respondents had good knowledge of signs and symptoms of STIs. In contrast, none of them knew that STIs can be asymptomatic. About 23.0% of the respondents have had STIs with 30.0% of these being recurring infections. Good health seeking behaviour was exhibited by respondents as most sought diagnosis (43.3%) and treatment (66.7%) for past STIs from medical doctors although many self-medicated before reporting at the hospital for treatment. Moreover, 80.9% of respondents reported that they subject themselves to periodical medical examination.

Conclusion: Results suggest the need for more educational interventions targeting this group emphasizing their high susceptibility to STIs/HIV, the significance of correct and consistent use of condoms for the prevention of STIs/HIV and the consequences of self-diagnosis and medication for STIs reported by many of the respondents.

Keywords: Female sex workers, Condoms, Infections, Knowledge, Perception, Health behaviour, Treatment pattern, Nigeria

Introduction

Sexually transmitted infections (STIs) are spread predominantly through sexual contact, including vaginal, anal and oral sex. The most common conditions they cause are gonorrhoea, chlamydial infection, syphilis, trichomoniasis, chancroid, genital herpes, genital warts, human immunodeficiency virus (HIV) infection and hepatitis B infection. Many STIs including chlamydia, gonorrhoea, hepatitis B, HIV and syphilis can also be transmitted from mother to child during pregnancy and childbirth, and through blood products and tissue transfer [1].

Sexually transmitted infections (STIs) are a major socio-economic and reproductive health problem worldwide. Complications of

untreated or improperly treated STIs include: pelvic inflammatory diseases; adverse pregnancy outcomes such as abortions, ectopic pregnancies and stillbirths; infertility; lower abdominal pain; and cervical cancer [1,2].

Globally, it is estimated that more than 1 million people acquire a sexually transmitted infection daily. Each year, an estimated 500 million people acquire one of four sexually transmitted infections: chlamydia, gonorrhoea, syphilis and trichomoniasis worldwide. In Nigeria, STIs rank among the five top disease categories for which Nigerians particularly adults seek health care, and rank among the ten most reported notifiable diseases in the country [2,3].

In Nigeria, studies have shown a steadily high prevalence of STIs including HIV among FSWs and their clients who constitute an important reservoir of STIs/HIV for continuous transmission to

the general population [4-8]. Studies carried out in other countries have also revealed a high prevalence of STIs among female sex workers [9-12].

The diagnosis and treatment of STIs along with the provision of education about high-risk behaviours, distribution and promotion of condoms, prevention of mother-to-child transmission, ensuring the safety of blood and blood products, reducing human immunodeficiency virus/acquired immune-deficiency syndrome (HIV/AIDS)-related stigma and HIV counseling and testing are successful prevention efforts to check the spread HIV and mitigate its impact achieve [13,14]. These various components of the prevention and care continuum are mutually reinforcing [15].

Low- and middle-income countries including Nigeria rely on syndromic management of STIs, which is based on the identification of consistent groups of symptoms and easily recognized signs (syndromes) to guide treatment, without the use of laboratory tests. This approach, which often relies on clinical algorithms, allows health workers to diagnose a specific infection on the basis of observed syndromes [1].

Sexually transmitted infections (STIs) increase the risk of HIV transmission [15,16], particularly in women [14]. The risk of cervical cancer, one of the most common cancers in women, is substantially increased by unprotected sex with different partners. Sometimes it is mistaken for STI. Effective detection and treatment of STIs is essential because of the increased risk of HIV and the health consequences [14].

The majority of STIs such as Chlamydia trachomatis and Neisseria gonorrhoea are present without symptoms [1,3]. Among women, STIs may take a long time to cause any symptoms; consequently, many women have infections without knowing it and hence do not seek treatment. This makes syndromic management of STIs in women less effective [17]. Some studies in Nigeria reported that many people with symptoms of STIs seek treatment outside the health facilities [2,3,18,19]. Poor treatment of STIs among FSWs may also perpetuate the growing problem of the spread antibiotic resistance to some of these STIs such as the epidemic of multi-drug resistant strain of Neisseria gonorrhoea reported in some countries in 2011 [3]. Improved treatment of STIs and condom promotion reduced the incidence of STIs by more than 80% in five years and contributed to reduction of HIV prevalence among FSWs and their clients [15,20]. It is important to treat any recent sexual partner of a person who has STI regardless of existence of symptoms or not. Contact tracing however is difficult where the STI may have been contracted through causal or commercial sex with an unknown partner [14].

Frequency of sex with multiple partners in which they have limited power in negotiating safer sex, poor healthcare seeking behaviour and a high burden of STIs place FSWs at high risk of HIV infection [3]. They often engage in unprotected sex and other risky behaviours, such as substance abuse. Safe sex approach with correct and consistent use of condoms remains the most highly

cost-effective strategy for preventing STIs/HIV particularly among sex workers and their clients [1,14,21,22].

Despite the high-risk sexual activity and trend of consistently high STIs in this group in Nigeria, there is paucity of empirical data on the health-seeking behaviour in the management of STIs among FSWs in the country particularly Ogun State where systematic study on this aspect of their lifestyle has not been adequately conducted and documented. In contrast, studies have reported health-seeking behaviour in the management of STIs in the general population in the country [18,19].

The focus of this paper is to bridge this identified gap in knowledge by reporting a sub-study on the health-seeking behaviour in the management of STIs among FSWs which forms part of a larger study that examined FSWs' pattern of condom use with their clients and regular/trusted sex partners, and willingness to seek and undergo HIV counseling and testing (HCT) and factors associated with their readiness to utilise HCT services in selected urban communities of Ogun State, Nigeria.

Methods

Study design

This was a cross-sectional study designed to describe the health-seeking behaviour of FSWs in the management of STIs.

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 projected population of 4.3 million in 2011 at a growth rate of 3.2% based on the 2006 National Population Census [23]. The people in the study communities are predominantly subsistence farmers and traders with large populations of students of secondary and tertiary educational institutions.

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 [24]. The participants were selected using the systematic random sampling method. The compiled list of names of FSWs resident in each of the selected brothel was used as the sampling frame in each of the brothels. The questionnaire probed the social background of the respondents, their knowledge of the signs and symptoms of STIs, perceived vulnerability to STIs/HIV, recent STI experience and their health-seeking behaviour in the management of STIs with emphasis on prevention and treatment practices. The questionnaire was pretested in a brothel in Ijebu Igbo but eventually excluded from being selected for the study. The research assistants were all undergraduates who were trained before the survey.

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 proposed survey will be conducted according to the principles of the Declaration of Helsinki.

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 World Health Organisation (WHO) [25]. 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 at a 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

A total of 131 respondents were interviewed for the study. The 131 respondents interviewed were from Ijebu Igbo (15.3%), Ago Iwoye (6.9%), Ijebu Ode (42.7%), Abeokuta (16.8%) and Sagamu (18.3%). Their ages ranged from 17 to 40 years with an average age of 25.3 years and a median age of 25 years. 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 work for about 1 to 7 years with an average and median period of 2.4 and 2 years respectively. The respondents had an average of one regular/trusted sex partner. The number of clients they had daily during the week preceding the study ranged from 2 to 9 with an average of 5 clients daily. The background characteristics of the respondents are presented in Table 1.

Age (years)	Frequency	%
<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
Total	131	100.0
Religion		
Christianity	118	90.1
Islam	12	9.1
Traditional	1	0.8
Total	131	100.0

Education		
None	11	8.4
Primary	44	33.6
Secondary	67	51.1
Tertiary	9	6.9
Total	131	100.0
Marital Status		
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
Total	131	100.0
Number of regular/trusted sex partners		
None	32	24.4
1	84	64.1
2	12	9.2
3	1	0.8
5	2	1.5
Total	131	100.0
Vocational Skill		
None	47	35.9
Hair dressing	37	28.2
Sewing	14	10.7
Trading	30	22.9
Catering	3	2.3
Total	131	100.0

Table 1: Background characteristics of the respondents.

Pattern of condom use among respondents

All (100.0%) respondents interviewed had used the male condom. However, 98.5% and 39.7% of respondents reported using condoms with their clients and regular/trusted sex partners respectively. 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 fewer number of the respondents consistently used condom during each round of sex with their clients (93.9%) and regular/trusted sex partners (24.4%). Ninety-eight (74.8%) of the FSWs interviewed had experienced frequent condom breakage when engaged in sex work with their clients and 78.6% of these category of respondents had other regular/trusted sex partners with whom they rarely have protective sex. Education of respondents was not significantly related to use of condom with neither the clients nor their regular/trusted sex partners ($p>0.05$).

Knowledge of STI among respondents

The most commonly mentioned STIs by the respondents were: gonorrhea (66.4%); syphilis (42.7%); and HIV (11.5%). Most (87.8%) of respondents knew condom use as the most effective

way STIs including HIV can be prevented. A few others mentioned abstinence from sex (6.9%) and avoid sharing clothes particularly underwear (0.8%) while 6.9% responded 'don't know'. Signs and symptoms of STIs known by the respondents are presented in Table 2.

Signs and symptoms of STI	Frequency (n=131)	%
Vaginal discharge	126	96.2
Urethral discharge in men	97	74.0
Genital rashes	22	16.8
Painful urination	76	58.0
Perineal itching	73	55.7
Genital sores	48	36.6
Other e.g. lower abdominal pain	14	10.7

Table 2: Knowledge of signs and symptoms of STIs among respondents.

None of the FSWs interviewed knew that STIs can be asymptomatic. Only 16.0% had the self-perceived risk of STI/HIV infection as more (16.8%) of those who had no STIs compared to 13.3% who had STIs had no self-perceived risk of HIV infection ($\chi^2 = 9.88$, $df = 2$, $p < 0.05$). Most (78.6%) did not feel to be at risk of STI/HIV infection and 5.3% were indifferent. Younger FSWs had more self-perceived risk of STI/HIV infection than the older ones ($p < 0.05$).

Pattern of STI experience and health seeking behaviour on STI diagnosis and treatment among respondents

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%).

Table 3 shows the sources of diagnosis and treatment for past STIs experienced by respondents. All (100.0%) of respondents who were eventually diagnosed and treated at the hospital by medical doctors indicated they initially sought treatment from patent medicine sellers and administered some form of self-medication. Twenty-five (83.3%) of the 30 respondents with STI experience had regular/trusted sex partners who they rarely have protected sex with.

Who diagnosed STI?	Frequency %	Who treated STI?	Frequency %
Self	11 36.7	Self	3 10.0
Medical doctor	13 43.3	Medical doctor	20 66.7
Patent medicine seller	4 13.3	Patent medicine seller	5 16.7
Laboratory technologist	1 3.3	Laboratory technologist	0 0.0
Traditional healer	1 3.3	Traditional healer	2 6.7
Total	30 100.0	Total	30 100.0

Table 3: Sources of diagnosis and treatment for past STIs experienced among respondents.

One hundred and six (80.9%) of respondents stated that they personally subject themselves to periodical medical examination. Of these, 78.3% usually seek medical examination at private hospitals. The last time they sought periodical medical examination ranged from 1 to 5 months prior to the survey with an average of 2 months and a median of 1 month. Health outlets where periodical medical examination is sought by the respondents are presented in Table 4. The major justification given for not going for periodical medical examination by about one-third (36.0%) of the twenty-five respondents was that "I'm healthy" while most (64.0%) did not give any reason. Analysis of variance (ANOVA) showed that older FSWs with a mean age of 26.1 years were more likely to subject themselves to periodical examination than the younger ones with a mean age of 21.6 years ($\chi^2 = 21.35$, $df = 1$, $p < 0.05$).

Discussion

It appears from the study that most of the FSWs underestimated their risk of STI/HIV infection by minimising their feelings of self-perceived vulnerability to the infection despite their high-risk sexual activities with multiple partners that include clients and regular/trusted sex partners. The clients and regular/trusted sex partners with whom the FSWs may feel obliged to have unprotected sex may contract STI/HIV from the FSWs and then transmit the infection to their partners in the general population. This finding is similar to that of a previous study on HIV-related risk perception among FSWs in Nigeria by Ankomah et al. [8].

It is discouraging that despite an active programme that is vigorously promoting safe sex with condom use for prevention of STIs including HIV in Nigeria, particularly among FSWs, about one-fifth of the FSWs interviewed admitted to have had recurring and new STI experiences in recent past. The programme needs to be strengthened by more intensive and extensive health education targeting this group and their clients and regular/trusted sex partners on safe sex using condoms.

In view of the fact a fewer number of the respondents who use condom with their clients and regular/trusted sex partners reported to consistently used it during each round of sex with them attest to the high-risk sexual activities of the FSWs and affirmed findings of studies [26,27] that showed significant discrepancy between knowledge and practice on condom use among FSWs and their clients. It is important to also empower the FSWs with skills on how to confidently and effectively negotiate safe sex with condom use with both their clients and regular/trusted sex partners. There is need to emphasise on information, education and communication/behavioural change and communication (IEC/BCC) activities on the significance of correct and consistent use of condoms and integrated with other STI prevention programmes in the study communities as successfully implemented in Benin [10] and Cote d'Ivoire [12].

It needs to be emphasised that STI control programme targeting clients and regular/trusted sex partners of FSWs is important because this population constitutes a significant risk for transmitting STIs to FSWs and the general population as reported

by Tabrizi et al. [28] in study on the prevalence of STIs among clients of FSWs in Thailand. Hence, strategies targeting this group of men need to be designed and developed by STI/HIV control programme Managers in the State for implementation to reduce STIs and HIV transmission in the study localities as advocated by Tabrizi et al. [28].

The low self-perceived risk of STIs including HIV infection among the FSWs despite their high-risk sexual activity showed the need for health education activities targeting the FSWs, particularly the older ones. The interventions should emphasise their vulnerability to STI/HIV infection going by the health risks and consequences involved in sex work and in view of the fact that some of them admitted to have had recurring and new STI experiences in recent past which makes them even more susceptible to HIV infection. On the STI experiences reported by some of the FSWs, we advocate increased safe sex promotion with more health education on the importance of consistent condom use by the women with their clients in order to prevent future STIs including HIV.

The high patronage of hospitals for STI diagnosis and treatment by the respondents showed that the health workers in these hospitals could serve as a platform in reaching out to this high-risk group with information on STIs/HIV transmission and prevention. We believe that this strategy could effectively contribute to STI/HIV control efforts because clinical services with regular screening have been reported by Steen and Dallabetta [29] to increase in condom use and reductions in STI and HIV prevalence.

Good health seeking behaviour was demonstrated by many of the respondents going by their high knowledge of the signs and symptoms of some common STIs as presented in Table 2 and their claim of subjecting themselves to periodical medical examination and seeking appropriate treatment of their STIs at the hospital. Perhaps the acclaimed regular medical check-up could possibly have contributed to their complacent feeling of not being at risk of STI/HIV by having the erroneous belief of being “healthy”. The STI treatment pattern among the FSWs showed that seeking treatment at the hospital among those who eventually reported at the hospital for treatment is probably dependent on the outcome of a previous incompetent attempt(s) at treating the infection. The poor attitude of self-diagnosis and self-medication reported by many of the respondents need be discouraged. Educational programmes need be developed for the FSWs emphasising the possible consequences of self diagnosis and medication on their health with possible abuse of antibiotics and the benefits of seeking healthcare from trained health workers at the hospitals. It further needs be emphasized to them that ineffective treatment of STIs through self medication or by someone who is not a health professional increases their risk of HIV infection.

Health educational programmes advocating behavioural change among the FSWs is suggested through the promotion of the importance of seeking appropriate and effective STI treatment and emphasis on the health consequences of inappropriate treatment of STI particularly as it concerns abuse of antibiotics. This is

important taking cognizance of consequences of ineffective treatment of STIs among FSWs which may contribute the growing problem of the spread antibiotic resistance to some of these STIs emphasised by Sekoni et al [3].

The fact that none of the FSWs interviewed knew that STIs could be asymptomatic and only a few of them had the self-perceived risk of STI/HIV infection should be of serious concern for HIV/AIDS control programme Managers as these factors militate against HIV/AIDS control. This is because the gap in knowledge will impede early detection, timely treatment of such STIs, promote related complications and transmission to sexual partners. This could cause serious health consequences considering the time lag between the manifestation of symptoms and when action will eventually be taken to treat the infection. The situation also increases their susceptibility to HIV infection. The finding where none of the FSWs interviewed knew that STIs could be asymptomatic is lower than that reported by Sekoni et al [3] in a study that assessed the prevalence, knowledge and treatment practices of STIs among brothel-based FSWs in Lagos, Nigeria.

Conclusion

The results point to the fact that there is high incidence of STIs among the FSWs which contrasts their low self-perceived risk of STIs including HIV despite their high risk sexual activity. The lack of knowledge that STIs could be asymptomatic could only mean that their low knowledge in this regard is a major factor that affects their perceived risk of exposure to STIs and attitude to condom use with their clients and regular/trusted sex partners.

The study has shown a health seeking behavioural pattern among infected FSWs. Results showed that although at some point during the period of infection, many of them mentioned seeking diagnosis and treatment at the hospital, this did not probably happen until some form of self-medication had been administered.

In view of these findings, there is clear evidence for the need to improve the health seeking behaviour of FSWs in STI management particularly as it concerns the utilisation of health facilities for effective treatment of STIs. There is therefore the need for more educational interventions targeting this group emphasizing their high susceptibility to STIs/HIV, the significance of correct and consistent use of condoms for the prevention of STIs/HIV and the consequences of self-diagnosis and medication for STIs reported by the respondents.

Limitations of the Study

The primary limitation of this study was the non-response bias among the FSWs interviewed. This limitation may be attributed to the population’s fear of participating in the research for fear of the law probably because sex work is illegal in the country. Moreover the study was a small, self-contained research that stood alone focusing only on brothel-based sex workers in five 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 be carried out using a larger and more inclusive sample.

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References

1. Hsieh AC, Mburu G, Garner AB, Teltschik A, Ram M, et al. (2014) Community and service provider views to inform the 2013 WHO consolidated antiretroviral guidelines: key findings and lessons learnt. *AIDS* 28 Suppl 2: S205-216.
2. Federal Ministry of Health (2002) Nigeria national reproductive health strategic framework 2002-2006. Abuja: Federal Ministry of Health: 1-9.
3. Sekoni AO, Odukoya OO, Onajole AT, Odeyemi KA (2013) Sexually transmitted infections: prevalence, knowledge and treatment practices among female sex workers in a cosmopolitan city in Nigeria. *African Journal of Reproductive Health* 17: 94-102.
4. Mann JM, Tarantola J, Netter T (1992) *AIDS in the World*. Cambridge MA: Harvard University Press.
5. National AIDS/STDs Control Programme (2002) HIV/AIDS: what it means for Nigeria. Background, projections, impact, interventions and policy. Abuja: Federal Ministry of Health 49.
6. National AIDS/STDs Control Program (2002) HIV/AIDS in Nigeria: overview of the epidemic. Abuja: Federal Ministry of Health 4.
7. Federal Ministry of Health (2010) HIV/STI integrated biological and behavioural surveillance survey (IBBSS) 2010. Abuja, Nigeria: Federal Ministry of Health.
8. Ankomah A, Omoregie G, Akinyemi Z, Anyanti J, Ladipo O, et al. (2011) HIV-related risk perception among female sex workers in Nigeria. *HIV AIDS (Auckl)* 3: 93-100.
9. Ruggao S, Wanapirak C, Sirichotiyakul S, Yutabootr Y, Prasertwitayakij W, et al. (1997) Sexually transmitted disease prevalence in brothel-based commercial sex workers in Chiang Mai, Thailand: impact of the condom use campaign. *J Med Assoc Thai* 80: 426-430.
10. Alary M, Mukenge-Tshibaka L, Bernier F, Geraldo N, Lowndes CM, et al. (2002) Decline in the prevalence of HIV and sexually transmitted diseases among female sex workers in Cotonou, Benin, 1993-1999. *AIDS* 16: 463-470.
11. Horizons (2002) STI management for sex workers in Madagascar: estimating the cost and effectiveness. Washington D.C. The Population Council: 1-4.
12. Ghys PD, Diallo MO, Ettiègne-Traoré V, Kalé K, Tawil O, et al. (2002) Increase in condom use and decline in HIV and sexually transmitted diseases among female sex workers in Abidjan, Côte d'Ivoire, 1991-1998. *AIDS* 16: 251-258.
13. Drame M (2000) GTZ/RAPA's multisectoral approach in West Africa. *Sexual Health Exchange* 3: 9-10.
14. Jackson H (2002) *AIDS Africa: continent in crisis*. Harare: SAfAIDS.
15. Lamptey P, Wigley M, Carr D, Collymore Y (2002) Facing the HIV/AIDS pandemic. *Population Bulletin* 57: 1-39.
16. Goliber TJ (1997) Population and reproductive health in sub-Saharan Africa. *Population Bulletin* 52: 29.
17. Population Council (2000) Syndromic method poor at detecting STIs in women. *Population Briefs* 6: 4.
18. Akinnowo EO, Oguntimehin F (1997) Health-seeking behaviour of STD patients in an urban area of southwest Nigeria: an exploratory study. *Health Transit Rev* 7 Suppl: 307-313.
19. Okereke CI (2010) Unmet reproductive health needs and health-seeking behaviour of adolescents in Owerri, Nigeria. *Afr J Reprod Health* 14: 43-54.
20. UNAIDS (1998) Connecting lower HIV infection rates with changes in sexual behaviour in Thailand. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).
21. World Bank (1997) *Confronting AIDS: public priorities in a global epidemic*. New York: Oxford University Press.
22. UNAIDS (2010) *Global report: UNAIDS report on the global AIDS epidemic 2010*. Geneva: Joint United Nations Programme on HIV/AIDS.
23. National Population Commission (2010) 2006 population and housing census of the Federal Republic of Nigeria: housing characteristics and amenities tables- priority tables (LGA). Abuja: National Population Commission 2.
24. Lemeshow S, Hosmer DW, Klar J, Lwanga SK (1990) *Adequacy of sample size in health studies*. Geneva: World Health Organisation 239.
25. Smith PG, Morrow RH (1996) *Field trials of health interventions in developing countries: a toolbox* (2nd edition). London: Macmillan Education Limited: 266.
26. Family Health International (2001) *What drives HIV in Asia? A summary of trends in sexual and drug-taking behaviours*. Arlington: Family Health International.
27. UNAIDS (2002) *Report on the global HIV/AIDS epidemic 2002*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).
28. Tabrizi SN, Skov S, Chandeying V, Norpech J, Garland SM (2000) Prevalence of sexually transmitted infections among clients of female commercial sex workers in Thailand. *Sex Transm Dis* 27: 358-362.
29. Steen R, Dallabetta G (2003) Sexually transmitted infection control with sex workers: regular screening and presumptive treatment augment efforts to reduce risk and vulnerability. *Reprod Health Matters* 11: 74-90.

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