Original Research Article

KNOWLEDGE AND PRACTICE OF PELVIC INFLAMMATORY DISEASE PREVENTION AMONG FEMALE STUDENTS

ABSTRACT

Introduction: Pelvic inflammatory disease or pelvic inflammatory disorder (PID) is an infection of the upper part of the female reproductive system namely the uterus, fallopian tubes or the ovaries often there may be no symptoms. PID is the clinical syndrome associated with upper genital tract inflammation caused by the spread of micro-organisms from the lower to the upper genital tract. This study assessed the knowledge and practice of pelvic inflammatory disease prevention strategies among the female students of College of Health Sciences, Niger Delta University, Amassoma, Bayelsa State, Nigeria. **Method:** Descriptive research design was adopted for this study. The design was considered appropriate for the study on the assessment of knowledge and practices of pelvic inflammatory disease prevention among female students in College of Health Sciences, Niger Delta University. A total of 184 females students in the female Hostels of College of Health Sciences, Niger Delta University, Bayelsa State were approached for this study. **Results:** Data obtained were analyzed using descriptive statistics of frequency tables and simple percentages. The results obtained from the study revealed that majority of the respondents 64(35%) were between the ages of 15-20years. The marital status of the respondents has 104(57%) as single as against 56(30%) as married and 24(13%) as divorced. The result indicated strongly that majority of the respondents 104(57%) were Christians, while 56(30%) and 32(17%) were Muslims and other religions respectively. Also, students in 500level are the highest respondents with a total number of 48(26%). **Conclusion:** The result demonstrated that 96(52%) of female students in College of Health Sciences of the University had a considerable level of knowledge of pelvic inflammatory disease. More than half (52%) of the respondents had a good level of knowledge about PID prevention; also an overwhelming majority of them held a very positive attitude towards PID prevention.

Key words: Pelvic Inflammatory Disease, Upper Reproductive Tract, *Chlamydia trachomatis Neisseria gonorrhoeae,* sexually active

INTRODUCTION

Pelvic inflammatory disease (PID) is an infection-induced inflammation of the female upper reproductive tract (the endometrium, fallopian tubes, ovaries, or pelvic peritoneum); it has a wide range of clinical manifestations. Inflammation spreads from the vagina or cervix to the upper genital tract, with endometritis as an intermediate stage in the pathogenesis of disease. The

hallmark of the diagnosis is pelvic tenderness combined with inflammation of the lower genital tract; women with pelvic inflammatory disease often have very subtle symptoms and signs [1]. Many women have clinically silent spread of infection to the upper genital tract, which results in subclinical pelvic inflammatory disease. Pelvic inflammatory disease is a major concern because it can result in long term reproductive disability, including infertility, ectopic pregnancy, and chronic pelvic pain. After the introduction of laparoscopy in the 1960s, research on pelvic inflammatory disease proliferated through the 1970s, 1980s, and 1990s, leading to major breakthroughs in the understanding of the microbial causes of the disease and its relationship to reproductive disability, as well as enabling the standardization of antimicrobial treatment [1]. According to a national estimate in 2001, more than 750,000 cases of pelvic inflammatory disease occurred in the United States [2]. Over the past two decades, the rates and severity of pelvic inflammatory disease have declined in North America and Western Europe [3]. These declines have occurred in association with public health efforts to control *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infection. Despite progress, however, pelvic inflammatory disease remains a problem because reproductive outcomes among treated patients are still suboptimal, subclinical pelvic inflammatory disease remains poorly controlled, and programs aimed at the prevention of pelvic inflammatory disease are not feasible in much of the developing world [4]**.** It is estimated that PID affects millions of women yearly all over the world and it is witnessing an uptick in Nigeria especially among young women [5]. In Port-Harcourt, Rivers State and Bayelsa State of Nigeria, the rate of PID was put at 21.0% [6]. In Osogbo, a South-Western Nigerian State, the prevalence of PID was 70.0% [7]. Also, in Nguru, North-Eastern Nigeria, the rate of PID was put at 62.8% [8]. Findings from a study conducted by [9] have confirmed the existence of PID among women of child bearing age in Onitsha North; particularly in Anambra

State, Eastern Nigeria, with a high prevalence of 60%. Even though there is paucity of data on PID in Nigeria, available literature on the prevalence of PID across Nigerian States and regions implies that the obvious evidence my not capture the actual reality pertaining the problem in the country. Therefore, in preventing PID, it is important that women are equipped with the knowledge and the necessary skill-sets as well as interventions and advocacy [10].However, in the College of Health Sciences, Niger Delta University, it is observed that some females suffer from pelvic inflammatory disease, hence the need to carry out a study to assess the knowledge and practices of pelvic inflammatory disease prevention among female of College of Health Sciences, Niger Delta University, Bayelsa State, Nigeria.

MATERIALS AND METHOD

Research Design: The research design adopted in this study was the descriptive design. The adoption of this design was informed because the study involved the collection of data to accurately and objectively describe existing phenomena and determining nature of a situation as it exists at the time of investigation population under investigation. The descriptive design is best adopted to obtain personal facts, beliefs and attitudes. The descriptive design has the advantage of covering a wider scope and at the same time economical. The design therefore was considered appropriate for the study on the assessment of knowledge and practices of pelvic inflammatory disease prevention among female students in college of health sciences Niger Delta University.

Research Setting: The research was conducted in Niger Delta University, College of health sciences which is a tertiary institution of learning in Wilberforce Island, Amassoma, Bayelsa State. The institution (College of Health Sciences) is made up two campuses; the female hostel which is made up just females of approximately 342 students and the second hostel which

comprises of both males and females. It also consists of the following departments: Medicine, Pharmacy, Medical Laboratory Science, Nursing Sciences, Anatomy, Physiology and Biochemistry. The research will be carried out in the female hostels of the first campus in College of Health Sciences.

Target population: The type to be used is accessible population; they are those members of the population who within the reach of the researcher. The target population here is the entire female students living in the hostels.

Sample size: The sample for this study was calculated to be two hundred (184) female students living in college of health science female hostel using Taro Yamane [11] sample size calculation formula. Taro Yamane is a simple and very frequently uses formula for sample size determination for estimating proportion in a finite population:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = sample size

N= population under study

e = margin of error (0.05)

$$n = \frac{342}{1 + 342(0.05)^2}$$

$$n = \frac{342}{1 + 0.855}$$

$$n = \frac{342}{1.855} = 184$$

Sampling Technique: A convenience sampling technique will be adopted. Sampling technique are procedures adopted to systematically select the chosen sample in a specified way under controls. This research work adopted the random sampling technique in selecting the respondents from the total population. Convenient sampling technique is a type of non-probability sampling method where the sample is taken from a group of people easy to contact or reach.

Instruments for data collection: Data collection involves a search for relevant information that ill proffer solution to specific problems. Every research effort therefore centers on the search for such information which could be obtained from primary or search for such information which could be obtained from primary or secondary sources. But for the purpose of this study, data for this study was gathered through primary sources (questionnaire) which is a self-developed and carefully structured by the researcher with which data was collected. The questionnaire consists of two parts (sections) A and B. Section A was designed to elicit personal data from the respondents and section B focuses on the assessment of knowledge and practices in the prevention of pelvic inflammatory disease which is the subject of the study.

Validity of instrument: The instrument is said to be valid when it measure what it is intended to measure. The validity of the instrument for data collection will be reviewed and corrected by my supervisor to ensure that the questions are adequate to answer the objectives and the questions of the research are appropriate.

Reliability of instrument: To ensure the face and the content validity of the items the reliability of the instruments after seen by the project supervisor, a pre-test of the research instrument was carried out prior to the actual study. Copies of the questionnaire will be administered to 10

students who live in main campus female hostel G which is different from the research setting. Using Combat Alpha, the reliability coefficient is 0.84 was gotten indicating good reliability.

Method of data collection: The students were approached in the evening hours during their leisure hour. The researcher briefed them about the study and obtained their consent to participate in the study.

Method of Data Analysis: Data were analyzed and presented using descriptive statistics of frequency tables and simple percentage.

RESULT

The demographic variables of the respondents were first presented followed by their assessment of knowledge and practices of pelvic inflammatory disease.

Table 1: Personal demographic data (N=184)

Items	Frequency (n)	Percentage (%)
Age		
15-20 years	64	35
21-25 years	56	30
26-30 years	40	22
30 years and above	24	13
Marital status		
Single	104	57
Married	56	30
Divorce	24	13
Religion		
Christian	104	57
Muslim	48	26
Others	32	17
Department		

Medicine	24	13
Pharmacy	24	13
Medical laboratory science	24	13
Nursing	32	17
Medical biochemistry	24	13
Anatomy	24	13
Physiology	2	16
Others	2	16
Level		
100	32	17.3
200	40	22
300	32	17.3
400	32	17.3
500	48	26

Table 1 shows the demographic variables of the respondents. It reveals that 64 (35%)) of the respondents were within the age range of 15-20years and this percentage was the highest number. Considering the marital status of the respondents, it shows that more than half of the respondents 104 (57%) were singles; 56 (30%) were married; concerning the religion of the respondents, it shows that 57% (104) were Christians; 48 (26%) were Muslim and 32 (17%) were of other religion. For department, 32 (17%) were nursing students which was the highest number of students; while 24 (13%) were medical biochemistry students; 24 (13%) were anatomy students; 16 (9%) was the least percentage and were students of physiology. For the academic level, 32 (17.3%) were 100 level students and 48 (26%) were 500 level students.

Table 2: Level of knowledge of pelvic inflammatory disease

What is your level of knowledge of pelvic inflammatory disease (PID)?	**YES (%)**	**NO (%)**
Have you heard of PID?	136	48

	(74%)	(26%)
Have you made effort to learn about PID?	104	80
	(57%)	(43%)
Have you get tested for PID?	128	56
	(70%)	(30%)
Have your partner gotten tested for PID	120	64
	(65%)	(35%)
Does your partner know about PID?	80	104
	(43%)	(57%)
Do you know the cause of PID?	96	88
	(52%)	(48%)
Do you use toilet roll during your menses?	40	144
	(21%)	(79%)
Do you douche when washing your vagina?	97	87
	(51%)	(49%)
Do you bleed between your menses?	92	92
	(50%)	(50%)
Do you have sticky vagina discharge?	94	90
	(51%)	(49%)
Do you have frequent vagina itching during those discharges?	64	120
	(32%)	(68%)
Are you aware of the health complications of PID?	40	144
	(21%)	(79%)

Table 2 shows the assessment of the level of knowledge of pelvic inflammatory disease (PID) by the respondents. It was reported by 136 (74%) of the respondents have heard of the PID; subsequently, 104 (57%) of the respondents have made effort to learn about PID; it was reported 128 (70%) of the respondents have got tested for PID; it was reported that 120 (65%) of the respondents agreed that their partners have gotten tested for PID; considerably, 96 (52%) of the respondents has learnt about PID; furthermore, 80 (43%) of the respondents are aware that their partners knows about PID; it was also recorded that 96 (52%) of the correspondents knows the cause of PID; it was stated that 40 (21%) of the respondents use toilet roll during menses; furthermore it was stated that 97 (51%) of the respondents douche while washing their vagina; it was stated that 92 (50%) of the respondents bleed between menses; it was stated that 94 (51%) of the respondents have sticky vagina discharge; it was stated that 64 (32%) of the respondents have

vagina itching; it was reported that 40 (21%) of the respondents are aware of the health complications of PID.

Table 3: The various practices of pelvic inflammatory disease prevention

What are the preventive practices you utilize in preventing pelvic inflammatory disease (PID)?	YES (%)	NO (%)
Use condoms during sexual intercourse?	112 (61%)	72 (39%)
Drink salt and water immediately after sexual intercourse?	64 (35%)	120 (65%)
Drink warm water immediately after sexual intercourse?	72 (39%)	112 (61%)
Drink alcohol immediately after sexual intercourse?	47 (26%)	137 (74%)
Douche during vagina washing?	96 (52%)	88 (48%)
Wash your vagina with antiseptics?	80 (43%)	104 (57%)
Use drugs such as antibiotics for prevention?	167 (91%)	17 (9%)
Practice good hygiene generally?	156 (85%)	28 (15%)
Use candle wax mixed with water to wash your vagina?	37 (20%)	147 (80%)

Table 3 shows the various practices of pelvic inflammatory disease (PID) prevention by the respondents. It was reported that 112 (61%) of the respondents use condoms during sexual intercourse; furthermore it was reported that 64 (35%) of the respondents drink salt and water immediately after sexual intercourse; it was reported that 72 (39%) of the respondents drink warm water immediately after sexual intercourse; it was also reported that 47 (26%) of the respondents drank alcohol immediately after sexual intercourse; it was further reported that 96 (52%) of the respondents douche during vagina wash; it was reported that 80 (43%) of the respondents washed their vagina with antiseptics; it was reported that 167 (91%) of the

respondents use drugs such as antibiotics for prevention of PID; it was further reported that 156 (85%) of the respondents practice good hygiene generally; it was reported that 37 (20%) of the respondents use candle wax mixed with water to wash their vagina. Finally, considering the knowledge of the respondents other specification were given as the cause of PID such; wash with soap and warm water after sexual intercourse, sit on hot water after sexual intercourse, wash with palm oil mixed with warm water after sexual intercourse, get medical check-up every three month, and sit on hot water mixed with salt after sexual intercourse; these was gotten from 40 (22%) of the general respondents.

DISCUSSION

This study assessed the knowledge and practice of pelvic inflammatory disease among female students of College Health Sciences, Niger Delta University. The result presented in table 1 reveals that majority of the respondents 64 (35%) were between the ages of 15-20years. The marital status of the respondents has 104 (57%) as single as against 56 (30%) as married and 24 (13%) as divorced, this is a reflection of the high population of youths in tertiary institutions. The result demonstrated that 96 (52%) of female students in College of Health Sciences had a considerable level of knowledge of pelvic inflammatory disease. This result is in tandem with the study conducted by Obiechina Nworah *et al.* [12] who reported a good knowledge and awareness of common STDs (HIV/AIDS, gonorrhea, syphilis, Chlamydia etc) among Nigeria adolescent girls in a high school at Onitsha, Anambra State of Nigeria. According to the research, 93.6% of the subject was aware of HIV/AIDS, 76.3% had knowledge of gonorrhea, while 69.1% and 6.6% had knowledge of syphilis and Chlamydia respectively. The highest source of information was through the school (80.6%), followed by television (80.1%) and radio (73.1%). This is not in agreement with Adegun [13] which recorded a high level of knowledge of STIs among patients

attending outpatient clinics at University Teaching Hospital; Ado-Ekiti, Ekiti State of Nigeria. The result also shows similarity with Kennedy *et al.* [14] study on the prevalence of *Chlamydia trachomatis* infection among female undergraduates of the University of Port Harcourt. According to the research, 60% of the subject was aware of *C. trachomatis* infection while 40% were ignorant about the infection. Also the result could be compared study by Chioma and Luke [7] who carried out a study on the prevalence pattern of bacterial isolates in cases of pelvic inflammatory disease patients at a tertiary hospital in Osogbo, Nigeria which, results showed that; 73.6% of the subject was aware of bacterial infection, 26.4% had knowledge of pelvic inflammatory disease. From the result of the study, 48 (26%) of the respondents had not heard of PID before. This could be attributed to a positive attitude and practice of PID prevention which in turn could result in the level of knowledge of PID. Also, the most frequent/common signs and symptoms is sticky vagina discharge. This could be as a result of invasion of bacteria (Chlamydia) in the genital tract. The highest level of knowledge of PID is well reflected in the sanitary practice (use of toilet roll during menses) of the respondents which result as 144 (79%) who do not toilet roll during menses. Again, a good knowledge of PID prevention was indicated by the respondents. With a very sound knowledge of its prevention, there was no doubt that the respondents would also be familiar with the preventive measure. Hence, the result showed 128 (70%) have gotten tested for PID; 112 (61%) use condom during sexual intercourse and 167 (91%) use antibiotics for prevention of PID. Furthermore 120 (655) of the respondents showed a positive attitude by confirming that their partners have been tested of PID while 64 (35%) of the respondent confirm that their partners have not been tested. Finally, 40 (22%) of the respondents gave responses other than what was asked on the questionnaire such as; wash with soap and warm water after sexual intercourse, sit on hot water after sexual intercourse, wash with palm oil

mixed with warm water after sexual intercourse, get medical check-up every three month, and sit on hot water mixed with salt after sexual intercourse.

CONCLUSION

The aim of the study was to investigate the assessment knowledge and attitudes of female students towards pelvic inflammatory disease prevention at college of health science Niger Delta University Wilberforce Island, Bayelsa State, Nigeria. The results of this study indicates that more than half (52%) of the respondents had good level knowledge about PID prevention; also an overwhelming majority of them held a very positive attitude towards PID prevention. Further analyzing showed that level of knowledge through various means did affect their attitude towards prevention. Very importantly, this knowledge go a long way to drastically reduce the incidence of PID in College of Health Sciences, Niger Delta University.

RECOMMENDATION

Due to the fact that the respondents have a positive attitude towards PID prevention, I recommend that wearing of condoms during sex which helps to protect from sexually transmitted infection. The risk of infection increases with unprotected sex. Maintenance of one sexual partner as infection increases with increased number of sexual partner. Sexually active women under 25 years old should be tested for Chlamydia every year or when there is a change of sexual partner. Sexual education should be introduced at the university as a means of increasing student's awareness about the problem and prevention of sexually transmitted diseases including pelvic inflammatory disease. This research was limited to just the College of Health Sciences, Niger Delta University, therefore, further research work should be done on this topic and it should involve a larger population.

ETHICAL CONSIDERATION/APPROVAL

The researcher collected a letter of introduction from the Dean of Faculty of Nursing Science which was given to the Dean of Students' Affairs through the Hall-warden. This granted the researcher access to distribute the questionnaire to the female students. Other ethical issues like; confidentially, voluntary participation and anonymity were considered in the conduct of the research study. In terms of confidentiality, the respondents will be assured that the information they will provide, will not be disclosed to anyone who is not directly involved in the study. As regards voluntary participation the respondents will be fully informed that participation is voluntary. Again, anonymity, privacy and confidentiality of the respondents will also be ensured during the interview. The respondents were assured that they would remain anonymous throughout the study.

PUBLICATION OF THIS ARTICLE

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