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Awareness of cervical cancer screening services and uptake of free liquid-based cytology test among brothel-based female sex workers in Sokoto State, Nigeria

Bilkisu Gulma Abubakar

Department of Community Medicine, Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria.

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There are few studies on the awareness and uptake of cervical cancer (Ca Cervix) screening services among Female Sex Workers (FSWs) in Nigeria despite the increased risk of Ca Cervix among FSWs and the potential benefit of early screening. The study aimed to assess the awareness, uptake, barriers to and predictors of uptake of Ca Cervix screening services among FSWs. A cross-sectional analytical study was conducted among 165 FSWs recruited via snowball sampling in Sokoto State, Nigeria. Participants were eligible for inclusion if they were brothel-based, had spent at least one year in the profession and were at least 21 years old or had debuted in sexual intercourse at least three years ago as the time of the study. A structured interviewer-administered questionnaire and a liquid-based cytology (LBC) test were used to obtain information. Data were analysed using IBM SPSS version 25. Ethical approval was obtained from the Health Research Ethics Committee of the Sokoto State Ministry of Health. Twenty (12.1%) and 11 (6.7%) of the respondents were aware of Ca Cervix and its screening services respectively. The commonest source of information was hospital/health workers 10 (50.0%). One (0.6%) of the respondents reported ever been screened for cervical cancer in the past and the highest proportion, 119 (72.1%), utilised the LBC test offered in this study. The commonest barriers to current uptake were lack of interest (93.5%) and invasion of privacy (73.9%). Consistent use of condoms with current partners was found to be a predictor of the uptake of the LBC test among the study participants. The low level of awareness of the disease and its screening tests underscores the need for health education and promotion intervention among FSWs by researchers, health workers and non-governmental organisations.

Key words: Awareness, cervical cancer, screening, female sex workers, uptake.

INTRODUCTION

Cervical cancer (Ca Cervix) is a significant public health problem. Even though highly preventable, Ca Cervix was the fourth most frequently diagnosed cancer and the fourth leading cause of cancer deaths in women globally,

E-mail: bilqise2@gmail.com; Tel: +2348036936384.

with an estimated 604,000 new cases and 342,000 deaths in 2020 (Sung et al., 2021). Cervical cancer is caused by infection of the lining of the cervix with high-risk human papillomaviruses (hrHPV), which are transmitted through sexual contact. It is the commonest gynaecological cancer in Nigeria with a higher incidence among FSWs (Olugbenga-Bello et al., 2016).

Approximately 14,000 Nigerian women are newly diagnosed with Ca Cervix, and 8000 die from the disease every year, ranking it as the second leading cause of female cancer deaths (Bruni et al., 2019; Ilesanmi and Kehinde, 2018). Female sex workers are at a very high risk of human papillomavirus (HPV) infection and Ca Cervix, which is not surprising as they are exposed to multiple risks (Hong et al., 2013). The inconsistent use of barrier contraception, multiple sexual partners, human immunodeficiency virus (HIV) infection, use of non-barrier contraception, younger age at sexual debut and the number of years spent doing sex work have been associated with an increased risk of HPV infection among FSWs (Ilesanmi and Kehinde, 2018). Cervical screening has been acknowledged as the most effective approach for Ca Cervix control by the World Health Organization (WHO) since 2002 (Odental, 2011).

A study done in Ogbomoso and Osogbo among 310 FSWs revealed that 51.9% had heard of Ca Cervix and 25% mentioned screening as a method of prevention of Ca Cervix (Olugbenga-Bello et al., 2016). In a study done among 406 FSWs in Abuja, 158 (38.9%) of the respondents had ever been screened (Ilesanmi and Kehinde, 2018). In another study done among FSWs in Ayilara, Lagos State, only 2.9% of the 105 respondents had ever had a pap smear done (Onajole et al., 2004).

The two primary reasons for not utilising Ca Cervix screening services in a study of FSWs in Abuja where 60.6% had never been screened were lack of interest and lack of awareness (Ilesanmi and Kehinde, 2018). Other reasons given were lack of time, procrastination, financial constraint, lack of accessibility to Ca Cervix screening, fear of discomfort/pain from the procedure and viewing screening service as unnecessary (Ilesanmi and Kehinde, 2018).

Evidence shows a high frequency of abnormal Pap test results among FSWs, and given the high risk of HPV, Ca Cervix, and the potential to transmit HPV to the general population, FSWs have been highlighted as a priority group for Ca Cervix prevention efforts (Duff et al., 2016). Although FSWs are among those at the highest risk for developing and dying of Ca Cervix, yet many are less likely than other women to be screened (Thulien, 2014). While most researches focused on self-reported uptake of a Ca Cervix screening test which could be subject to bias, this study differed significantly from the rest. It offered the Liquid Based Cytology (LBC) test to the participants through an outreach well-women clinic taken to brothels for Ca Cervix screening. This study aimed to assess the awareness, prevalence (reported past and current uptake), barriers to and predictors of uptake of Ca Cervix screening services among FSWs in Sokoto State, Nigeria.

METHODS

Study design, area and population

The study was cross-sectional in design and was done in Sokoto State, North western Nigeria in October 2021. Cervical cancer was the second commonest cancer among females in Sokoto in 2013 accounting for 15.6% of all cancers reported that year in both males and females (Nigerian National System of Cancer Registries, 2016). Cervical cancer screening services are available in only two health facilities in Sokoto State.

Although FSWs may be found in all the Local Government Areas (LGAs) in the State, however, they operate in brothels in specific areas in some LGAs, which are Dange-Shuni, Sokoto South, Sokoto North, Wamakko, Illela, and Wurno LGAs. Dange-Shuni, Sokoto South, Wamakko and Sokoto North are urban LGAs and they constitute the Metropolis, while Illela and Wurno are rural LGAs.

There is no formal documentation of existing brothels in the State and the number of FSWs in each brothel. So, identification and line listing of the brothels and FSWs was done with the help of community guides in each LGA where sex work is done in brothels; the community guides are people who had worked in previous surveys with FSWs and knew the brothels. A total of 30 brothels with 306 FSWs were identified in the six LGAs: there were 12, 4, 3, 3, 5, 3 brothels in Dange-shuni, Sokoto South, Sokoto North, Wamakko, Illela and Wurno respectively. Aside the brothels, FSWs are found along roadsides and in some hotels in Sokoto State, but these categories of FSWs are highly mobile and getting back to them is difficult.

Female sex workers, who were brothel-based, spent at least one year in the profession (Olubenga-Bello et al., 2016) and were at least 21 years old (Saslow et al., 2012) or debuted in sexual intercourse at least three years ago as at time of the study were included. Female sex workers with the following conditions were excluded: pregnancy, history of vaginal prolapse, without a cervix, having an abnormal uterine bleeding, diagnosed genital tract cancer, obvious cervical warts, fungating, or ulcerative lesions of the cervix.

Sample size calculation and sampling technique

The minimum sample size for the study was determined using the estimator for a cross- sectional study, $n = \frac{z^2pq}{d^2}$ (Ibrahim, 2009) and a prevalence of awareness of Ca Cervix screening from a previous study of 71.4% was used (Ilesanmi and Kehinde, 2018). After sample size adjustment for a finite population less than 10,000 using $nf = \frac{n}{1+\frac{n}{N}}$ (Ibrahim, 2009), a minimum sample size of 155 was arrived at. After adjustment for possible 10% non-response rate, a sample size of 172 was arrived at.

Snowball sampling technique was used to enrol respondents for the study because FSWs are a hard-to-reach population and are highly mobile with many doing the work underground because sex work is outlawed hence using a random sampling technique would be difficult.

Proportionate allocation (PA) was used to proportionately allot the respondents to be enrolled from each of the LGAs using the calculated sample size, which was 172 as follows;

$$\text{PA} = \frac{\text{Total population of FSWs in 1 LGA}}{\text{Total population of FSWs in 6 LGAs}} \text{ X sample size}$$

The number of brothels to be selected from each LGA was

determined using PA. To be able to obtain the sample size, it was decided to use twenty brothels out of the thirty line-listed in the State.

$$\text{PA} = \frac{\text{Total number of brothels in 1 LGA}}{\text{Total number of brothels in 6 LGAs}} \text{ X } 20$$

The brothels were selected using a simple random sampling technique by balloting.

The number of participants to be recruited from each brothel was also determined using the following formula:

$$\text{Number of FSWs recruited from each brothel} = \frac{\frac{\text{Total number of FSWs to be recruited in 1 LGA}}{\text{Total number of brothels to be selected in 1 LGA}}}{}$$

Study instruments and research assistants

A questionnaire was adapted from previous studies (Ilesanmi and Kehinde, 2018; Joshi et al., 2015; Lafort et al., 2016; Soohoo et al., 2013; World Health Organisation, 2020) and structured into three sections consisting of a total of 56 stem questions. The sections were A: Sociodemographic, reproductive, sexual, behavioural and clinical characteristics; B: Awareness of Ca Cervix and its screening services; C: Prevalence of and barriers to uptake of Ca Cervix screening services of the respondents. The validity of the questionnaire was assessed by checking for content validity. The appropriateness of the questions was assessed by the consultants in the Department of Community Medicine, Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto. A laboratory request/ report form was used to request for the LBC.

Five female research assistants were recruited based on their experience and competence in research and fieldwork. They were trained for 3 hours daily for two days by the principal researcher in the Department of Community Medicine seminar room, UDUTH Sokoto. The training included an overview of the study, including the study objectives, use of questionnaire in open data kit (ODK), sampling, field activities, ethics of fieldwork and interpersonal communication skills.

The questionnaire was pre-tested by the principal researcher and all the trained research assistants on 10% of the sample among FSWs in neighbouring Kebbi State after the conclusion of the training. The reliability of the questionnaire was assessed by checking for internal consistency and test-retest reliability.

Data collection methods

An interviewer-administered structured electronic questionnaire built in ODK version 1.24.1 was used as the data collection instrument. ODK was installed on all the research assistants' smartphones via the Google play store.

Interviews were conducted in the morning and afternoon in the brothels where the participants ply their trade, and their privacy was assured. The language of data collection was Hausa, except when the respondent did not understand Hausa, English and Pidgin English were used. The principal researcher supervised the process. The principal researcher took the cervical samples, having undergone a posting in the Obstetrics and Gynaecology Department of UDUTH Sokoto and certified competent by a Gynaecologist.

Data management plan

The independent variables were sociodemographic, sexual, reproductive, behavioural and clinical characteristics, awareness of Ca Cervix and its screening services. The dependent variable was current uptake of Ca Cervix screening service. Completed questionnaires were downloaded from ODK server in Statistical Package for Social Sciences (SPSS) format. Data was analysed using IBM® SPSS version 25. Univariate, bivariate and multivariate analyses were done.

Ethical considerations

This study was approved by the Health Research Ethics Committee of the Sokoto State Ministry of Health. Permission was sought from the LGA chairmen and traditional heads of areas where the brothels were located, the managers of the brothels and the leaders of FSWs.

Before individuals were recruited into the study, written informed consent was obtained by explaining the purpose and nature of the research and the voluntary nature of participation in the study. They were assured of confidentiality and the right to opt-out after beginning the interview.

In line with WHO guidance, before taking the sample for LBC, the participants were counselled on Ca Cervix, its risk factors and prevention (WHO, 2014). Results were communicated to the participants who were willing to know their results. Those whose findings were normal were advised on regular Ca Cervix screening every three years and were told where to obtain the services. When explaining to a woman that her screening test was positive but NOT suspicious for cancer, information was provided in clear and simple language according to WHO guidance (WHO, 2014).

All the participants, irrespective of the outcome of the results, were counselled on safe sex practices, including the consistent and correct use of a condom. Participants with STIs were treated with kits containing four tablets of azithromycin (1g), fluconazole (150mg) and secnidazole (2g). Participants with abnormal cervical changes were referred for colposcopy and biopsy which were sponsored by the researcher.

RESULTS

One hundred and seventy-two questionnaires were administered and 165(95.9%) accepted to participate in the study.

Sociodemographic, reproductive and sexual characteristics of the respondents

The ages of the respondents ranged from 18 to 55 years and slightly less than half 81(49.1%) were in the age group 25-34 years; the mean age was 28.02 ± 6.9. A higher proportion 70(64.2%) of the respondents first married at 17 years or less with mean age at first marriage as 16.48±3.4 years. Forty-eight (29.1%) of the respondents did not have any formal education. The monthly income of 66(40.0%) was between N30000-N59000 and the median income with Inter Quartile Range (IQR) were N40000 (N53750) (Table 1).

Seventy-nine (71.2%) of the respondents had ever delivered 1 or 2 children with a median of 2 and IQR of 2. Fifty-four (48.6%) delivered their first baby at 18-23 years with mean age of 18.40 ± 3.4. One hundred and eleven (67.3%) had coitarche at 17 years of age or less with mean age of 16.20 ± 2.8 years. Most of the respondents

Table 1. Sociodemographic characteristics of the respondents.

Variable	Frequency (n= 165)	Percent
Age group (years)	n= 165	
15-24	54	32.7
25-34	81	49.1
35-44	26	15.8
45-54	3	1.8
≥55	1	0.6
Religion	n= 165	
Islam	108	65.5
Christianity	57	34.5
Tribe	n= 165	
Hausa	81	49.1
Fulani	13	7.9
Igbo	4	2.4
Others (e.g. Tiv, Idoma, Jaba, Jukun, Kanuri)	65	40.6
Marital status	n= 165	
Married	7	4.2
Never married	55	33.3
Separated	37	22.4
Divorced	47	28.5
Widowed	18	11.0
Cohabitation	1	0.6
Age at first marriage (years)	n= 109	
≤17	70	64.2
18-23	34	31.2
≥24	5	4.6
Educational attainment	n= 165	
None	14	8.5
Qur'anic	34	20.6
Primary	29	17.6
Secondary	82	49.7
Tertiary	6	3.6
Average monthly income (naira)	n= 165	
5000-29000	38	23.0
30000-59000	66	40.0
60000-89000	12	7.3
90000-119000	14	8.5
≥120000	24	14.5
Did not disclose	11	6.7

Source: Author.

138(83.6%) had been engaged in sex work for five years or less with median of 3 years and IQR of 3. Sixty-one (37.0%) of the respondents had at most 10 clients per week with median number of 21 clients per week and IQR of 23 (Table 2).

Behavioural and clinical characteristics of the respondents

Sixty (36.4%) of the respondents were using a hormonal contraceptive method as at the time of the survey with emergency contraception (56.7%) being the most common method used. Seven (11.7%) of the respondents had been using a contraceptive method for more than 3 years with the median duration of use of 1 year and IQR of 2.2 years. Seventy-two (43.6%) had used a contraceptive method in the past; the median duration of use was 1 year and IQR of 1.75 years (Table 3).

A higher proportion 144(87.3%) of the respondents

Table 2. Reproductive and sexual characteristics of the respondents.

Variable	Frequency (n)	Percent
No. of children ever delivered	n= 111	
1-2	79	71.2
3-4	22	19.8
5-8	10	9.0
Age at first delivery (years)	n= 111	
≤17	48	43.2
18-23	54	48.7
≥24	9	8.1
Age at first vaginal sexual intercourse (years)	n= 165	
≤17	111	67.3
18-23	50	30.3
≥24	4	2.4
No. of years doing sex work	n= 165	
1-5	138	83.7
6-10	21	12.7
11-15	4	2.4
16-20	2	1.2
No. of clients per week	n= 165	
≤10	61	37.0
11-20	20	12.1
21-30	47	28.5
31-40	18	10.9
41-50	8	4.8
≥51	11	6.7

Source: Author.

used condom with the clients compared with their partners 118(71.5%). The majority of the respondents used condom always with their partners (83.1%) and their clients (80.6%) (Table 3).

Forty-eight (69.6%) out of 69 of the respondents who smoked, did so always with an average number of years of smoking of 2 (4) years. Nineteen (32.8%) out of the 58 respondents who consumed alcohol in the past 30 days did so always (Table 4).

One hundred and two (61.8%) of the respondents have had symptoms suggestive of sexually transmitted infections (STIs) in the past, the commonest being vaginal discharge 61(59.8%) and the majority (84.3%) received treatment. The majority 131(79.4%) of the respondents knew their HIV status of which 5(3.0%) were positive. Ninety-three (71.0%) last screened for HIV in the past 6 months with an average of 3 months and IQR of 6 (Table 5).

Awareness and uptake of cervical cancer screening services among the respondents

Only 20 (12.1%) and 11 (6.7%) of the respondents were aware of Ca Cervix and its screening services respectively. The commonest source of information was the hospital/health worker. The majority 8(72.7%) of those who were aware of Ca Cervix screening services had not heard of any Ca Cervix screening test (Table 6). Only one (0.6%) of the respondents reported having ever been screened for Ca Cervix in the past and she had VIA. The reason for carrying out the test was recommendation by a health care provider (Table 6). More than two-thirds 119(72.1%) of the respondents utilised the cervical cancer screening services offered in this study (Table 6).

Barriers to the uptake of cervical cancer screening services among the respondents

The most common barrier to reported past uptake of LBC was lack of awareness (75.6%), followed by lack of request by the doctor (6.1%). Lack of interest (93.5%) and invasion of privacy (73.9%) were the most common barriers to current uptake in this study (Table 7).

Predictors of current uptake of cervical cancer screening services among the respondents

The factors found to be significantly associated with the

Table 3. Current and past use of contraceptives by the respondents.

Variable	Frequency (n)	Percent
Current use of contraceptive method	n= 165	
Yes	60	36.4
No	105	63.6
Type of method in current use	n= 60	
Emergency contraception	34	56.6
Injectable	12	20.0
Implant	9	15.0
OCPs	4	6.7
IUCD	1	1.7
Duration of use (years)	n= 60	
<1	24	40.0
1-3	29	48.3
>3	7	11.7
Past use of contraceptive method	n= 165	
Yes	72	43.6
No	93	56.4
Type of method used in the past	n= 72	
Emergency contraception	31	43.1
Injectable	23	31.9
OCPs	12	16.7
Implant	6	8.3
Duration of use (years)	n= 72	
<1	33	45.9
1-3	34	47.2
>3	5	6.9
Condom use with current partner in the last 1 month	n= 165	
Yes	118	71.5
No	38	23.0
I am not in a relationship	9	5.5
Frequency of condom use with current partner	n= 118	
Occasionally	5	4.2
Mostly	15	12.7
Always	98	83.1
Condom use with client in the last 1 month	n= 165	
Yes	144	87.3
No	21	12.7
Frequency of condom use with client	n= 144	
Occasionally	6	4.2
Mostly	22	15.3

OCP- oral combined pills IUCD- intrauterine contraceptive device
Source: Author.

current uptake of the LBC test were religion, number of clients per week, frequency of condom use with current partner, condom use with the client, ever consumption of alcohol, and history of STIs. When these were put into a regression model, only the frequency of condom use with the current partner was found to be a predictor. Those who used condoms consistently with their partners were about 3.6 times more likely to have utilised the LBC test compared to those who did not (aOR = 3.63, 95%CI: 1.17-11.21, p = 0.025). Additionally, respondents who had a history of STIs were about 2 times more likely to have utilised the LBC test compared to those who did not, although the association was not statistically significant (aOR= 0.59, 95% CI: 0.23-1.52, p= 0.59]

Table 4. Pattern of smoking and alcohol consumption by the respondents.

Variable	Frequency (n)	Percent
Current smoking status	n= 165	
Yes	69	41.8
No	96	58.2
Frequency of smoking (days)	n= 69	
1-2	12	17.4
3-4	9	13.0
5-6	0	0
7	48	69.6
Duration of smoking (years)	n= 66	
1-2	41	59.4
3-5	16	23.2
≥6	12	17.4
Ever consumed alcohol	n= 165	
Yes	66	40.0
No	99	60.0
Consumed alcohol in the past 30 days	n=66	
Yes	58	87.9
No	8	12.1
Frequency of alcohol consumption	n= 58	
Rarely	30	51.7
Occasionally	8	13.8
Mostly	1	1.7
Always	19	32.8

Source: Author.

(Table 8).

DISCUSSION

This study assessed the awareness, prevalence, barriers to and predictors of uptake of Ca Cervix screening services among FSWs in Sokoto State, Nigeria.

The awareness of Cervical Cancer and its screening services was found to be low as only 20 (12.1%) and 11 (6.7%) respectively of the respondents reported to have ever heard of them. This call for more awareness to be raised on these aspects, as lack of awareness of Cervical Cancer and its screening has been shown to limit the acceptance and utilisation of Cervical Cancer screening services (Hyacinth et al., 2012; Nnadi et al., 2014; Ndikom et al., 2015). In the study done in Abuja, 71.4% of the 406 FSWs were aware of cervical cancer screening services (Ilesanmi et al., 2018). The reason the awareness level was higher in the later study is probably due to the fact that 84.5% of the respondents had some level of formal education compared to 70.9% in this study. Education is a significant factor which influences people's behaviours, opportunities and access to information including information on health and health-related matters. Another reason for the dissimilarity of the figure reported in this study and the past study may be attributed to effective supervision of FSWs in the location of the past study.

The commonest source of information for both the disease and its screening tests was the hospital/health worker which is quite impressive as it shows that health workers are putting efforts to raise awareness on these. Several studies have shown the health care workers as the source of information on Ca Cervix and its screening services (Abiodun et al., 2013, Abiodun et al., 2017; Agunwa et al., 2019; Awosan et al., 2018; Kietpeerakool et al., 2009).

The mass media (radio and TV) can be major sources of information to the public as they are being utilised by the majority of the populace and will reach a higher proportion of people than health workers. People utilise the hospitals mainly for health reasons but the mass media is used for entertainment enjoyed by many people and in-between such, health related messages could be passed as commercials. Though the mass media is the second commonest source of awareness in this study, there is room for improvement and the potential to reach a wide audience with them. Friends/relatives were also a significant source of information in this study thus showing that interpersonal communication can be major source of information on Ca Cervix. No mention of other

Table 5. History of STIs and HIV status of the respondents.

Variable	Frequency (n)	Percent
History of STIs	n= 165	
Yes	102	61.8
No	63	38.2
Symptom suggestive of STIs contracted	n= 102	
Vaginal discharge	61	59.7
Lower abdominal pain	28	27.5
Genital ulcer	6	5.9
Others e.g. fever, rashes	7	6.9
Treatment of STIs	n= 102	
Yes	86	84.3
No	16	15.7
HIV status	n= 165	
Positive	5	3.0
Negative	126	76.4
I don't know	34	20.6
ART uptake	n= 5	
Yes	5	100.0
No	0	0
Last screening for HIV (months)	n=131	
1-6	93	71.0
7-12	21	16.0
13-18	6	4.6
≥ 19	11	8.4

STIs- sexually transmitted infections; HIV- human immune deficiency virus.
Source: Author.

sources like schools and worship places. Since all the respondents in this study have a religion and the majority have some level of education, hearing about Ca Cervix in places of worship would have made a positive impact on its utilisation and hearing about it in schools will be of immense benefit as only correct information is expected to be passed.

Only one of the respondents reported to have ever been screened for Ca Cervix in the past and it was not surprising as they had abysmally low awareness of Ca Cervix and its screening services. The respondent reportedly had VIA which was recommended by a health worker and received her result which is impressive and goes to show that the health workers are doing a good job. Some studies have shown low prevalence of screening hence corroborating the finding in this study. Only 2.9% and 1% of those surveyed in Lagos, Ogbomoso and Osogbo had ever been screened for Cervical Cancer (Olugbenga-Bello et al., 2016; Onajole et al., 2004). The survey conducted in Abuja among FSWs reported a higher figure (38.9%) than what was obtained in this study, likely due to more health law enforcement in the capital, such as more frequent testing intervals for FSWs; Abuja is also more educationally developed than Sokoto State and this might have been the reason for the higher prevalence of screening in Abuja. Conversely, studies done outside Nigeria have shown a high prevalence of screening. The prevalence of uptake of pap smear reported was very high (92.5%) in a survey done among 611 sex workers in Vancouver (Duff et al., 2016). A high proportion (69.7%) reported uptake of Pap smear in a survey of 402 FSWs in Thailand (Kietpeerakool et al., 2009). These are countries with organized cervical cancer screening services and probably is the reason for the high figures reported compared to this study. Also, these countries have health insurance, increased awareness and the fact that FSWs in those climes are better supervised and screened for STIs and other diseases.

The highest proportion (72.1%) of the respondents utilised the free LBC test offered in this study, which is impressive and comparable to studies done in the USA (84.4%) and India (98.6%) (Joshi et al., 2015; Zhang et al., 2020), The later studies reported higher figures probably because USA has an organized Ca Cervix screening programme while the study in India offered the services free to the FSWs. The commonest barrier to reported past uptake of Ca Cervix screening services was lack of awareness, followed by lack of request by the doctor, which further buttresses the importance of

Table 6. Awareness and uptake of cervical cancer screening services.

Variable	Frequency (n)	Percent
Awareness of cervical cancer	n= 165	
Yes	20	12.1
No	145	87.9
Sources of information*	n= 20	
Hospital/health worker	10	50.0
Friends/relatives	7	35.0
Radio/TV	7	35.0
Newspapers/fliers/posters	1	5.0
Awareness of cervical cancer screening	n= 165	
Yes	11	6.7
No	154	93.3
Sources of information*	n= 11	
Hospital/Health worker	6	54.5
Radio/TV	4	36.4
Friends/relatives	3	27.3
Type of tests heard of*	n= 11	
Visual inspection with acetic acid, VIA	1	9.1
Pap smear/ liquid-based cytology	1	9.1
HPV DNA test	1	9.1
I do not know any	8	72.7
Reported past uptake of cervical cancer screening test	n= 165	
Yes	1	0.6
No	164	99.4
Type of cervical cancer screening test had	n= 1	
Visual inspection with Acetic acid, VIA	1	100.0
Frequency of screening	n= 1	
Once	1	100.0
Age at first screening	n= 1	
33	1	100.0
Time last screening was done	n= 1	
1-2 years	1	100.0
Current uptake of cervical cancer screening test	n=165	
Yes	119	72.9
No	46	27.9

*Multiple responses.
Source: Author

awareness in the utilisation of such services. It also stresses the role that healthcare workers have to play, that is, making enquiries about the most recent Ca Cervix test results and requesting that women do it when it is due and where a woman has never done it, making her aware of it and requesting for it. Lack of interest in the screening test and invasion of privacy were the commonest barriers to current uptake of the LBC test cited in this study; respondents expressed disdain with the fact that they have to open their genital area for the samples to be taken and wished that blood sample was taken instead or if they could take the sample by themselves. This shows that the provision of self-sampling kits may enhance the acceptability and utilisation of Ca Cervix screening services. In a study done in Ogbomoso and Osogbo, the reported barriers were the cost of the screening test and the specific location where the screening will be done as most of the respondents would prefer the screening to be done in their brothel (Olugbenga-Bello et al., 2016). The two primary reasons for not utilising Ca Cervix screening services in a study of FSWs in Abuja were lack of interest and lack of awareness (Ilesanmi et al., 2018).

The only predictor of uptake of the Ca Cervix screening test identified was the frequency of condom use with the current partner. Those who used condoms consistently

Table 7. Barriers to the uptake of cervical cancer screening services.

Variable	Frequency (n)	Percent
Reasons for not taking the cervical cancer screening test in the past*	n= 164	
Lack of awareness	124	75.6
Not requested by the doctor	10	6.1
No reason	9	5.5
Lack of interest	6	3.7
Don't know where it is done	5	3.0
Lack of time	4	2.4
Not important/ necessary	3	1.8
Test is too expensive	1	0.6
Cannot have cancer	1	0.6
Reasons for not taking the cervical cancer screening test now*	n= 46	
Lack of interest	43	93.5
Invasion of my privacy	34	73.9
Lack of time	2	4.3
No reason	1	2.2

*Multiple response.
Source: Author

Table 8. Predictors of current uptake of cervical cancer screening services.

Predictor	aOR	95% CI		p value
		Lower	Upper	
Religion				
Islam vs Christianity*	0.99	0.32	3.12	0.987
No. of clients per week				
≤20 vs ≥21*	1.71	0.65	4.50	0.276
Frequency of condom use with current partner				
Inconsistent vs consistent*	3.63	1.17	11.21	**0.025****
Condom use with client				
Yes vs No*	1.67	0.10	27.95	0.723
Ever consumed alcohol				
Yes vs No*	0.51	0.18	1.48	0.216
History of STIs				
Yes vs No*	0.59	0.23	1.52	0.272

aOR- adjusted Odds Ratio **CI**- Confidence Interval; ***Reference group ****p*<0.05.
Sources: Author

with their partners were about 3.6 times more likely to have utilised the LBC test in this study as compared to those who did not. Those who used condoms consistently probably had a better health seeking behaviour than those who did not thus the reason for their high uptake of LBC in this study. The predictors of uptake of Ca Cervix screening services among FSWs reported in previous studies vary between places and countries. A survey done among FSWs in Vancouver reported HIV-seropositivity and outreach services as predictors of uptake of Pap smear test as both increased sex workers' odds of regular Pap testing (Duff et al., 2016). HIV-seropositivity did not predict uptake in this study. Cervical cancer screening utilisation was predicted by providers' recommendation, history of STIs, frequency of facility visit, and history of vaginal examination in a survey of sex workers done in Bahir Dar city in Ethiopia (Muluneh et al., 2019). History of STI did not predict uptake in this study. Knowledge of Ca Cervix and ever had HIV testing were the two significant predictors of Pap smear testing in a study of FSWs in Beijing, China (Hong et al., 2013).

Limitations

The study was prone to information bias as it entailed asking questions on social and sexual behaviours, some of which might be sensitive. However, efforts were made to reduce this problem by assuring participants of the confidentiality of all information provided and explaining to them the study's nature and purpose. Privacy was also ensured during data collection. This study focused on FSWs in the brothels and excluded FSWs on the streets and hotels, which might be a source of bias as the brothel-based FSWs might be different from them. Social desirability bias can also contribute to overreporting of good actions and underreporting of bad actions, particularly during face-to-face interviews. Concerning this, the participants were informed that the purpose of the research was for academic purposes and were assured of confidentiality, and interviews were conducted in private.

Conclusion

There was a low level of awareness of Ca Cervix and its screening services among the respondents; the commonest source of information was the hospital/health worker. The past reported prevalence of Ca Cervix screening was poor while the current uptake was good. The commonest barriers to reported past uptake were lack of awareness and lack of request by the doctor; lack of interest and invasion of privacy were the commonest barriers to current uptake of LBC in this study. Consistent use of a condom with a current partner was the only predictor of uptake of the LBC test among the respondents.

Recommendations

The following are hereby recommended:

1. Health workers should endeavour to provide more health education and promotion services on Ca Cervix and its screening services at every interaction with FSWs and the female populace; health workers should enquire about the Ca Cervix screening test at each interaction and request a screening test once the client is due.
2. There should be health education and promotion intervention on awareness and knowledge of Ca Cervix and its screening services among FSWs by researchers, health workers and non-governmental organisations (NGOs).
3. Self-sampling test kits for Ca Cervix screening should be made available in Nigeria by the Federal Government to enhance utilisation so that FSWs who do not want an LBC test due to privacy issues can opt for it.
4. Outreach well-women clinics (taken to the brothels) for Ca Cervix screening for FSWs should be organised by NGOs and researchers to enhance access and utilisation.

CONFLICTS OF INTERESTS

The author has not declared any conflicts of interests.

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