

Prevalence of Venereal Diseases among Female Students of Abia State University Uturu, Abia State Nigeria

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ABSTRACT

The prevalence of Sexually Transmitted Infections (STIs) among female students of Abia State University Uturu (ABSU) was studied. Blood samples and High Vaginal Swab (HVS) samples were collected from four hundred and fifty (450) female undergraduate students and investigated for various agents of STIs including: *Candida albicans*, *Neisseria gonorrhoea*, *Treponema pallidum*, *Staphylococcus aureus* and Human Immuno Deficiency Virus, using standard microbiological methods. The HVS were analyzed using direct wet smear and culture techniques while blood samples were examined using standard proprietary agents. Out of the 450 female students sampled, *Candida albicans* had the highest prevalence rate of infection of 39.55%. It was followed by *S. aureus* (24.22%) and *T. pallidum* (4.0%). *N. gonorrhoea* and HIV was not isolated among the female students. There was a significant difference in the prevalence level of infection with age (χ^2 cal 7.2616 $P < 0.05$ df3), faculty based distribution (χ^2 cal 3.887 $P < 0.05$ df4). Increased screening for STIs is essential in preventing disease transmission and complicated health problems among these groups.

Keywords: Prevalence, Venereal Diseases, Female, Students

INTRODUCTION

Venereal diseases otherwise known as Sexually Transmitted Infections (STIs) or Diseases are illness that has a significant probability of transmission between humans by means of human sexual behaviour (including vaginal intercourse, oral sex and anal sex). They are also

transmitted through the use of unsterilized needles and blades, blood transfusion, childbirth or breastfeeding (Workowski and Berman, 2006). Until the 1990's, STIs were commonly known as venereal diseases: *Veneris* is the Latin genitive form of the name Venus, the Roman goddess of love.

Social disease was another form of euphemism. In recent years, the term STIs has been preferred, as it has a broader range of meaning: a person may be infected, and may potentially infect others, without having a disease. STI is a broader term than Sexually Transmitted Disease (Wu *et al.*, 1995) because an infection is colonization by a parasitic species which may not cause any adverse effects. In a disease, the infection leads to impaired or abnormal function which may not show any signs or symptoms.

Some STIs are caused by bacterial infection, and example of such infection includes Gonorrhoea, Syphilis, Staphylococcus, Streptococcus and Chancroid etc. Some are also due to fungal infection e.g. Candidiasis (yeast infection). Some are caused by deadly virus, e.g. viral Hepatitis, Genital herpes, Human Immune Deficiency Virus (HIV) which leads to Acquired Immuno Deficiency Syndrome (AIDS), Human Papilloma Virus (HPV), Genital warts etc. Protozal infection includes Trichomoniasis etc (Jin, 2010).

STIs should be prioritized as a public health problem by interrupting the transmission chain and preventing new series of events from occurring. It has been estimated by WHO (WHO, 2004) that the most susceptible group of

STI carriers are women of sexually active age between 21-25 years. Under-notification of infected individuals remains high bordering on about thousands of cases per year especially due to the search for alternative cures, as seventy per cent of victims do not directly turn to health services. Through the increase in STIs, preventive measures and care delivery services have increased with strong stimuli for them to seek health care services. Associating STI diagnosis and treatment with condom use, promotion are on-going in some parts of the country and have proved their efficiency to decrease the incidence of the Human Immuno Deficiency Virus (HIV/AIDS) and other STIs (Varghese *et al.*, 2002).

However, to reduce risk and vulnerability situations, women need to be considered active subjects. Health services are responsible for seeking strategies to enhance the adoption of protective behaviours. It is important to highlight that risk perception should not only be seen individually but also in a social and cultural context.

JUSTIFICATION

Sex is no longer an affair restricted within the matrimonial bed. The news media, the youth and even the old advertise sex either through news flash, show of real pictures of nudity or sex suggestive dressing

culture. Sex has also become a medium of exchange. Most undergraduate females are therefore engaged in different degrees of sex-related merchandize. It is a common knowledge that sex is traded for grades in most Nigerian Universities including Abia State University.

A renowned professor once remarked that Nigerian University degrees have become Sexually Transmitted Degrees. It is therefore not surprising that most Nigerian undergraduate students are infected with all manner of STIs. In view of the latency of most of these STIs, it will not be out of place to assume that most people (including female undergraduates) are ignorant of their disease status. This work is therefore crucial in ascertaining the real situation in Abia State University. This work will also create awareness on the dangers associated with sexual promiscuity and the need for students to live a more responsible life style.

STUDY LOCATION

The study was carried out in Abia State University Uturu in Isukwuato Local Government Area of Abia State, Nigeria. Uturu has two seasons namely: Wet and dry seasons. The area atmospheric temperature range is 29°C to 39°C

during the dry season and before the rain sets in while the lowest temperature range is 18°C to 29°C which occurs during the rainy season and harmattan period.

Collection of Sample

Information on the demographic characteristics such as age, and faculty was obtained through a questionnaire. A total number of 450 samples were collected and transported to the Tropical Disease Research Laboratory, Abia State University Uturu.

Direct Examination

Wet mounts of all Swab samples were made in sterile normal saline on clean slides and examined under the low power (10x) and high power (40x) magnification for typical yeast cells with hypae or pseudohypae. Gram stain was carried out on HVS and examined with X100 objective lens under oil immersion for Gram negative diplococci and clue cells.

Inoculation of Samples

HVS specimens were inoculated into blood agar and MacConkey agar.

Identification of Isolates

Yeast isolates were screened for germ tube production in serum broth. *Candida albicans* were identified on the basis of the following features: Thick walled oval

yeast cells with pseudomycelium and germ tube formation in human serum at 37°C. Germ tube negative species were regarded simply as yeast species.

Serological Tests

Separated serum from blood from were dispensed into two ml volumes sterile plastic containers and used within two days for screening tests of HIV and syphilis. Others were frozen for confirmatory test.

HIV antibody assay was carried out with Determine HIV ½ rapid test strips (Abbott laboratories USA) and HIV ½ stat-pak assay (ChemBio diagnostics USA) using methods according to the standard national HIV screening algorithm in Nigeria.

Syphilis antibodies were tested for using syphilis ultra rapid test strips (Clinotech Diagnostics Canada). All reactive syphilis samples containing *T. pallidum* antibodies were further tested and confirmed with Treponema Pallidum Haemglutination Assay (Teco Diagnostics USA).

RESULTS

Out of the 450 samples collected from the female undergraduate students, 305 (67.78%) were infected while 145(32.22%) were not infected. Of the 305 infected cases recorded, 178 (39.55%) was attributed to *Candida albicans*, 109(24.22%) and 18 (4.0%) were

attributed to *Staphylococcus aureus* and *Treponema pallidum* respectively. No cases of Gonorrhoea and HIV were observed. There was no statistical significant difference in the type of organism isolated from the female students ($P>0.05$ df =4). See Table 1.

Female students between 21-25 years of age had the highest rate of infection (88.39%). Students between 26-30 years recorded an infection rate of 78.57% while student between 16-20 years recorded an infection rate of 58.97%. The least infection rate of 26.69% was recorded among students between 30-35 years. There was a significant relationship between the age groups and the rate of pathogen infection ($P<0.05$ df= 3). See Table 2.

The Faculty of Humanities and Social Sciences had the highest prevalence rate of infection (87.78%). An infection rate of 72.22% infection was observed in the Faculty of Environmental and Engineering Sciences. The Faculty of Biological/Physical Sciences and Education recorded prevalence infection rates of 70% and 66.67% respectively. The least infection rate was observed in Faculty of Business Administration (42.22%). There was a significant difference in the prevalence of STIs among

students from the various faculties (P <0.05 df= 4). See Table 4.

Table 1: Common STI Isolated from 450 Female Undergraduates in ABSU

Organism	No. of Students Examined	Number of Students Infected	Percentage Rate of Infection (%)
<i>Candida albicans</i>	450	178	39.55
<i>Staphylococcus aureus</i>	450	109	24.22
<i>Treponema palladium</i>	450	18	4.00
<i>Niesseria gonorrhoea</i>	450	0	0.00
HIV	450	0	0.00
Total	450	305	67.78

Table 2: Age Related Distribution of Pathogens among Female Students in Abia State University

Age Groups (Years)	No. of Students Examined	Number of Students Infected	Percentage Rate of Infection (%)
16 – 20	195	115	58.97
21 – 25	112	99	88.39
26 – 30	98	77	78.50
30 – 35	45	14	31.11
Total	450	305	67.78

Table 3: Faculty Based Distribution of Sexually Transmitted Infections in Abia State University.

Faculty	No. of Students Examined	Number of Students Infected	Percentage Rate of Infection (%)
Biological and Physical Sciences	90	63	70.00
Humanities and Social Sciences	90	79	87.78
Business Administration	90	38	42.22
Education	90	60	66.67
Environmental and Engineering Science	90	65	72.22
Total	450	305	67.78

DISCUSSION

A prevalence level of 67.77% shows that STIs are hyper endemic among female students in Abia State University Uturu, Abia State. Sexually active female adults have been accepted as a high risk group in terms of STI transmission and as such prevalence level of these infections in them are employed globally as a yardstick for evaluating

the trend of such infections within the general population at low risk of getting infected (Colombo *et al.*, 1987, WHO 2004). A study of the prevalence of STIs among female students is an approximation of the prevalence of these infections in their male counterparts (Colombo *et al.*, 1987).

The commonest organism encountered in the study was *Candida albicans* (39.55%). This finding is comparable with previous studies on STIs among female undergraduate students in University of Ilorin (Aboyeji and Nwabuisi, 2003, Oyelese *et al.*, 2005).

Neisseria gonorrhoea was not isolated among the female students in the study. In contrast, other researchers have found its rate ranging from 0.1% in Jos, (Oyelese *et al.*, 2005) to 0.5% in Kano (Larsen, 1995). This could be attributed to abuse of antimicrobials which can easily be obtained over the counter of pharmacy shops and medicine dealers without authorized prescriptions.

The high prevalence level recorded among age group 21-25 years agree with the generally observed fact that the incidence of STIs by the number of cases treated each year is highest among people between 21-25 years (CDC, 2000, Nwokedi *et al.*, 2004, Bustamante *et al.*, 2006). Earlier data from the World Health Organization showed that this age group 21-25 years are persons with the greatest sexual activity and that the incidence of STI decreases with age (WHO, 2006).

The prevalence rate of STIs among Abia State University female

students are clear signs that promotion of early recourse to health services especially routine mandatory and early screening of these students cannot be over emphasised. Proper treatment of all STIs like use of correct and effective medicines, contact tracing and treatment of sexual partners and education of the general populace should not be overlooked in the university. The university may make regular screening and treatment compulsory and free. This will definitely reduce the incidence of these infections and equally reduce their long term effects.

REFERENCES

- Aboyeji, A.P. and Nwabuisi C. (2003). Prevalence of Sexually Transmitted Diseases among Female Students in Ilorin, Nigeria. *Journal of Obstetrics and Gynaecology*, 23:(6):637-639.
- Ajello, L. and Hay, R.J. (1998). Topley and Wilson Microbiology and Microbial Infections, 9th Edition Volume 4: Medical Mycology, Arnold San Francisco.
- Bryan, C. (2011). Infectious Diseases Chapter Eight Sexually Transmitted Diseases: Baron's Medical Microbiology 4th Edition. University of Texas Medical Branch. ISBN 0-9631172-1-1.

- Burchell, A., (2006). Modelling the Sexual Transmissibility of Human Papilloma Virus Infection Using Stochastic Computer Simulation and Empirical Data from a Cohort Study of Young Women in Montreal Canada. *American Journal of Epidemiology* 169 (3): 534-543.
- Bustamante, M., Rodlescia, S., O., Connell, E., Guoyong, Z. and Fermin, L. (2006). Prevalence of Sexually Transmitted Diseases in Women: Miami Dade County, Florida Epi *Monthly Report* 7 ;(12).
- Center for Disease Control and Prevention (2000). Sexually Transmitted Disease Surveillance. *Division of STD Prevention, Health and Human Service, Atlanta*, 112-134
- Colombo, U.F., Bregozzo, T., Biziolli, B., Garlaschi, M., Varetto, F. and Mangnabosco, G. (1987). Screening for Sexually Transmitted Diseases in Sexually Active Adolescents. *Annals of Obstetric and Gynaecology/ Medical Perinatology* 108(4): 245-250.
- DeCock, K.M., (2000). Prevention of Mother to Child HIV Transmission in Resource Poor Countries: Translating Research into Policy and Practice. *JAMA* 283:1175.
- Harding, A.K., Anadu, E.C., Gray, L. and Champeau, D.A. (1999). Nigerian University Students Knowledge, Perceptions and Behaviours about HIV/AIDS. Are These Students At Risk? *Journal of Research in Social Health*, 8(2): 34 -38.
- Jin, F. (2010). Per-Contact Probability of HIV Transmission in Homosexual Men in Sydney in the Era of HARRT. *AIDS*, 24(6):907-913.
- Larsen, S.A. (1995). Laboratory Diagnosis and Interpretation of Test for Syphilis. *Clinical Microbiology, Reviewed*, (130):2353-2358.
- Noris, S.J. (2003). *Treponema* and Other Human Host Associated Spirochetes. In Manual of Clinical Microbiology 8th Edition Murray P.R (Editors). *Amsterdam Society of Medicine Press*. 343-346.
- Nwokedi, E.E., Azeez-Akande, O. and Dikko, A.U. (2004). Pattern of Sexually Transmitted Infections in a Reference Clinic of Amino Kano Teaching Hospital, Kano. *Highland Medical and Research Journal*, 2:55-60.

- Oyelese, A.O., Onipede, A.O. and Aboderin, A.O. (2005). Sexually Transmitted Infections in Obafemi Awolowo University Teaching Hospital, Ile Ife, Nigeria. A Decade of Clinic Experience. *African Journal of Clinical and Experimental Microbiology*, 64-68.
- Varghese, Maher, J.E., Peterman, T.A., Branson, B.M. and Steketee, R.W. (2002). Reducing the Risk of Sexual HIV Transmission: Quantifying the Per-Act Risk for HIV on the Basis of Choice of Partner, Sex Act and Condom Use. *Journal of Sexually Transmitted Diseases*, 29 (1):38-43.
- Workowski, K. and Berman, S., (2006). Sexually Transmitted Diseases Treatment Guidelines. *MMWR Recomm Rep* 55 (RR-11): PMID 16888612.
- World Health Organisation (2006). Global Prevalence and Incidence of STDs Overviews and Estimates. Geneva (<http://www.who.int/genomics/publishers/en/index/html>).
- World Health Organization (2004). Guidelines For the Treatment of Sexually Transmitted Diseases. *Morbidity Mortality Weekly Recommendation Report*, 47 (RR-1):1-118.
- Wu, J., Chen, C., Sheen, I., Lee, S., Tzeng, H. and Choo, K. (1995). Evidence of Transmission of Hepatitis D Virus to Spouses from Sequence Analysis of the Viral Genome. *Hepatology*, 22 (6): 1656-1660.

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