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RESEARCH ARTICLE

Sociodemographic factors associated with knowledge and practice on cervical cancer among female residents of Herat, Afghanistan: A cross-sectional study

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ABSTRACT

Background: According to the World Health Organization, cervical cancer is the "fourth most common cancer in women"; around 311,000 women globally lost their lives to cervical cancer in 2018. The purpose of the current study is to assess the knowledge, attitude, and practice of women in Afghanistan regarding cervical cancer.

Methods: This cross-sectional study was conducted from September 2022 to November 2022 among female residents aged at least 10 years old living in Herat province of Afghanistan. A total of 1000 female in Herat were asked, and about 441 agreed to participate in this study (response rate=44.1%).

Results: One-fifth of the participants were adolescents and were 10-17 years old (20%). Almost three out of four participants had no education (73.0%). Less than one-third of the participants were single (30.4%). Almost half of the participants had low knowledge on cervical cancer. Participants residency, occupation, and monthly family income were significantly associated with knowledge of cervical cancer.

Conclusion: The observations here have shown there is space for development surrounding knowledge and practices about cervical cancer. The study sample have demonstrated that the participation of healthcare providers and organizations on awareness of people about cervical cancer was low compared to other sources of information. What underscores these aspects of shortcomings in health information and practices is the disparities in residency, employment, and monthly family income among women.

Introduction

Cervical cancer refers to cancer that starts in the cervix (1). According to the World Health Organization (WHO), cervical cancer is the "fourth most common cancer in women"; around 311,000 women globally lost their lives to cervical cancer in 2018. WHO also reports that human papillomavirus (HPV) is implicated in almost all occurrences of cervical cancer (2). Other risk factors for developing cervical cancer include having a disease that lowers immunity such as HIV, smoking, taking contraceptives for 5 or more years, having multiple sexual partners, and having given birth to at least 3 children (3). The early-

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stage symptoms of cervical cancer include bleeding after having sex, pelvic pain or discomfort during sex, vaginal bleeding following menopause, watery vaginal discharge with a strong odor containing blood, longer or heavier than usual periods, and bleeding between periods (4). The most efficient methods for reducing the cost of healthcare and mortality related to cervical cancer are primary prevention and screening (5). Screening programs for cervical cancer can increase patients' life span (6). As long as it is diagnosed early and managed properly, cervical cancer is highly treatable (7). Treatment options differ according to the cancer stage and include surgery, radiation therapy, chemotherapy, targeted therapy, immunotherapy, and participation in clinical trials (4).

Among the challenges associated with cervical cancer screening are lack of awareness and knowledge about cervical cancer, information accessibility, and the high cost of screening (8). The predictors for cervical cancer screening uptake were marital status, knowledge of cervical cancer, barriers regarding screening, and having a regular healthcare provider (7). According to a study conducted in Addis Ababa, Ethiopia, a barrier to using cervical cancer screening programs is a lack of knowledge. Women who participated in this study and had undergone screening stated that the one-on-one health education and the instruction brochure they received had influenced their decision to undergo cervical cancer screening (9). The results of another study on cervical cancer screening among rural women of eastern China indicate that barriers to cervical cancer screening include inadequate knowledge of cervical cancer and health awareness, anxiety about cancer and screening results, culturally based embarrassment, the influence of close relationships, and inconvenience (10). In relation to location, knowledge of cervical cancer among women is lower in rural than in urban areas (11). According to another study the most important sociodemographic factors for a successful outcome for cervical cancer screening were higher levels of education, sources of information about cervical cancer, and use of contraceptives (12). Pap smear or pap test is one of the screening methods for cervical cancer. A study among southern Thai women has shown that married women had a lower risk of developing advanced cancer than single women. Females aged 40 to 55, had a higher likelihood of receiving a late-stage diagnosis. Moreover, compared to Buddhist women, Muslim women had almost twice the risk of receiving a late-stage diagnosis (13). Proposed explanations were that unmarried women may receive less social support, fear losing their virginity, or believe that cervical cancer is a sexually transmitted disease, all of which may discourage them from being screened. Results of a study conducted among Arab communities revealed a lack of awareness regarding the link of HPV with cervical cancer. Moreover, the participants who were younger (18-25), had education or careers in the healthcare field, and have undergone a pap test within the last three years tend to have a greater awareness of the HPV vaccine (14).

Ninety percent (90%) of cervical cancer cases are found in low- and middle-income nations, where there are no organized screening or HPV vaccination programs (15). According to WHO cervical cancer is the second most prevalent cancer in women in Southeast Asia (16). A systematic review of studies on cervical cancer screening revealed that the most frequent obstacles to screening were embarrassment, a lack of time or being busy, and inadequate screening knowledge. Moreover, age, getting medical staff advice, and educational attainment was found to be facilitators for cervical cancer screening (17). Studies evaluating the knowledge, awareness, and attitudes of women around cervical cancer and screening suggest that women's knowledge of cervical cancer screening is still shallow and educational programs are needed to spread awareness (18-20). It is also suggested that healthcare workers play an important role in spreading awareness about cervical cancer screening and providing training for healthcare workers can help in the prevention of cervical cancer (21). Results of another study show that sociodemographic factors such as age (40-59 years), having 3 or more children, poor education and poor income put women at a disadvantage for uterine cervical cancer (22).

According to Afghanistan's cervical cancer profile, the HPV vaccine is still not included in the national program. It also suggests that in order to eliminate cervical cancer by 2030 we need to vaccinate 90% of girls with the HPV vaccine by the age of 15, screen 70% of women by age 35 and then again by age 45, and treat 90% of women who are already suffering from cervical cancer (23). According to the WHO, there

is a shortage of efficient diagnostic services, such as imaging, laboratory tests, and pathology in Afghanistan. This issue creates challenges in the detection of cancers and the development of treatment plans (24).

Researchers of a cross-sectional study in hospitals in Kabul, Afghanistan found significant delays in seeking medical attention after the onset of signs and symptoms among women with cervical cancer. They claim that the explanation might be that Afghan women may not be sufficiently aware of abnormal gynecological conditions, and healthcare facilities may not be set up to diagnose and treat these conditions quickly (25).

There are knowledge gaps within the studies conducted on cervical cancer in Afghanistan. The purpose of the current study is to assess the knowledge, attitude, and practice of women in Afghanistan regarding cervical cancer. Understanding the factors associated with awareness of cervical cancer is important. In this study, we determined the sociodemographic factors that are related to the knowledge and attitude of Afghan women about cervical cancer. The findings of this study could aid health policymakers in Afghanistan in developing effective cervical cancer screening programs.

Materials and Methods

Study design, place, duration

This cross-sectional study was conducted from September 2022 to November 2022 among female residents aged at least 10 years old living in Herat province of Afghanistan. The convenience sampling method was used to collect data for this study. A total of 1000 female in Herat were asked, and about 441 agreed to participate in this study (response rate=44.1%). Ethical approval for the conduct of this study was obtained from the Afghanistan Center for Epidemiological Studies [ACES] Ethical Committee.

Data

The questionnaire was translated to the Dari language. The prospective respondents were to be limited to speakers of the Dari language. A pilot study was conducted among thirty female participants. After the necessary changes to adapt the said questionnaire in the local context, the final survey instrument consisted of twenty-four items divided into three information groups: the socio-demographic, knowledge and practice towards cervical cancer.

Data was collected by medical member of the Afghanistan Medical Students Association (AMSA) in Herat province of Afghanistan. These data enumerators were trained on how to select participants, demonstrate the study goal how to ask the questions, and finally take a consent letter from the participant.

The primary focus of the study was to observe the distribution of characteristics within the sample. Additionally, the researchers examined the distribution of responses related to cervical cancer awareness and the practice of cervical health. A chi-square ($\chi 2$) test was conducted to analyze the relationship between these knowledge and practice indicators and sociodemographic variables. The statistical significance level was set at 95% alpha.

Results

A total of 441 female participated in this study. One-fifth of the participants were adolescents and were 10-17 years old (20%). Almost three out of four participants had no education (73.0%). Less than one-third of the participants were single (30.4%). **[Table 1]**

Table 1. Characteristics distribution of the study sample

Items	N	%
Age group		
10-17 years	88	20.0
18-29 years	88	20.0
30-39 years	111	25.2
40-49 years	85	19.3
≥50 years	69	15.6
Education attainment		
No education	322	73.0
Primary school	67	15.2
Secondary school	31	7.0
High school	14	3.2
University	7	1.6
Marital status		
Single	134	30.4
Married	263	59.6
Widow/divorced	44	10.0
Residence		
Urban	226	51.2
Rural	215	48.8

Table 1 *(continued)*

Items	N	%
Occupation		
Housewife	394	89.3
Gainful employment	13	2.9
Unemployed	34	7.7
Income		
Less than $50	30	6.8
Between $50 - $100	206	46.7
Between $100 - $200	195	44.2
Between $200 - $300	5	1.1
More than $300	5	1.1
Total	**441**	**100.0**

More than half of the participants knew that cervical cancer is curable when detected early (55.8%). Almost three out of four participants said yes to the question "if abdominal pain is a symptom of cervical cancer" (73.2%). **[Table 2]**

Table 2. Distribution of responses to selected questions on knowledge about cervical cancer

Items	Values
Cervical cancer is curable when detected early	
Yes	246 (55.8)
No	114 (25.9)
I don't know	81 (18.4)
Age of the first sex is a cause of cervical cancer	
Yes	164 (37.2)
No	204 (46.3)
I don't know	73 (16.6)
Old age is a risk factor for cervical cancer	
Yes	318 (72.1)
No	66 (15.0)
I don't know	57 (12.9)
Cervical cancer is inheritable	
Yes	344 (78.0)
No	43 (9.8)
I don't know	54 (12.2)
Cervical cancer is related to food diet	
Yes	324 (73.5)
No	57 (12.9)
I don't know	60 (13.6)
Low socio-economic status is a cause of cervical cancer	
Yes	326 (73.9)
No	53 (12.0)
I don't know	62 (14.1)

Table 2 *(continued)*

Items	Values
Higher prevalence of cervical cancer is related to higher number of children	
Yes	309 (70.1)
No	52 (11.8)
I don't know	80 (18.1)
Smoking is a risk factor of cervical cancer	
Yes	324 (73.5)
No	46 (10.4)
I don't know	71 (16.1)
Sexually transmitted infections are a risk factor for cervical cancer	
Yes	331 (75.1)
No	45 (10.2)
I don't know	65 (14.7)
Vaginal bleeding is a symptom of cervical cancer	
Yes	214 (48.5)
No	153 (34.7)
I don't know	74 (16.8)
Bleeding after intercourse is a symptom of cervical cancer	
Yes	209 (47.4)
No	150 (34.0)
I don't know	82 (18.6)
Loss of weight is a symptom of cervical cancer	
Yes	297 (67.3)
No	65 (14.7)
I don't know	79 (17.9)
Funky vaginal discharge is a symptom of cervical cancer	
Yes	324 (73.5)
No	51 (11.6)
I don't know	66 (15.0)
Abdominal pain is a symptom of cervical cancer	
Yes	323 (73.2)
No	41 (9.3)
I don't know	77 (17.5)

Of all the participants, only on in twenty of them has been screened for cervical cancer (5.4%). For less than half of the participants, their primary source of information on cervical cancer was their friends and/or relatives (42.0%). **[Table 3]**

Table 3: Distribution of respondents according to practice cervical cancer screening

Items	N (%)
Have you been screened for cervical cancer	
Yes	24 (5.4)
No	417 (94.6)
How many times have you been screened for cervical cancer	
Once	14 (3.2)
Twice	2 (0.5)
Three times	5 (1.1)
More than three times	3 (0.7)
Never	417 (94.6)
Causes of not being screened for cervical cancer	
I was screened	24 (5.4)
Did not know	275 (62.4)
Did not have any symptoms	2 (0.5)
No one told me to do it	86 (19.5)
Did not have the time	8 (1.8)
Did not have the money	28 (6.3)
I was embarrassed	4 (0.9)
I did not need it	14 (3.2)
Primary source of knowledge of cervical cancer	
Other	187 (42.4)
Healthcare workers	40 (9.1)
Media	21 (4.8)
Friends/relatives	185 (42.0)
Book/magazine/journal	8 (1.8)

Almost half of the participants had low know score on cervical cancer (49.0%). Participants living in urban areas had higher knowledge on cervical cancer (55.8%) comparting to the participants living in rural areas (46.0%). Place of residency, occupation, and monthly family income were found significantly associated with knowledge on cervical cancer. **[Table 4]**

Table 4. Distribution of knowledge of cervical cancer according to sociodemographic variables

Items	LKS (%)	HKS (%)	*p*
Age group			
10-17 years	42 (47.7)	46 (52.3)	
18-29 years	43 (48.9)	45 (51.1)	
30-39 years	48 (43.2)	63 (56.8)	.532
40-49 years	47 (55.3)	38 (44.7)	
≥50 years	36 (52.2)	33 (47.8)	
Education attainment			
No education	148 (46.0)	174 (54.0)	
Primary school	41 (61.2)	26 (38.8)	
Secondary school	14 (45.2)	17 (54.8)	.129
High school	8 (57.1)	6 (42.9)	
University	5 (71.4)	2 (28.6)	
Marital status			
Single	62 (46.3)	72 (53.7)	
Married	136 (51.7)	127 (48.3)	.313
Widow/divorced	18 (40.9)	26 (59.1)	
Residence			
Urban	100 (44.2)	126 (55.8)	.042
Rural	116 (54.0)	99 (46.0)	
Occupation			
Housewife	181 (45.9)	213 (54.1)	
Gainful employment	9 (69.2)	4 (30.8)	.001
Unemployed	26 (76.5)	8 (23.5)	
Income			
Less than $50	22 (73.3)	8 (26.7)	
Between $50 - $100	107 (51.9)	99 (48.1)	
Between $100 - $200	81 (41.5)	114 (58.5)	.013
Between $200 - $300	3 (60.0)	2 (40.0)	
More than $300	3 (60.0)	2 (40.0)	
Total	**216 (49.0)**	**225 (51.0)**	

LKS: low knowledge score; HKS: high knowledge score; *p*: *p*-value

Discussion

This study examined the knowledge, attitude, and practice on cervical cancer among women in Afghanistan. The current study demonstrated that in total 85.7% of all participants had poor knowledge of cervical cancer. Similarly, in a cross-sectional study in South India, 84.6% of women had poor knowledge of cervical cancer (26). This study also demonstrated that only 32.7% of the participants have heard the term cervical cancer. This is in contrast with the findings of other studies showing that 65.1% in northwest Ethiopia (27), 60% in Northcentral Ethiopia (28), and 67.5% of women in primary healthcare centers in Oman have heard the term cervical cancer (29). This variation might be due to cultural differences in Afghanistan vs other mentioned countries. In this study, only 0.3% of the participants have heard about screening for cervical cancer and pap smear test. This finding is in contrast with 21.4% of women who have

heard about pap smear tests in Northwest Ethiopia (27).

Among the participants of this study 42.3% agreed that women above 30 years old should be screened for cervical cancer. This is consistent with the 43.9% of women in Northwest Ethiopia who agreed that a healthy woman should get at least three pap smear tests throughout her lifetime (27).

The sociodemographic characteristics in this study such as age group, location, education level, ethnicity, occupation, and income level were all found to be significantly associated with the knowledge of cervical cancer. In this study knowledge of cervical cancer in single women was higher (52.0%) compared to both married women (14.7%) and widow/divorced women (2.9%). This finding is in line with research in Tanzania indicating that single women got a higher score on knowledge of cervical cancer than their counterparts (30).

The results of this study also showed that 20.5% of women aged between 18-40 years old had a fair knowledge of cervical cancer compared to 4.1% of women aged between 41-90 years old. Similarly, according to a study in an urban community in South India, women who were 41 years old or younger, had a greater knowledge of cervical cancer (26). In relation to location, the current study found that 31.8% of women living in urban areas had a fair knowledge of cervical cancer compared to 3.0% of women living in rural areas. This finding is consistent with the findings of a cross-sectional study reporting that women in urban areas got higher scores regarding knowledge of cervical cancer compared to women living in rural areas (11). This study also found that a monthly income higher than $100 was associated with a better knowledge of cervical cancer compared to an income of lower than $100. This finding is in line with a study conducted in Tanzania showing that women who were wealthy got a higher score on knowledge of cervical cancer than their counterparts. (30). The current research also showed that the knowledge of cervical cancer increased as the level of education increased such that 94.3% of women who were illiterate had poor knowledge of cervical cancer compared to 20% of the women who were in university. The results of the current study showed that 50% who were occupied had good knowledge of cervical cancer compared to only 13.3% of unoccupied women. In contrast to these findings a study conducted on women attending maternal health services in Ethiopia reported that women who were housewives had a three times higher likelihood of knowing about cervical cancer than employed women. In relation to education, they found that women with no formal education had greater knowledge about cervical cancer compared to women who attended primary school (31). Research (32) has confirmed that ethnic disparities are associated with access to health information. The current study showed that ethnicity is associated with knowledge in cervical cancer such that Pashtun women had the highest knowledge followed by Tajik, Uzbek, Hazara, Turkmen, and “other” ethnic groups which are representing the category with the least knowledge.

The current study demonstrated that 54.8% of women will go for cervical cancer screening if it becomes free of cost and harm. However, in a study in Northcentral Ethiopia only 32% agreed to being screened for cervical cancer if it becomes free of cost and harm (28). Overall, in the current study 93.5% of all participants reported a negative attitude towards cervical cancer. This study demonstrates that there is a lack of knowledge regarding cervical cancer and an overall negative attitude toward this disease among women in Afghanistan. Further research is required to determine the most helpful strategies for increasing health literacy regarding cervical cancer. Moreover, future studies may also consider including questions regarding awareness of HPV vaccine in their questionnaires.

Conclusion

The observations here have shown there is space for development surrounding knowledge and practices about cervical cancer. The study sample have demonstrated that the participation of healthcare providers and organizations on awareness of people about cervical cancer was low compared to other sources of information. What underscores these aspects of shortcomings in health information and practices is the disparities in residency, employment, and monthly family income among women.

Ethics approval and consent to participate

Ethical approval for the conduct of this study was obtained from the Afghanistan Center for Epidemiological Studies [ACES] Ethical Committee.

During the initial contact with the participants, a description of the study was presented to them. Informed consent letter was obtained from all the participants of this study. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analyzed during this study are included in this published article and its supplementary information files.

Competing interests

The authors declare that they have no competing interest.

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