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KNOWLEDGE OF THE REPRODUCTIVE TRACT INFECTIONS AND PREVENTIVE MEASURES AMONG SECONDARY SCHOOL STUDENTS IN ANAMBRA STAT

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ABSTRACT

Reproductive tract infection has become a serious public health issue all over the world owing to its high prevalence especially among adolescents. It determining the knowledge of the RTIs and its preventive measure is one of the major steps to reduce it prevalence. Therefore, the study was designed to determine the knowledge of reproductive tract infections and preventive measures among secondary school students in Anambra State. Four research questions and two hypotheses guided. The design of the study was a cross-sectional research design. The population of the study consisted of 3046 secondary school students in the study area. Sample size for the study was 305 secondary school students which was ten percent of the entire population. The instrument for data collection was a researcher developed instrument titled Knowledge of the Reproductive Tract Infections and Preventive Measures (KRTIPMI). The validation of the instrument was done by three experts one from the Department of Health Promotion and Public Health Education, one from the Department of Educational Foundations (Measurement and Evaluation), all in Nnamdi Azikiwe University, Awka and one from medical Department. The reliability of the instrument was established using Kuder-Richardson (K-20) and the reliability coefficients of 0.81, 0.80. 0.82 and 0.81 was obtained with an overall reliability coefficient of 0.81 which was considered high for the study. The descriptive statistics of frequency percentage and means was used to answer the research questions; while t-test statistics was used to test the hypotheses at 0.05 level of significance.The results of the study showed that the secondary school students had moderate knowledge of the reproductive tract infection but a very good knowledge of the preventive measures of RTIs. Based on findings of the study, it was recommended that parents and teachers need to increase their teachings on RTIs so that the students will be well knowledgeable about RTIs is all about among others.

Keywords: Knowledge, reproductive, tract Infection, health Issue, Secondary students

Introduction

Reproductive tract are the tissues, glands, and organs involved in producing children provided all organs are present, normally constructed, and functioning properly. The reproductive system of an organism, also known as the genital system, is the biological system made up of all the anatomical organs involved in sexual reproduction. In women, the reproductive system includes the ovaries, the fallopian tubes, the uterus, the cervix, and the vagina. In men, it includes the prostate, the testes, and the penis (National cancer Institute, 2023). When the reproductive tract is not properly cared for both in terms of self-care and lifestyle, it could lead to different reproductive tract infections.

Reproductive tract infection has become a serious public health issue all over the world owing to its high prevalence. For women, it could lead to adverse pregnancy outcomes for reproductive age women and in men various reproductive health problems in future. Reproductive tract infections are being increasingly recognized as a serious global health problem with impact on individual women and men, their families and communities. They can have severe consequences, including infertility, ectopic pregnancy, chronic pelvic pain, miscarriage, and increased risk of HIV transmission (Population Council, 2024).

Reproductive Tract Infections (RTIs) are a group of infections that affect the female and male reproductive organs. These infections can cause discomfort, pain, and, if left untreated, potentially serious health complications (Caritas,2023). Reproductive tract infections (RTIs) are infections of the genital tract caused by bacteria, fungi, viruses and other pathogens (Temmerman, 2005). Reproductive tract infections can affect the external genital region and the reproductive organs. In both women and men, there are several potential sites of infection. Reproductive tract infections are infections of the genital tract and they affect both women and men. Some RTIs (such as syphilis and gonorrhoea) are sexually transmitted, but many are not. In women, overgrowth of endogenous microorganisms normally found in the vagina may cause RTI (yeast infection, bacterial vaginosis). Medical interventions may provoke iatrogenic infection in several ways endogenous organisms from the vagina or sexually transmitted organisms in the cervix may be pushed during a transcervical procedure into the upper genital tract and cause serious infection of the uterus, fallopian tubes and other pelvic organs; this iatrogenic infection is a state of ill health or adverse effect caused by medical treatment; it usually results from a mistake made in treatment, and can also be the fault of a nurse, therapist or pharmacist.

Organisms from outside the body can also be introduced into the upper genital tract during medical procedures if infection control is poor (World Health Organization, 2024). In men, sexually transmitted infections are much more common than endogenous or iatrogenic infections. Endogenous infections are probably the most common RTIs worldwide. They result from an overgrowth of organisms normally present in the vagina. Endogenous infections include bacterial vaginosis and candidiasis (World Health Organization, 2024). These

infections can be easily treated and cured. Iatrogenic infections occur when the cause of infection (a bacterium or other micro-organism) is introduced into the reproductive tract through a medical procedure such as menstrual regulation, induced abortion, and the insertion of an IUD or during childbirth. This can happen if surgical instruments used during the procedure have not been properly sterilized, or if an infection that was already present in the lower reproductive tract is pushed through the cervix into the upper reproductive tract (Population Council, 2024).

Sexually transmitted infections (STIs) are caused by viruses, bacteria, or parasitic microorganisms that are transmitted through sexual activity with an infected partner. About 30 different sexually transmitted infections have been identified, some of which are easily treatable, many of which are not. HIV, the virus that causes AIDS, is perhaps the most serious sexually transmitted infection as it eventually leads to death. STIs affect both men and women, and can also be transmitted from mothers to children during pregnancy and childbirth (Population Council, 2024). RTI might cause severe problems like infertility, ectopic pregnancy, and endometriosis in the long run (Chandini , 2022).Most commonly seen reproductive tract infections (RTI's) in women are: Gonorrhea, Chlamydia, Vaginosis, HPV (Human papillomavirus); the most common RTIs in men are: HIV (Human immunodeficiency virus), urethritis (inflammation of the urethra), prostatitis (inflammation of the prostate gland), epididymitis (inflammation of the tube that carries sperm).

More than 1 million sexually transmitted infections (STIs) are acquired every day worldwide, the majority of which are asymptomatic. Each year there are an estimated 374 million new infections with 1 of 4 curable STIs: chlamydia, gonorrhoea, syphilis and trichomoniasis. More than 500 million people 15–49 years are estimated to have a genital infection with herpes simplex virus (HSV or herpes). Human papillomavirus (HPV) infection is associated with over 311 000 cervical cancer deaths each year. Almost 1 million pregnant women were estimated to be infected with syphilis in 2016, resulting in over 350 000 adverse birth outcomes. STIs have a direct impact on sexual and reproductive health through stigmatization, infertility, cancers and pregnancy complications and can increase the risk of HIV. Drug resistance is a major threat to reducing the burden of STIs worldwide (World Health Organization, 2024).Preventive measures for RTIs is essential for maintaining good reproductive health.

Some key preventive measures include: practicing safe sex, including the use of condoms, can significantly reduce the risk of sexually transmitted RTIs; regular screenings and tests for common RTIs, especially for individuals at higher risk, can help with early detection and treatment; maintaining proper genital hygiene can help prevent infections. This includes wiping from front to back and avoiding harsh soaps and douches; vaccination against certain viruses, such as HPV, can help reduce the risk of viral RTIs (Caritas, 2023). According to Risnawati Ramli (2020), washing the genitals every day, changing clothes frequently, at least twice a day in the bath,

during menstruation, use of soft pads, always washing hands before touching the genitals, avoid using other people's towels or washcloths and shaving of pubic hair to prevent bacterial growth

A comprehensive approach is required to eliminate reproductive tract infections. Prevention of RTI is done at two levels; level one education and communication; including sex education in the curriculum where teenagers can receive support education about safe sex; protected sex (use of condoms); encourage monogamous relationships (limitation in the number of sex partners). Some many factors could determine students' knowledge of RTIS and its preventive measures.

Knowledge may be seen as expertise, and skills acquired by a person through experience or education, the theoretical or practical understanding of a subject, what is known in a particular field; facts and information; or awareness or familiarity gained by experience or a fact or situation. Knowledge is the state or act of knowing, familiarity, awareness or understanding gained through experience or study. For this study, knowledge is checked based on the practical understanding of reproductive tract information and its preventive measures acquired by the students. According to Finlay (2019), knowledge of other dimensions of sexual and reproductive health and other STIs in their study is lacking especially for early adolescents (10-to 14-year olds). Study concluded slightly more than three quarter of the studied adolescent had no knowledge regarding mode of transmission of RTI and slightly more than two third of them incorrect knowledge regarding preventive measures. Regarding total knowledge score the current study finding revealed that slightly more than two third of them had incorrect knowledge (Amira, Aziza, and Amal, 2022). The proportion of students that had good knowledge, appropriate attitude, and good preventive practice towards STIs were low. Apart from knowledge, there are other factors that can affect knowledge of RTIs and its preventive measures such as gender.

Gender is whether the students are male or female as it affects knowledge of RTIs According to Prusty and Unisa (2013), knowledge and treatment seeking behavior was poor among adolescent women. There is need for programmatic and policy emphasis on increasing knowledge and awareness through family life education including in educational curriculum at school level. Findings of the study revealed that younger adolescents, rural and poor women are less likely to seek treatment than older urban and rich adolescent women respectively. With respect to geography, women from northern region and north-eastern women have less probability to seek treatment than their southern counterparts. Those who are not aware of RTI/STI symptoms are less likely to seek treatment. Thus, here is need to focus on poor adolescents with a special focus on strengthening their knowledge about RTI/STI infections.

Finally, Reproductive tract infection has become a serious public health issue all over the world owing to its high prevalence. When left untreated, could lead to serious reproductive health problems in the future for both male and female individual and the problem usually starts from the time of puberty and this time most children are in

their secondary school not having a good knowledge of RTIs and its preventive measures could lead to serious mistakes and it is against this background that the study determined the knowledge of the reproductive tract infections and Preventive Measures among Secondary School Students in Anambra State, Nigeria.

Purpose of the Study

The purpose of the study was to determine Knowledge of the Reproductive Tract Infections and Preventive Measures among Secondary School Students in Anambra State Nigeria. Specifically, the study seeks to determine the :

1. knowledge of reproductive tract infections among secondary students in Anambra state.
2. knowledge of reproductive tract infections among secondary students in Anambra state based on their gender.
3. knowledge of the preventive measures of reproductive tract infections among secondary students in Anambra state.
4. knowledge of the preventive measures of reproductive tract infections among secondary students in Anambra state based on their gender.

Research Questions

The following research questions guided the study;

1. What is the knowledge of reproductive tract infections score of secondary students in Anambra state?
2. What is the knowledge of reproductive tract infections of secondary students in Anambra state based on their gender?
3. What is the knowledge of preventive measures of reproductive tract infections score of secondary students in Anambra state?
4. What is the knowledge of the preventive measures of reproductive tract infections among secondary students in Anambra state based on their gender?

Hypotheses

The following hypotheses was formulated and tested at 0.05 level of significance:

1. There is no significant difference in the knowledge of reproductive tract infections of secondary students in Anambra state based on their gender.
2. There is no significant difference in the knowledge of the preventive measures of reproductive tract infections of secondary students in Anambra state based on their gender.

Research Method

The design of the study was a cross-sectional research design. The study was carried out in Anambra State. The population of the study consists 3046 secondary school students in the public and private schools selected for the study. All the school used for the study was mixed gender schools. The sample of the study was 305 secondary school students. Which was 10 percent of the population size. The

sample was gotten through multistage sampling procedure. The instrument for data collection was a researcher developed instrument titled Knowledge of the Reproductive Tract Infections and Preventive Measures Items (KRTIPM) Validation of the instrument was established by the help of three experts, one from the Department of Health Promotion and Public Health Education, one from the Department of Educational Foundations (Measurement and Evaluation), all in Nnamdi Azikiwe University, Awka and one from medical Department. The instrument was assessed for reliability by using 20 copies of the questionnaire on students at Imo State who are not part of the study. The reliability of the instrument was analyzed using Kuder-Richardson 20 formula and the reliability coefficients of 0.81, 0.80. 0.82 and 0.81 was obtained with an overall reliability coefficient of 0.81 which was considered high for the study. The descriptive statistics of frequency percentage and means was used to answer the research questions; while t-test statistics was used to test the hypotheses at 0.05 level of significance.

Presentation of Results

Research Question One: What is the mean knowledge score on reproductive tract infections score of secondary students in Anambra state?

Table 1: *Mean Knowledge on Reproductive Tract Infections of Secondary School Students in Anambra State*

	N	Mean	SD	Dcision
Knowledge of Reproductive Tract Infections (Percentage Scores)	304	57.49	13.32	Moderate

Table 1 shows that the mean knowledge of students on reproductive tract infections was 57.49. This value suggests that there was a moderate knowledge of reproduction tract infections among secondary school students in Anambra state.

Research Question Two: What is the mean knowledge on reproductive tract infections of secondary students in Anambra state based on their gender?

Table 2 : *Mean Knowledge on Reproductive Tract Infections of Secondary School Students in Anambra State by Their Gender*

Variable	Gender	N	Mean	SD	Decision
Knowledge of Reproductive Tract Infections (Percentage Scores)	Male	118	53.91	9.78	Moderate
	Female	186	59.75	14.73	Moderate

Table 2 shows that the mean knowledge scores of male and female students on reproductive tract infections were 53.91 and 59.75 respectively. This suggests that there

was a moderate knowledge of reproductive tract infection among male and female students in Anambra sate. The standard deviation scores were 9.78 and 14.73. The standard deviation scores that there was more variability in the scores of female students compared to the male students.

Research Question Three : What is the mean knowledge on preventive measures of reproductive tract infections of secondary students in Anambra state based on their age?

Table 3 : *Mean Knowledge on Preventive Measures of Reproductive Tract Infections of Secondary School Students in Anambra State*

	N	**Mean**	**SD**	**Decision**
Knowledge of Preventive Measures of Reproductive Tract Infections (Percentage Scores)	304	78.51	17.38	Very Good

Table 3 shows that the mean knowledge of students on preventive measures of reproductive tract infections was 78.38. This implies that secondary school students in Anambra state had a very good knowledge of preventive measures of reproduction tract infections.

Research Question Four: What is the mean knowledge on preventive measures of reproductive tract infections among secondary students in Anambra state based on their gender?

Table 4: *Mean Knowledge on Preventive Measures of Reproductive Tract Infections of Secondary School Students in Anambra State by Their Gender*

Variable	**Gender**	**N**	**Mean**	**SD**	**Decision**
Knowledge of Preventive Measures of Reproductive Tract Infections (Percentage Scores)	Male	118	74.72	14.29	Very Good
	Female	186	80.91	18.73	Very Good

Table 4 shows the mean knowledge of preventive measures of reproductive tract infections by male students was 74.72 while that of the female students was 80.91. Although both male and female students had very good knowledge of preventive measures of reproductive tract infections, female students were 6.19 points ahead of the male students in their knowledge of preventive measures of reproductive tract infections. However, the standard deviation scores (Male = 14.27 and female = 18.73) indicate that male students were more homogenous in their scores than the female students.

Hypothesis One: There is no significant difference in the knowledge of reproductive tract infections of secondary students in Anambra state based on their gender.

Table 5 : *T-test Analysis on Mean Knowledge of Reproductive Tract Infections of Secondary School Students by Gender*

Source of variation	N	Mean	SD	Df	*T*	*p*-value	Remark
Male	118	53.91	9.78	302	-3.81	.000	S
Female	186	59.75	14.73				

As shown in Table 5, there was a significant difference in the mean knowledge of reproductive tract infections of male and female students in Anambra state secondary schools, t (302) = -3.81, p < 0.05. The null hypothesis was rejected since the p-value was less than 0.05.

Hypothesis Two: There is no significant difference in the knowledge of the preventive measures of reproductive tract infections of secondary students in Anambra state based on their gender.

Table 6 : *T-test Analysis on Mean Knowledge of Preventive Measures of Reproductive Tract Infections of Secondary School Students by Gender*

Source of variation	N	Mean	SD	Df	*T*	*p*-value	Remark
Male	118	74.72	14.29	302	-3.07	.002	S
Female	186	80.91	18.73				

The results displayed in Table 6 shows that there was a significant difference in the mean knowledge of preventive measures of reproductive tract infections of male and female students in secondary schools in Anambra state, t (302) = -3.02, $p < 0.05$. The null hypothesis was rejected since the p-value was less than 0.05.

Discussion of Findings

The result in table one should that the secondary school students had moderate knowledge of reproductive tract infections as shown in the mean knowledge score. The findings of the study was inline with the findings of Desai, et al. (2020) that the participants of the study had some knowledge of RTIs. This moderate knowledge can be attributed to their demographic characteristics as adolescents, they have not started full in taking care of themselves they depend on their parents for care most of them are still minors who many not know the left from their right and how their body works and functions; they might have a feeling that they have a problem but would not know exactly what is happening to them.

The result of the findings on knowledge of RTIs based on gender of the secondary school students revealed that based on their gender that is male and female they had moderate knowledge of RTIs the findings was not in line with the

findings of Balakrishnan et al (2024) that female had no or poor knowledge of RTIs. The reason for the findings might be because of the fact that in our African culture setting, male are more independent than the female; the male might have access to discussions with their peers. The females are being controlled there by not giving the opportunity to interact with their peer for better knowledge of RTIs. The null hypothesis of no significant difference was also rejected because the female showed a bit better knowledge than the male secondary school students.

The findings on the knowledge of the preventive measures of RTIs revealed that, firstly, there was a very good knowledge generally of the preventive measures of RTIs among secondary school students this could be because of the effect of health education taught randomly in schools. This health education teaching usually builds self-consciousness of good hygiene among students which in turn, influences the students' behaviour of infection prevention. Although the findings were not in line with the findings of Anil et al (2022) that people do not put the knowledge of the prevention into practice. The studies finding was in line with the findings of Ayalnesh et al (2020), that the respondents had a good knowledge of the preventive practices of RTIs.

Finding on knowledge of the preventive measures of RTIs based on gender revealed that female students had very good knowledge of the preventive measures of RTIs more than their male counterpart. This was also against the findings of Balakrishnan et al, (2024) who found out that male are more knowledgeable then the female respondents. The findings of the study might be so because female are assumed to be more self-organized and neat more than the male counterpart; male find it difficult to take care of themselves like bathing and washing of the clothes and under wears. The null hypothesis of no significant difference was rejected.

Conclusion

The secondary school students had a moderate knowledge of the reproductive tract infections generally. Gender did not have so much effect on their knowledge of the reproductive tract infections. For knowledge of the preventive measures of RTIs, gender also played a role in the knowledge of the preventive measures of RTIs among secondary school students.

Recommendations

Based on the findings of the study the followings recommendations were made;

1. There is need for parents and teachers to increase their teachings on reproductive tract infections so that the students will be well knowledgeable about what RTIs is all about.
2. Health education and health promotion should be an intensified in schools to accommodate the teaching on RTIs for both male and female students.
3. Students should be educated on the dangers of RTIs as it has a serious future health implications.
4. Government and non-governmental organization through school should also join in the sensitization process in order to move the student's moderate knowledge to a very high knowledge in future.

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