ASSESSMENT OF THE KNOWLEDGE, ATTITUDE AND PRACTICE OF CERVICAL CANCER SCREENING AMONG STUDENTS IN A TERTIARY INSTITUTION IN SOUTHERN NIGERIA

ABSTRACT

Background: Cervical cancer is a malignant condition affecting the cervix, with an average onset age of 45 years. It is the second most common cancer among women globally, yet it is highly preventable if the premalignant stage is discovered through early routine screening.

Objectives: The objective of this study was to determine the knowledge, attitude and practice of cervical cancer screening among Ambrose Alli University student, Ekpoma, Edo state.

Methodology: Descriptive cross-sectional study was conducted among 326 students of Ambrose Alli University using semi-structured interviewer administered questionnaire and multistage sampling technique was employed. Data was analyzed using IBM SPSS version 23.0 software for descriptive statistics.

Results: It was observed that, 24.8% of respondents had good knowledge, 28.2% had fair knowledge, while 46.9% of respondents had poor knowledge. Knowledge increased with increasing age with highest knowledge (63.6%) among 29 -31 years age group. Knowledge also increased as observed in those in the higher class. The attitude of the participants toward cervical cancer screening was poor. 18.7% had positive attitude toward cervical cancer screening. Half of the respondents who had good knowledge also had good attitude toward cervical cancer screening.The practice of screening exercise by respondents was also found to be poor as 1.5% of the respondents had ever done Pap smear at least once in the past.

Comment [MG1]: Consider simplifying the sentence for better and easier understanding

Comment [MG2]: Consider providing relevant statistic e.g., correlation

Comment [MG3]: Consider writing higher socioeconomic class if that is meant

Comment [MG4]: Generally starting with numbers is avoided if not otherwise unavoidable.

Comment [MG5]: Consider providing relevant statistic values e.g., percentage.

Comment [MG6]: What screening exercise is used for CA Cx? Please consider writing in simple and self-explanatory way.

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Conclusion: From this study, theknowledge, attitude and practice of cervical cancer screening among students of Ambrose Alli University were low which can have a negative impact in the general public.

KEYWORDS: Cervical cancer, Pap smear, knowledge, attitude, Practice

Comment [MG7]: Please make conclusion a "conclusive" statement to the objective and add some future direction in this section.

Comment [MG8]: Consider adding MeSH terms that are not in your title for better visibility

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1. INTROUDUCTION

1.1 BACKGROUND

Cervical cancer is a cancerous state that affects the cervix, with an average onset age of 45 years. It often has a pre-cancerous stage, which typically develops in younger women under the age of 40[1]. The major cause of cervical cancer is infection with one or more high-risk strains of the human papillomavirus (HPV), a common sexually transmitted virus which indicates that cervical cancer can be preventable [2]. The availability of effective screening options such as Pap smear, human papilloma virus-deoxyribonucleic acid testing and visual inspection with application of acetic acid and iodine makes it quite easy to comprehend [3]. Cervical cancer is associated with the following risk factors; early age at first sexual intercourse, multiple male sexual partners, male sexual partners who have had multiple partners, early age at first birth, multi-parity, smoking, long-term use of oral contraceptive pills, immunosuppressed states etc. [1].

Comment [MG9]: Cancer is definitely a cancerous state. Think if it is really important to state the evident here.

Cancer of the cervix is a preventable disease and a vital aspect of its prevention is the detection of the pre malignant form by cervical screening, and if detected in time, recovery is achievable[1]. As a result of the long transition time from a premalignant lesion to frank cancer of the cervix, it gives enough time for detectingearly and achieve nearly complete cure even in secondary health care centers [1].However, in developing countries it has been noticed that there is difficulty in implementing cytology-based screening programs[4]. It has been noted that the incidence of cervical cancer over the past decades has decreased in developed countries [5].This can be created to increased awareness and more effective screening and prevention strategies employed in these countries [6]. Furthermore, the human papilloma virus vaccine has contributed to a decline in the incidence rate of cervical cancer [7].Although screening is a well-known and cost-effective strategy for reducing the burden of cervical cancer globally, its implementation

Comment [MG10]: Please consider the sentence simpler and clearer

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remains significantly low, especially in developing countries[8].It has been reported that a major barrier to access is that most cervical cancer screening services (provided by governmental and nongovernmental agencies) in Nigeria had been sporadic and poorly coordinated[9].

Despite efforts by governmental and non-governmental organizations to enhance access to cervical cancer screening services in Nigeria, the uptake has been dismal. Various studies have identified factors influencing the practice of cervical screening tests globally. These factors include a woman's age, marital status, number of children, risk perception, financial constraints, and knowing someone with cervical cancer[10].Furthermore, the cost of screening, which can be as high as twenty thousand naira (20-30 USD) may contribute to the low participation rate. In a country like Nigeria, where a significant portion of the population lives below the poverty line and healthcare is largely funded through out-of-pocket expenses, this cost can be prohibitive for many individuals [11].

Worldwide, 266,000 women die of cervical cancer each year. It is the leading cause of cancer deaths in Eastern and Central Africa [12]. Cervical cancer is the second most common cancer both among women and in the general population in Nigeria. Of the 14,000 women who develop the disease annually, over half of them will die.In Nigeria, the Cervical Cancer Age-standardized Incidence Rate in 2018 is 27.2 per 100,000 women while the Cervical Cancer Age-standardized Mortality Rate is 20 per 100,000 women[13].

It has been reported that approximately 50% of invasive cervical malignancies are diagnosed in patients who have never been screened and that 10% of the remaining cervical cancer patients have not had a Pap smear in the 5 years before diagnosis[14]. A previous study from Zaria noted that only 270 patients were screened as part of routine screening in 5 years[15]. The consequences of the increasing prevalence of cervical cancer include increasing morbidity and mortality of women due to an otherwise preventable disease.Nigeria has not had a great deal of

Comment [MG11]: Consider putting the global scenario before national scenario.

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success in implementing effective cervical cancer screening till date. In addition to presenting a significant burden in terms of morbidity and mortality, cervical cancer also increases economic risk, which imposes very high direct costs on health systems, communities, households and lost the productivity of patients, premature death, and disability[16]. Loosing a mother is devastating for a family, but even when the disease is not fatal, the consequences are severe. Surgical and radiological treatment of cervical cancer often leads to physical, psychological, economic and sexual issues as well as infertility. These debilitating outcomes warrant policies to reduce the prevalence of cervical cancer[17].

The study was carried out among female students of Ambrose Alli University to determine their level of understanding of cervical cancer screening. It will be an effective means in creating and disseminating information about the importance of the screening programs available. The emphasis on cervical cancer screening at this point in time is imperative because of the continuous increase in cervical cancer cases in this environment as opposed to that in the developed world which is largely attributed to the widespread practice of cervical cancer screening among their women.The study intends to achieve a reduction in the incidence of cervical cancer in this environment by increasing women's knowledge and hence practice of cervical cancer screening.

The researchers aim to determine the knowledge of cervical cancer screening among female students of Ambrose Alli University. It was also the aim of the researchers to investigate the attitude of female students of Ambrose Alli University towards cervical cancer screening and to assess the practice of cervical cancer screening among participants.

Comment [MG12]: Please provide this before Nigeria'a scenario if it is not specific to Nigeria.

Comment [MG13]: Not a major point. But does the author consider that male need not to have good knowledge/attitude/practices regarding cervical cancer (CA Cx)? If yes, please explain why. If not, please provide justification inclusion of female population only.

Comment [MG14]: Cite your reference, please.

Comment [MG15]: Please consider if it is really the objective of this study. Increased good KAP can be a by product of an KAP survey, but surveys are not generally intervention if not explicitly intended and formulated for that specific purpose. And an intervention study is analytical in nature. So this is not relevant objective of this study. Please, do the necessary correction.

Comment [MG16]: These 2 sentences can be clubbed together or made more simpler. Please follow SMART objective writing guidelines, and consider using the most suitable do-verbs.

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2.0 METHODOLGY

2.1 STUDY AREA

The study was carried out in Ambrose Alli University, Ekpoma, Edo state.It is accredited and recognized by the National University Commission. It has several faculties and departments that are accredited and render educational services to its students and prospective students. The population currently covers an estimate of about 27,000 regular undergraduate students [18].

Comment [MG17]: Are these information relevant for the study methodology point of view?

2.2 STUDY DESIGN

A descriptive cross-sectional study design was used for the study

2.3 STUDY POPULATION

The study population targeted was the female students of Ambrose Alli University Ekpoma.

2.4.1 Inclusion criteria

The study included only Female undergraduate students of Ambrose Alli University whoconsented to the study.

Comment [MG18]: What about any other relevant criteria? E.g., Female aged lesser than legal age of consent (if applicable), who were not present during the survey etc. Please address inclusion criteria judiciously.

2.4.2 Exclusion criteria

Respondents who were unwilling to participate in the study

2.5 STUDY DURATION

The study was done over a timeline of 6months from March to September 2021.

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2.6 SAMPLE SIZE DETERMINATION

The sample size was calculated using the formula for simple proportion [19]:

$$n = \frac{z^2pq}{d^2}$$

Where:

n = minimum sample size

z = standard normal deviate (reliability coefficient at 95% confidence interval; standard value of 1.96)

d = degree of accuracy or margin of error at 5% (standard value is 0.05)

p = prevalence i.e. proportion of population with characteristics of interest = 73.9% (0.739)

Prevalence of knowledge of cervical cancer screening of 73.9% from a study done in Ibadan [20], was taken.

q = 1 – p

The sample size was thus estimated at:

$$n = \frac{1.96^2 \times 0.739 \times (1 - 0.739)}{(0.05)^2}$$

$$= \frac{3.8416 \times 0.739 \times 0.261}{0.0025}$$

= 296.

10% attrition will be added for non-responses

Comment [MG19]: 10% attrition means, we need to achieve desirable sample size as 90% of the estimated size. So 90% = 296, 100% = 329

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10% of 296 = 29.6

Final sample size = 296 + 29.6 = 325.6 = 325.

2.7 SAMPLING TECHNIQUE

Multistage sampling method was employed in the selection of the participants for the study using Interviewer-administered questionnaire.

First stage: This was done using simple random sampling method- balloting. The names of the various 14 faculties across all campuses of Ambrose Alli University, Ekpoma were written on pieces of papers, folded and placed in an enclosed container, shaken together and then four faculties were selected. The faculties selected were faculty of clinical science, education, basic medical science and faculty of life science.

Second stage: This involved anothersimple random sampling were by the names of 31 departments from the selected four faculties were written on pieces of papers, folded and placed in four enclosed container based on the respective faculties. Each container was shaken and then one departmentwas selected from each container. The selected departments were medicine and surgery, health education, anatomy and microbiology department.

Third stage: Involved a Stratified sampling, in which there was proportional allocation of students from selected departments.

Comment [MG20]: Then we may need to adjust sample size for design effects

Comment [MG21]: Justify such representation. E.g., a 25% of the

Comment [MG22]: 1/31 may not be methodologically wrong, but it looses its representativeness.

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MEDICINE AND SURGERY

Comment [MG23]: Please write Table name as per standard guidelines, e.g., Table 1: Different Class-wise number students in Medicine and Surgery department

Class	Population
100	350
200	325
300a	250
300b	300
400	175
500a	80
500b	125
Total	1605

HEALTH EDUCATION

Comment [MG24]: Follow standard guidelines for naming a table

Year of study	population
100 level	395
200 level	387
300 level	375
400 level	290
Total	1447

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MICROBIOLOGY

Year of study	population
100 level	400
200 level	323
300 level	280
400 level	190
Total	1193

ANATOMY

Year of study	population
100 level	348
200 level	345
300 level	338
400 level	324
Total	1355

Sum Total = Medicine and Surgery (100-500 level) + Health Education (100-400Level) + Anatomy (100-400 level) + Microbiology (100-400Level)

Sum Total = 1605 + 1447+ 1193+ 1355= 5600

Comment [MG25]: Table naming

Comment [MG26]: Same as previous, table naming

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The study population was 5600. The sample size of 326 was calculated from this as follows:

Medicine and Surgery = (1605 / 5600) × 326 = 93

Health Education = (1447 / 5600) × 326 = 84

Anatomy = (1193 / 5600) × 326 = 69

Microbiology = (1355 / 5600) × 326 = 80

Students in each department were randomly selectedand given the questionnaire.

Comment [MG27]: Simple randomisation or systematic or any other, please clarify

2.8 TOOLS FOR DATA COLLECTION

Data was collected using semi structured questionnaires (both closed and open ended) designed based on the specific objectives of the study. The questions were aimed to gather information regarding respondent's knowledge on screening for cervical carcinoma, their attitude and practice of cervical cancer screening. The questionnaire was also designed to obtain relevant socio-demographic characteristics of the respondents. The questionnaire was adapted from a previous study on knowledge, attitude and practice of cervical cancer screening amongst market women of Yola metropolis carried out in Adamawa State21[28].

Comment [MG28]: Is UG student population homogenous to this? If not, a validation of the tools is expected.

2.9 DATA ANALYSISc

Comment [MG29]: Consider justifying the cut-off values for "good"

Data was entered into and analyzed with IBM SPSS software version 23.0. Proportions were derived for categorical variables while means and standard deviations were derived for continuous variables. The dependent variables were the socio-demographic factors while the outcome variables were knowledge and practice of cervical cancer screening. Knowledge, attitude and practice of cervical cancer screening were assessed by scoring the responses to the

Comment [MG30]: Why not median (IQR)? Was this data normal? Please address these issues.

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questions in section two, three and four respectively in the questionnaire. Section two had a total of 15 questions beginning from question 7 and ending at question 21. A score of one was awarded to every correct answer except for question 8 which had no score because it was used to access the source of information of the respondents in regards to the knowledge of Pap smear. The highest obtainable score in this section was 14. Participants who scored below 6 had poor knowledge;participants who scored between 6-10 had fair knowledge while participants who scored above 10 had good knowledge of cervical cancer screening.

Comment [MG31]: Why 6 as a cut-off, please justify

Section three which accessed the attitude of respondents toward cervical cancer screening had a total of 12 questions, beginning from question 22 and ending at question 33. Each question was awarded two marks and one mark respectively for every correct answer of “strongly agree” and “agree” or “strongly disagree” and “disagree”. The maximum obtainable score in section three was 24. Respondents who scored below 13 have negative attitude while those that scored 13 and above, have positive attitude toward cervical cancer screening.

Section four had a total of 6 questions, beginning from question 34 and ending at question 39. Questions 34 and 35 were awarded 2 marks each for each correct answer. For question 35 which accessed the number of times participants went for screening, had a maximum score of 3. A score of 1, 2 and 3 respectively was awarded for once, twice and multiple times while questions 36 to 38 had no score as they were used to access the influence on participants’ decision to go for pap smear, findings of the pap smear and action of the participants if pap smear was abnormal. The maximum obtainable score in this section is 7. Respondents who scored below 3 have poor practice while respondents who scored 3 and above, have good practice of cervical cancer screening.

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2.10 ETHICAL CONSIDERATION

Individual informed consent was obtained from the respondents after detailed explanation of the objectives, scope, and benefits of the study had been made known to them.

Comment [MG32]: Extra word., rather author may consider "written informed consent" or "digital informed consent" as applicable

The permission of the various head of departments in the selected department was sort before the research was commenced.

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3.0 RESULTS

Table 1: Socio-Demographic Characteristics of Respondents:

Variable	Frequency (n=326)	Percent
Age Group (in years)		
17 – 19	24	7.4
20 – 22	91	27.9
23 – 25	114	35
26 – 28	86	26.4
29 – 31	11	3.3
Mean ± S.D	23.7 ± 3.3	
Marital Status		
Single	244	74.8
Married	82	25.2
Ethnic Group		
Esan	126	38.7
Bini	90	27.6
Etsako	47	47
Yoruba	38	11.7
Igbo	20	6.1
Owan	5	1.5
Level		
100	28	8.6
200	87	26.7
300	89	27.3
400	90	27.6
500	32	9.8
Religion		
Christianity	278	85.3
Islam	48	14.7
Department		
Medicine	94	28.8
Anatomy	84	25.6
Health Education	69	21.1
English Education	80	24.5

A total of 326 Students were interviewed for the study. The socio-demographic characteristic of the respondents is as shown in table 1 above. The highest percentages (35.0%) of the respondents were within the 23 – 25 years age group. However, their age ranged from 17 – 31 years, with a mean age of 23.7 and a standard deviation of ±3.3. Most of the respondents were single (74.8%),

Comment [MG33]: Consider reporting response rate

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while married represented 25.2% of the total number of respondents.The ethnicity was dominated by Esan ethnic group (38.7%), majority (85.3%) of the respondents were Christians while the highest number of respondents were from year 3 (27.3%) and 4 (27.6).

Comment [MG34]: As a thumb rule, texts are to written first and tables to be referred within the text with table number. Then Table is to be presented.

Table 2: Respondents' Source of Information about pap smear

Source of Information	Frequency (n=102)	Percent (%)
School	49	48.0
Health Worker	29	28.4
Social Media	16	15.7
Mass Media	8	7.8

Out of the 326 respondents, 102 (31.3%) have heard of Pap smear. Table 2 above shows the source of information of the respondents. School had the highest percentage (48.0%) while mass media (7.8%) was the list source of information

Comment [MG35]: Please arrange in order. After referring to table 3, referring to table 2- is confusing for readers

Table 3: Knowledge of Ambrose Alli University Students on Cervical Cancer and Cervical Cancer Screening.

Questions	Responses			
	Yes (%)	No (%)	I don't know	Total (%)
Heard of cancer of cervix	299 (91.7)	27 (8.3)	0 (0.0)	326 (100)
Heard of pap smear	102 (31.3)	224 (68.7)	0 (0.0)	326 (100)
Pap smear is the most helpful way to detect pre-cancer and cancer of the cervix	85 (26.1)	90 (27.6)	151 (46.3)	326 (100)
Women should have pap smear at least every 3years	136 (41.7)	48 (14.7)	142 (43.6)	326 (100)
The purpose of pap smear is to detect abnormal cells in the cervix	179 (54.9)	32 (9.8)	115 (35.3)	326 (100)
Pap smear is able to detect all types of	48 (14.7)	130 (39.9)	148	326 (100)

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female genital cancers			(45.4)	
Pap smear is non-invasive and relatively inexpensive	71 (21.8)	120 (36.8)	135 (41.4)	326 (100)
Women should have pap smear since onset of sexual activity	151 (46.3)	27 (8.3)	148 (45.4)	326 (100)
Pap smear should be performed in both menstrual and non-menstrual periods.	58 (17.8)	120 (36.8)	148 (45.4)	326 (100)
A woman should not have sex 24hours before having pap smear	123 (37.7)	48 (14.7)	155 (47.5)	326 (100)
Pap smear should be discontinued after menopause	59 (18.1)	130 (39.9)	137 (42.0)	326 (100)
A patient with a normal Pap smear does not need pap smear in the future	43 (13.2)	162 (49.7)	121 (37.1)	326 (100)
There is no need to have pap smear if it is not administered by a doctor	196 (60.1)	58 (17.8)	72 (22.1)	326 (100)

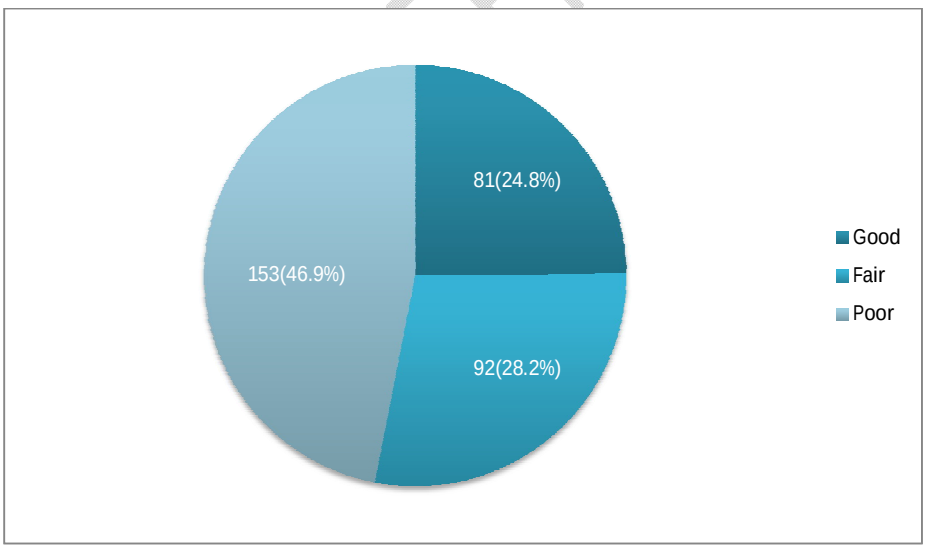

FIGURE 1: General Knowledge of cervical cancer and cancer screening

The knowledge of the respondents on cervical cancer and cervical cancer screening as assessed in table 3, is shown in figure 1 above. 24.8% of respondents had good knowledge, 28.2% had fair knowledge, while 153(46.9%) of respondents had poor knowledge. Since some of the respondents were medical students, this result was expected.

Comment [MG36]: Put this into "discussion" section

Table 4: Knowledge and Socio-Demographic Characteristics of Respondents.

Socio-Demographic Characteristics.	Knowledge of Respondents.			Chi-Square	P-Value
	Good (%)	**Fair (%)**	**Poor (%)**		
Age Group (years)					
17 – 19	4 (16.7)	2 (8.3)	18 (75.0)		
20 – 22	11 (12.1)	20 (22.0)	60 (65.9)		
23 – 25	31 (27.4)	39 (34.5)	43 (38.1)		
26 – 28	27 (31.4)	32 (37.2)	27 (31.4)		
29 – 31	9(63.6)	2 (18.2)	2 (18.2)	**154.495**	**<0.0001***
Marital status					
Single	58 (23.7)	61 (25.0)	125 (51.3)		
Married	22 (26.8)	32 (40.2)	28 (33.0)	**8.282**	**0.016**
Religion					
Christian	70 (25.2)	77 (27.7)	131 (47.1)		
Muslim	11 (22.9)	15 (31.3)	22 (45.8)	**0.221**	**0.895**
Level					
100	4 (14.3)	1 (3.6)	23 (82.1)		
200	5 (5.7)	38 (43.7)	44 (50.6)		
300	12 (13.5)	17 (19.1)	60 (67.4)		
400	37 (41.1)	32 (35.6)	21 (23.3)		
500	22 (68.8)	7 (21.8)	3 (9.4)	**117.910**	**<0.0001***
Department					
Medicine	60 (64.5)	23 (24.7)	10 (10.8)		
Anatomy	4 (5.8)	36 (52.2)	29 (42.0)		
Health education	17 (20.2)	13 (15.5)	54 (64.3)		
Microbiology	6 (7.5)	21 (26.2)	53 (66.3)	**136.230**	**<0.0001***

***=Significant (p<0.05)**

There was statistically significant (P<0.05) relationship between the age of respondents and their knowledge of Pap smear. Similarly, a statistically significant relationship was found between the participants' ethnic group, level and knowledge of Pap smear as well as their department and

Comment [MG37]: Preferably use "association" in place of relationship, as there are more suitable test for relation.

UNDER PEER REVIEW

knowledge of Pap smear. However, there was no statistically significant relationship between respondents' religion and knowledge of Pap smear.

:

Table 5: Attitude of Respondents towards Cervical Cancer Screening

Comment [MG38]: Correct the formatting for better visibility

Questions	Frequency (n=326)			
	Strongly agree (%)	**Agree (%)**	**Disagree (%)**	**Strongly disagree (%)**
Would feel embarrassed if a male doctor performed the Pap smear	120 (36.8)	80 (24.5)	37 (11.3)	89 (27.3)
Would go for screening even if single	98 (28.5)	7 (2.1)	8 (2.5)	218 (66.9)
Being married will prevent you from going for screening	258 (79.1)	21 (6.4)	12 (3.7)	35 (10.7)
Thinks pap smear screening is too expensive	106 (32.5)	158 (48.5)	17 (5.2)	45 (13.8)
Thinks it is painful to have pap smear	63 (19.3)	185 (56.7)	10 (3.1)	68 (20.9)
Thinks having a pap smear is unpleasant and embarrassing.	112 (34.4)	139 (42.9)	25 (7.7)	50 (15.3)
Thinks it is difficult to make out time to go for screening	199 (61.0)	36 (11.0)	30 (9.2)	61 (18.7)
Thinks it is difficult to get to the pap smear clinic	201 (61.7)	51 (15.6)	21 (6.4)	53 (16.3)
Thinks Pap smear is unnecessary if there are no signs and symptoms.	137 (42.0)	65 (19.9)	33 (10.1)	91 (27.9)
Thinks being busy is a barrier to Pap smear	151 (46.3)	55 (16.9)	46 (14.1)	74 (22.7)
Thinks it is unnecessary to go for only Pap smear screen	125 (38.3)	108 (33.1)	26 (8.0)	67 (20.6)
Afraid that something wrong will be detected if gone for pap smear screen.	35 (10.7)	17 (5.2)	32 (9.8)	242 (74.2)

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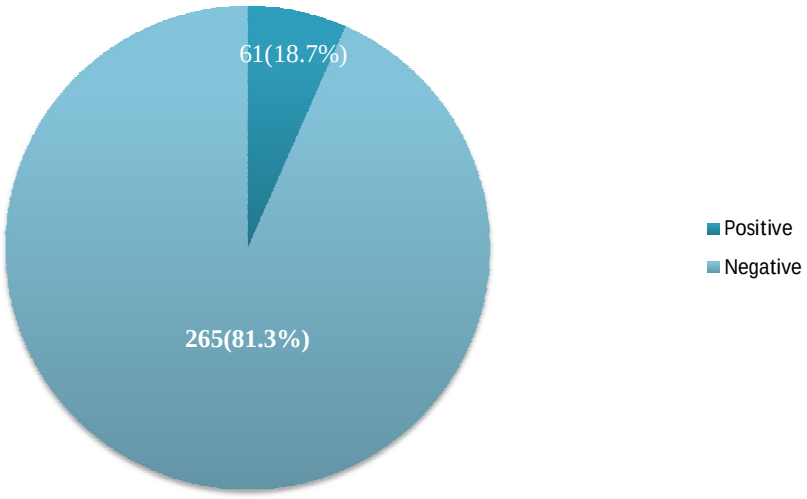

Figure 2: General attitude of respondents toward cervical cancer screening

61(18.7%) of respondents demonstrated positive attitude toward cervical cancer screening while 265(81.3%) of participants demonstrated negative attitude toward cervical cancer screening.

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Table 6: Response of Ambrose Alli University Students Regarding Practice of Cervical Cancer Screening.

Questions	Frequency (n=326)	Percent (%)
Have had at least one screening for cervical cancer		
Yes	5	1.5
No	321	98.5
	n=5	
Number of times screened for cervical cancer		
Once	5	100.0
Twice	0	0
Multiple	0	0
Influence on decision to go for pap smear		
Friends and family	3	60
Doctors' advice	2	40
Pap smear finding		
Normal	5	100
Would encourage people to go for screening.		
Yes	65	19.9
No	261	80.1

From table 6 above, only 5(1.5) participant have done pap smear, of which 100% of them only had pap smear done once. Friends and family accounted for the highest influence on their decision to go for pap smear. 19.9% of respondents were willing to encourage others to go for screening.

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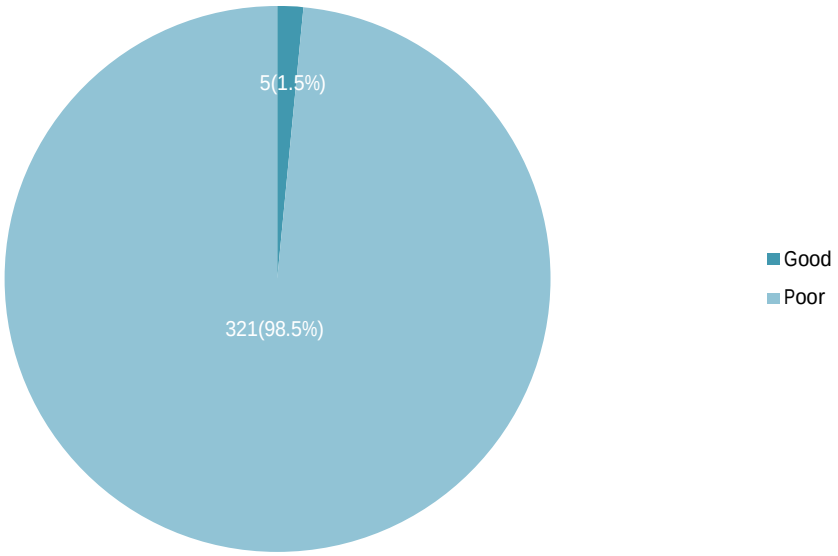

Figure 3: General practice of respondents toward cervical cancer screening

33(10.1%) of respondents demonstrated good practice of cervical cancer screening while 293(89.9%) of participants demonstrated poor practice of cervical cancer screening.

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Table 7: General knowledge and General attitude of Respondents.

General knowledge of pap smear	General attitude of respondents		Test statistics	P-Value
	Positive (%)	**Negative (%)**		
Good	44 (53.7)	38 (43.6)		
Fair	15 (16.3)	77 (83.7)		
poor	2 (1.3)	150 (98.7)		
			96.432	**<0.0001***

***=Significant (p<0.05)**

There is statistically significant relationship between general knowledge of pap smear and general attitude of respondents toward cervical cancer screening.

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4.0 DISCUSSION

This study was conducted to assess the knowledge, attitude and practice of cervical cancer screening among female students at Ambrose Alli University.

This research showed that majority of the participants has heard of cervical cancer. This is higher than the finding in Ethiopia (54.4%) [22] and Cameroon (28%) [23], however it was similar when compared to another study done among female medical students of Crimea State Medical University Ukraine where 80% of the participants had heard about cervical cancer [24] However, it was observed that despite the fact that most of the respondent have heard of cervical cancer, half of them had poor knowledge on cervical cancer screening. This result was also similar to the study done in Lagos [25], however it was in contrast to another study done in Saudi Arabia [26] as majority of the participants had good knowledge on cervical cancer screening.

Knowledge of cervical cancer screening increased with increasing age as most of the participant between 29 to 31 years had good knowledge of cervical cancer screening while most of the participants aged 17 to 19 had poor knowledge. Similarly, Monica Ideström's study of Denmark showed that knowledge and concerns regarding Pap smear test were dependent on age, where younger women showed lesser degree of awareness and practice as compared to the older participants [27].There was also a significant relationship between knowledge of cervical cancer and age of participant.

Knowledge of cervical cancer screening also increased with increasing university level as students in 400 and 500 level had higher knowledge when compared to the other levels. The better knowledge of these students can be explained by the fact that these students, especially medical students and those in final year, must have been taught about cervical cancer as a part of

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their curriculum recently and therefore were more informed about the disease. This was in keeping with similar research done in Al-Ahsa Saudi Arabia where most of the student's had good knowledge of cervical cancer screening [28]. There was also statistical relationship between the knowledge of cervical cancer screening and university level of participants.

In this study, only a few of the study participants had a positive attitude towards cervical cancer screening. This is much lower than a similar study conducted in Hawassa University among female students [29]. 36.8% and 24.5% of the participants strongly agree and agree respectively that administration of Pap smear by a male doctor will be uncomforting and embarrassing to them and it is in keeping with a research doneSouth Africa [30], while 79.1% and 6.4% strongly agree and agree that being married will prevent them from going for screening. It is also important to state that 106 and 158 respondents strongly agree and agree that Pap smear is expensive. This finding was similar to a research done in Haiti [31] and this may be a huge deterrent in the attitude as well as practice of cervical cancer screening amongst participants. Majority of the respondent are confident that nothing wrong will be detected if they go for Pap smear while 42.0% and 19.9% of respondent strongly agrees and agrees that going for Pap smear is unnecessary if there are no signs and symptoms. This therefore confirms that the knowledge of Pap smear amongst the respondents is low as its purpose is for the prevention of cervical cancer, so individuals need not wait before the onset of signs and symptoms before going for screening.

One third of the respondents think it's unnecessary to go to the hospital just for the purpose of Pap smear. This therefore implies that the hospital is a good means of encouraging women to go for Pap smear as most visits to the hospital by women are for other reasons and not Pap smear.

There was statistical significance between the level of knowledge of cervical cancer screening and the attitude of the respondents. Over half of the participants with good knowledge of cervical cancer screening had a positive attitude toward cervical cancer screening. However, despite having good knowledge and positive attitude toward screening, the practice of cervical cancer screening among them was low. This could be due to the fact that majority of the respondents were confident that nothing wrong will be detected if they go for Pap smear.

Although practice of screening is reported to be low in Nigeria, studies from rural areas and slums have reported lower practice of cervical cancer screening. Only five (1.5%) respondents in this study had done a cervical cancer screening test at some time. Among women interviewed in two slums, in Lagos, also none had been screened or was aware of a screening test for cervical cancer [32]. In a study at rural Okada a community in Edo state, Southern Nigeria, none had been screened for cervical cancer [33]. A low practice of cervical cancer screening was however, also observed in a study in Olusosun, a commercial and residential area of Lagos where only 5% of the female respondents had undertaken a pap smear [34]. Similarly, in a study in Onitsha, a metropolitan city in Anambra, Southeast Nigeria, only 1.8% of respondents had done a cervical screening test [35].

A survey in Britain reported 91% of women have had a cervical cancer screening test at least once [36] Practice of cervical cancer screening varies globally, being higher in developed countries compared with less developed. Studies carried out in some other developing countries also showed low practice of cervical cancer screening. In a Kenyan study, practice was 6% [37] and 0.8% in a community based study in Elmina, Ghana [38].

Out of the 5 respondents who have been screened for cervical cancers, 3 of them went for screening because of the advice from family and friends while the remaining went because a

doctor recommended or advised them to for screening. This further suggests that doctors and health care workers should advise patients who are eligible for the commencement of screening to go for screening.

The low practice could be due to poor availability of screening services within Esan West Local government and poor knowledge of people about the disease and its screening. Moreover, cervical cancer screening services are mostly available in tertiary health institutions with fairly high cost in most cases.

Comment [MG39]: Add "strength" and "limitations" in this "discussion" section

4.2 RECOMMENDATION

To the government

1. Public service announcements promoting Pap smear test utilization and its benefits should be carried out by the government, non-government organizations and schools.
2. Policies that encourage doctors to recommend the procedure to their female patients who meet the necessary requirements for commencing Pap smear test screening should be instituted.
3. Policies that encourages the orientation of the new university intakes about cervical cancer and cervical cancer screening should also be instituted

To the public health physician/and health workers

1. Encourage or as appropriate mandate that all women coming for antenatal services are provided with the options of a Pap smear test

To the General Populace

The general population should take the issue of cervical cancer screening seriously as preventing the disease is much better than its management. The more enlightened once who have undergone screening, should advice and encourage others to go the screening as well.

CONCLUSSION

In conclusion, knowledge, and attitude regarding cervical cancer screening among students of Ambrose Alli University were low. Cervical cancer screening is also low as only 5 (1.5%) of the respondent had ever gone for screening.

Comment [MG40]: Make some conclusive statements, not only result

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LIST OF ABBREVIATIONS
FMOH: Federal Ministry Of Health
HPV: Human Papilloma Virus
Pap smear: Papanicolaou Smear
WHA: World Health Assembly
WHO: World Health Organization

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