Basmah Salim Al Afari et al, 2019;3(10):836–840.
https://doi.org/10.24911/IJMDC.51-1561646708

ORIGINAL ARTICLE

Knowledge and awareness about cervical carcinoma among women in Saudi Arabia

Basmah Salim Al Afari[1*], Rana AbdulAzeem Al-Bassam[1], Hanouf Thunayan Alotaibi[1], Ola Abdullah Alotaibi[2], Dana Tariq Alsuwaidan[3], Musarrat Nafees[4]

ABSTRACT

Background: Cervical cancer is one of the most preventable neoplasia in females. It is the second most common cancer in females with 80% occurrence in the developing countries. It has been predicted that incidence of cervical cancer would increase in Saudi Arabia. This study aimed to assess the knowledge and awareness levels of women in Saudi Arabia about cervical carcinoma.

Methodology: Total of 415 randomly selected women aged 20–35 years participated in the study in Riyadh, Saudi Arabia, in July 2018. The study was based on a self-administered closed-ended questionnaire consisting of 32 questions assessing the knowledge and awareness about cervical carcinoma.

Results: About the general knowledge of cervical carcinoma, this study found that the mean of the general knowledge toward cervical carcinoma was low. The highest knowledge among women in Saudi Arabia was "Heard of cervical cancer" (94%), while the mean of lowest was "Had direct contact with the disease" (20%). Among participants, 51.8% knew that cervical cancer can be a terminal illness, and 26% knew that cervical cancer is associated with an infection.

Conclusion: These results showed that the majority of the participant's general knowledge towards cervical carcinoma was low. The majority of cases heard about Pap smear although there was high knowledge among women in Saudi Arabia about the vaccine against cervical cancer that contains Human Papilloma virus. More studies and investigations in this field are recommended since cervical carcinoma is preventable when approached properly.

Keywords: Cervical carcinoma, pap smear, cervical cancer, human papilloma virus.

Introduction

Cervical cancer is a slowly developing cancer, which starts as precancerous dysplasia [1].Carcinoma of the cervix is considered as the second most common cancer among women throughout the world, with 80% occurrence in the developing countries [2]. Cervical cancer is reported to be the third most common gynecological malignancy in Saudi females with an incidence rate of 1.9 cases per 100,000 women/year. The number of new cervical cancer cases was 152 cases per year, and 55 women die from cervical cancer per year. An intense increase in the incidence of cervical carcinoma in Saudi Arabia is predicted; the projected number of the recent cervical cancer cases and deaths by the year 2025 will be 309 and 117, respectively [3]. An estimated 1%–2% of women develop cervical intraepithelial neoplasia grade 2 and 3 (CIN 2 and 3) each year worldwide [4,5].

The Papanicolaou's (PAP) smear test is a simple and effective screening test for cervical carcinoma to detect pre-invasive and invasive stages. This early stage detection of cervical cancer is preventable, treatable, and curable. This screening method is proven to reduce the incidence and mortality from cervical cancer, up to 80% [6].

Human papillomavirus (HPV) infection is well recognized as the main cause of cervical squamous intraepithelial lesions and invasive cervical carcinomas. From more than 100 types of HPV described, about 40 are known to infect the genital tract, and about 20

Correspondence to: Basmah Salim Al afari
*Medical Intern, Department of Health Studies,
Dar Al Uloom University, Riyadh, Saudi Arabia
Email: Email: bsya94@gmail.com
Full list of author information is available at the end of the article.
Received: 17 July 2019 | **Accepted:** 21 July 2019

have been classified as oncogenic to humans [7]. With recent advances in epidemiological studies, coupled with contemporary progress in molecular biology findings, have established a strong causal association between infection by serotypes 16, and 18 of the sexually transmitted HPV and cervical cancer [8].

Other risk factors which have been proposed to cause cervical cancer are; cigarette smoking, use of oral contraceptives, low fiber diet, older age, family history of cervical cancer, immunodeficiency, herpes-simplex virus II. Risk factors related to sexual behavior are: first intercourse at an early age, having multiple partners, having partners who are involved in high-risk sexual activities. Treatment of Cervical cancer depends on the stage. Early-stage of the disease is treated effectively either by surgery or chemo-radiation, while the advanced-stage is treated primarily with chemo-radiation [1].

Primary and secondary prevention means of cervical cancers reduce the chances of the disease, and no other type of cancer has such good prevention. The primary prevention is through HPV vaccine; secondary prevention is through cervical screening. The reason behind the deaths from cervical cancer is not the maliciousness of cancer itself; it is rather the diagnosis of the carcinoma at its late stages [2]. Early detection Screening and proper follow up for cervical cancer have been proven to reduce its incidence and mortality rate worldwide [9].

Subjects and Methods

This is a cross-sectional study conducted on a random sample of the population of Riyadh, Saudi Arabia in July 2018. A convenient sample size of 415 women with an age range of 20–35 years was invited to participate in the study.

The study was based on a self-administered closed-ended questionnaire consisting of 32 questions that were divided into three sections. The first section consisted of six questions was about demographic data, including the name of the institute and level of education in the university.

The second section was related to the general awareness about cervical carcinoma having six questions. The third section was about the risk factors related to cervical cancer. In the third section, questions were related to awareness about PAP smear as a screening test and HPV vaccine with reference to preventing the cervical carcinoma. A five-point Likert scale format was used for the responses.

The data were compiled, checked for completeness, and analyzed using Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 22. Results of descriptive analysis of knowledge and awareness of cervical cancer, Pap smear, attitude, HPV, and vaccine were tabulated. The knowledge score represented the sum of the correct answers of the 26 questions in the second and third sections of the questionnaire. The value one was given for the correct answers, zero for wrong answers, and for "don't know" responses. The cut-off for a poor knowledge score was set at values below 60% of the total score.

Results

The present study was comprised 415 individuals who lived in Saudi Arabia, the data were collected by using a structured questionnaire, the majority had nationality of Saudi 401 (96.6%), the participants were distributed equally according to the age group approximately (100) per age group, the greatest of the samples had Bachelor's degree 303 (73.0%), furthermost 302 (72.8%) was Married, while 113 (27.2%) was single.

Four questions with different-level and measurement were analyzed to recognize the magnitude of the general knowledge towards cervical carcinoma among women in Saudi Arabia. The magnitude was 68% and above who scored as high knowledge and less than 68% had low knowledge. Additionally, it was used Pearson Chi-Square to determine the differences among women in Saudi Arabia toward Cervical Carcinoma.

The mean of the general knowledge toward cervical carcinoma was low (0.48 ± 0.22), range (0–1) (48%), the highest knowledge among women in Saudi Arabia was "Heard of cervical cancer" (0.94 ± 0.23), range (0–1) (94%), while the mean of lowest was "Had direct contact with the disease" (0.20 ± 0.40), range (0–1) (20%). The association of general knowledge was considered statistically significant (0.05) $\chi^2 = 32.8 \leftrightarrow 9.4.1$, $p \leq 0.05 \geq 0.001$), except the Cervical Cancer can be a terminal illness was $\chi^2 = 0.40$, $p > 0.05 < 0.462$) as shown in Figure 1.

Six questions with different-level and measurement were analyzed to recognize the magnitude of knowledge about the relationship between estimated risk factors and occurrence of the disease among women in Saudi Arabia.

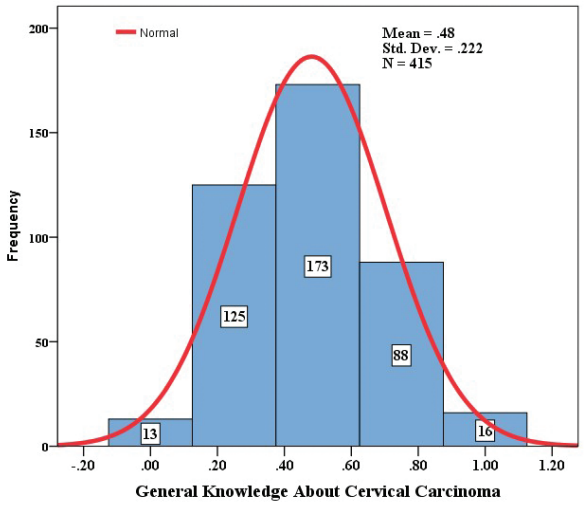

Figure 1. *General knowledge about cervical carcinoma.*

The magnitude was 68% and above who scored as having high knowledge, and less than 68% had low knowledge.

Additionally, Pearson Chi-Square was used to determine the difference among women in Saudi Arabia towards knowledge about the relationship between estimated risk factors and occurrence of the disease.

The mean of the knowledge about relationship between estimated risk factors and occurrence of disease was low (0.40 ± 0.11), range (0–1) (48%), the highest knowledge among women in Saudi Arabia was "HPV infection" (0.60 ± 0.23), range (0–1) (94%), while the mean of lowest was "Multiple pregnancies and child births" (0.10 ± 0.11), range (0–1) (10%). The knowledge about relationship between estimated risk factors and occurrence of disease was considered statistically significant (0.05) $\chi^2 = 39.8 \leftrightarrow 29.0$, $p \leq 0.05 \geq 0.001$, shown in Table 1.

Seven questions with different-level and measurement were analyzed to recognize the magnitude of knowledge of the Pap smear as a screening test among women in Saudi Arabia. The magnitude was 68% and above, who scored as high knowledge, and less than 68% had low knowledge. Additionally, Pearson Chi-Square was used to determine the differences among women in Saudi Arabia toward knowledge of the Pap smear as a screening test.

The mean of the knowledge of the Pap smear as a screening test was low (0.35 ± 0.11), range (0–1) (48%), the highest knowledge among women in Saudi Arabia was "Hear about Pap smear" (0.80 ± 0.40), range (0–1) (80%), while the mean of lowest was "Start doing Pap smear" (0.10 ± 0.31), range (0–1) (10%). Knowledge of the Pap smear as a screening test was considered statistically significant (0.05) $\chi^2 = 24.2 \leftrightarrow 10.9$, $p \leq 0.05 \geq 0.001$) as shown in Table 2.

Three questions with different-level and measurement were analyzed to recognize the magnitude of the general knowledge towards the HPV vaccine among women in Saudi Arabia. The magnitude was 68% and above, who scored high knowledge, and less than 68% had low knowledge. Additionally, Pearson Chi-Square was used to determine the differences among women in Saudi Arabia towards the HPV vaccine.

The mean of the knowledge towards the HPV vaccine was very low (0.06 ± 0.19), range (0–1) (6%). The highest knowledge among women in Saudi Arabia was "Vaccine against cervical cancer contains HPV" (0.08 ± 0.23), range (0–1) (8%), while the mean of lowest was "The vaccine is protective against genital warts" (0.20 ± 0.40), range (0–1) (20%). The association of Knowledge

Table 1. *The magnitude of knowledge about the relationship between estimated risk factors and occurrence of disease.*

Knowledge items	Answer				*M*	SD	*χ2*	*p*
	Correct		Wrong					
	n	%	*n*	%				
B_1: Genetic factors	25	6.0	390	94.0	0.60	0.24	32.1	0.001
B_2: HPV infection	34	8.2	381	91.8	0.80	0.28	29.0	0.001
B_3: Multiple pregnancies and child births	5	1.2	410	98.8	0.10	0.11	39.5	0.001
B_4: Miscarriage and abortions	4	1.0	411	99.0	0.20	0.10	39.9	0.001
B_5: Long term use of contraceptives oral	29	7.0	386	93.0	0.70	0.26	30.7	0.001
B_6: Pregnancy at young age	7	1.7	408	98.3	0.20	0.13	38.7	0.001
Mean of knowledge					0.40	0.11		

Table 2. *The magnitude knowledge of the Pap smear as a screening test.*

Knowledge items	Answer				*M*	SD	*χ2*	*p*
	Correct		Wrong					
	n	%	*n*	%				
C_1: Hear about Pap smear	332	80.0	83	20.0	0.80	0.40	17.3	0.001
C_2: Know when to start doing Pap smear	185	44.6	230	55.4	0.45	0.50	23.7	0.001
C_3: Start doing Pap smear	24	10.4	207	89.6	0.10	0.31	19.6	0.001
C_4: Know how frequently Pap smear should be done	173	41.7	242	58.3	0.42	0.49	24.2	0.001
C_5: Know the duration Pap smear should be done	51	25.0	153	75.0	0.25	0.43	10.9	0.001
C_6: know when to stop doing Pap smear	53	12.8	362	87.2	0.13	0.33	11.7	0.001
C_7: know indicators	35	41.2	50	58.8	0.41	0.50	16.5	0.001
Mean of general knowledge					0.35	0.24		

was considered statistically significant (0.05) $\chi^2 = 7.9 \leftrightarrow 3.5$, $p \leq 0.05 \geq 0.001$) (Figure 2).

A one-way analysis of variance was accompanied to discover whether the responders with numerous characteristics had varied levels of knowledge. There was a non-significant difference in knowledge between Nationalities (Saudi and Non-Saudi) ($p = 0.913$). Moreover, no statistically significant difference between the knowledge in age groups was found ($p = 0.975$).

In contrast, there was statistically significant difference in the knowledge between

Marital status [$F(1, 413) = 4.15, p = 0.001$] and education level [$F(2, 412) = 9.21, p = 0.001$].

Discussion

According to general knowledge about cervical carcinoma, this study found that the mean of general knowledge toward cervical carcinoma was low. The highest knowledge among women in Saudi Arabia was "Heard of cervical cancer" (94%), while the mean of lowest was "Had direct contact with the disease" (20%). Among participants, 51.8% knew that cervical cancer can be a terminal illness, and 26% knew that cervical cancer is associated with an infection. In the western region of Saudi Arabia, a cross-sectional descriptive study was performed in the Department of Obstetrics & Gynecology, Faculty of Medicine, King Abdul-Aziz University Hospital, Jeddah, which included 200 respondents; nearly, 44.5% of them believed that patients with cervical cancer had a good chance of being cured [10]. In contrast to the present results, a descriptive cross-sectional study was conducted among women in Saudi Arabia which included 412 participants, it revealed that there was good awareness of cervical cancer and its risk factors among the surveyed women (78.6%) [11].

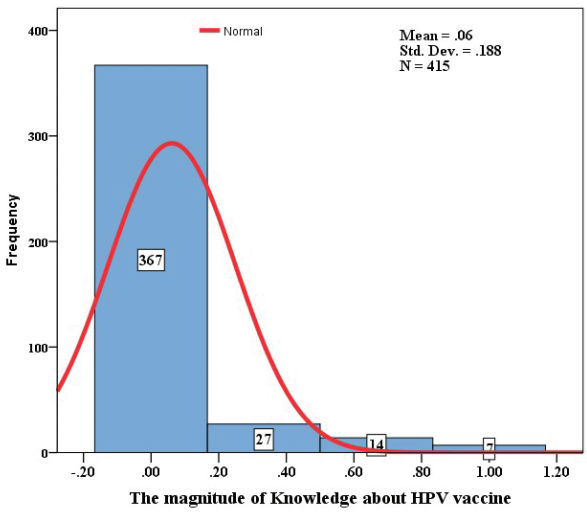

Figure 2. *The magnitude of knowledge toward HPV vaccine.*

A study was carried out among 740 Saudi males and females above the age of 16 years, majority of the participants (73.9%) had heard about cervical cancer, but most of them didn't know that it is a preventable disease (48.5%) [12]. In China, a study conducted among 388 women reported that overall, 52.6% of the women (204/388) had knowledge about cervical cancer, and only 36.1% of the women knew that cervical cancer could be cured if it is diagnosed early, this refers to low knowledge about cervical cancer [13]. Many studies conducted in Asian countries reported that 50%–85% of women were aware of cervical cancer [14,15]. Mulhim et al. conducted a study, which aimed to assess the knowledge, signs, symptoms, risk factors and vaccination about cervical cancer. The study concluded that there was an absence of awareness regarding risk factors, early signs and symptoms and prevention of cervical cancer [16].

The Pap smear test is the recent screening method, which is also highly cost-effective [17]. Regarding knowledge of the Pap smear as a screening test, it was found that 80% of cases had heard about Pap smear, 44.6% knew when to start doing Pap smear, 41.7% knew how frequently Pap smear should be done, 25% knew the duration in which Pap smear should be done, 12.8% knew when to stop doing Pap smear and the lowest was "start doing Pap smear" (10%). Another study showed that 67.6% of the respondents were aware of the cervical screening (Pap smear), however, only 16.8% had ever had the test. Most of those who were aware of the screening had got their information from the media or doctors [6]. Kim et al. [18] conducted a study in Chicago in a sample consisting of 159 Korean-American women, 40–69 years of age; 26% of the respondents had never heard before bout the Pap smear test. Only 34% of respondents reported having had a Pap smear for screening, while another 20.8% reported having had a Pap smear due to health problem. In Hail, KSA, another study reported that the knowledge of the study participants about Pap smear screening test was low, only 33.3% of women knew about cervical cancer screening [19].

Conclusion

The study results showed that the majority of the participant's general knowledge toward cervical carcinoma was low. The highest knowledge among women in Saudi Arabia was "Heard of cervical cancer." The majority of cases heard about Pap smear. Regarding knowledge about the relationship between estimated risk factors and occurrence of the disease, this study reported that the highest knowledge among women in Saudi Arabia was "HPV infection" as a risk factor for the disease. Also, it was found that there was high knowledge among women in Saudi Arabia about the vaccine against cervical cancer which contains HPV.

List of Abbreviations

HPV	Human papilloma virus
PAP	Papanicolaou

Conflict of interest
The authors declare that there is no conflict of interest regarding the publication of this article.

Funding
None.

Consent for publication
Informed consent was obtained from the participants.

Ethical approval
This study has been approved by the institutional review board of Riyadh Elm university, with a registration number FRP/2018/211 on 10-07/2018

Author details
Basmah Salim Al Afari[1], Rana AbdulAzeem Al-Bassam[1], Hanouf Thunayan Alotaibi[1], Ola Abdullah Alotaibi[2], Dana Tariq Alsuwaidan[3] , Musarrat Nafees[4]
1. Medical Intern, Department of Health Studies, Dar Al Uloom University, Riyadh, Saudi Arabia
2. Medical Intern, Qassim University, Buraydah, Saudi Arabia
3. Third Year Medical Student, Al Faisal University, Riyadh, Saudi Arabia
4. Department of Health Studies, Professor of Anatomy, Riyadh Elm University, Riyadh, Saudi Arabia

References

1. A.D.A.M. Medical Encyclopedia. Cervical cancer. Atlanta, GA: A.D.A.M., Inc.; 2005 [updated 2017 October 21; cited 2018 July]. Available from: https://medlineplus.gov/ency/article/000893.htm
2. Al Sairafi M, Mohamed FA. Knowledge, attitudes, and practice related to cervical cancer screening among Kuwaiti women. Med Princ Pract. 2009;18(1):35–42. https://doi.org/10.1159/000163044
3. Adefuye PO. Knowledge and practice of cervical screening among professional health workers in a suburban district in Nigeria. Niger Med Pract. 2006;50:19–22. https://doi.org/10.4314/nmp.v50i1.28829
4. Al-Mandeel HM, Sagr E, Sait K, Latifah HM, Al-Obaid A, Al-Badawi IA, et al. Clinical practice guidelines on the screening and treatment of precancerous lesions for cervical cancer prevention in Saudi Arabia. Ann Saudi Med. 2016;36(5):313. https://doi.org/10.5144/0256-4947.2016.313
5. Kumar V, Abbas AK, Fausto N, Mitchell RN. Robbins basic pathology. Sauders Elsevier. University of Chicago, Chicago, Illinois; 2007, vol. 8. pp 504–6.
6. Sait KH. Attitudes, knowledge, and practices in relation to cervical cancer and its screening among women in Saudi Arabia. Saudi Med J. 2009;30(9):1208–12.
7. Kamzol W, Jaglarz K, Tomaszewski KA, Puskulluoglu M, Krzemieniecki K. Assessment of knowledge about cervical cancer and its prevention among female students aged 17-26 years. Eur J Obstet Gynecol Reprod Biol. 2013;166(2):196–203. https://doi.org/10.1016/j.ejogrb.2012.10.019
8. Parkin DM, Bray FI, Devesa SS. Cancer burden in the year 2000. The global picture. Eur J Cancer. 2001;37 Suppl 8:S4–66. https://doi.org/10.1016/S0959-8049(01)00267-2
9. Parkin DM, Bray F, Ferlay J, Pisani P. Global cancer statistics, 2002. CA Cancer J Clin. 2005;55:74–108. https://doi.org/10.3322/canjclin.55.2.74
10. Haverkos HW. Multifactorial etiology of cervical cancer: a hypothesis. Med Gen Med. 2005;7(4):57.
11. Mulhim NK, Saad Morsi AM. Knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school in Al-Ahsa, Kingdom of Saudi Arabia. Asian Pac J Cancer Prev. 2014;15(6):2529–32. https://doi.org/10.7314/APJCP.2014.15.6.2529
12. Almajnuni AS, Balubaid AS, Alzhrani AS, Alkayyal MS, Alghamdi AS, Abdou AM, Sheba MA. Assessment of the awareness toward cancer cervix, early detection and prevention of risk factors among Saudi males and females. Egypt J Hospital Med 2018;70(4):699–702. https://doi.org/10.12816/0043827
13. Baloch Z, Yasmeen N, Li Y, Zhang W, Lu H, Wu X, et al. Knowledge and awareness of cervical cancer, human papillomavirus (HPV), and HPV vaccine among HPV-infected Chinese women. Med Sci Monit 2017;23:4269. https://doi.org/10.12659/MSM.903370
14. Joy T, Sathian B, Bhattarai C, Chacko J. Awareness of cervix cancer risk factors in educated youth: a cross-sectional, questionnaire based survey in India, Nepal, and Sri Lanka. Asian Pac J Cancer Prev. 2011;12:1707–12.
15. Johnson DC, Bhatta MP, Gurung S, Aryal S, Lhaki P, Shrestha S. Knowledge and awareness of human papillomavirus (HPV), cervical cancer and HPV vaccine among women in two distinct Nepali communities. Asian Pac J Cancer Prev. 2014;15(19):8287–93. https://doi.org/10.7314/APJCP.2014.15.19.8287
16. Mulhim& NK, Saad Morsi AM. Knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school in Al-Ahsa, Kingdom of Saudi Arabia. Asian Pac J Cancer Prev. 2014;15(6):2529–32. https://doi.org/10.7314/APJCP.2014.15.6.2529
17. Rodu B, Cole P. The fifty-year decline of cancer in America. J Clin Oncol. 2001;19:239–41. https://doi.org/10.1200/JCO.2001.19.1.239
18. Kim K, Yu ES, Chen EH, Kim J, Kaufman M, Purkiss J. Cervical cancer screening knowledge and practices among Korean-American women. Cancer Nurs. 1999;22:297–302. https://doi.org/10.1097/00002820-199908000-00006
19. Duaa N. Almansour, Asma M. Alshamri, Shadiah N. Alrashidi, et al. Knowledge and attitude of cervical cancer screening among women in hail- kingdom of Saudi Arabia. Int J Curr Res. 2018;10:69149–53.