

Perception and risk factors for cervical cancer among women in northern Ghana

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SUMMARY

Objective: This study assessed the perception of risk of cervical cancer and existence of risk factors for cervical cancer based on five known risk factors among women attending the Tamale Teaching Hospital in Tamale, Ghana.

Methods A consecutive sample of 300 women was interviewed using a semi-structured questionnaire to inquire about risk factors and perception of risk of cervical cancer. Specific risk factors that were explored included early coitarche, multiple sexual partners, polygamous relationships, history of smoking, and having a current partner who had multiple sexual partners.

Results: Sixty-one per cent of women reported that they had no personal risk for cervical cancer. 27% of respondents were in polygamous relationships, and of those, more than half didn't think they were at an increased risk of cervical cancer. 2 women had a total of ≥ 5 sexual partners in their lifetime and neither believed they were at any risk for cervical cancer. 23% said their current partner had had at least 2 sexual partners in his lifetime, and of those, (61%) thought they were at no risk for cervical cancer. 46% of respondents reported not having any of the risk factors listed in the study. 23% of respondents reported having one risk factor while 21% had two risk factors and 11% had three or more risk factors.

Conclusion: Women's perception of personal risk for cervical cancer is lower than their actual risk based on the five behavioural risk factors assessed and a lack of knowledge of the personal factors for the disease

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INTRODUCTION

In Ghana the cervical cancer incidence rate of 26.4 per 100,000 women per year makes it the most commonly occurring cancer in women.¹ There are nearly 7 million women aged 15 years and older who are at risk of developing cervical cancer in Ghana¹

A number of risk factors for cervical cancer are linked to exposure to the human papilloma virus (HPV).^{2,3} These include early age of first sexual intercourse⁴, having multiple sexual partners⁴ and having partners who themselves have multiple sexual partners.⁵ Other independent risk factors are infrequent screening for

cervical cancer and tobacco use.⁶ While the prevalence of HPV infection is not known in Ghana, about 21.5% of women in the general population in West Africa are estimated to harbor cervical HPV infection at any given time.¹

No national screening programme currently exists in Ghana for cervical cancer, although at the time of this study, referral-based screening is available in two urban teaching hospitals which reach a limited number of women. Diagnosis of cervical cancer in the early treatable stages remains relatively rare.⁷

A study published in 2000 showed that of the women with cervical cancer who presented to the Korle-Bu Teaching Hospital - the largest teaching hospital in Ghana - 64.3% presented with stage IIB or worse disease.⁸ Conversely, there have been dramatically reduced rates of cervical cancer in developed countries with well organized-screening and treatment programs.^{9,10,11}

Several studies have found that perceived risk is an important predictor of whether individuals change behaviors to reduce risk exposure.^{12,13,14,15} In addition, perception of risk has been found to lead people to initiate actions to reduce risk.¹⁶ Women's perception of their own risk of cervical cancer often differs from scientific estimates of risk^{17,18}, and even when screening facilities are widely available, lack of risk perception often serves as a barrier to screening.^{19,20,21}

This study was designed to explore women's perceptions of their own risk of cervical cancer and to determine if risk perceptions were associated with the number or type of risk factors women reported having, that could put them at an increased risk of cervical cancer.

The study was conducted at the antenatal and child welfare clinics of the Tamale Teaching Hospital. The hospital is the referral center for the three northern regions of Ghana, and one of three (3) teaching hospitals in the country; it is the center for clinical training of medical students of the University of Development Studies. The hospital has a 452-bed capacity of which 40 are in the Gynecology Department. Of the number of Gynecology cases admitted each year to the hospital, 2% are cervical cancer patients. Approximately 220 women access care at the antenatal clinic and 620 women are seen at the child welfare clinic each month.

METHODS

This study was conducted between February and July 2013 at the antenatal clinic (ANC) and child welfare clinics (CWC) of the hospital. To be eligible for inclusion in the study, women had to be between the ages of 18-45 years; able to communicate in Twi, English or Dagbani (the three most common languages in the region); seeking non-urgent care; and able to provide informed consent.

Female research assistants administered a semi-structured questionnaire to each participant in a separate room attached to the clinic, which ensured privacy from the other clinic attendants and the hospital staff. Each participant was given a unique study ID and on completion of the interview was given a token gift such as a bar of soap, body powder or a pack of fruit juice.

The survey collected information about demographic characteristics, knowledge of cervical cancer, risk factors for developing cervical cancer and the respondent's perception of her personal risk for cervical cancer. Using the risk factors of being in a polygamous relationship, first intercourse before age 15, smoking cigarettes, 2 or more sexual partners in one's lifetime, and believing your partner had 2 or more lifetime sexual partners, a risk scale of 0-5 was created with the presence of each risk factor representing one unit of risk. Respondents were then categorized into no risk (having none of the risk factors), low risk (having one risk factor), moderate risk (having two risk factors) and high risk (having 3 or more risk factors).

Attempts to minimize errors on this study included the use of trained research assistants who were fluent in all three languages used in the interviews, thus removing the need for translators. The questionnaires were also translated from English and back translated from all three languages so that questions asked were the same regardless of which language was used. Double entry of data was also done.

The study was approved by the Ethics Review Committee of the Ghana Health Services and the Institutional Review Board of the University of Michigan in the United States.

Data were analysed in STATA statistical software (13.0, College Station drive, TX). Frequencies and descriptive statistics were derived for demographic characteristics, knowledge about cervical cancer, personal risk factors and perception of risk. Relationships of perceived risk and objective risk were determined by cross tabulating relevant determinant variables with these outcome variables. Chi-square statistics were calculated with specified cross tabulations, with significance declared at a p-value ≤ 0.05 .

RESULTS

Three hundred and five eligible women were invited to participate in the study. Three women declined participation and two women did not complete the interviews, thus yielding a response rate of 98.4%.

Demographic Characteristics

Data were collected from 300 participants from February to July 2013, yielding a response rate of 98%. Overall, most participants in the sample were Moslem (83%), married (93%) and had no more than basic education (primary, junior high school and Islamic school). Less than a fifth of respondents were not involved in any income generating activity and were categorized as unemployed; this category includes homemakers and

about ten percent of respondents worked in different capacities for governmental institutions, and were categorized as government workers. The mean age was 28 (SD 5.6). Majority of the women had coitarche after age 15. The average number of sexual partners per woman was 1.7 (SD 1.7) and the average number of children per woman was 2.0 (SD 1.5). None of the women had ever smoked. A third of the women (n=81, 27%) were in a polygamous relationship (Table 1).

Table 1 Socio-demographic characteristics of the study population

Demographic variables	Number	Percentage
n=300		
Age group (years)		
18-26	132	44.0
27-35	136	45.0
36-45	32	11.0
Religion		
Moslem	249	83.0
Christian	51	17.0
Marital Status		
Single	13	4.0
Co-habiting	9	3.0
Married	278	93.0
Pregnancy Status		
Pregnant	154	51.0
Not Pregnant	140	47.0
Not Sure	6	2.0
Polygamous Status		
Polygamous	81	27.0
Non-Polygamous	219	73.0
Educational Status		
No Education	71	24.0
Basic Education	111	37.0
Secondary Education	62	21.0
Tertiary Education	56	18.0
Occupational Status		
Unemployed	53	18.0
Farmers	4	1.0
Traders	81	27.0
Government Workers	32	11.0
Business Owners	69	23.0
Other Work	61	20.0
Insurance Status		
No Insurance	22	7.3
National Health Insurance	274	91.3
Other Insurance	4	1.3

Knowledge Of Cervical Cancer

The majority of respondents (200, 66.7%) had never heard about cervical cancer. Of the 100 women who had heard about cervical cancer, 23 (23%) reported that they were aware of the risk factors, 17 (17%) said they knew the signs of cervical cancer and 14 (14%) respondents said they knew how cervical cancer was detected. Only nine respondents (3%) had been previously screened for cervical cancer

Willingness To Screen

The majority of the respondents (n =289, 96%), said they were likely to seek screening for cervical cancer if the facility offered screening services while 9 (3%) said they were unlikely to screen under these conditions.

Most of the women (n=290, 97%) expressed willingness to seek screening for cervical cancer if screening was free. Majority of respondents (n=229, 76%) were willing to pay at least something for screening but Fourteen (4.7%) of women were not willing to pay anything for screening. Fifty-seven (19%) were noted as being cautiously willing to pay depending on the cost.

Perception Of Risk

Most women (184, 61.3%) thought they had no risk for cervical cancer while a smaller number (101, 33.7%) reported low risk. Even fewer women (13, 4.3%) perceived themselves at moderate risk and only two women (0.7%) considered themselves to be at great risk

We found a significant relationship between perception of risk and willingness to be screened if screening was free (p<0.05) but contrary to expectations, the perception of risk was inversely related to the expression of willingness to be screened. We also found significant relationships between risk perception and highest level of education and these two factors were directly related. Risk perception and willingness to pay for screening were also significantly related and were inversely related (Table 2).

Actual Risk

Respondent's actual risk of Cervical Cancer, based on an objective assessment, was compared with respondent's perception of risk of cervical cancer. Perceived risk and actual risk (as assessed via the 5-point risk scale) were significantly associated with one another (p=0.026) and had a positive correlation.

Table 2 Demographic characteristics relationship with perception of risk

Variable	Perception of Risk				X ²	p-value
	No Risk	Low Risk	Moderate Risk	High Risk		
Age						
18-26	92	35	4	1	7.50	0.27
27-35	75	53	7	1		
36-45	17	13	2	0		
Level of Education						
None	51	20	0	0	18.60	0.03
Basic	69	37	4	1		
Secondary	38	22	2	0		
Tertiary	26	22	7	1		
Willingness to screen (if free)						
Not Willing	5	0	0	1	26.70	0.00
Willing	176	100	13	1		
Maybe	3	1	0	0		
Willingness to pay for screening						
Not Willing	9	3	1	1	13.60	0.03
Willing	140	76	12	1		
Maybe	35	22	0	0		
Knowledge of Risk						
No Knowledge	44	29	4	0	8.30	0.016
Knowledge	7	11	5	0		
Actual Risk						
No Factors	97	36	2	1	22.97	0.03
One Risk Factor	33	31	5	0		
Two Risk Factors	39	19	5	0		
Three Risk Factors	14	15	1	1		
Four Risk Factors	1	0	0	0		

DISCUSSION

To the best of our knowledge, this is the first study comparing perception of cervical cancer risk to actual risk in Ghana. There have been studies on perception of risk in southern Ghana and a recent study on perception of risk among men - also conducted in southern Ghana²³ - but previous studies have not compared perception of risk and actual risk.

In more than half of the women, there were at least one of the risk factors assessed. The underestimation of risk was a consistent finding in our study, as were women's lack of knowledge of cervical cancer.

While it may be logical to assume that these two factors are directly related, a similar study conducted in Kenya²⁴ using women with similar low levels of knowledge on the disease, reported that majority of the Kenyan women thought themselves at relatively high risk of cervical cancer. Nonetheless, our study is consistent with other studies done in Africa demonstrating low levels of knowledge regarding cervical cancer on the continent^{18,24}

We found a significant relationship between risk perception and education and a positive correlation between both variables.

This is not surprising, since it will be expected that more education will be associated with better knowledge about cancer and its risks.

One of the unique observations in this study was the fact that more than a quarter of the women interviewed were in polygamous relationships. This is consistent with the culture in the Northern Region of Ghana which is a highly patriarchal society where Islam is the main religion and this risk factor for cervical cancer has the tendency to be overlooked because of the cultural acceptance of polygamy. Perceived risk was also significantly associated with knowledge of risk factors and willingness to screen which was consistent with data in existing literature.²⁴

Notable among our findings was the fact that the higher a woman perceived her risk to be – even when she underestimated that risk – the higher her actual risk for cervical cancer was, based on objective factors. Perception of risk was also significantly related to willingness to be screened, which is consistent with existing data that establishes significance between perceived personal risk and the need for screening.²⁴ A surprising finding was the fact that the correlation between perception of risk and willingness to screen was negative. We postulate that the fear of the unknown –when it comes to a diagnosis of cancer – could be a deterrent for screening, in a woman who thinks she is likely to test positive.

It is possible that women provided socially acceptable responses since those who reported being willing to screen were not actually asked to do so. This is one of many studies that highlight the gap in knowledge of a very significant public health problem.^{17, 23} As at the time of this research, only one facility in the city of Tamale (which is about 9 kilometers away from the Tamale Teaching Hospital), offered free screening for cervical cancer. It could thus be argued that without the provision of screening services, educating women on cervical cancer is moot. However at the beginning of 2014, the Tamale Teaching Hospital started referral – based Visual Inspection with Acetic acid (VIA) followed by colposcopy. Thus, educating women on cervical cancer is likely to become increasingly important as women now have options for screening and treatment.

Limitations of this study include the use of convenience sampling in a hospital setting. This might not necessarily be representative of all women in the Northern Region. We also did not disaggregate the declaration of willingness to screen with actual screening, as we did not offer the opportunity to screen at the time of the interview. Future research that includes a comparison of stated intentions and actual behavior is warranted.

Another limitation of this study is that the number of sexual partners of the respondents or their partners might also have been under reported or inaccurate due to women desiring to give socially-acceptable answers or not being aware of their partners' sexual habits/history. Nonetheless, given the assurances of anonymity that women were given, and the private space in which data were collected, we believe women answered as honestly as could be expected given the sensitive nature of the subject.

In conclusion, the self-perception of cervical cancer risk for women in our study was lower than their actual risk, however the higher their perceived risk, the higher their actual risk. The perception of risk was positively related to their willingness to screen for cervical cancer.

It is therefore recommended that women are educated about cervical cancer and associated risks. There is also a need for the provision of low-cost, high quality and readily accessible facilities. These are critical to increasing screening rates and reducing cervical cancer morbidity and mortality. Particular attention needs to be given to women in patriarchal societies where risky behavior such as polygamy is culturally acceptable.

With the initiation of screening in the teaching hospital, it is hoped that widely available platforms such as the antenatal and child welfare clinic could be a place to educate women on cervical cancer and its risks. Further research is needed to explore social and cultural barriers for women now that screening is available.

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