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# *TRICHOMONAS VAGINALIS* INFECTION AMONG FEMALE STUDENTS OF FEDERAL POLYTECHNIC OKO

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## Abstract
This study aimed to investigate Trichomonas vaginalis infections among female students at Federal Polytechnic Oko. The research was conducted according to an established protocol. Using sterile swab sticks, 40 swab samples were obtained and subjected to microscopic inspection. The age group with the greatest infection rate, 18–22 years old, was 63.63%. In comparison to other students, ND1 students had a higher infection rate (86.67%) according to level (year of study). The infection rate among non-pregnant students was higher (18.55%) than that of pregnant students (28.57%). According to this research, female students at Federal Polytechnic Oko are often infected with Trichomonas vaginalis, which implies that hygienic measures should be strengthened. In order to stop Trichomonas vaginalis from spreading, it is advised that Federal Polytechnic Oko students be informed about its presence and the importance it poses to their health.

**Keywords** Trichomonas vaginalis, expectant and non-pregnant female students, level, age category

## INTRODUCTION
### 1.1. Background of the Study
The most prevalent pathogenic protozoan infection of global significance is trichomoniasis, which is caused by the anaerobic parasite Trichomonas vaginalis.Prior to the 1950s, when knowledge of the flagellate's function as a sexually transmitted infection—usually via unprotected sexual contact—began to develop, it was thought of as a commensal organism.
The only known host that is capable of trophozoite transmission is humans. On the other hand, sharing towels, toilet seats, and sauna benches—which act as reservoir hosts—is likely how certain illnesses spread. Both sexes are affected, but more female instances than male cases have been documented, and these female cases also show symptoms of infection (Allsworth *et al.,* 2009). The most typical sign of the illness in females is vaginitis. Infections of the adnexa, skin, endometrium, and Bartholin glands are among the complications. Pregnant women infected with this parasite may have increased propensity tone plastic changes in cervical tissues, infertility, and unfavorable birth outcomes such as post-abortion or post-hysterectomy infection (Chinyere *et al.,* 2010).

Trichomonas vaginalis is the most common on-viral sexually transmitted disease globally. It is a parasitic protozoan that is spread by sexual contact and is expected to cause 180 million new infections annually. Neonatals may also get it by passing through an infected birth canal,


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however this is rare. The illness is often asymptomatic.Infection with Trichomonas vaginalis is often asymptomatic in adults and may lead to urethritis in males. Women who have trichomoniasis often complain of discomfort, pain, and/or vaginal discharge. The consistency of T vaginalis infection with other sexually transmitted infections (STIs) is a significant and pressing global public health problem. It raises both male and female HIV transmission risk (Forna and Gulmezoglu, 2003). According to Workowski and Berman (2010), trichomoniasis is also linked to cervical neoplasia, postoperative infections, and infertility.Semen, urine, and vaginal, prostatic, or urethral secretions from infected people may all be found to have Trichomonas vaginalis. The diagnostic techniques most often used are: direct microscopic analyses of wet mount preparations. Trichomonas vaginalis illness has significant medical, social, and financial ramifications. Antenatal infections increase the risk of low birth weight babies, early placental membrane rupture, and preterm labor. Infertility, atypical pelvic inflammatory disease, and cervical cancer have also been connected to this illness (Grodstein *et al.,* 2013).

## 1.2. Statement of the Problem

According to reports, individuals infected with Trichomonas vaginalis experience pain and psychological disturbance. It has also been noted that trichomoniasis is a significant contributor to pathology in gynecology and obstetrics. Although intercourse is the main way that the disease is spread, contaminated fabrics like clothes and towels have also been linked to the spread of the illness (Alcamo, 2014). Numerous factors are associated with elevated infection rates, such as insufficient personal hygiene, engaging in sexual activity with numerous partners, residing in a low socioeconomic status, and being underdeveloped. It is crucial to look at the incidence of Trichomonas vaginalis among female students at Federal Polytechnic Oko given the damage that the infection causes and the many ways in which it might spread.

## 1.3. Aim and Objectives of the Study

The objective of this study is to determine the prevalence of Trichomonas vagirnalis among female students enrolled at Federal Polytechnic Oko.

The specific objectives include;

to investigate the age-based incidence of Trichomonas vaginalis infection in female students

Determine whether the prevalence of Trichomonas vaginalis infection among female students varies by marital status (single versus married).

In order to determine the prevalence of Trichomonas vaginalis infection among female students, this study will compare two levels: ND1 and HND1.

## 1.4. Significance of the Study

The following persons will gain from this study:

Medical Professionals: Research findings can help healthcare providers better understand the prevalence of this sexually transmitted infection and improve diagnostic and treatment approaches.

Public Health Officials: Data on prevalence can inform public health strategies, such as prevention and control programs, to reduce the spread of *Trichomonas vaginalis*.

Patients: Knowledge about the prevalence of *Trichomonas vaginalis* can empower individuals to take necessary precautions and seek timely medical care.

Researchers: Other scientists working in related fields can use this research to build upon or conduct further studies.



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Policy Makers: Research results can guide the development of policies related to sexual health and STI prevention.
Educational Institutions: Universities and schools can incorporate this research into their curriculum to educate students about the importance of sexual health.
General Public: Research-based awareness campaigns may aid in educating the public about Trichomonas vaginalis hazards and prevention.
The objective of this study is to examine the prevalence of Trichomonas vaginalis among female students.
To create awareness on its public health implications

### 1.5. Scope of the Study
This research is restricted to examining the frequency of Trichomonas vaginalis among female students at Federal Polytechnic Oko.

## METHODOLOGY
### 3.1. Materials
Swab sticks, swab tube, microscope, 0.85% of physiological saline, methanol, 20% giesmastain, cover slip, beaker, test tube, Bernsen burner, autoclave and Petri dish.

### 3.2. Study Area
The Federal Polytechnic Oko, located in Orumba North, Anambra state, Nigeria, was the study's site.

### 3.3. Sample Size Determination
At Federal Polytechnic Oko, 40 high vaginal swab samples were randomly taken from students.

### 3.4. Collection of Samples
For analysis, high vaginal swabs were taken. Making sure the swab hits the vaginal walls to collect vaginal fluid or moisture, the soft tip of the sterile swab stick was delicately inserted two inches beyond the introitus, or the entry into the vagina, and spun for fifteen seconds. Without coming into contact with the skin, the swab was removed and put right into the swab tube. The swab was carefully inserted into the tube so as to prevent contamination, the soft tip was kept from being touched, and the cap was then fastened.

### 3.5. Examination of Samples
After air-drying a sterile microscope slide that had been coated with T. vaginalis, the slide was fixed for approximately one minute with methanol and subsequently dried. Following this, the slide was submerged in 20% Giesma stain for a duration of twenty minutes.

After rinsing the slide in buffered water to get rid of extra discoloration, it was allowed to dry without a cover slip.

To find the Trichomonas vaginalis trophozoite, the stained preparation was inspected using a light microscope with an oil immersion objective lens set to 100x.

## RESULTS


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According to age, level, and status, the Rate of Infection with Trichomonas vaginalis in Female Students is shown in tables 4.1, 4.2, and 4.3 underneath.

Table 4.1: Rate of Trichomonas vaginalis Infection in Female Students by Age

| Age range | Total sample | Number of infected (%) | Number of uninfected (%) |
|---|---|---|---|
| 18-22 | 22 | 14(63.63) | 8(36.36) |
| 23-28 | 18 | 7(38.89) | 11(61.11) |
| Total = 40 | | 21(52.50) | 19(47.50) |

Table 4.2: Based on Level, the Infection Rate of Female Students with Trichomonas vaginalis

| Grade | Total sample | Number of infected (%) | Number of uninfected (%) |
|---|---|---|---|
| $ND_1$ | 12 | 8(66.67) | 4(33.33) |
| $ND_2$ | 10 | 6(60.00) | 4(40.00) |
| $HND_1$ | 10 | 5(50.00) | 5(50.00) |
| $HND_2$ | 8 | 3(37.50) | 5(62.50) |
| Total = 40 | | 22(55.00) | 18(45.00) |

Table 4.3: Based on Status, the Infection Rate of Female Students with Trichomonas vaginalis

| Status | Total sample | Number of infected (%) | Number of uninfected (%) |
|---|---|---|---|
| Pregnant | 7 | 2(28.57) | 5(71.43) |
| Non pregnant | 33 | 18(54.55) | 15(43.45) |
| Total = 40 | | 20(50.00) | 20(50.00) |

## DISCUSSION, CONCLUSION AND RECOMMENDATION

### 5.1. Discussion

The age group of 18 to 22 years had the greatest infection rate of 14 (63.63%), while the age group of 23 to 28 years had the lowest infection rate of 7 (38.89%), according to the study's results. The overall infection was however 21(52.50%). Seña *et al.* (2007) found a correlation between the study population's level of sexual activity and the infection rate. Additionally, the fact that the infection is most common in people who engage in increased sexual activity and have several sexual partners provides strong evidence that T. vaginalis is sexually transmissible. The recent study revealed that adults between the ages of 18 and 22 were more likely to get the virus during sexual activity.

In this research, the level of students and the proportion of infections varied. Of the Federal Polytechnic students, Oko, an ND1 student, had the greatest percentage of infections (86.67%), followed by ND2 (60.00%), and HND2 (37.50%), which had the lowest rate of infections. It's possible that the high infection incidence of trichomoniasis results from a lack of awareness of this significant public health issue. Trichomonas is the most prevalent sexually transmitted parasite infection worldwide, yet Petrin *et al* (2018) found that it is mostly disregarded.


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According to this research, pregnant students had a lower rate of infections (28.57%) than non-pregnant students (18.55%). The highest infection rate among this status may be due to the fact that, in contrast to other statuses whereby pregnant women are already married, most members of this status are single, engaged, or active in some other kind of sexual activity.

### 5.2. Conclusion

As this study's findings shown, Trichomonas vaginalis infections are still widespread at Federal Polytechnic, Oko. This suggests that sufficient preventative actions are required.

### 5.3. Recommendations.

The report suggests the following actions:

Students of Federal Polytechnic, Oko should be enlightened on the existence of *Trichomonas vaginalis* since most of them might not be aware of the infection.

Awareness campaigns should be organized at various levels of endeavors so as to enlighten the general public on the health significance of *Trichomonas infection*.

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