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Pattern of sexually transmitted diseases among commercial sex workers (CSWs) in Ibadan, Nigeria.

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Summary

The purpose of this study was to determine the pattern of STDs among commercial sex workers (CSWs) in Ibadan, Nigeria. The subjects were 169 CSWs randomly selected from 18 brothels, majority of who were examined and investigated in their rooms. Another 136 women without symptoms who visited the special treatment clinic, University College Hospital, Ibadan were selected as a normal control group. Vaginal candidiasis was the most common STD diagnosed in both CSWs and the control group. The other STDs in their order of frequency were HIV infection 34.3%, non-specific vaginosis 24.9%, trichomoniasis 21.9% and gonorrhoea and "genital ulcers" had an incidence of 16.6% each. Other important conditions were tinea cruris 18.9%, scabies 7.7% genital warts 6.5% and 4.1% of them had syphilis sero-positivity. All the 13 CSWs that had scabies, the 4 (36.4%) with genital warts and the 19 (67.9%) with "genital ulcers" had HIV infection. While there was no significant difference between the CSWs with vaginal candidiasis, gonorrhoea, trichomoniasis and the control group, the HIV positivity was significantly higher ($P < 0.001$) in CSWs than in the control subjects. These findings suggest that women who exchange sexual services for money can no longer be ignored, and should therefore be identified and made to participate in STD prevention and control programmes.

Keywords: Sexually transmitted diseases, pattern, Commercial sex workers, Ibadan, Nigeria.

Résumé

Le but de cette étude était de déterminer le plan des MST parmi les filles qui se livrent à prostitution rémunérée à Ibadan, Nigeria. Nous avons sélectionné au hasard 169 sujets de 18 bordels, la majorité desquels ont été consultés dans leur chambre – 136 femmes symptomatiques qui ont visité la clinique de traitement spécial du centre Hospitalier Universitaire d'Ibadan ont été sélectionnées comme groupe de contrôle. L'infection vaginale causée par le champignon candida était la MST commune diagnostiquée à la fois chez les bordels et le groupe de contrôle. Les autres MST dans l'ordre de fréquence étaient l'infection au VIH 34.3%, La vaginose non-spécifique 24.9% la trichomoniose 21.9%, la gonorrhée et les ulcères génitaux "avec une incidence de 16.6% chacune. D'autres conditions importantes étaient la tinea cruris 18.9%, les croûtes (scabies) 7.7%, les verrues génitales 6.5% et 4.1% de ces derniers avaient une séro-positivité de la syphilis. Tous les 13 bordels qui avaient les croûtes, 4(36.4%) ayant les verrues et 19 (67.9%) avec des ulcères génitaux étaient infectés du virus VIH. Alors qu'il n'y avait pas de différence significative entre les groupes de contrôle et les autres qui souffraient des candidiases, gonorrhée et trichomoniose, l'infection au VIH était significativement élevée ($P < 0.001$) chez les prostituées que les

sujets de contrôle. Ces conclusions suggèrent que les femmes échangeant le plaisir sexuel pour de l'argent ne peuvent plus être ignorées et devraient alors être identifiées et prendre part dans les programmes de prévention et de contrôle de MST.

Introduction

Sexually transmitted diseases (STDs) are infections that are principally transmitted during sexual intercourse and they constitute a major problem worldwide, accounting for massive expenditure and resulting in infertility, foetal wastage, disfigurement and discomfort [1-4].

The social and economic consequences of STDs include social stigma and personal damage due to infertility and pregnancy wastage resulting in abusive behaviour, divorces and commercial sex work [5, 6]. Commercial sex workers (CSWs) have held a time-honoured position in STDs control, both as major reservoirs of the disease and as a convenient, untraceable source of infections [7].

Evidence that CSWs may play a significant role in the spread of STDs such as gonorrhoea is accumulating [8-11]. There are at present no comprehensive or reliable data on the prevalence of STDs among commercial sex workers in Nigeria, however, evidence from studies in other countries show that it is quite high [12]. Osoba [4] reported a prevalence of gonococcal infection among the CSWs to be 15.8 percent. Various studies of commercial sex workers in Asia and Africa report a high prevalence of STDs among them [13-16].

The arrival on the scene of HIV, which is sexually transmitted in about 80 percent of cases [5], has worsened the situation because while the conventional STDs such as gonorrhoea and syphilis are treatable, HIV/AIDS is fatal and currently has no cure. This will no doubt constitute a serious health problem considering the number of commercial sex workers operating in many of the brothels in Ibadan. The aim of the present study was to determine the pattern of STDs among the commercial sex workers in Ibadan, Nigeria.

Material and methods

Study population

Commercial sex workers (CSWs) working in 18 brothels that were randomly selected in Ibadan municipality were included in this prospective study. The study was done between February 1998 and March 2000, in cooperation with the health-nursing officers attached to the Special Treatment Clinic, University College Hospital, the Directors of the brothels and the "Presidents" of the inmates.

Name, age, place of work, other occupation, parity, and marital status were noted. Symptoms of dysuria, low abdominal pain, and vaginal discharge were routinely enquired after.

All the CSWs had a complete pelvic examination. Specimens for culture were taken with sterile cotton-tipped applicator from the urethral, vagina and endocervix.

Control group

One hundred and thirty-six female patients that attended Special Treatment Clinic but without symptoms during the period of study were randomly selected and entered into the study.

Laboratory procedures

The high vaginal swabs were examined by the wet preparation for *Trichomonas vaginalis*, *Candida albicans* and *Gardnerella vaginalis* (Clue cells) while the cervical and urethral swabs were Gram-stained for intra-cellular Gram-negative diplococci, and cultured onto Modified Thayer-Martin's medium. The plates were incubated at 37°C in an atmosphere of a candle extinction jar. Suspected oxidase-positive colonies were Gram-stained for Gram-negative diplococci and confirmation by Sugar utilization tests in serum-free medium [17]. Beta-lactamase activity of the isolates was tested using the Starch-paper technique [18]. Blood samples were taken and tested for HIV antibodies using a commercially available enzyme-linked immunosorbent assay (ELISA) and a Western blot (WB) assay using the procedures recommended by the manufacturer. The sera were also used for VDRL and TPHA tests.

Data analysis

Statistical analysis was performed using the student t and the chi squared tests.

Results

During the period of study, 169 commercial sex workers (CSWs) randomly selected from 18 brothels and 136 female patients without symptoms were investigated for sexually transmitted diseases at the Special Treatment Clinic, University College Hospital, Ibadan. Table 1 shows the age distribution of the 169 CSWs and 136 symptomless women investigated, 63.3% being within the ages of 20 and 29 years while only 4.2% were over 50 years of age. Of the control subjects investigated, 58.1% were within the ages of 20 and 29 years. Table 2 shows that the majority of the CSWs (74.5%) were of low parity (0-1)

Table 1: Age distribution of CSWs and control group examined

Age group (years)	No. of subjects	%	Control group	%
10-19	19	11.2	20	14.7
20-29	107	63.3	79	58.1
30-39	23	13.6	16	11.8
40-49	13	7.7	14	10.3
> 50	7	4.2	7	5.1
Total	169	100	136	100

Table 2: Parity of CSWs and the control group investigated

Number of parity	No. of subjects	%	Control group	%
0.1	126	74.5	52	38.2
2-3	40	23.7	67	49.3
≥4	3	1.8	17	12.5
Total	169	100	136	100

Of the 169 CSWs seen, 88 (52.1%) were single, 37 (21.8%) separated, 28 (16.6%) divorced and 10 (5.9%) widowed. Only 6 (3.6%) were married and these were not living in the brothels (Table 3). Ninety-three (55%) of them engaged in various types of contraceptive devices including the use of condom.

Table 3: Marital status of the CSWs and control group investigated.

Marital status	No. of subjects	%	Control group	%
Single	88	52.1	63	46.3
Married	6	3.6	32	23.5
Separated	37	21.8	25	18.4
Divorced	28	16.6	13	9.6
Widowed	10	5.9	3	2.2
Total	169	100	136	100

All the CSWs investigated admitted to regular use of prophylactic antibiotics in various combinations, common ones being weekly injection of Spectinomycin. Table 4 shows that vaginal candidiasis was the most common STD diagnosed in both CSWs and the control group. The other STDs in their order of frequency in the CSWs were HIV infection 34.3%, non-specific vaginosis (*Gardnerella vaginalis* infection) 24.9% and trichomoniasis 21.9%. gonorrhoea and "Genital ulcers" had an incidence of 16.6% each. Other important conditions were *Tinea cruris* 18.9% scabies 7.7%, genital warts 6.5% and 4.1% of them had Syphilis seropositivity. All the 13 CSWs that had Scabies, 4 (36.4%) with genital warts and 19 (67.9%) with "genital ulcers" had HIV infection.

Table 4: Diagnosis of STDs in CSWs and the control group

Diagnosis	No. of subjects	%	Control group	%
Gonorrhoea	28	16.6	21	15.4
Candidiasis	99	58.6	70	51.4
Trichomoniasis	37	21.9	26	19.1
Genital warts	11	6.5	3	2.2
Non-specific vaginosis (clue cells)	42	24.9	12	8.8
Scabies	13	7.7	--	--
"Genital ulcers"	28	16.6	2	1.5
<i>Tinea cruris</i>	32	18.9	13	9.6
Syphilis seropositivity	7	4.1	--	--
HIV-seropositivity	58	34.3	3	2.2

There was no significant difference between the CSWs with vaginal candidiasis, gonorrhoea, trichomoniasis and the control group. The HIV positive was significantly higher ($P < 0.001$) in CSWs than in the control subjects.

A significant difference ($P < 0.001$) between "genital ulcers" among CSWs (16.6%) and the control group (1.5%) was also observed. The betalactamase producing strains constituted 97.6% of the gonococcal isolates

Discussion

Sexually transmitted diseases (STDs) constitute a major public health problem in both developed and developing countries of the world and are causing concern to those responsible for their control and eradication [19]. The prevalence of STDs is on the increase [20] and women; particularly CSWs are the major reservoirs and are responsible for their high prevalence [21-23].

A considerable number of unmarried unemployed women that engaged in commercial sex work live comfortably in many brothels scattered around urban areas of Ibadan and cater for the sexual needs of the male population, mostly of the low income group asking payment in cash in exchange for a short sexual relationship [24]. Most of the CSWs encountered during the study were very young, 74.5% being below 30 years. This is not unexpected as there is usually a higher demand for younger women by men who patronize commercial sex workers. This is in keeping with the findings of Meheus *et al.* (1974) [24] that found 86% in the 15 to 25 years age group in Central African town of Butare, Umar (1998) [25] with 60.7% being below 30 years and with those of Uribe-Salas *et al.* (1997) [26] who reported that younger women in the age group 20-29 years were the ones mostly engaged in commercial sex work.

In this study, 88 (52.1%) of the 169 CSWs seen were single, 37 (21.8%) separated, 28 (16.6%) divorced and 10 (5.9%) widowed. This is in agreement with the findings of Umar (1998) [25] who found that over half of the CSWs were either separated, divorced or widowed whilst about 40% were single and he attributed this to the traditional extended family system which hitherto had served as a social institution gradually breaking down due to the process of urbanization and hence such categories of women who otherwise would have been taken care of in such traditional setting find that they now have to fend for themselves.

The data on the prevalence of STDs in CSWs vary around the world, depending on the reliability of the diagnostic tests used on them and their response to medical examination. Some of them declined to be examined or investigated and these were the older women who now act as the "godmothers" to the younger CSWs. The spectrum of STDs among the CSWs has widened since the previous study done in 1972 by Osoba [4] in our center. While gonorrhoea and *Trichomonas vaginalis* vaginitis were the only STDs diagnosed, a wider spectrum of STDs among the CSWs investigated was demonstrated. In the present study, vaginal candidiasis (58.6%) was the most common STD diagnosed in the CSWs and other STDs in their order of frequency were HIV infection (34.3%), Non-specific vaginosis (24.9%) trichomoniasis (21.9%), *Tinea cruris* (18.9%), gonorrhoea (16.6%), "genital ulcers" (16.6%), scabies (7.7%) genital warts (6.5%) and syphilis seropositivity (4.1%). This was partly due to the fact that the majority of the CSWs were examined and investigated in their hotel rooms and there was an improvement in the diagnostic methods used in this study. The finding is consistent with those of Turner and Morton (1976) [11] in Sheffield, Meheus *et al.* (1974) [24] and many other workers [4, 27-37], who demonstrated a reasonably high incidence of STDs among CSWs.

It has been reasonably established that the presence of STDs in a person is associated with an increased risk of HIV infection following exposure by a factor of three to five and can be as high as 10-300 fold in the presence of a genital ulcer [5]. A number of studies have suggested that HIV-seropositive women may similarly be at increased risk for genital HIV

infection or cervical neoplasia, though the data are limited [38-40]. In the present study, all the 13 CSWs that had scabies, 36.4% with genital warts and 67.9% with "genital ulcers" had HIV infection. Similar study by Kreiss *et al.* [41] in Nairobi where genital warts were present in 10% of 145 women infected with HIV, but only in 6% of the HIV seronegative women and also human papillomavirus DNA detected in cervical specimens of 37% of HIV infected women confirm the trend. We found no significant difference between the CSWs with vaginal candidiasis, gonorrhoea, and trichomoniasis and the control group but a highly significant difference between CSWs with HIV infection and the control subjects was demonstrated. The implication of this is probably that apart from HIV infection that is currently untreatable, the role of CSWs as carriers of STDs has gradually declined in importance as compared with the promiscuous amateurs who pose a serious threat to the control of STDs. One of the reasons for failure to interrupt STD transmission could be that these transmissions are frequently a result of sexual exposures with these promiscuous amateurs who parade themselves as "responsible" ladies on the street.

Public health workers interacting with CSWs and others involved in commercial sex work should stress techniques that can help prevent the spread of STD. They should insist that their partners use condoms. Control can best be accomplished by public health programmes that commit themselves to finding STD transmitters through persistent efforts to screen, diagnose, treat, and follow-up on high-risk individual within communities. Women who exchange sexual services for money are at risk and can no longer be ignored. They should be identified and made to participate in STD prevention and control programmes [7].

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