



Original Research Article

Breast, cervix and colorectal cancer attitude, knowledge and practice among eligible female health care workers in Umm AL Quwain primary health care centres

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Cancer is identified as one of the most common problems in the UAE. Health care workers in primary health care centers (PHCC) are the basic providers of preventive care measures to patients. Breast, cervical, and colorectal cancer screening is part of the routine preventive programs adopted by the Ministry of health and prevention. To evaluate the knowledge, attitude, and practices amongst female health workers in Umm al Quwain (UMM AL QUWAIN) PHCC on breast, cervical and colorectal cancer. A cross-sectional observational study was designed to evaluate the knowledge, attitude, and practices of female healthcare workers in UMM AL QUWAIN PHCCs in September 2019. A total of 250 healthcare workers in all 4 PHCCs in UMM AL QUWAIN of which 105 are female healthcare workers. The study sample consisted of 50 eligible female health care workers. The categories of female healthcare workers included medical doctors, dentists, nurses, laboratory technicians, and pharmacists. Eligibility was determined according to the national screening criteria for cervical, breast and colorectal cancer, which are age above 40 years for breast cancer, and colorectal cancer, whereas for cervical cancer participant needs to be sexually active (married, divorced or widowed) and above 25 years old. The data was collected from questionnaires that were distributed routinely. The questionnaire was pretested to ensure its suitability to all participants. It was observed that 42.0% of female healthcare workers never practiced breast self-examination, 66.0% did not undergo a mammogram while 72.0% did not undergo Pap smear test since they did not think it was necessary. 84.8% of the participants did not know they are at risk of colorectal cancer. The majority had given correct answers to questions on breast, cervical, and colorectal cancer in the questionnaire. Female healthcare workers revealed adequate knowledge about breast, cervical, and colorectal cancer. However, they need more information on cancer risk estimation. Establishing continuous education programs for female health care workers on breast, cervical and colorectal cancer, and the importance of screening tests could help in further enhancing their knowledge and eventually improving their practices.

Keywords: Breast cancer - cervical cancer - colorectal cancer - cancer screening programs - knowledge.

INTRODUCTION

Cancer is reported as one of the most important health problems in the world. It is the leading cause of death in

developed countries and the second leading cause of death in developing countries (Tastan et al., 2013; Jemal et al.,

2011). In 2018, cancer was responsible for 9.6 million deaths. Globally, about 1 in 6 deaths is due to cancer. The cancer burden can be reduced through early detection and management. Furthermore, it is indicated that detection of early signs and symptoms for cervical, breast, and colorectal cancer provides early treatment and prevents disease progression (WHO, 2013;WHO, 2018).

Breast cancer is the most common type of cancer in women and is a significant cause of death (WHS, 2008). Studies revealed that, the attitude and orientation of healthcare providers are essential determinants for promoting breast screening programs (Bekker et al.,1999).

Cervical cancer is the third most common cancer worldwide (Jemal et al., 2011). Early detection of cervical cancer reduces the incidence of invasive cancer, and subsequently its mortality (Denny 2012). Non-compliance with screening guidelines continues to be a major risk factor for invasive cervical cancer (White and Wilkes, 1999). Studies have found that there was a strong link between the knowledge and attitudes of cervical cancer, and the resultant health-seeking behaviours (Birhanu et al., 2012). Women's attitudes towards cervical cancer screening were found to have an impact on the adoption of cervical cancer screening in many developing countries (Kietpeerakool et al., 2009). Regular pap smear test reduces the risk of developing cervical cancer by 30%, if done every 10 years, 80% every 5years, and 90% every 3 years (Nor Hayati, 2003). Colorectal cancer is the second most common type of cancer worldwide and the third most common cause of cancer-related deaths in women (Jemal et al., 2011). The disease can be diagnosed in its early stages through effective personal risk evaluation and scanning programs and has a high chance of recovery (Tastan et al., 2013) Colonoscopy, sigmoidoscopy, barium enema, and fecal occult blood test (FOBT) are among the screening methods used in colorectal cancer (Tinmouth et al.,2012).

For healthcare workers to be effective educators, they need to have appropriate knowledge, attitude and beliefs concerning the health behavior being promoted (Wilkes et al., 1999).

Appropriate knowledge, attitude, and beliefs on health behaviour need to be promoted to healthcare workers so they can be effective health educators (Wilkes et al., 1999).

METHODOLOGY

A cross-sectional observational study was designed to evaluate the knowledge, attitude, and practices of female healthcare workers in UMM AL QUWAIN PHCCs in September 2019. An Ethical approval was obtained from the ethical committee of the UMM AL QUWAIN medical district. A total of 250 healthcare workers in all 4 PHCCs in UMM AL QUWAIN of which 105 are female healthcare workers. The study sample consisted of 50 eligible female health care workers. The categories of female healthcare workers included medical doctors, dentists, nurses, laboratory technicians, and pharmacists. Eligibility was

determined according to the national screening criteria for cervical, breast, and colorectal cancer, which are age above 40 years for breast cancer and colorectal cancer, whereas for cervical cancer participant needs to be sexually active (married, divorced or widowed) and above 25 years old. The data was collected from self-administered questionnaires that were distributed routinely after obtaining an informed consent. All 50 questionnaires were collected back without any refusal (response rate 100%) The questionnaire was pretested to ensure its suitability to all participants. Descriptive statistics were used to describe the sociodemographic characteristics of the study participants. Statistical analysis of the data was performed to provide frequency; means, standard deviations, and percentage for all responses in the survey. The analysis was performed using Statistical Package for Social Science (SPSS) (IBM, Armonk, NY, USA).

The questionnaire was divided into three parts.

Tool of the study : Data collection from the questionnaire. It was divided into three parts.

-The first part

Included healthcare workers' socio-demographic characteristics as regards to their educational level, work experience, marital status, age, number of children, age of marriage, age of 1st pregnancy, exercise, dietary habits, and history of cancer in the family.

The categories of healthcare workers include medical doctors, nurses, dentists, laboratory technicians, and Pharmacists.

-The second part

Participants' practices are assessed by 7 questions which include; the health care worker status and cancer screening practice in applying scans for breast, cervix, and colorectal cancers, their breast self-examination, (BSE), and risk for colorectal cancer, etc. The practice scores (ranging from 1 to3) and classified into Poor practice (≤ 50) Fair practice (51- 80%), and (> 80) considered Good practice.

-The third part

Participants' knowledge is assessed by 35 questions. They include; evaluation of the knowledge of the health care worker on breast, cervix, and colorectal cancers. Each question will provide one point for each correct answer; an incorrect answer will get zero. Correct responses will be summed up to get a total score for each participant. The Total score for all questions will be 35 points. The knowledge scores are classified into poor knowledge ($\leq 50\%$), fair knowledge (51- 80%), and (> 80) considered Good knowledge.

Statistical analysis of the data was performed to provide frequency; means, standard deviations, and percentage for all responses in the survey.

RESULTS

Table 1. Shows the characteristics of female healthcare workers. Out of a total of 50 eligible female healthcare

Table 1. Assessment of the baseline demographics and characteristics of the sample Parameters (number and percentage)

Socio-Demographic Data		
1. Name of center: -	No	Percent
1. Al Salama PHCC	9	18.0%
2. Al Khazan PHCC	14	28.0%
3. Al Falaj PHCC	7	14.0%
4. Al Rafa PHCC	1	2.0%
5. Dental center PHCC	14	28.0%
6. MCH center PHCC	5	10.0%
Function group / category	No	Percent
1. Doctor	5	10.0%
2. Nurse	40	80.0%
3. Pharmacist	1	2.0%
4. Lab	3	6.0%
5. Dentist	1	2.0%
3. Age	No	Percent
1. 30-40 years	1	2.0%
2. 41-50 years	35	70.0%
3. Above 50	14	28.0%
4. Education	No	Percent
1. Diploma	28	56.0%
2. Bachelor	14	28.0%
3. Master	7	14.0%
4. Above master	1	2.0%
5. Marital status	No	Percent
1. Married	50	100.0%
2. Single	0	0.0%
6. Age of marriage	No	Percent
1. 20 -25	30	60.0%
2. 25—30	15	30.0%
3. Above 30	5	10.0%
7. Age of first pregnancy	No	Percent
1. 20 -25	25	50.0%
2. 25—30	19	38.0%
3. Above 30	6	12.0%
8. Number of children	No	Percent
1. One	6	12.0%
2. two	21	42.0%
3. three	17	34.0%
4. and above	6	12.0%
9. Physical Exercise	No	Percent
1. Never	16	32.0%
2. Sometimes	30	60.0%
3. One a week	3	6.0%
4. Three times per week	1	2.0%
10. Nutrition habits: -	No	Percent
1. Lots of fruits and vegetables	31	62.0%
2. Low-fiber, high-protein and fat	19	38.0%
11. Having a family member with any cancer	No	Percent
1. Yes	16	32.0%
2. No	34	68.0%
12. Experience	No	Percent
1. 5 years or less	9	18.0%
2. 6-15 years	25	50.0%
3. 16-25 years	16	32.0%
13. Training Course	No	Percent
1. Yes	28	56.0%
2. No	22	44.0%

workers in Umm al Quwain primary health care centres, 80% of the questionnaire respondents were nurses. 70% of

the female health worker were above 40 years. 56% were Diploma holders and 60 % got married between the age of

Table 2. The Risk Perception and Behavior of health care workers for Breast, Cervix, and Colorectal Cancers Screening Program

Breast, cervical and colorectal cancer Practice Questionnaire		
	No	Percent
1. Do you perceive yourself at risk for breast cancer?		
1. Yes	13	26.0%
2. No	18	36.0%
3. Don't know	19	38.0%
2. Status of practicing breast self-examination (BSE)		
1. I perform regular breast self-examination	10	20.0%
2. I perform unregular breast self-examination	19	38.0%
3. I never performed breast self-examination	21	42.0%
3. Status of undergoing mammography? (to be answered if above 40 years)		
1. I receive regular mammography	6	12.0%
2. I receive unregularly mammography	11	22.0%
3. I never received mammography before	33	66.0%
4. Do you perceive yourself at risk for cervical cancer?		
1. Yes	6	12.0%
2. No	21	42.0%
3. Don't know	23	46.0%
5. Status of undergoing regular gynecological examination?		
1. I receive regular gynecological examinations	8	16.0%
2. I receive unregularly gynecological examinations	15	30.0%
3. I never received regular gynecological examinations	27	54.0%
6. Status of undergoing Pap smear test? (to be answered if married, divorced, widowed)		
1. I take the test regularly	5	10.0%
2. I take the test unregularly	9	18.0%
3. I did not take the test	36	72.0%
7. Do you perceive yourself at risk for colorectal cancer?		
1. Yes	4	8.0%
2. No	22	44.0%
3. Don't know	24	48.0%

20 -25 years. Among the female healthcare workers, 32% had worked for more than 16 years. A total of 32% of the participants reported that they had a positive family history of cancer.

Concerning Breast cancer 26% perceived themselves at risk for breast cancer, nevertheless, 42% never practiced Breast self-examination (BSE) and 66% never had a mammogram done. Whereas for cervical cancer, 46% did not know that they were at risk. The percentage of those who had regular gynecological examinations and regular Pap smear tests were 16% and 10% respectively. 44% did not perceive themselves at risk of colorectal cancer. (Table 2).

Regarding female healthcare worker's knowledge about breast, cervical, and colorectal cancer, it has been found that a clear majority (74.7%) answered correctly to the questions. There was a satisfactory level of knowledge of cervical (78.2%) colorectal cancer (75%), and breast cancer knowledge (70.2%). (Table 3, Figure 1).

The mean cancer knowledge amongst female healthcare workers was highest amongst doctors with a mean of 90.6 whereas the least mean cancer knowledge was expressed in pharmacists and lab technicians with a mean of 63.3 and 61.6 respectively. (Figure 2).

There was a significant relationship ($p=0.019$) between education and total cancer knowledge level especially in cervical cancer which a statistical significant value

($p=0.05$). (Table 4).

The relationship between years of experience and cancer knowledge was insignificant in breast and colorectal cancer. However cervical cancer knowledge was higher in those having five years or less work experience ($p<0.05$) (Table 5).

The relationship between the total number of years of experience level and total knowledge level was insignificant. Hence indicating that practice of cancer screening was not related to the level of knowledge in female healthcare workers. (Table 6).

There was no significant difference between the length of practical experience and the level of education, and age. However, the total practice level was high in those who received training courses. (Table 7).

DISCUSSION

Breast and colorectal cancer are the top 2 deadliest cancers in the United Arab Emirates (GCO, 2019). It was estimated that every year 108 women are diagnosed with cervical cancer and 56 die from it in a population of 1.82 million women as from 15 years and above in the United Arab Emirates (ICO/IARC, 2018) This explains the attention received by the cancer screening programs in the country and the strong role played by the healthcare professionals

Table 3. Female healthcare workers' Knowledge on Breast, Cervical, and Colorectal Cancers

Breast ,cervical and colorectal cancer knowledge	Not correct		Correct	
	No	Percent	No	Percent
Breast cancer				
1. When should a woman get her first screening mammogram?	19	38.0%	31	62.0%
2. All lumps in the breast are cancerous.	7	14.0%	43	86.0%
3. What factors may increase a woman's risk of developing breast cancer?	12	24.0%	38	76.0%
4. A sign of possible breast cancer is	26	52.0%	24	48.0%
5. African American women are more likely to get breast cancer.	40	80.0%	10	20.0%
6. A woman with no high-risk factors probably won't get breast cancer and doesn't need to worry about the disease.	3	6.0%	47	94.0%
7. It's OK to use deodorant on the day you have a mammogram.	3	6.0%	47	94.0%
8. Women who have their first child before age 30 and breastfeed are less likely to develop breast cancer.	9	18.0%	41	82.0%
9. Its safe for women to use hormone therapy for a prolonged time during menopause.	15	30.0%	35	70.0%
Total breast cancer knowledge	134	29.8%	316	70.2%
Colorectal cancer				
10. Colonoscopy is the only test used to screen for colorectal cancer in people who have no symptoms of it.	5	10.0%	45	90.0%
11. Which of the following is not a screening test for Colorectal Cancer?	13	26.0%	37	74.0%
12. Which of the following is not a risk factor for Colorectal Cancer?	12	24.0%	38	76.0%
13. Which of the following is most important in the prevention of Colorectal Cancer?	24	48.0%	26	52.0%
14. Which of the following stages is characterized by a tumor on the innermost layers of the colon?	5	10.0%	45	90.0%
15. Which form of treatment is advised for Stage 4 Colorectal Cancer?	10	20.0%	40	80.0%
16. Which of the following is not a common side effect of chemotherapeutical treatment for colorectal cancer?	31	62.0%	19	38.0%
17. Which of the following is not a home treatment for mouth sores resulting from chemotherapeutical treatment for colorectal cancer?	4	8.0%	46	92.0%
18. FOBT is a screening method for colon cancer. If the FOBT test is (+), it is not necessary to receive a colonoscopy.	12	24.0%	38	76.0%
19. Blood in the rectum or bleeding after defecation, unexplainable fatigue, anemia, and stomachache can be symptoms of colorectal cancer	9	18.0%	41	82.0%
Total Colorectal cancer knowledge	125	25.0%	375	75.0%
Cervical cancer				
20. Cervical cancer is observed less frequently between the ages 30-55	7	14.0%	43	86.0%
21. Pap smear test cannot detect cervical cancer at 90-95% accuracy before clinical onset	16	32.0%	34	68.0%
22. Screening program for cervical cancer should start at the age of 30. Until the age of 60	21	42.0%	29	58.0%
23. Irregular, non-menstruation-related bleeding and discharge can be an early symptom of cervical cancer especially if it occurs after sexual intercourse.	3	6.0%	47	94.0%
24. Do I still need to get screened for cervical cancer if I received the vaccine?	7	14.0%	43	86.0%
25. Current HPV vaccines protect women 100% against HPV 16 and 18, which cause cervical cancer	32	64.0%	18	36.0%
26. The human papilloma virus (HPV) causes cervical cancer.	3	6.0%	47	94.0%
27. Cervical cancer usually doesn't cause symptoms right away.	9	18.0%	41	82.0%
28. Women who have had any type of hysterectomy can't get cervical cancer and don't need to be tested for it.	6	12.0%	44	88.0%
29. Is there more than one type of vaccine?	6	12.0%	44	88.0%
30. How long does the vaccine protect women against HPV?	10	20.0%	40	80.0%
Total Cervical cancer knowledge	120	21.8%	430	78.2%
Total cancer knowledge	379	25.3%	1121	74.7%

especially in the primary health care settings as they are more accessible and frequently visited. Fair knowledge (74.7%) about cancer (breast, cervical and colorectal) knowledge was observed amongst our studied sample meanwhile a cross-sectional study in Turkey reported a large proportion of low knowledge and inadequate screening practice in female healthcare workers (doctors, nurses, midwives) working in primary health care

service about cervical cancer and its risk factors (Can et al., 2014).

A cross-sectional descriptive study that was conducted in Qatar on female healthcare workers in primary health care centers to evaluate their knowledge, attitudes, and practices towards cervical cancer screening revealed that they had little knowledge regarding the eligibility and screening interval (Alali et al., 2016), contrary to our

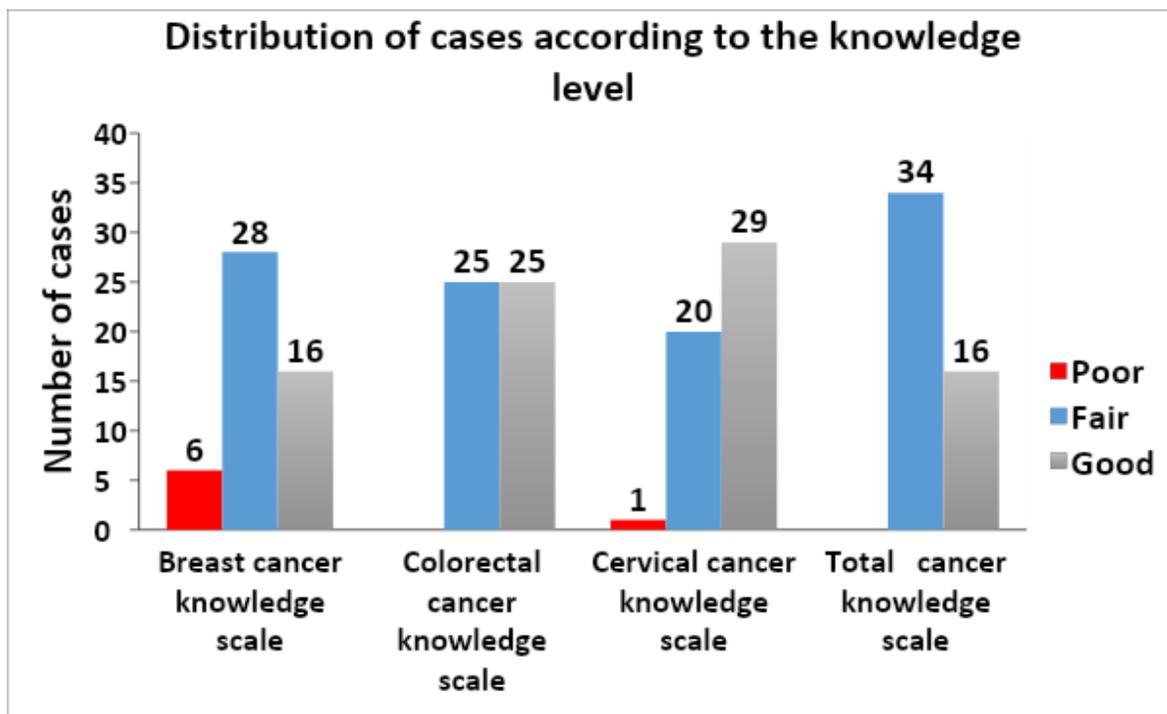


Figure 1: Distribution of cases according to the knowledge level

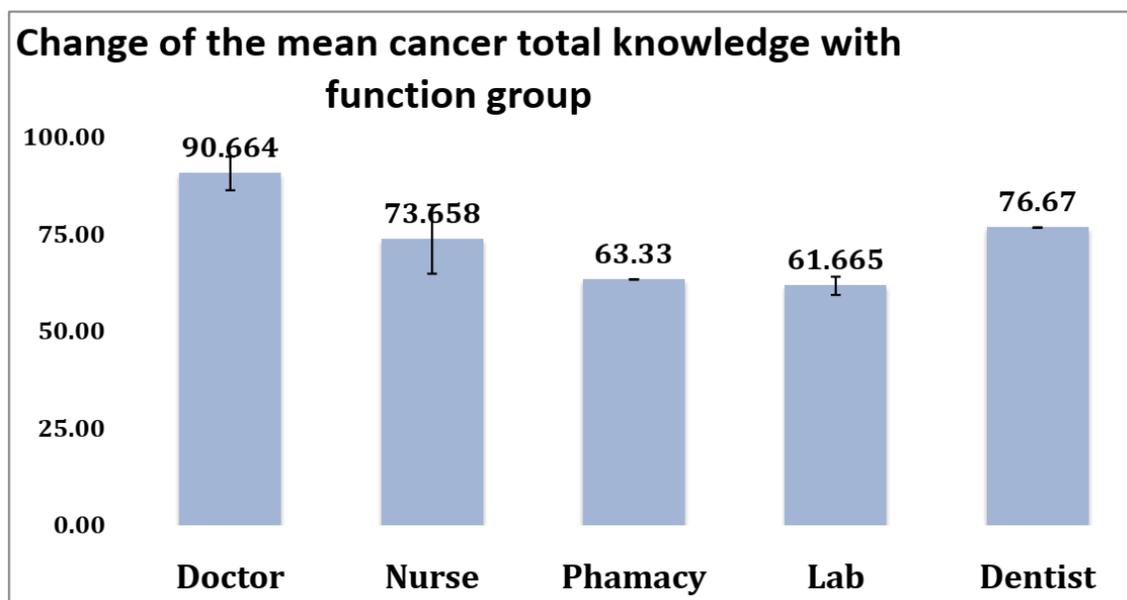


Figure 2: Change of the mean cancer total knowledge with function group

studied sample who answered correctly to questions regarding eligibility and interval of cervical cancer screening.

In another study conducted by Nwanko et al. to assess knowledge, attitude, and uptake of pap smear amongst certified nurses in Enugu, results determined a significant relationship between nurses' work experience and knowledge scores (Nwanko et al., 2010). On the other hand,

our results revealed that the respondents with the least experience duration had better cervical cancer knowledge, however, the total cancer knowledge level was not significant amongst the respondents. This may be explained by being freshly graduated with updated knowledge and due to recent attention provided to cervical cancer screening and prevention programs provided by Healthcare authorities in the United Arab Emirates.

Table 4. Relation of Education level and cancer knowledge

	Education	N	Mean	SD	F	P value	
Breast cancer knowledge level	1. Diploma	29	66.67	17.06	1.51	0.23056	P > 0.05 NS
	2. Bachelor	13	73.51	19.00			
	3. Master	8	77.78	18.78			
Colorectal cancer knowledge level	1. Diploma	29	71.72	14.66	2.02	0.14408	P > 0.05 NS
	2. Bachelor	13	78.46	12.81			
	3. Master	8	81.25	12.46			
Cervical cancer knowledge level	1. Diploma	29	75.24	11.88	3.14	0.05239	P ≈ 0.05 Almost Significant
	2. Bachelor	13	81.12	6.90			
	3. Master	8	84.09	6.43			
Total cancer knowledge level	1. Diploma	29	71.49	9.41	4.31	0.01915	P < 0.05 Significant
	2. Bachelor	13	77.95	9.38			
	3. Master	8	81.25	10.07			

In general, with increasing the education level, the mean knowledge increases.

Table 5. Relationship of Experience and cancer knowledge

	Experience	N	Mean	SD	F	P value	
Breast cancer knowledge level	5 years or less	9	67.90	19.60	0.82	0.44605	P > 0.05 NS
	6-15 years	25	68.00	18.79			
	16-25 years	16	75.00	15.97			
Colorectal cancer knowledge level	5 years or less	9	73.33	14.14	0.08	0.92583	P > 0.05 NS
	6-15 years	25	75.20	14.75			
	16-25 years	16	75.63	14.13			
Cervical cancer knowledge level	5 years or less	9	83.84	6.06	3.46	0.03970	P < 0.05 S
	6-15 years	25	79.27	10.00			
	16-25 years	16	73.30	11.72			
Total cancer knowledge level	5 years or less	9	75.55	8.33	0.03	0.96579	P > 0.05 NS
	6-15 years	25	74.53	10.84			
	16-25 years	16	74.58	10.46			

Only cervical knowledge is statistically significantly different, (Lower experience group has higher knowledge!!)

Table 6. Correlations of total practice level and total knowledge level

Breast cancer knowledge level	Pearson correlation coefficient	0.09	
	P value	0.51346	P > 0.05 NS
Colorectal cancer knowledge level	Pearson correlation coefficient	0.00	
	P value	0.98395	P > 0.05 NS
Cervical cancer knowledge level	Pearson correlation coefficient	0.23	
	P value	0.11104	P > 0.05 NS
Total cancer knowledge level	Pearson correlation coefficient	0.14	
	P value	0.33572	P > 0.05 NS

All correlations are weak positive non statistically significant

Table 7. Correlations of total practice level and education, experience years, age and training

	Education	N	Mean	SD	F	P value	
Cancer total practice level	1. Diploma	29	29.81	15.64	0.58	0.56197	P > 0.05 NS
	2. Bachelor	13	36.25	19.45			
	3. Master	8	32.16	22.92			
Cancer total practice level	Experience	N	Mean	SD	0.82	0.44605	P > 0.05 NS
	5 years or less	9	40.48	11.84			
	6-15 years	25	27.72	17.17			
Cancer total practice level	16-25 years	16	33.48	20.17	-0.59	0.55819	P > 0.05 NS
	age	N	Mean	SD			
	40-50 years	35	30.82	18.15			
Cancer total practice level	Above 50	14	34.19	17.77	2.42	0.01943	P < 0.05 Significant
	training	N	Mean	SD			
	Yes	28	36.99	16.03			
Cancer total practice level	NO	22	25.33	18.02			

Regarding breast cancer, low knowledge and practice levels were reported amongst nurses in Asmara hospital in Eritrea and in Sousse PHCC in Tunisia (Andegiorgish et al., 2018 ;Selma, 2018). A study from Tunisia said that this could be the cause for diagnosing breast cancer in advanced stages, and indicated the importance of integration of nurses into the program of breast cancer screening[(Selma ,2018). Whereas, in our study, we found breast cancer knowledge was 70.2% amongst female healthcare workers and the mean total cancer knowledge amongst Nurses was 73.6.

A study regarding the awareness of female healthcare workers about risk factors and screening methods for early detection of breast cancer in Nigeria revealed that 55% of the respondent's knowledge about risk factors for breast cancer was very poor. The authors noted that there was low knowledge of BSE (Breast self-examination) and mammography associated with a low practice level of mammography (Eze et al., 2018). Meanwhile, our study showed 67% responded correctly to the questions in the survey on risk factors, and the age to undergo a mammogram. Although 42% never done BSE and 66% never undergone a mammogram. The same low levels of practice were noted in the findings conducted in the 3 above-mentioned studies.

Regarding knowledge of colorectal cancer screening, risk factors, and prevention, eligible female healthcare workers, answered correctly with a percentage of 75% of total colorectal cancer knowledge. This indicating adequate knowledge. A study by Muliria et al. done in 2016 evaluating the attitudes and knowledge of Health care workers in PHCC regarding Colorectal cancer concluded inadequate knowledge levels among Healthcare workers and regarded as one of the barriers affecting CRC screening. They indicated that more than 55% of nurses and physicians did not know the frequency of screening test, the upper age limit, and how to identify high-risk for CRC (Muliira et al., 2016).

In a cross-sectional study conducted at both the University Hospital of Universidade Luterana do Brasil and at basic health units of Canoas Rio Grande do Sul, Brazilian physicians were found to have had very little knowledge about the guideline's recommendations for colorectal cancer screening (Souza et al., 2012). Whereas, we observed that there was no significant relation between practice and total knowledge level. Although there was a significant increase in cancer total practice level in those who received training. Moreover, we found that there was an increase in the mean total cancer knowledge, and the increased in educational level of the participants ($p=0.05$).

Conclusion and Recommendations

In conclusion, female healthcare workers expressed a high-level knowledge about cancer (breast, cervical and colorectal cancer), however, their practice levels were unsatisfactory. The lack of practice levels might be

attributed to cultural believes that stigmatizes cancer and also due to lack of coverage of insurance scheme covering cancer screening tests. In our study a significant relationship was observed between practice level, and staff who had received training.

Therefore, we recommend that there is a need for regular Continuous Medical Education (CME) sessions focused on practice regarding cancer screening for healthcare workers. This might help to change their attitude as they are the role models for community members. This will have a positive impact on morbidity and mortality of cancer which is one of the strategic goals of the Ministry of health and prevention. It is recommended that healthcare workers should be better informed about the importance of screening for cancers, given their preventive roles for the general population (GCO, 2019).

Our study is limited by its design, the number of participants, and exclusivity to one Emirate. Performing a more comprehensive study that involves female healthcare workers practicing throughout the United Arab Emirates is needed.

Conflict of interest

No conflict of interest exists in the submission of this manuscript.

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