

ORIGINAL RESEARCH ARTICLE

Sexually transmitted infections: Prevalence, knowledge and treatment practices among female sex workers in a cosmopolitan city in Nigeria

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Abstract

Sexually transmitted infections constitute economic burden for developing countries, exposure to causative agents is an occupational hazard for female sex workers. Targeted interventions for this population can reduce the incidence and prevalence of sexually transmitted infections including human immunodeficiency virus, but barriers exist which can hinder effective implementation of such programs. This descriptive cross sectional study sought to assess the prevalence, knowledge and treatment practices of sexually transmitted infections among brothel based female sex workers. Three hundred and twenty three consenting female sex workers were surveyed using pre tested, interviewer administered questionnaires. More than half of the respondents (54.2%) had poor knowledge of symptoms of sexually transmitted infections. Only 13.9% were aware that sexually transmitted infections could be asymptomatic. The self reported prevalence of symptomatic sexually transmitted infections was 36.5%. About half of those with sexually transmitted infections sought treatment in a hospital or health centre while 32.5% from a patent medicine vendor. Most respondents (53.8%) mentioned the perceived quality of care as the main reason for seeking treatment in their chosen place. More of the respondents with good knowledge of sexually transmitted infections reported symptoms compared to those with fair and poor knowledge. The knowledge of sexually transmitted infections among these female sex workers is poor and the prevalence is relatively high. Efforts to improve knowledge promote and encourage preventive as well as effective treatment practices must be made for this population. (*Afr J Reprod Health 2013; 17[1]: 94-102*).

Résumé

Les infections sexuellement transmissibles constituent un fardeau économique pour les pays en développement et l'exposition aux agents pathogènes est un risque professionnel pour les prostituées. Les interventions qui visent cette population peuvent réduire l'incidence et la prévalence des infections sexuellement transmissibles, y compris le virus de l'immunodéficience humaine, mais il existe des obstacles qui peuvent entraver la mise en œuvre effective de ces programmes. Cette étude descriptive transversale a cherché à évaluer les pratiques de la prévalence, la connaissance et le traitement des infections sexuellement transmissibles chez les prostituées qui pratiquent leur métier dans des bordels. Trois cent vingt-trois prostituées consentantes ont été interrogées à l'aide des questionnaires déjà testés et administrés par l'intervieweur. Plus de la moitié des interviewées (54,2%) avaient une mauvaise connaissance des symptômes des infections sexuellement transmissibles. Seulement 13,9% étaient au courant que les infections sexuellement transmissibles peuvent être asymptomatiques. La prévalence des symptômes d'infections sexuellement transmissibles auto signalés était de 36,5%. Environ la moitié de ceux qui sont atteints des infections sexuellement transmissibles ont recherché un traitement dans un centre hospitalier ou dans un centre de santé tandis que 32,5% le recherchaient auprès d'un vendeur des médicaments brevetés. La plupart des interviewées (53,8%) ont mentionné la qualité perçue des soins comme la principale raison pour se faire soigner dans les lieux choisis. Beaucoup d'interviewées qui ont une bonne connaissance des infections sexuellement transmissibles ont signalé des symptômes par rapport à ceux qui les connaissent passablement ou mal. La connaissance des infections sexuellement transmissibles chez les prostituées est mauvaise et la prévalence est relativement élevée. Il faut faire des efforts pour améliorer les connaissances, pour promouvoir et pour encourager la prévention ainsi que les pratiques de traitement efficaces à l'intérêt de cette population (*Afr J Reprod Health 2013; 17[1]: 94-102*).

Keywords: Symptomatic STIs, Patent medicine vendor, Brothels

Introduction

Sexually transmitted infections are infections that

are spread primarily through person-to-person sexual contact. Globally, increasing numbers of new sexually transmitted infections cases have

been observed over the years from 333 million in 1995 to 448 million new cases of syphilis, gonorrhoea, chlamydial infection and trichomoniasis in 2005 among adults aged 15 – 49 years¹. Complications of untreated/improperly treated sexually transmitted infections include male and female infertility, abortions, ectopic pregnancies, stillbirths, lower abdominal pain and cervical cancer².

Sexually transmitted infections rank among the five top diseases for which Nigerians seek medical attention, and the major sexually transmitted infections are ranked among the ten most reported notifiable diseases in Nigeria². According to the Nigerian National HIV/AIDS and Reproductive Health Survey of 2007, most Nigerians are aware of STIs, but women possessed lower level of knowledge. In addition, more females reported symptoms compared to males³. The Joint United Nations Program on HIV/AIDS guidance note on HIV and sex work defines sex workers to include female, male and transgender adults and young people who receive money or goods in exchange for sexual services, either regularly or occasionally⁴. Female sex workers in particular, are often socially stigmatized and economically disadvantaged. They can be found in areas such as brothels, bars, restaurants, night clubs, hotels (hot spots) and on the streets.

In Nigeria, the deteriorating economic situation has led to increased unemployment and poverty. These are factors that are known to promote sex work⁵. Sex work continues to drive existing sexually transmitted infections epidemics while helping to seed new ones. Human immunodeficiency virus and sexually transmitted infections epidemics are interdependent and a sexually transmitted infection in either the client or the sex worker or in either sexual partner facilitates the transmission of HIV. Sexually transmitted infections are usually concentrated among female sex workers who often have limited power in negotiating safer sex and poor healthcare seeking behavior. Also, the two most common sexually transmitted infections, Chlamydia trachomatis and Neisseria gonorrhoea, are often asymptomatic and are more likely to go undetected and untreated⁶. Poor treatment of sexually transmitted infections among female sex workers

may also perpetuate the growing problem of antibiotic resistance, for instance, the epidemic of multi drug resistant strain of Neisseria gonorrhoea reported in some countries in 2011⁷.

A considerable proportion of female sex workers in the 2007 National HIV/STI integrated biological and behavioral surveillance survey reported symptoms associated with sexually transmitted infections. Self reported sexually transmitted infections symptoms among female sex workers in Lagos state increased slightly from 14% in 2000 to 16% in 2007⁸. Studies carried out in other countries have also revealed a high prevalence of sexually transmitted infections causing organisms among female sex workers⁹⁻¹¹. High sexually transmitted infections prevalence indicates frequent risky sexual practice and a poor provision/ uptake of services¹².

The 2007 survey also revealed that brothel based female sex workers in Lagos had lower levels of knowledge compared to their peers in Cross rivers, Edo, FCT, Kano and Anambra states, condom use at last sex with boyfriends and regular sex partners was much lower than condom use with clients and casual sex partners across the states⁸. Clients of female sex workers are defined as a bridge population as they play an important role linking female sex workers with general population women. Studies show that clients of female sex workers are at greater risk of contracting sexually transmitted infections and passing same to their other sexual partners including wives and girlfriends¹³.

The World Health Organization has reported that Nigeria not only has an inadequate number of health workers but also existing urban rural maldistribution and poor skill mix¹⁴. This may contribute to health inequalities leaving many without access to health care such that persons with sexually transmitted infections may not be able to seek appropriate care, even in the presence of symptoms. Some studies in Nigeria have reported that many people with symptoms of sexually transmitted infections seek treatment in non-orthodox health facilities².

This study was carried out among brothel based female sex workers in Lagos state, to determine the prevalence, knowledge and treatment practices for sexually transmitted infections among this

vulnerable at risk population to identify areas that may require attention and therefore guide program implementers.

Methodology

Lagos state is located in the south western part of Nigeria with the southern boundary framed by 180 kilometer long Atlantic coastline, north & eastern boundary is Ogun state while Republic of Benin forms the western boundary, it is considered the commercial and economic capital of Nigeria with a population of 9,013,534 inhabitants¹⁵ according to the 2006 national population census, it is made up of twenty local government areas. Two adjoining LGAs, one urban and the other rural (namely Ojo and Badagry) with a joint population of 839,164 were purposively selected for the study. This was because of their close proximity to the border with Republic of Benin which results in a high number of migrant population, traders, long distance drivers, youths and female sex workers. An army cantonment and an international trade fair complex are also located in this area.

A cross sectional descriptive study was carried out to assess sexually transmitted infections prevalence, knowledge and treatment practices among female sex workers in the two local government areas. The study population consisted of brothel based female sex workers in the two local government areas. Community mapping was conducted and all the brothels (41 in number) with resident female sex workers were identified. Advocacy visits were conducted to all the brothels and meetings were held with the manager and the chairlady (female sex workers representative). Thirty nine brothels agreed to participate in the survey giving a brothel response rate of 95.1%. The total population sample of all the female sex workers in the participating brothels (383 in number) was used for the survey. A list of the entire number of resident female sex workers in each brothel was obtained and attempts were made to reach all the female sex workers on each list. Three hundred and twenty three willing female sex workers above the age of 18years participated in the study.

Data was collected using a pretested structured interviewer administered questionnaire. The names

of the respondents or other identifying information were not included in the questionnaires. The knowledge section had 7 sexually transmitted infection symptoms for grading knowledge, namely lower abdominal pain, vaginal discharge, penile discharge, itching of the vagina, burning pain on urination, genital ulcers/sores and swelling in the groin area. Questions were also asked on route of transmission and prevention of human immunodeficiency virus/sexually transmitted infections. Four research assistants were trained and involved in data collection which took place in March 2011. The interviews were conducted in settings that ensured visual and auditory privacy. The proposal was approved by the research and ethics committee of Lagos University Teaching Hospital, participation was voluntary and verbal informed consent was obtained from each of the respondents.

Confidential data management was ensured, data obtained was entered and analyzed using Epi info version 3.5.1. Data analysis involved the use of frequency tables and chi-square test was used to determine the factors that may be associated with the occurrence of sexually transmitted infections among the respondents. P values of <0.05 were said to be statistically significant. Knowledge items were scored and graded thus: Of the seven symptoms of sexually transmitted infections listed in the questionnaire, respondents who knew 5-7 symptoms of sexually transmitted infections were classified as having a good knowledge, those with 3-4, fair knowledge and less than 3 as having a poor knowledge of sexually transmitted infections.

Results

All the respondents were female and their ages ranged from 18 to 48 years. Up to 49.2% had been female sex workers for more than one year. (Table 1)

Less than half (46.7%) were able to correctly define human immunodeficiency virus, 60.4% were able to correctly define acquired immune deficiency syndrome while only 4.3% were able to correctly define sexually transmitted infections. Up to 43.0% could mention at least two ways by which human immunodeficiency virus could be transmitted while a slightly higher number

Table 1: The socio-demographic characteristics of the respondents

Socio-demographic variables	Number (%) n=323
Mean age	28.1 ± 6.8
Age group (years)	
18 – 24	108 (33.4)
25 – 34	159 (49.2)
35 – 44	48 (14.9)
45 and above	8 (2.5)
Marital status	
Married	16 (5.0)
Separated/Divorced	92(28.5)
Single	202 (62.5)
Widowed	13(4.0)
Level of education	
No formal education	25 (7.7)
Completed primary	196 (60.7)
Completed secondary	96 (29.7)
Tertiary	6(1.9)
Religion	
Christianity	307 (95.0)
Islam	15 (4.6)
None	1 (0.3)
Duration of sex work	
Less than six months	80 (24.8)
Six-twelve months	84 (26.0)
Above one year	159 (49.2)

(46.1%) could mention at least two ways by which human immunodeficiency virus transmission can be prevented. Only 36.5% knew that sexually transmitted infections can be prevented while 33.1% knew that sexually transmitted infections can be cured and 13.9% knew that sexually transmitted infections can be asymptomatic. (Table 2)

Vaginal itching was the symptom of sexually transmitted infections most commonly known by the respondents (60.4%); this was followed by vaginal discharge (48.3%), dysuria (46.1%), lower abdominal pain (43.0%) and penile discharge (39.6%). Only 36.5% and 33.1% of the respondents were aware that genital sores and growth around the genitals were signs of sexually transmitted infections respectively. (Table 3)

Only 40.9% of the respondents knew of condoms as a means of preventing sexually transmitted infections. A considerable proportion (48.0%) did not know of any way to prevent sexually transmitted infections. Thirty-eight (11.8%) thought that sexually transmitted infections could be prevented by observing hygienic practices.(Table 4) When the knowledge of sexually transmitted infections was scored and graded 128(39.6%) had good knowledge, 20(6.2%) had fair knowledge and 175(54.2%) had poor knowledge.

The prevalence of reported symptoms of sexually transmitted infections within the past year was relatively high among the sex workers with 118(36.5%) haven had at least one episode of sexually transmitted infection. Among respondents who had experienced symptoms, the number of episodes within the past year ranged from 1-10 with a median of one and a mean of 1.66±1.32 episodes. Of the 118 respondents who had sexually transmitted infections, 117 sought some form of treatment for the condition. When asked for the place where they sought treatment, 59(50.4%) sought treatment in a hospital or health centre and 38(32.5%) from a patent medicine vendor, while 4(3.4%) sought treatment through self medication. When asked for the reasons for their preferred place of treatment, most respondents (53.8%) mentioned the perceived quality of care as the main reason for seeking treatment in their chosen place. Affordable cost of care (11.1%) and the fear of long term side effects of STIs (9.4%) were other common reasons for choosing the place of treatment (Table 5).

A bivariate analysis assessing the factors associated with the occurrence of sexually transmitted infections in the past year showed that knowledge was associated with reported symptoms of sexually transmitted infections with more of the female sex workers having good knowledge reporting symptoms compared to female sex workers with fair or poor knowledge. There was no statistically significant association between age, religion, marital status, duration of sex work or education and the occurrence of sexually transmitted infections within the past year. (Table 6)

Table 2: Knowledge of sexually transmitted infections including HIV

Knowledge item	Number (%) n=323
Can correctly define HIV	151(46.7)
Can correctly define AIDS	195(60.4)
Can correctly define sexually transmitted infections	14(4.3)
Can mention at least two ways in which HIV can be transmitted	139(43.0)
Can mention at least two ways in which HIV can be prevented	149(46.1)
Knows that STIs can be prevented	118(36.5)
Knows that STIs can be cured	107(33.1)
Knows that STIs can be asymptomatic	45(13.9)

Table 3: Correct knowledge of signs and symptoms of sexually transmitted infections

Signs and symptoms	Number (%) n=323
Vaginal itching	195(60.4)
Vaginal discharge	156(48.3)
Lower abdominal pain	139(43.0)
Pain when passing urine	149(46.1)
Discharge from the penis	128(39.6)
Genital sores	118(36.5)
Growth around the genitals	107(33.1)

Multiple responses

Table 4: Knowledge of methods of sexually transmitted infections prevention

Methods (n=323)	Number (%)
Prophylactic antibiotic use	21(6.5)
Condom use	132(40.9)
Personal hygiene/correct use of toilets	38(11.8)
Nothing	155(48.0)
Others*	8(2.5)

*Others included using herbal concoctions, abstinence and douching

Discussion

Several studies have reported that the awareness of sexually transmitted infections/human immunodeficiency virus among the Nigerian populace is very high^{3,16,17}. The women in this study were no exception as almost all of them had

heard of HIV, the main source of information was the mass media.

Similar to the findings of the 2007 HIV/AIDS and reproductive health survey, vaginal itching, vaginal discharge and pain on urination were the

Table 5: Sexually transmitted infections prevalence and treatment practices

Variable	Number(%)
Had STI in the past year (n=323)	118(36.5)
Sought treatment for STI (n=323)	117(36.2)
Place of treatment (n=117)	
Hospital	59(50.4)
Patent medicine vendor	38(32.5)
Self medication	4(3.4)
Traditional/herbal healer	3(2.6)
Others*	13(11.1)
Main reason for choice of place of treatment (n=117)	
Afraid of long term effects	11(9.4)
Affordable cost of treatment	14(12.0)
Recommended by friend/family	7(6.0)
Quality treatment	63(53.8)
No reason	6(5.1)
Others#	6(5.1)
Non response	10(8.5)

* primarily a local nurse or other non-physician health worker and during a community outreach program

These included close distance to health facility, not being in her usual location at the time of development of symptoms and the fact that the chosen place of treatment is the only place she knows where such care is obtained

Table 6: Factors associated with occurrence of sexually transmitted infections in the past year

Variable	Had STI n(%) (n=118)	Did not have STI n(%) (n=205)	Total n(%) N=323	P
Age (in years)				
18-24	35(32.4)	73(67.6)	108(100)	0.382
25-34	59(37.1)	100(62.9)	159(100)	
35-44	22(45.8)	26(54.2)	48(100)	
Above 45 years	2(25.0)	6(75.0)	8(100)	
Education				
No formal education	4(16.0)	21(84.0)	25(100)	0.087
Completed primary	80(40.8)	116(59.2)	196(100)	
Completed secondary	32(33.3)	64(66.7)	96(100)	
Tertiary	2(33.3)	4(66.7)	6(100)	
Marital status				
Married	5(31.3)	11(68.8)	16(100)	0.636
Single	71(35.1)	131(64.9)	202(100)	
Separated/divorced/widowed	42(40.0)	63(60.0)	105(100)	
Religion (n=322)				
Christianity	113(36.8)	194(63.2)	307(100)	0.652
Islam	5(33.3)	10(66.7)	15(100)	
Duration of sex work				
Less than six months	25(31.2)	55(68.8)	80(100)	0.186
Six months to one year	27(32.1)	57(67.9)	84(100)	
Above 1 year	66(41.5)	93(58.5)	159(100)	
STI knowledge				
Poor	45(25.7)	130(74.3)	175(100)	<0.001
Fair	4(20.0)	16(80.0)	20(100)	
Good	69(53.9)	59(46.1)	128(100)	

symptoms most commonly known by the sex workers³. The knowledge that these symptoms are an indication of a sexually transmitted infection was however considerably higher among the respondents in this study when compared to the figures obtained from the general population. The national survey showed that 34%, 30%, 24% and 18% were aware of vaginal itching, vaginal discharge, dysuria and lower abdominal pain respectively³. The knowledge of symptoms of sexually transmitted infections among the women in the national HIV/AIDS reproductive survey was reported to be lower than that of HIV/AIDS as also observed in this study³.

Similar studies have reported varying levels of knowledge of sexually transmitted infections and human immunodeficiency virus among female sex workers in different settings¹⁸⁻²². In Lahore, Pakistan, a study among female sex workers revealed a low level of knowledge of human immunodeficiency virus where only 19% had heard of human immunodeficiency virus¹⁸, also 15.2% of female sex workers in a study conducted in Ibadan¹⁹ had good knowledge of sexually transmitted infections while a study conducted in two urban local government areas of Lagos state showed that 81.9% could identify sexual route as the most common route of human immunodeficiency virus transmission²⁰. About

75% of female sex workers in a Papua new guinea study²¹ knew that condoms are the most effective way of preventing human immunodeficiency virus infection, while 60.8% of female sex workers in a Chinese study had overall good knowledge of Human immunodeficiency virus/Acquired immunodeficiency syndrome²².

Some sexually transmitted infections may be present without symptoms, this may prevent early treatment and promote related complications and transmission to sexual partners. Only a small proportion (14%) of the female sex workers in this study knew that sexually transmitted infections could be asymptomatic. Studies among young women in other settings have also revealed a low level of knowledge of the asymptomatic nature of sexually transmitted infections²³. Even health care workers have been reported to have a low knowledge in this regard albeit with reported higher figures than that obtained in this group of women²⁴.

Condom use is considered the single, most efficient, reliable means of preventing the sexual transmission of both human immunodeficiency virus and other sexually transmitted infections²⁵. However, only 40.9% of the respondents in this study mentioned condom use as a means of preventing sexually transmitted infections. Considering the fact that such a large percentage did not know that condoms can be used to prevent sexually transmitted infections, efforts should be made to promote the knowledge and consistent use of condoms among this highly exposed group of workers to reduce the transmission of sexually transmitted infections.

This study has also revealed a high level of misconception about sexually transmitted infections among these sex workers, a considerable proportion mentioned that observing hygienic practices when using the toilet is a method of preventing sexually transmitted infections. The misconception that hygienic practices could protect against sexually transmitted infections has also been reported in other studies²⁶. The indiscriminate use of prophylactic antibiotics is an important contributor to the increasing menace of antimicrobial resistance. Many of the respondents in this study mentioned prophylactic antibiotics as a means of preventing sexually

transmitted infections. Addressing the irrational use of antibiotics should be considered during health promotion programs for these sex workers. The prevalence of symptomatic sexually transmitted infections in this group of women is relatively high. These figures are higher than those reported in other sexually active Nigerian women where only 7% had experienced symptoms of sexually transmitted infections (namely genital discharge, itching and ulcer) in the previous year³. The 2008 national demographic and health survey also reported much lower figures among women in the south west region of Nigeria with only 1.3% have reported symptoms of sexually transmitted infections in the previous year.³ A review of female sex workers in other settings also showed higher rates of sexually transmitted infections than the general populace²⁷. The figures in this study are much closer to those reported among female sex workers in other locations^{20,27-29}. Female sex workers in Beijing China, however had much higher rates than the female sex workers in this study with 79% of them having reported a symptom of sexually transmitted infection in the previous year³⁰.

HIV counseling and testing remains a key intervention for the prevention and control of human immunodeficiency virus.³¹ Up to 65.5% of the women in this study had a human immunodeficiency virus test in the past 12 months. This figure is much higher than that reported in both the 2007 national HIV/AIDS and reproductive health survey (14%) and 2008 national demographic and health survey (17%)³. In Beijing, China, only 22% of female sex workers had been tested for human immunodeficiency virus³⁰. This may be due to the fact that there is a Global Fund-sponsored free mobile HIV counseling and testing service along the West African Transport Corridor and adjoining communities. The study location falls within this transport corridor.

Although knowledge and awareness have been reported to have a limited effect on changing attitudes and behavior^{32,33}, they are important components of behavioral change programs which help promote informed, healthy choices.³⁴ In this study, more of the respondents with good knowledge reported more symptoms of sexually

transmitted infections. Efforts aimed at reducing sexually transmitted infections among these women need to focus on providing knowledge and an increased understanding of sexually transmitted infections, its mode of transmission and prevention in order to reduce transmission and promote effective treatment seeking practices among these women.

Orthodox settings remain a valuable tool for the effective treatment of sexually transmitted infections. In this study, more than half of the female sex workers with symptomatic sexually transmitted infections sought treatment from orthodox medical facilities. Their patronage of orthodox facilities for the treatment of sexually transmitted infections is higher than in the general populace³. A considerable proportion of female sex workers in a similar study conducted in the Lagos metropolis were also reported to have sought treatment from orthodox settings²⁰. The Lagos state HIV and AIDS Strategic Plan 2010 - 2015 has an intervention program that involves training of patent medicine vendors and chemist operators on syndromic sexually transmitted infection management to enable them support clients who turn up for sexually transmitted infection drugs to receive the appropriate dosages and encourage them on adherence.³⁵

Perceived high quality of care seems to be a major factor the female sex workers considered before choosing a place to obtain treatment for their sexually transmitted infections. Ensuring the provision of high quality health care services for the treatment of sexually transmitted infection among female sex workers who choose to patronize orthodox healthcare settings should be emphasized in sexually transmitted infection control programs.

Conclusion

The knowledge of sexually transmitted infections among these workers is poor and misconceptions exist about the mode of prevention. The prevalence of sexually transmitted infections among the sex workers is also relatively high and many of them do not engage in any preventive practices against sexually transmitted infection occurrence. However, considerable proportions

with sexually transmitted infections do seek help in orthodox health facilities. Efforts to promote their knowledge and encourage effective preventive practices should be made for these sex workers.

Contribution of Authors

Dr Sekoni A.O: Conception and study design, data collection and analysis, preparation of manuscript

Dr Odukoya O.O: Conception and study design, data collection and analysis, preparation of manuscript

Prof Onajole A.T: Conception and study design, preparation of manuscript

Dr Odeyemi K.A: Conception and study design, preparation of manuscript.

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