

# Knowledge of Female Health Care Professionals Regarding Sexually Transmitted Infections

Eze, Uih and Babatope, B. O.

Dept of Clinical Pharmacy and Biopharmacy, Faculty of Pharmacy,  
Olabisi Onabanjo University, Shagamu Campus, Ogun State.

## ABSTRACT

In depth knowledge of sexually transmitted infections (STIs) could aid in promoting its management especially among female health care professionals.

This cross sectional survey investigated the extent of knowledge of female health care professionals in Ogun State on selected STIs and their causative organisms, clinical manifestations, laboratory test and drugs used for their management using a pretested 24 item questionnaire

Response rate was 84.75%. All respondents were aware of STIs. Major source of information was clinical meetings and workshops (58%). Respondents had a good knowledge of the causative organisms (78%), fair knowledge on need for laboratory examinations for gonorrhoea (56%), and poor knowledge (less than 50%) of the clinical manifestations, laboratory examinations for Chlamydia and Trichomoniasis and drugs used in STIs.

No significant association was found in the variables compared. Misconceptions exist in the spread of STIs.

Conclusion is that the respondents were aware of STIs however their knowledge in clinical manifestation, lab exams, and drugs are suboptimal.

**KEYWORDS:** Sexually transmitted infections (STIs), Knowledge, Female healthcare professionals.

## INTRODUCTION

Sexually transmitted infections (STIs) including HIV and hepatitis remain one of the greatest global public health

challenges.<sup>1</sup> STIs are also common in developing countries<sup>2</sup> and they continue to be a serious public health problem in sub-Saharan Africa. The World Health Organization (WHO) estimates that 12% of 15-49 year olds have a curable STI<sup>3</sup> and about 3.7 million people are affected with STIs annually in Nigeria.<sup>4</sup>

Examples of STIs are Gonorrhoea, Chlamydia, syphilis, Trichomoniasis, some urinary tract infections, HIV/AIDS etc

Although the health risk associated with STIs affect both women and men. Women are disproportionately affected. Women are much more vulnerable biologically, culturally, socio economically, to sexually transmitted infections.<sup>5</sup> Women have greater biological susceptibility to acquire infections if exposed,<sup>6</sup> and all STI detection and management strategies based on symptoms and signs- not only syndromic approach are hampered because STI in women are likely to be asymptomatic.<sup>7</sup> These are further complicated as women tend not to seek treatment and more stigma is attached to STIs in women.<sup>5</sup>

Untreated STIs in women can lead to pelvic inflammatory disease (PID), infertility, and ectopic pregnancy, cancers of the reproductive tracts, pregnancy loss, neonatal morbidity and mortality and an increased risk of HIV transmission.<sup>6</sup>

Since sexually transmitted infections are proven co-factors increasing the risk of HIV transmission their appropriate diagnosis and treatment are critical<sup>8</sup> especially in women.

The estimated incidence and costs associated with STIs indicates the great need for the general public educational awareness on the topic of sexual health.

Educational awareness of STIs is also important especially in the case of female health care professionals. Using their unique positions in both the community and the hospitals, female health care professionals are poised to offer diverse essential role in providing patient information to help in providing patient health care services including diagnosis and treatment of sexually transmitted infections to help reduce the spread of STDs and their suffering and costs.<sup>9</sup> They may also serve as a succor and a repository of knowledge on management of sexually transmitted infections especially to their fellow women bearing in mind the stigma attached to STIs in women.

In-depth knowledge in the management of sexually transmitted infections could also increase their understanding of the Syndromic approach to STI diagnosis and management. The Syndromic approach to STI diagnosis and management makes treatment accessible and affordable to a large majority of the population because trained health workers at all levels can use it<sup>10</sup>.

In realization of the importance of female health care professionals in the diagnosis, management and prevention of STIs there is need to know and document to what extent they are knowledgeable about STIs. While the knowledge of healthcare workers on STIs have been examined in previous studies 10, 11 no work has been done on female health care professionals ▶



especially in the location of this study. This study investigated the general awareness of female healthcare professionals on STIs and their specific knowledge on causative organisms, clinical manifestations, laboratory test and drugs used in management of STIs.

This study will serve as a database for further studies; it will also serve as an indicator for education/information among all healthcare professionals especially the females.

## MATERIALS/METHODS

A purposive cross sectional survey was conducted among female health care professional working in Olabisi Onabanjo University Teaching Hospital (OOUTH) Shagamu (a tertiary health institution) and General Hospital Ijebu Ode (a secondary health institution) from December 2005 to February 2006 to determine their knowledge on sexually transmitted infections. These two health institutions were selected because they are both referral and training centre with reasonable number of female health care professionals and a large turnout of patients that the study population have influence on.

A pretested 24 item questionnaire consisting of an open ended and close ended questions on knowledge of STIs was administered to the respondents by one of the investigators (BB). Some of the close ended questions Had options like 'Yes', 'No' and 'don't Know', others had options to be picked from while the rest were to be cross matched question to answer.

The questionnaire was made up of four sections. The first section asked questions on socio demographic characteristics of the respondents (age, marital status, profession and years of experience). The second section had questions on awareness of sexually transmitted infections such as 'Have you heard about STIs?', source of information, 'when last information was received on STIs, names of STIs known e.t.c

The 3rd section asked questions on spread, causative organisms and clinical manifestations of STIs and the fourth section asked questions on the need for laboratory test and drugs used in STIs management.

Syphilis, Chlamydia, Trichomoniasis and gonorrhoea were chosen as the

primary test diseases based on the recommended STIs (other than HIV) for inclusion on STIs prevalence survey with higher priority in females.<sup>12</sup> Also gonorrhoea, syphilis and Chlamydia have been classified as nationally reportable diseases for CDC though there is no national reporting requirements for trichomoniasis and HIV among others.<sup>9</sup>

The entire female health care professional in the 2 hospitals served as the study population. Out of about 294 female health care professionals in OOUTH 20% (58.8~59) was taken as sample size for each institution giving a total of 118 respondents for the two health institutions.

Convenience consecutive sampling was used as suggested by WHO<sup>12</sup> and enrollment continued until the required number of respondents was obtained.

## Ethical Issues

Verbal consent was sought from each respondent before inclusion into the study.

## Analysis

All data obtained were analyzed using SPSS 11.0 for Windows Version.

Level of significance was set at  $P < 0.5$ . Questions on disease versus causative organism, clinical manifestations and drugs used in STI management respectively were scored. A correct answer was given one point and a wrong answer zero point with a total of 4 points for each category. Also percentages for the correct answers were obtained for the questions and correct knowledge was graded as follows Poor ( $>50\%$ ), Fair (50-59%), Good (60-69%) and Very good ( $>70\%$ ).

## RESULTS

A response rate of 84.75% was reached as 100 questionnaires were retrieved back. Results for the two hospitals are similar and are presented together.

## SOCIODEMOGRAPHIC DATA

The socio demographic characteristics of the respondents are shown on Table I. The average age + standard deviation were 30.8+ 7.473 and the modal age group was 24 -29 years and 51% were married. Majority of the respondents were nurses (39%), Doctors (19%), and Pharmacists (12%) with majority (53%) having 1-5 years working experience.

## Awareness of STI

All the respondents had heard of sexually transmitted infections. Fifty percent and 45% of the respondents heard it most recently from clinical meetings and books respectively. Other sources of information such as the media, journals, symposia and the internet are shown in Figure 1.

Majority (64%) had heard something about STIs in the last 6 months while 15% and 14% heard something pertaining to STIs in the last one year and more than one year ago respectively. Two respondents (2%) claimed to hear about STIs everyday.

The respondents mentioned 18 different STIs as names of STIs which included gonorrhoea 93%, Syphilis 83%, HIV/AIDS 60%, trichomoniasis 50%, Chlamydia 39%, candidiasis 29%, herpes 7%, chancroid 6%, bacteria vaginosis 4%, lymphgranuloma 4%, hepatitis 3%, PID 3%. One respondent mentioned Venereal Disease Research Laboratory Test (VDRL) as a name of an STI.

Eighty nine (89%) of the respondents knew that women are more vulnerable to STIs than men. Ninety seven respondents accepted knowing the causes of STIs.

## Knowledge on Spread/ Causative Organism and Clinical Manifestations of STIs.

Sixty four (64%) and 61 (61%) of the respondents said the causes were from bacteria and viruses respectively, while 38 (38%), 8 (8%), and 2 (2%) said it was from fungi, through hereditary and from protozoa respectively. All respondents agreed that STIs can be spread through sexual intercourse, while 6% and 4% of the respondents said it could be spread through toilet seats and kissing respectively. One respondent each said it could be spread through oral sex, drinking of infected urine (she referred to it as traditional method) and underwear sharing respectively.

Results obtained from the question "if a potential sex partner has an STI, the probability of becoming infected is related to?" is shown on Table II. The average percentage of positive response of the respondents was found to be 44% and there was no significant association between the profession of the respondents and the correct answers given for probability of being



infected ( $X^2 = 1.400$ ,  $df = 4$  and  $P = 0.8442$ ).

The knowledge of the respondents on STI versus causative organisms and STIs versus clinical manifestations is shown on Table III. The average knowledge of the respondents on STIs versus causative organism was 78% while that of STIs versus Clinical manifestations was 35.73%.

### Knowledge on Laboratory Test and Drugs Used

Ninety one (91%) of the respondents agreed that STI tests are necessary. One respondent (1%) disagreed and 8 (8%) respondents gave no response. Sixty one (61%) respondents agreed that STI test should be carried out when one had symptoms, 19 (19%) and 15 (15%) agreed that once a year and twice a year were appropriate respectively. On the benefits of early STI laboratory test, 61 (61%) believed that early test will lead to early diagnosis of the disease and consequently early treatment of the disease. Thirty two (32%) and 14 (14%) claimed that benefits of early treatment were for one to know her health status and for good health respectively.

Fifty six (56%) of the respondents agreed that laboratory examination is required for gonorrhoea, while 27% and 25% knew that laboratory exams were required for Chlamydia, trichomoniasis respectively. Also 40% and 22% of the respondents knew that some STIs such as Chlamydia and trichomoniasis respectively could have asymptomatic carriers. Fifty three of the respondents knew that severe STI consequences included ectopic pregnancy and cancer.

Eighty four percent of the respondents knew that STIs could be treated and 32, 38, 25 and 26 respondents got the correct choice of drugs for syphilis, Chlamydia, gonorrhoea and trichomoniasis respectively. A knowledge rate of 30.23% was obtained for the STIs versus drugs used to treat them.

There was no significant association between profession/years of experience and knowledge on STIs and their causative organisms, clinical manifestations, benefits of early STI test and choice of drugs respectively (Table IV).

### DISCUSSIONS

This study was carried out to assess the knowledge of sexually transmitted

infection among female healthcare professionals. The study showed that all the respondents had heard about sexually transmitted infections. This is expected since the study population was health care professionals.

Major sources of hearing of STIs in the last six months included clinical meetings, books and the media. This is encouraging as healthcare professionals need to be kept abreast of relevant topics such as STIs to enable them provide better service.

Half of the respondents claimed hearing of it most recently from clinical meetings. This demonstrates the importance of clinical meetings organized in various units of the hospital and implies that clinical meetings are crucial among health professionals and so should be encouraged. Such meetings serve as a good source of knowledge of recent developments in health care practice.

The media as a substantial recent source of information buttressed the powerful role it plays in disseminating health education to the masses. Media formed a good source of information among hospital workers, 13 and female non health care workers 11 in previous studies. The use of internet as a source of information for STIs was quite low (23%) for the respondents, this may be due to reduced access to the internet or due to the cost implications. The internet had about the same level as journals and symposia.

Two respondents claimed that they hear some thing about STI everyday. This is commendable.

Majority of the respondents knew gonorrhoea as an STI followed by syphilis and HIV. Knowledge of the causative organism for gonorrhoea was high (70%) This is similar to results obtained in a study by Joda et al<sup>10</sup>, where most of the respondents knew the organism that caused gonorrhoea. However knowledge on organisms and their clinical presentations were poor. This differs from the study by Joda et al which showed that 96% and 82.04% of the respondents knew of the symptoms of gonorrhoea for men and women respectively<sup>10</sup> However Chlamydia (tracked for the first time in 1995, has consistently remained the most reported infectious disease, followed by gonorrhoea and HIV/AIDS. These three plus syphilis and Hepatitis B accounts for 87% of

the total number of medical cases caused by the top maladies, according to a report released by CDC<sup>9</sup>.

Surprisingly VDRL was mentioned as an STI by one of the respondents. This is not so rather it is a laboratory test for detecting syphilis with full meaning as the Venereal Disease Research Laboratory Test, which is a non specific test which becomes positive within 3-4 weeks of primary activity. It is helpful in assessing disease activity and it becomes negative 6 months after treatment of early syphilis.

Majority of the respondents knew that women were vulnerable to STIs. STIs can lead to pelvic inflammatory diseases (PID), infertility, potentially fatal ectopic pregnancies, and cancer of the reproductive tract. STDs can also result in irreparable lifetime damage for infants infected by their mothers during gestation or birth.<sup>9</sup> Despite the fact that 97 respondents accepted knowing the causes of STIs, less than this number knew the causative organisms. However, all respondents knew it could be spread through sexual intercourse. This could have been obvious because of the word "sexual" as part of the name of the disease. However some misconceptions still exist as regards the spread of STIs among the respondents. Some respondents indicated that STIs could be spread through toilet seats, kissing, drinking infected urine and underwear sharing.

Trichomoniasis is most commonly transmitted to others through unprotected sexual intercourse; however there have been cases where the disease has been transmitted through shared towels and from women to their newborn babies through childbirth.<sup>14</sup>

Chlamydia is spread through vaginal and oral intercourse, from the birth canal to the fetus, rarely from the hand to the eye.<sup>15</sup>

Syphilis can be spread during vaginal, anal or oral sex through contact with an open sore or contact with a skin rash, however it can not be spread by contact with toilet seats, doorknobs, swimming pools hot tubs, bathtubs, shared clothing or eating utensils.<sup>16</sup>

Factors that contribute to the uncontrolled spread of STDs include a lack of widespread routine STD screening programs, the social stigma associated with these diseases, and a



for reducing sexually transmitted infections, including HIV infection. The Cochrane Database of Systematic Reviews. 2004 Issue 3

3. WHO, 2001 WHO Global Prevalence and incidence of selected curable sexually transmitted infections. Overview and Estimates, Geneva:
4. Syndromic Management of sexually transmitted infections. Manual for health workers in Nigeria (2001) IN Joda A E and Olawoye OY Knowledge and Practice of community pharmacist on sexually transmitted infections (STIs) and Management. Nig J of Pharmacy 2005 vol 37 30-31
5. World Health Organization Fact Sheets No 249, June 2000
6. Technical issues in Reproductive Health (The Harriet and Robert Heilbrum Dept of Population and Family Health) Section V: Sexually Transmitted/reproductive Tract infections. [www.columbia.edu/itc/h/s/pub\\_health/modules/reproductive\\_health/health\\_infections.html](http://www.columbia.edu/itc/h/s/pub_health/modules/reproductive_health/health_infections.html). Date assessed 26-5-2006
7. Askew L and Maggwa NB. Integration of STI prevention and management with family planning and antenatal care in sub-Saharan Africa- what more do we need to know? International Family Planning perspectives 2002 vol 28 No 2;28(2):77-86
8. STI/ HIV/AIDS Epidemic And Intervention Program In Nepal. Family Planning Associations Of Nepal. HIV/AIDS Strategy 2002-2006 Section A.
9. Williamson JS, Wyandt CM. Chlamydia: The silent STD. Continuing Education Drug Topics September 2000.
10. Joda A E and Olawoye OY Knowledge and Practice of community pharmacist on sexually transmitted infections (STIs) and Management. Nig J of Pharmacy 2005 vol 37 30-31
11. Eze UIH and Babatope BO. 2006. Knowledge, attitude and practice (KAP) of the prevention of sexually transmitted infections among health care female hospital workers. Nig. Qt. J. Hosp.Med. Vol 16 (4) 132-135
12. STI/HIV Prevalence study Methodology, Guidelines for the implementation of STI prevalence surveys 1999. WHO
13. Ugochukwu F, Awareness of HIV/AIDS among Hospital workers. 2003. Nig, J. Clin. Prac. 6(2) 103-107
14. Natural Cure Bacterial Vaginosis: Bacterial Vaginosis or Trichomoniasis-An overview of the two. 2/19/2008
15. Planned Parenthood Sexual Health Resources May 2001
16. The syphilis FAQ was reviewed by the Division of STD Prevention, Centers for Disease Control and Prevention, National Women's health information center . US
17. Gibson P, Pendo M, Wohlfeiler . Focus-A guide to AIDS research and counseling, Risk, HIV and STD Prevention.1999 ;14:7
18. Medscape Trichomoniasis excerpt Last updated Sept 18 ,2006
19. Martin D H, Mroczkowski T F, Dalu ZA. A controlled Trial of a single Dose of Azithromycin for the treatment and chylamydial urethritis and Cevityicis. The Azithromycin for chylamydial infection Study Group. N Engl J Med 1992;327:921-925
20. Workowski KA, Levine WC 2002 Guidelines for treatment of sexually transmitted Diseases Treatment (MMWR2002/51 (RR06):1-80)

**Table I: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS**

Characteristics	Frequency	Percent(%)
<b>Age(Years)</b>		
18-23years	16	16.0
24-29years	37	37.0
30-35years	13	13.0
36-41years	10	10.0
<42years	23	23.0
No Response	1	1.0
<b>Marital status</b>		
Single	48	48
Married	51	48
Separated/Divorced	1	1
<b>Profession</b>		
Doctor	19	19
Pharmacist	12	12
Nurse	53	53
Others	11	11
No response	5	5
<b>Years of experience</b>		
<1year	18	18
1-5years	38	38
6-10years	14	14
11-15years	2	2
16-20years	9	9
<20years	15	15
No response	4	4

**Table II: RESPONSES ON FACTORS RELATED TO PROBABILITY OF BECOMING INFECTED IF POTENTIAL SEX PARTNER HAS STI**

Factors	No of Respondents				
	Yes	No	Don't Know	No response	Total
Frequency of sexual exposure with exposed persons.	74(74%)	5(5%)	3(3.0%)	18(18%)	100(100%)
Uninfected partners susceptibility or resistance to infection.	32(32%)	3(3%)	25(25%)	40(40%)	100(100%)
Relative transmissibility of the STI organism for the infected partner.	26(26%)	11(11%)	9(9%)	54(54%)	100(100%)

**Table III: RESPONDENTS KNOWLEDGE ON CAUSATIVE ORGANISM VERSUS DISEASE AND CLINICAL MANIFESTATION**

ORGANISM	DISEASE			CLINICAL MANIFESTATION		
	No of Respondents			No of Respondents		
	Correct	Incorrect	No response	Correct	Incorrect	No response
Trepanoma pallidium	76(76%)	3(3%)	21(21%)	48((48%)	13(13%)	39(39%)
Trichomonas Vaginalis	77(77%)	5(5%)	18(18%)	20(20%)	37(37%)	43(43%)
Nisseria gonorrea	83(83%)	-	17(17%)	34(34%)	28(28%)	38(38%)
Chylamdia trachomatis	76(76%)	5(5%)	19(19%)	41(41%)	20(20%)	39(39%)

**Table IV: ASSOCIATION OF RESPONDENTS PROFESSION/YEARS OF EXPERIENCE WITH OTHER VARIABLES**

Variable	A. Profession			B. Year of Experience			Comments For A&B
	X2	df	P value	X2	df	P value	
Causative Organism	0.4227	9	1.000	0.5232	12	1.000	NS
Clinical Manifestation	1.943	4	0.7463	7.440	6	0.2821	NS
Choice of Drugs	1.473	6	0.9612	0.6026	3	0.8958	NS
Benefits of early Test	0.8635	2	0.6494	0.4312	3	0.9337	NS

Note- X2 = Chi Square, df= Degree of freedom,



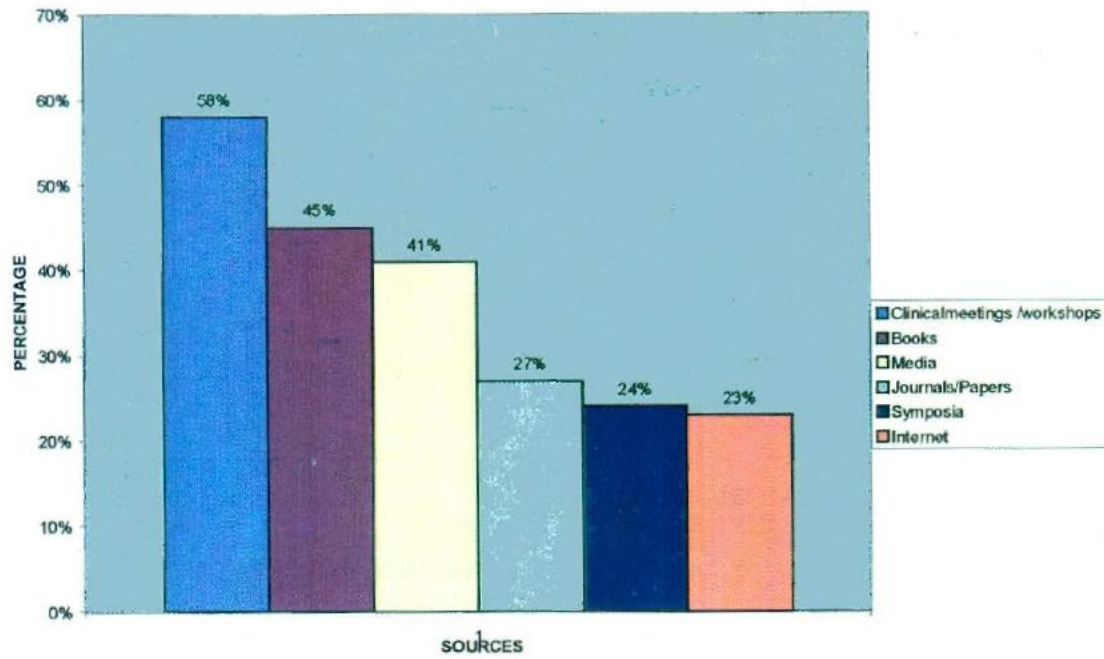


FIGURE 1 RESPONDENTS SOURCES OF INFORMATION ON STIs

Note: Percentages will sum up to more than 100% as respondents chose more than one source of information