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Studies on the Prevalence of Trichomoniasis among Women in Jos-North, Plateau State, Nigeria

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Abstract

Sexually Transmitted Diseases(STDs) have been prevalent human infections and is on the increase in most tropical and sub-tropical African countries including Nigeria. A survey of the prevalence of Trichomoniasis, was carried out in Jos-North Local Government Area, Plateau State, Nigeria in 2010. A total of 300 women were examined within three functional health institutions namely; University of Jos Health Centre, EWCA Evangel Hospital and Faith Alive Foundation Hospital, using the simple flagella staining techniques; the cultural, and the direct examination methods, which involved wet preparation of High Vaginal Swab (HVS), and eosin staining methods. Three hundred (300) questionnaires were also administered to obtain sociological indices about the disease in regards to the age of the women, type of toilet they use and their occupations. Results showed an overall prevalence of 40(13.3%) in the 300 women examined of which the women between 26 and 30 years rated highest with143(6.7%) as against 41-45 years with only 5(0.3%) for the disease's infection. Women observed to be of high socio-economic status that used the water-cistern toilet rated the least,120(5%) as against those with very low social status that used the pit-latrine toilet which rated highest,180(8.3%) of the number infected.Under occupation, business women recorded highest, 19(6.3%)prevalence rate, students rated 4(1.3%) among others. Vaginal discharge rated highest, (81%) among other observable clinical symptoms associated with the disease as recorded in the survey. The findings regarding the disease deserve some quick response to better the health status of the dwellers in Jos-North in particular and Plateau State in general.

Keywords: Trichomoniasis, Vaginal swab, Sexually Transmitted Diseases (STDs), Clinical Symptoms.

Introduction

Trichomoniasis is a Human Parasitic Sexually Transmitted Disease (HPSTD) in tropical and subtropical Africa. It is one of the commonest human sexually transmitted diseases (STDs)distributed globally with an estimated 17million cases each year [1]. It is caused by a protozoan flagellate parasite, *Trichomonas vaginals* . This is found mostly in the urino-genital system, [2]. Although the occurrence of the disease is apparently in women, it also causes a chronic and substantial level of inflammation of the urethritis in men [3]. Some trachomonads found in men are uncommon and non-pathogenic, for instance, *Pentatrichomonashomonis* found in the large intestine and *Trichomonastenax* which also inhabits the mouth[4] and [5]. In spite of its adverse effects on human, especially women, little or no attention is being given to its pathogenic impact being one of the tropically neglected human

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diseases. This therefore, results in persistent vaginal discharge, irritations and itchings(pruritis or urteceria), painful sexual intercourse, vaginal inflammation and occasional abdominal pains as it infects the bladder or pelvic tissues of women [6]. Trichomoniasis has remained a major threat to many races worldwide, yet its prevalence has not been exhaustively recorded. Nigeria and particularly, Plateau State populace are also victims of the disease as revealed by the study, even as it is strongly believed to enhance the transmission of Human Immunodeficiency Virus (HIV)/AIDS. The study examined the prevalence of Trichomonasis in Jos-North Local Government Area, Plateau State. Certain socio-economic factors influencing the disease prevalence was also determined.

Materials and Methods

Study Area

Jos-North is a Local Government Area located at the extreme of the Northern part of Jos-city, within a range of 1695sq.km, and contains about 450,000 inhabitants of Anaguta, Afizere and Berom ethnic groups who are mainly farmers,(National Population census, 1991). The area is situated along the Guinea savannah belt where few trees and grassland vegetations are domicile, except for some communities where hedges and cacti are planted to serve as fences around living houses as well as boundaries of household and farmlands. Annual rainfall is 1,645mm between May and October as wet seasons, while dry seasons range within October and April. Temperature has a mean ground of 23^{o}C and 35^{o}C lowest and highest ranges respectively.

The main sources of water for domestic use include well-water, small rivers or streams, few boreholes with minimal pipe-borne waters. There are few craftsmen, drivers, petty traders, but mainly farmers and civil servants that live and do business in the area.Three functional health institutions namely, University of Jos Health Centre, EWCA Evangel Hospital and Faith Alive Foundation Hospital, were carefully selected as study sites based on regular and consistent in-and out-patients services rendered by qualified health personals and medical personnel.

Materials

Application of well constructed 300 questionnaires administered on routinely visited 300 in-and out-patients of the three hospitals, served as main source of information as regards the socio-economic status of the targeted individuals under consideration. These included their age, the type of toilets they use and their occupation. Other materials used for the study included centrifuge, microscope, cover slips, sterile cotton swabs, clean grease-free glass slides, markers, speculum and masking tapes.

Methods

Collection of vaginal swabs

Questionnaires were administered to the 300 women and their vaginal swabs collected by female health workers (Laboratory technicians) on duty during the visits after due consent of the patients themselves. A clean swab was used to pick discharge which were immediatelyreturned in to the rubber container labelled with the subject's age, name and laboratory number assigned to each participant examined.

Microscopic Examination

Vaginal swabs were immediately taken to the laboratory, processed and examined according to [7].

Results

Of the 300 women examined for Trichomoniasis, 40(13.3%) were positive, manifesting major pathological signs and varying clinical symptoms. The various human characteristics such as age, occupation and the type of toilet used were further analyzed in a tabular form as fully presented in Table 1above. Summary of results in Table 1 indicated that, age group 26-30 were the most infected, 20(6.7%), of the 143 patients examined for the disease in the

three hospitals, while age 41-45 was the least, 01(0.3%). Similar results under toilet-related prevalence showed that of the 40 patients with positive cases, women that used pit-latrine ranged highest, 25(8.3%) out of the 180 patients examined while those that used water cistern had less positive infection 15(5.0%) rate as fully represented in Table 2 . Further analyzed results for occupation-related prevalence revealed that business women had the highest positive infection rate, 19(6.3%) of the 100 women examined for the disease, while students were observed to experience the least positive infection rate, 4(1.3%), of the 42 patients examined for the infection, as clearly represented in Table 3 .

Further careful observation of the samples examined under the powered microscope, there was need to correlate the responses of the same patients whose vaginal swabs were tested for the disease, from the administered questionnaire in regards to all parameters considered above with the observed results obtained from the microscopy.One of such aspects was the clinical symptoms associated with trichomoniasis in the patients so examined, namely vaginal milk-colour discharge, vaginal itching, vaginal odour, and vaginal yellowish and whitish discharge. Observation of the samples for these symptoms showed that milky vaginal discharge ranged highest with 25(62.5%), 36(90%) and 38(95%) for age-related, toilet-related and occupation-related prevalence respectively (Fig.1). Vaginal itching had 19(47.5%), 34(85%), and 29(72.5%) respectively for the three parameters mentioned above. Vaginal odour recorded 16(40%), 23(57.5%), and 28(70%); yellowish vaginal discharge had 08(20%), 05(12.5%)and 06(15%) while whitish vaginal discharge was observed as 11(27.5%), 11(27.5%) and 20(50%) for age, toilet and occupation related prevalence respectively (Fig.1). There was no observed significant statistical difference ranged, <0.01 to >0.05 between the examined parameters in relation with the positive prevalence cases of the disease in the investigated location using Analysis of Variance (ANOVA).

Table 1: Age-related Prevalence for Trichomoniasis in Jos-North, Plateau State.

Age Group(yr)	No. examined	No. infected (%)
15-20	15	3(1.0)
21-25	80	6(2.0)
26-30	143	20(6.7)
31-35	507	(2.3)
36-40	73	(1.0)
41-45	51	(0.3)
Total	**30040**	**(13.3)**

Table2: Toilet-related Prevalence for Trichomoniasis in Jos-North,Plateau State

Type of Toilet Used	No.Examined	No.Infected(%)
Pit- latrine	180	25(8.3)
Water Cistern	120	15(5.0)
Total	300	40(13.3)

Table 3: Occupation-related Prevalence for Trichomoniasis in Jos-North,Plateau State

Occupation	No.Examined	No.Infected(%
Students	42	4(1.3)
Civil Servants	65	8(2.4)
Business Women	100	19(6.3)
House Wives	93	9(3.0)
Total	300	40(13.3)

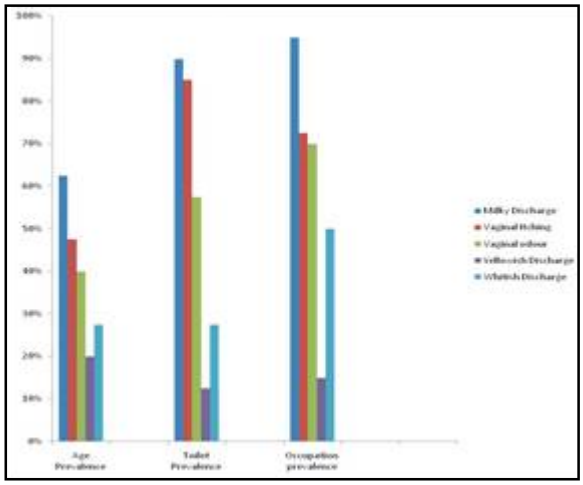

Fig.1: Clinical symptoms associated with Trichomoniasis in the study area.

Discussion

All results showed some prevalence range as further analyzed as regards to the considered socio-economic and human factors. A prevalence of 40(13.3%) as overall positive rate for the disease in the surveyed area presents an acceptable baseline data which agreed with past researchers at different instances of their studies on similar subjects. The range of prevalence among age-related groups show proficiency of those between 26-30 years with the highest positive rate(6.7%) which was observed to have been as a result of the high sexual activities among those within the range as compared to those between 41 and 45 years with the least prevalence rate (0.3%) observed to experience reduced sexual activities, rather showed highly stable relationships as previously recorded by [8] who confirmed a possible rise of the disease prevalence among same age group for the sake of high sexual involvement. [9] also reported similar range of the disease high prevalence of 87% among women of age group 15 and34 years as more than any other age range, which was also attributed to the same high sexual activities in same locality. Lower prevalence rate exhibited by age groups between 16 -20 and 36-40 years could be as a result of their high educational background which puts them in reduced vulnerability to the infection due to their high level of enlightenment toward the dangers of illicit sexual practices as also supported by [10] who reported in their findings on the women of age group 31-35 years to suffer greater rate of divorce, consequently a high level of sexual relationships resulting from uncontrollable threatened sexual urge with opposite sexual partners. They further reported that out of 200 women screened for trichomoniasis only 23.7% of the women still comfortably married to their husbands were positive for the disease as against the earlier age group with higher prevalence rate of 76.3% due to unstable sexual lifestyle. In another similar report, [11] recorded that women within age group 15-20 and 31years experienced quite low prevalence of 0.4% for the disease due to educational and enlightened background as well as having stable sexual relationships.

Furthermore, analyzed results on the socio-economic status as regards occupation and the type of toilet these women used showed a high prevalence among women that used pit-latrine, as against the low prevalence rate of 5% for those that used water cistern toilet, which attributed mainly to poor hygienic condition of pit-latrine as compared to that of water cistern. This agreed with the works of [12] who reported similar result as regards high infection for the disease through rough urinating exposing such women to high rate of trichomoniasis, especially for those of such low socio-economic status and poor hygiene practice. With regards to occupation, business women recorded the highest prevalence rate (6.3%) of infection which was further attributed to ignorance, illiteracy and unawareness among them, as compared to the low rate among the civil servants and students with better knowledge and awareness about the disease.

Vaginal discharge was frequently observed in women with positive cases. This is as high as 95%. The frequent occurrence of these discharge cut-across the three parameters (age, toilet types and occupation). Other clinical symptoms recorded are vaginal itching and odour. In a review by [13], it was reported that when symptoms arise, the most common presenting complaint among women diagnosed with *T.vaginalis* was vaginal discharge seen in more than 50% of cases. [14] had also in

a study of 200 women demonstrated 74% with vaginal discharge were infected with *T.vaginalis.*

The high prevalence of trichomoniasis in this study area means that more effort in controlling the disease should be intensified. Also, control programmes must work towards increased screening in order to identify endemic areas for treatment.

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