

Cervical Cancer Knowledge, Perceptions and Screening Behaviour among Female University Students in Ghana

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Abstract

Cervical cancer is becoming a leading cause of death among women in developing countries. Nevertheless, little is known regarding knowledge and perception of cervical cancer and screening behaviour particularly among female tertiary students in Ghana. This study sought to examine the knowledge, perceptions of cervical cancer and screening behaviour among female students in the University of Cape Coast and Ghana Institute of Management and Public Administration in Ghana. A cross-sectional survey design was adopted for the study. Systematic and stratified random sampling techniques were used to select 410 participants for the study, and a questionnaire was used to collect data from participants. The study found that the participants lacked knowledge on specific risk factors and symptoms of cervical cancer. Also, even though the participants had a fair perception of cervical cancer, they had a poor cervical cancer screening behaviour. Awareness of cervical cancer was significantly influenced by religious affiliation whilst cervical cancer screening was significantly determined by the working status of the participants. Specific knowledge on cervical cancer and its risk factors as well as regular screening behaviour is paramount to the prevention of

cervical cancer. Consequently, the University Health Services should focus on promoting regular cervical cancer awareness campaigns among the students particularly the females.

Keywords: Cervical cancer; knowledge and perception; female students; Ghana

Introduction

According to the International Agency for Research on Cancer [IARC], cervical cancer is the fourth most widespread cancer in women, and the seventh on the whole, with an estimated 528,000 new cases in 2012 alone. Also, the large majority (85%) of the global burden occurs in the less developed regions, where it accounts for close to 12 percent of all female cancers. Notable high-risk regions include Eastern Africa (42.7 per 100,000), Melanesia (33.3 per 100,000), Southern Africa (31.5 per 100,000) and Middle Africa (30.6 per 100,000). However, rates are lowest in Australia/New Zealand (5.5 per 100,000) and Western Asia (4.4 per 100,000) [1].

There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5 percent of all female cancer deaths. Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions. Thus, mortality rates vary widely among the various regions of the world, with rates ranging from less than 2 per 100,000 in Western Asia, Western Europe and Australia/New Zealand to more than 20 per 100,000 in Melanesia (20.6 per 100,000), Middle Africa (22.2 per 100,000) and Eastern Africa (27.6 per 100,000) [1].

According to Asante-Agyei [2], in Ghana, about 6.57 million women over 15 years are at risk of developing cervical cancer. Each year in Ghana, at least 3,000 women are diagnosed with cervical cancer and at least 2,000 women die from the disease. Hence, cervical cancer is the most frequently diagnosed form of cancer in women in Ghana,

including women between the ages of 15 to 44 years. Cervical cancer is an entirely preventable type of cancer, and only 3.2 percent of urban women aged 18 to 69 and 2.2 percent of rural women aged 18 to 69 get screened for cervical cancer at least once every three years in Ghana. Studies on knowledge and perception of cervical cancer as well as screening behaviour of people abound in the literature [3-7]. However, little is known about women's knowledge, perception of cervical cancer and screening behaviour in Ghana, particularly among female tertiary students. This paper examined the knowledge, perceptions of cervical cancer and screening behaviour among female students in the University of Cape Coast (UCC) and Ghana Institute of Management and Public Administration (GIMPA) in Accra, Ghana.

Materials and methods

Study design and target population

A cross-sectional survey design was adopted for this study, and data for the study were obtained from only primary source. Participants of the study included female students from the University of Cape Coast (UCC) and the Ghana Institute of Management and Public Administration (GIMPA) in Accra, Ghana.

Sampling procedure

In UCC, a systematic random sampling technique was used so that in each of the halls of residence, persons were selected from every fourth room and questionnaires were administered to them. In GIMPA, stratified random sampling technique was used so that participants were drawn from each class and level. Hence, participants were contacted in their various classes since there were no halls of residence and therefore difficult to contact them outside the class. A total of 410 female undergraduate students (205 from each institution) were contacted for the two surveys in each of the two institutions. The surveys were

conducted between November 2013 and April 2014. The purpose of the study was carefully explained to all the potential participants in order to help obtain their informed consent before participation. As such, only those who had given their informed consent were included in the study.

Data collection instrument

Data for the study were collected using questionnaire. The questionnaire was organised in four different sections: A to D. Section A comprised of the demographic characteristics of participants while section B focused on participants' knowledge and awareness of cervical cancer, which consisted principally of close-ended questions. Section C dealt with participants' perception of cervical cancer in terms of susceptibility, seriousness, and benefits. These were measured using a five-point Likert scale statements on a scale as follows: SA= Strongly Agree; A= Agree; U= Uncertain; D= Disagree; SD=Strongly Disagreed. Lastly, section D centred on participants screening behaviour for cervical cancer, and questions were basically close-ended questions. The surveys were facilitated by well-trained research assistants who helped in administering and retrieving the questionnaires during the fieldwork.

Data processing and analysis

Data collected from the surveys were crossed-checked and edited to ensure that there are no inconsistencies in the responses and the information given was relevant, and the data were subsequently coded. The STATA statistical software (version 12) was employed to process the data. The results were presented in frequencies, percentages, and tables for discussion. Also, a binary logistic regression model was used to examine the predictors of cervical cancer awareness and screening among the participants. The dependent variables of the logistic regression models were awareness of cervical cancer and cervical cancer screening which had

binary outcomes, yes or no. The yes was coded “0” while the no was coded “1”. Both dependent variables were separately modeled against the socio-demographic characteristics of participants to determine which of them had a significant relationship with each of the dependent variables.

Results

Socio-demographic characteristics of participants

From Table 1, results on the socio-demographic characteristics of the participants revealed that the majority (61%) of the respondents were 20 to 29 years, more than one-fifth (22%) were less than 20 years while only a few (6.8%) were 40 years and above. In terms of marital status, the single participants were dominant (80.5%) while less than a fifth (17.3%) were married and only a few (2.2%) were divorced or separated. Also, Christians were dominant (92.2%) and only a few (7.8%) were Muslims. About 38 percent were also working while in school while about 62 percent were not working.

Knowledge of cervical cancer

Table 2 presents results on participants’ knowledge on cervical cancer. From the table, the results revealed that out of 410 female students who participated in the study, 85.6 percent (351) had heard of cervical cancer while 14.4 percent had not heard of cervical cancer. Of the 351 participants who had heard of cervical cancer, the majority (82.3%) indicated that cervical cancer affects women only; 5.4 percent reported that it affects both men and women while 0.8 percent reported that men only and 11.5 percent indicated that they did not know who the disease actually affects. When asked to locate the cervix, 60.5 percent of the participants indicated that the cervix is at the lower portion of the uterus, about one-fifth (20.2%) indicated that it was located in front of the vagina while 16.8 percent reported that they did not know.

Additionally, participants were asked to identify the risk factors associated with cervical cancer. As indicated in Table 2, 43.0 percent of the participants associated the disease with family history while 15.1 percent related it with alcoholism and only 8.3 percent linked it with age at marriage. Close to one-third (31.0%) of the participants, however, reported that they did not know the risk factors that are concomitant to cervical cancer. In terms of familiarity with the symptoms cancer, 82.4 percent of the participants who have heard of cervical cancer indicated that they were not familiar with the symptoms while only 17.6 percent indicated that they were familiar with the symptoms. However, the 62 who were familiar with the symptoms indicated abnormal vaginal bleeding (32.2%), increased vaginal discharge (31.0%), pain during urination (18.7%) and pelvic pain (18.1%) as the specific symptoms associated with cervical cancer.

Furthermore, from Table 3, it can be observed that among the socio-demographic characteristics of the participants, only religious affiliation (OR=4.03, $P < 0.001$) had a significant relationship with cervical cancer awareness. As such, the odds of cervical cancer awareness were higher for Christian (4.03 times) compared to their Muslim counterparts. Age, marital status and work status of the participants, therefore, had no significant relationship with awareness of cervical cancer.

Perceptions about cervical cancer

Table 4 presents results on participants' perception about cervical cancer. As indicated in the table, 81.0 percent of the participants disagreed with the statement that a person who is unaware of cervical cancer cannot contract it while only 10.5 percent agreed and 8.5 percent were uncertain. Also, 73.4 percent of the participants who had heard of cervical cancer agreed that it is a deadly disease and only 16.8 percent disagreed with 9.8 percent being uncertain. Additionally, more than half (55.3%) of the participants disagreed that cervical

cancer can be transmitted sexually while on the other hand, 31.7 percent of the participants agreed that cervical cancer can be transmitted sexually and 13.0 percent were uncertain.

Furthermore, 68.7 percent of the participants disagreed that cervical cancer has no cure. Conversely, only 18.0 percent of the participants agreed that cervical cancer has no cure with 13.3 percent being uncertain. Similarly, 62.8 percent of the participants agreed that cervical cancer can cause infertility while 29.8 percent of the participants disagreed that cervical cancer can cause infertility and only 7.4 percent were not certain. In addition, 79.7 percent of the participants agreed that all women are at risk of cervical cancer. However, only 10.5 percent of the participants disagreed that all women are at risk of cervical cancer while close to one-tenth (9.8%) were uncertain. Lastly, 82.4 percent of the participants agreed that cervical cancer screening is beneficial while only 7.6 percent disagreed with one-tenth (10.0%) being uncertain.

Screening behaviour

Results on the screening behaviour of participants have been presented in Table 5. Out of the 351 participants who had heard of cervical cancer, 53.4 percent (187) indicated that they were aware of screening for cervical cancer while 46.6 percent (164) indicated that they were not aware of screening. Further, out the 187 participants who were aware of screening for cervical cancer, 92.0 percent indicated that they had not been screened in the last two years while only 8.0 percent had ever been screened in the last two years. Meanwhile, the majority (80.0%) of those who had ever been screened for cervical cancer in the last two years indicated that their doctors had explained their results to them, while only 20.0 percent indicated the otherwise. Lastly, 69.5 percent of the participants who knew about screening for cervical cancer indicated that they had the intention of getting screened in the future while only 30.5 percent indicated that they had no intention of getting screened for cervical cancer in the future. Table 6 presents a summary of results from a logistic regression analysis on

socio-demographic predictors of cervical cancer screening. From the results, only work status (OR=5.90, $P < 0.003$) of the participants had a significant relationship with cervical cancer screening among other variables such as age, marital status, and religious affiliation. Participants who were working while schooling were 5.90 times more likely to screen for cervical cancer compared to their counterparts who were not working.

Discussion

The study revealed that the majority (85.6%) of the participants were aware of cervical cancer. In a similar study, Ayinde et al. [8] found among female undergraduate students in Ibadan, Nigeria that 71 percent were aware of cervical cancer. However, this is in contrast with Hoque and Hoque's [4] findings among South African female University students that less than half (42.9%) of the participants had heard of cervical cancer. The majority (82.3%) of the participants knew that cervical cancer affects only women and were aware of the location of the cervix. This may be as a result of the fact that the participants were university students and for that matter, they may likely be enlightened about their body and its physiology.

The study also found that the majority of the participants had no knowledge of the symptoms of cervical cancer, even though they had heard of it. This means that the participants may not be able to know if they have the disease. This could be due to poor sensitisation of students as well as the general public on cervical cancer and its symptoms. This confirms the findings by Aswathy et al. [9] which revealed that the majority of participants (92.8%) studied in India had poor knowledge of the symptoms of cervical cancer.

The family history of cervical cancer was correctly identified as a risk factor for the disease by the participants in previous studies [4]. In this study, even though 42.9 percent of the participants rightly identified family history as a risk factor, more than half of the participants who had heard of cervical cancer did not know any risk factors associated with

the disease. In a similar way, Hoque and Hoque [4], as well as Abotchie and Shokar [5], also found that the level of knowledge of female university students on risk factors for cervical cancer was quite poor. The study further revealed that awareness of cervical cancer was significantly determined or predicted by religious affiliation of the participants. As such, the Christians were more likely to be aware of cervical cancer than their Muslim counterparts.

In terms of perceptions of risk, the majority of the participants perceive that they can still get cervical cancer irrespective of their awareness of it. The majority also perceived that cervical cancer is a fatal disease. Indeed, cervical cancer is found to be one of the leading causes of morbidity and mortality among the gynaecological cancers worldwide [10]. The study further found that the majority of the participants perceived that cervical cancer has a cure. This is consistent with Sudenga et al.'s [7] finding among Kenyan women that nearly all previously screened women (92%) believed that cervical cancer was curable if detected early.

The majority of the participants implied that cervical cancer can actually make them infertile. Cervical cancer treatment for most women means that they may not be able to get pregnant depending on the type of treatment; however, in some cases, women with early cervical cancer may still be able to get pregnant and have children [11]. The participants acknowledged that every woman is at risk of contracting cervical cancer, and this was also found by Sudenga et al. [7] that most women studied felt they were at risk of cervical cancer. The majority of the participants also recognised that going for regular screening for cervical cancer would be of great benefit to them in the future.

With regard to screening behaviour, the study found that just more than half (53.4%) of those who had heard of cervical cancer knew of available screening opportunities for the disease. This implies that a considerable number of the participants did not know about screening services for the disease. In similar studies, Al-Sairafi and Mohamed [12]

established among Kuwaiti women that only about 52 percent of women had adequate knowledge about cervical cancer screening, while Al-Meer et al. [13] revealed that about three quarters had heard about cervical cancer screening. Besides, Abotchie and Shokah [4] found that female university students were unaware of local screening initiatives for cervical cancer.

The study further found that the majority of the participants had never gone for screening for cervical cancer in the past two years preceding the study, perhaps because of lack of awareness. Also, a number of studies found that cervical cancer screening rate is quite low in various female populations [4, 7, 12, 14, 15]. However, most of the participants were stated that they would be willing to screen for cervical cancer in the future. Studies by Sudenga et al. [7] and Al-Meer et al. [13] also reported similar findings. Also, screening for cervical cancer was significantly determined by the work status of the participants; hence, working participants were more likely to screen for cervical cancer than their non-working counterparts. This could come from the fact that working participants may more likely afford the cost of screening for the disease, unlike their counterparts who were not working.

Conclusion

The study revealed the female university students did not have adequate knowledge of cervical cancer. They lacked knowledge on the specific risk factors as well as the specific symptoms associated with cervical cancer. The female university students had a quite fair perception of cervical cancer. However, they had a very poor screening behaviour for cervical cancer; nevertheless, they had the intention of screening in the near future. Cervical cancer awareness was therefore significantly influenced by religious affiliation whereas screening was significantly determined by the working status of the participants. The University Health Services should plan cervical cancer awareness and screening campaigns for all students with particular attention to female students.

Study limitations

Like any other studies, this study is not without limitations. Even though the questionnaire used for the study was duly pretested, it was not really validated. However, this did not negatively affect the results of the study in any way. This is because the measures used in the questionnaire were directly drawn from published literature. Furthermore, the study did not consider sample size calculation. Thus, the sample size was conveniently obtained based on the availability of participants at the time of the study. This, we believe, may not have any significant negative impact on the study results. The study did not also look at the results for the individual institutions separately.

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Conflict of interest

The authors report no conflicts of interest in this work

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Table 1: Socio-demographic characteristics of participants

Variables	Frequency	Percent
Age (N=410)		
Less than 20 years	90	22.0
20-29	250	61.0
30-39	42	10.2
40+	28	6.8
Marital status (N=410)		
Single	330	80.5
Married	71	17.3
Divorced/separated	9	2.2
Religious affiliation (N=410)		
Christian	378	92.2
Muslim	32	7.8
Work status		
Working	155	37.8
Not working	255	62.2

Table 2: Knowledge of cervical cancer among female university students

Variables	Frequency	Percent
Have heard of cervical cancer (N=410)		
Yes	351	85.6
No	59	14.4
Gender affected (n=351)		
Men only	3	0.8
Women only	289	82.3
Both men and women	19	5.4
Do not know	40	11.5
Location of cervix (n=445)*		
In front of the vagina	90	20.2
Lower portion of the uterus	266	60.5
Under the bladder	11	2.5
Do not know	75	16.8
Risk factors (n=351)		
Family history of the disease condition	151	43.0
Alcoholism	53	15.1
Age at marriage	29	8.3
Exercise	9	2.6
Do not know	109	31.0
Familiar with symptoms (n=351)		
Yes	62	17.6
No	289	82.4

Table 2 continued.

Identified symptoms (n=155)*		
Abnormal vaginal bleeding	50	32.2
Increased vaginal discharge	48	31.0
Pain during urination	29	18.7
Pelvic pain	28	18.1

Note: *Multiple responses

Table 3: Socio-demographic predictors of cervical cancer awareness

Variables	Odds Ratio	P- value	95% Conf. Interval
Age of respondent			
Less than 20 (Ref)	1		
20-29	1.05	0.887	0.493 - 2.262
30-39	0.89	0.862	0.242- 3.275
40 and above	1.70	0.517	0.339- 8.588
Marital status			
Single (Ref)	1		
Married	1.09	0.852	0.425-2.807
Divorced/separated	2.07	0.472	0.284-15.074
Religious affiliation			
Muslim (Ref)	1		
Christian	4.03***	0.001	1.825-8.901
Work status			
Not working (Ref)	1		
Working	1.23	0.551	0.571 - 2.857

Notes: Ref= Reference Category; *** p<0.001

Table 4: Perceptions of female university students about cervical cancer

Statement	N=351 Level of agreement (%)				
	SA	A	U	D	SD
A person who is unaware of cervical cancer cannot contract it	6.5	4.0	8.5	32.7	48.3
Cervical cancer is a deadly disease.	34.4	39.0	9.8	10.7	6.1
Cervical cancer can be transmitted sexually.	11.7	20.0	13.0	40.8	14.5
Cervical cancer has no cure	4.6	13.4	13.3	42.4	26.3
Cervical cancer can cause infertility	21.2	41.6	7.4	22.2	7.6
All women are at risk of cervical cancer.	37.3	42.4	9.8	5.9	4.6
Cervical cancer screening is beneficial	50.3	32.1	10.0	3.2	4.4

Notes: SA= Strongly Agree; A= Agree; U= Uncertain; D= Disagree; SD=Strongly Disagreed

Table 5: Screening behaviour of female university students

Variables	Frequency	Percent
Awareness of screening for cervical cancer (n=351)		
Yes	187	53.4
No	164	46.6
Ever been screened in the last two years (n=187)		
Yes	15	8.0
No	172	92.0
Doctor explained the result? (n=15)		
Yes	12	80.0
No	3	20.0
Intention of getting screened in the future (n=187)		
Yes	130	69.5
No	57	30.5

Table 6: Socio-demographic predictors of cervical cancer screening

Variables	Odds Ratio	P- value	95% Conf. Interval
Age of respondent			
Less than 20 (Ref)	1		
20-29	0.83	0.829	0.116 - 4.210
30-39	0.93	0.946	0.151- 5.834
40 and above	0.37	0.331	0.050- 2.742
Marital status			
Single (Ref)	1		
Married	0.44	0.084	0.174-1.115
Divorced/separated	1.73	0.659	0.150-20.112
Religious affiliation			
Muslim (Ref)	1		
Christian	1.50	0.204	0.176-1.446
Work status			
Not working (Ref)	1		
Working	5.90***	0.003	1.804 - 9.336

Notes: Ref= Reference Category; *** p<0.001