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الجمهورية اليمنية
وزراة التعليم العالي والبحث العلمي
الجامعة الامارتية
كلية الطب والعلوم الصحية
قسم طب المجتمع

Assessment of Awareness Of Breast Cancer and its Risk Factors among Female in Emirates International University, Sana'a City, Yemen

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تقييم وعي الطالبات الجامعيات حول سرطان الثدي في الجامعة الدولية الاماراتية، صنعاء، اليمن

The research is Submitted to the Department of Community Medicine, Faculty of medicine and Health Sciences, Emirates International University as A partial Fulfillment for MBBS. Graduation

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The Researchers

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LIST OF ABBREVIATIONS

WHO	World Health Organization
BC	Breast Cancer
NMSC	Non melanoma us skin cancer
DALYs	Disability - adjusted life years
LMICs	Low and middle - income countries
BHGI	The breast health global initiative
NGOs	Non – governmental organization
EMR	Eastern Mediterranean Region
GCC	Gulf cooperation council
ASR	Age – adjusted standardized incidence rate
EIU	Emirates international University
BSE	Breast self-examination
CBE	Clinical breast examination
NCDs	Non communicable diseases
BMI	Body mass index
UAE	United Arab Emirates

Abstract

Background: Breast cancer continues to be a major cause of morbidity and mortality among women throughout the world and in Yemen lack of awareness and early detection program in developing country is a main reasonfor escalating the mortality.

Objectives: The present study was assessment of awareness of breast cancer and its risk factor among female in Emirates international university, Sana'a Yemen in term of detect knowledge about breast cancer risk factors, early warning signs, breast cancer therapeutic and performing breast self-examination.

Methods: This is a cross-sectional study was conducted between 30 April 2021 and 11 July 2021 and included female students from Emirate international university in Sana'a, Yemen. Systematic random sampling procedure was used. Data were collected through a validated self-administered questionnaire(Appendix I). The questionnaire included 35 questions testing knowledge of risk factors, early warning signs, treatment modalities and breast self-examination.

Descriptive statistics were computed using percentage, mean, standard deviation, and frequency distribution were used to summarize the data. One way Anova test was used to test the associations between knowledge of respondents towards breast cancer and the participant's characteristics.

Results: The participants (n = 324) were most frequently between 20 to 30 years (78.7%) and the mean age was (23.2) years (SD 4.09). The percentage of participants who had low/below average knowledge scores regarding risk factors was 75.0%.

The respondents had high knowledge about the breast cancer warning signs, the early detection of breast cancer and the treatment for breast cancer was 89.3%, 91.3% and 81.7%, respectively. The results of the study revealed that the there is a statistically significant association at the level (0.05) between the respondents' awareness of breast cancer and age group of respondents,type of faculty and faculty year of participants..

Conclusion: These findings underscore the continuing need for more education and awareness through programs aimed at raising awareness among women.

Keywords: Breast cancer, Awareness, Emirates international University, Sana'a, Yemen.

CHAPTER 1: INTRODUCTION

1.1 Background of the study

Cancer ranks as a leading cause of death and an important barrier to increasing life expectancy in every country of the world (Bray, Laversanne, Weiderpass, & Soerjomataram, 2021). According to estimates from the World Health Organization (WHO) in 2019 (WHO., 2020), cancer is the first or second leading cause of death before the age of 70 years in 112 of 183 countries.

In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent breast cancer mortality changed little from the 1930s through to the 1970s. Improvements in survival began in the 1980s in countries with early detection programmers combined with different modes of treatment to eradicate invasive disease (DeSantis *et al*., 2015).

Breast cancer is the most common malignancy and first cause of cancer mortality in women worldwide with a world number of new cases estimated at 1,384,155 in 2008 (Ferlay *et al*., 2008). Its worldwide prevalence is still on the rise (Forouzanfar *et al*., 2011; Sasco, 2008), and nowadays breast cancer is considered to be an increasing public health problem among populations in low- and middle- income countries (LMICs). Moreover, a recent population- based study of cancer survival in Africa, Asia and Central America found unacceptably low breast cancer survival rates in African countries especially in Gambia

where the 5- year age- standardized relative survival did not exceed 12% (Sankaranarayanan *et al*., 2010).

The Eastern Mediterranean region (EMR) encompasses 22 countries spanning from Morocco in the west to Pakistan in the east, and contains a population of almost 600 million people. Like many other developing regions, the burden of disease in the EMR has shifted in the past four decades from primarily communicable diseases to non-communicable diseases, such as cancer and cardiovascular diseases (Taha & Eltom, 2018).

According to the International Agency for Cancer Research and GLOBOCAN 2008, in the Gulf Cooperation Council (GCC) countries breast cancer incidence rates are highest in Bahrain (49.8/100,000), followed by Kuwait (47.7/100,000) and Qatar (38.1/100,000). Compared to other Arab peninsular countries, such as Saudi Arabia (22.4/100,000) or Yemen (20.8/100,000) (Albeshan, Mackey, Hossain, Alfuraih, & Brennan, 2018).

The Arab world has a total of 22 countries spread across Northern Africa and Western Asia, including the Middle East. Data from Arab countries on breast cancer vary according to region and country. In Arab countries, the breast cancer represents 14 % to 42 % of all female cancers. Age-adjusted standardized incidence rates (ASR) were reported to vary from 9.5 to 50 cases per 100,000 women per year 50 % of cases are younger than 50 years compared to 25 % in developed countries. Cancer remains a taboo in most Arab countries. The majority of people still refer to it as “other disease” and remain afraid of mentioning it by name .Arab women share a set of different cultural, norms and beliefs and studies have shown that patient-based outcomes could be affected by cultural experiences and ethnic backgrounds(Rahou *et al*., 2016).

In Yemen breast cancer is the most common cancer among females it is considered as a major health-threatening factor to women's health in Yemen. In 2019, 847 women were diagnosed with breast cancer; accounting for 26.6% of all female cancer cases and 14.7% of total cancers. Moreover, about 58.7% of those diagnosed were aged 49 years or less and 80% had advanced cancer at the time of diagnosis (Yemen National Cancer Center, 2020). World health organization in 2020 was estimated the percentage of female breast cancer in Yemen constitute of 2894 (31.1%) (WHO, 2020b) (Figure 1).

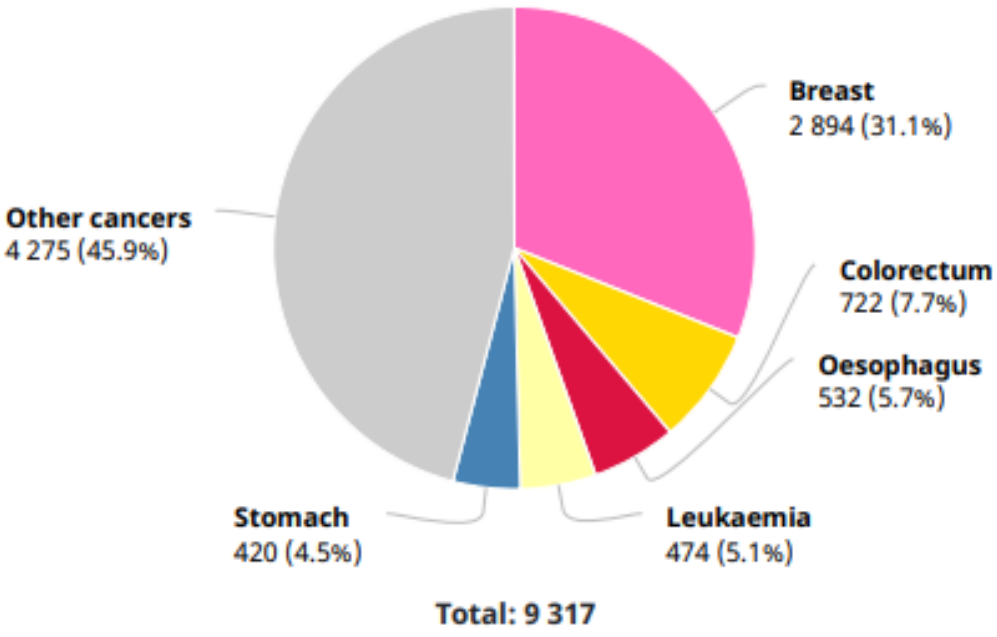


Figure 1.1: Number of new cases in 2020, females, all ages, in Yemen(WHO 2020)

This study was designed to Assess of Breast Cancer Awareness among Female University Students in EIU, Sana'a City, Yemen.

1.2 **Problem statement**

In Yemen breast cancer is the most common cancer among females it is considered as a major health-threatening factor to women's health in Yemen. In 2019, 847 women were diagnosed with breast cancer; accounting for 26.6% of all female cancer cases and 14.7% of total cancers. Moreover, about 58.7% of those diagnosed were aged 49 years or less and 80% had advanced cancer at the time of diagnosis (Yemen National Cancer Center, 2020).

An inadequate awareness of and widespread misconceptions about breast cancer were identified as barriers that affect the utilization of the existing public screening services (Global Initiative for Breast Cancer Awareness Team, 2008). It has been suggested that the enhancement of knowledge and the correction of misconceptions among young women will stimulate positive attitudes towards breast cancer education and make them more 'breast aware', which in turn may promote the earlier detection of breast cancer (Karayurt, Özmen, & Çetinkaya, 2008).

The present study aimed to assess the awareness of female university students in the EIU regarding breast cancer and its preventive measures among this population.

1.3 ` **Study Significance**

The lack of knowledge and incorrectly held beliefs about breast cancer prevention among females are responsible for the negative perception of the curability of cancer

detected early and of the efficacy of the screening tests. It is, therefore, important to assess the level of awareness of risk factors in our communities. This study aimed to assess awareness of breast cancer, and practice of breast cancer screening among female students in EIU Sana'a, Yemen.

1.4 **Conceptual framework for factors influencing awareness of breast cancer**

The conceptual framework below shows the various factors that will be conceptualized to independently affect breast cancer risk factors, warning signs and early detection awareness, Knowledge of treatment and Knowledge of Breast Self-Examination , among the female's students at Emirates international university.

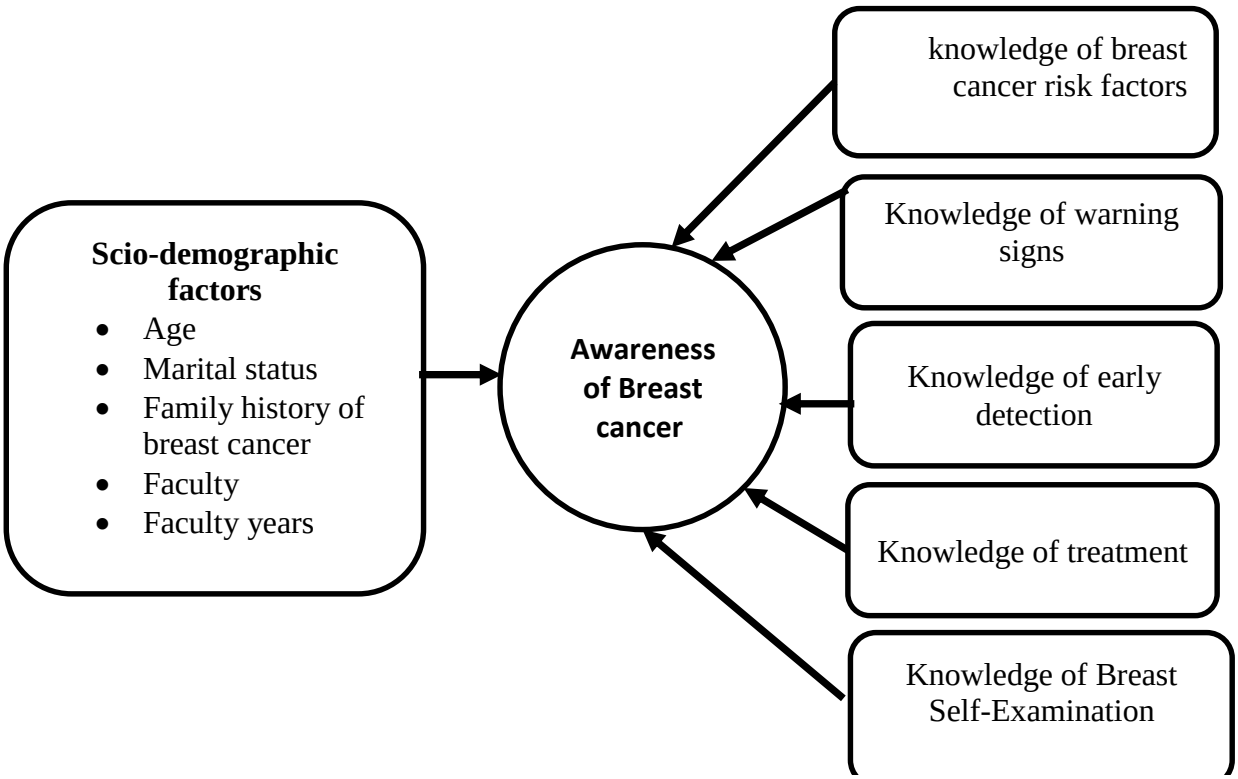


Figure 1.2: Conceptual framework for factors influencing awareness of breast

1.5 **Objectives of the study**

1.5.1 General objective:

The general objective aimed to assess of breast cancer awareness among female University Students in EIU, Sana'a city, Yemen.

1.5.2 Specific objectives:

1. To describe the characteristics of study participants.
2. To determine student knowledge of breast cancer risk factors, warning signs, early detection, treatment and performing and reasonsfor not performing breast self-examination.
3. To explore the association between sociodemographic variables and Knowledge of breast cancer.

CHAPTER 2: LITERATURE REVIEW

2.1 Breast Cancer Background

Cancer ranks as a leading cause of death and an important barrier to increasing life expectancy in every country of the world (Bray, Laversanne, Weiderpass, & Soerjomataram, 2021). According to estimates from the World Health Organization (WHO) in 2019(Organization, 2000), cancer is the first or second leading cause of death before the age of 70 years in 112 of 183 countries and ranks third or fourth in a further 23 countries (Figure 2.1).

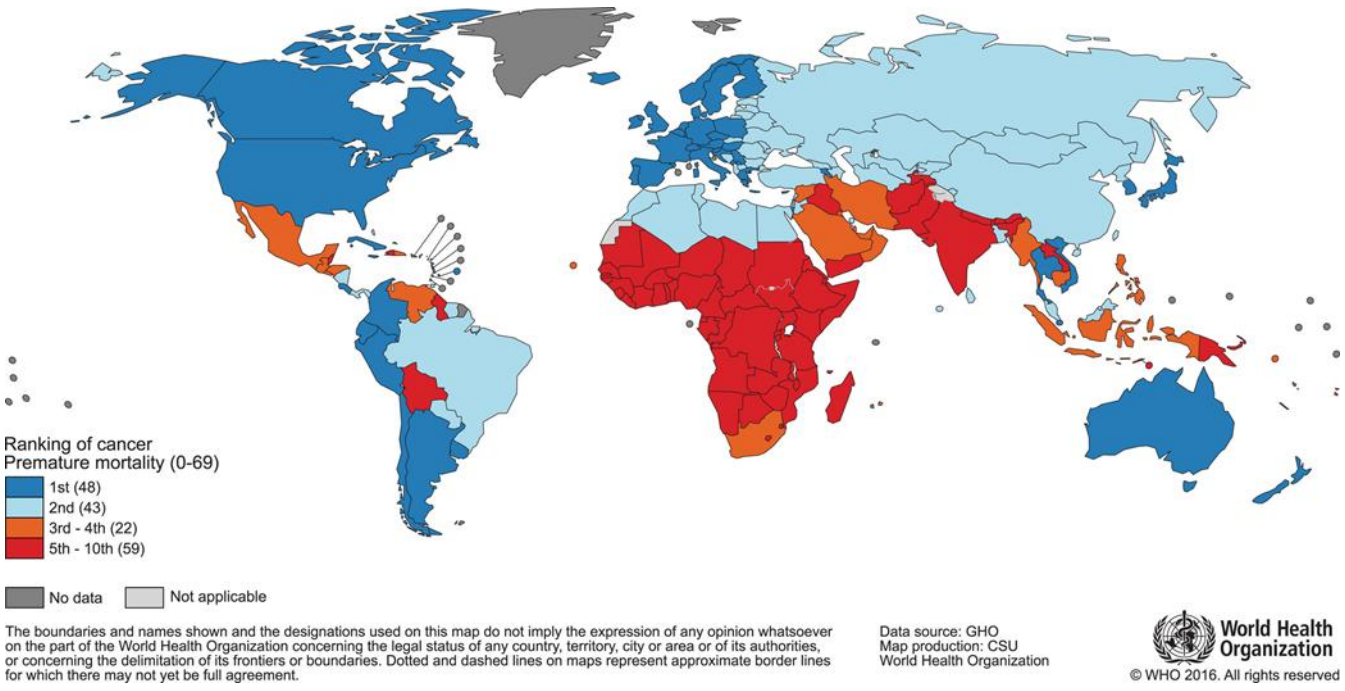
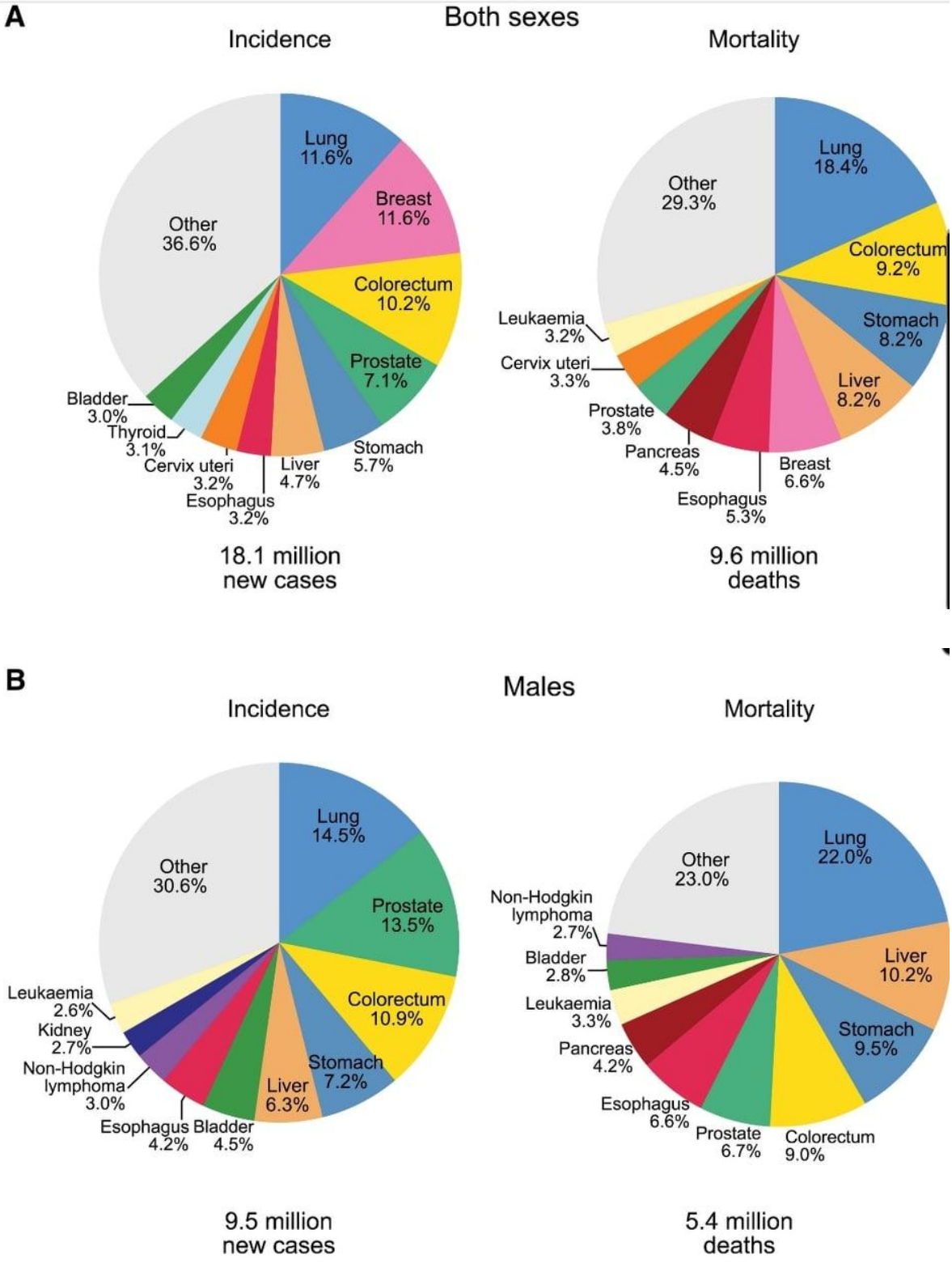


Figure 2.1: National Ranking of Cancer as a Cause of Death at Ages <70 Years in 2019.(WHO 2019)


A
Both sexes
Incidence
Mortality
Lung 11.6%
Breast 11.6%
Colorectum 10.2%
Prostate 7.1%
Stomach 5.7%
Liver 4.7%
Esophagus 3.2%
Cervix uteri 3.2%
Thyroid 3.1%
Bladder 3.0%
Other 36.6%
18.1 million new cases
Lung 18.4%
Colorectum 9.2%
Stomach 8.2%
Liver 8.2%
Breast 6.6%
Esophagus 5.3%
Pancreas 4.5%
Prostate 3.8%
Cervix uteri 3.3%
Leukaemia 3.2%
Other 29.3%
9.6 million deaths
B
Males
Incidence
Mortality
Lung 14.5%
Prostate 13.5%
Colorectum 10.9%
Stomach 7.2%
Liver 6.3%
Bladder 4.5%
Esophagus 4.2%
Non-Hodgkin lymphoma 3.0%
Kidney 2.7%
Leukaemia 2.6%
Other 30.6%
9.5 million new cases
Lung 22.0%
Liver 10.2%
Stomach 9.5%
Colorectum 9.0%
Prostate 6.7%
Esophagus 6.6%
Pancreas 4.2%
Leukaemia 3.3%
Bladder 2.8%
Non-Hodgkin lymphoma 2.7%
Other 23.0%
5.4 million deaths

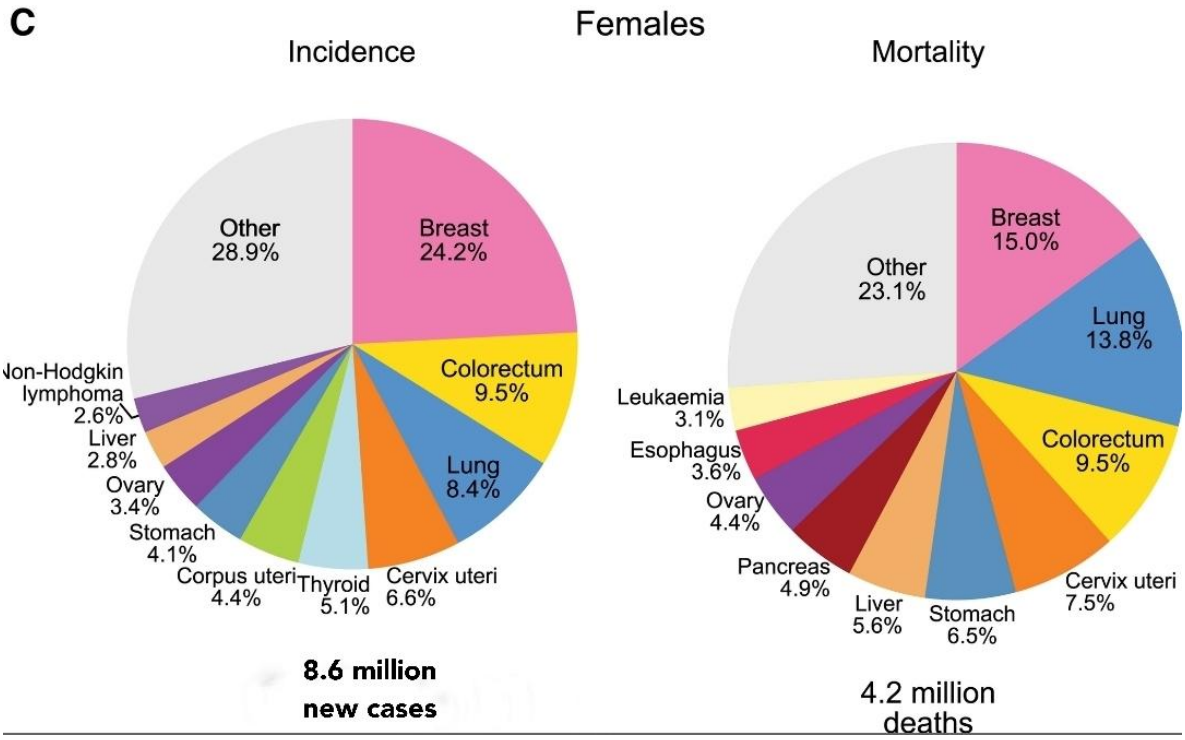


Figure 2.2: Distribution of type of cancer sorted by Gender, GLOBOCAN 2020 (Bray *et al*., 2018).

The numbers of countries represented in each ranking group are included in the legend.

Source: World Health Organization(Bray *et al*., 2018).

Breast cancer (BC) is the top cancer in women worldwide and is increasing particularly in developing countries where the majority of cases are diagnosed in late stages(Cheng *et al*., 2014; WHO Organization, 2014).

(Figure 2.2) shows the top 10 cancer types for estimated cases and deaths worldwide for men and women, combined and separately, with NMSC included within the other category.

For both sexes combined, the top 10 cancer types account for >60% of the newly diagnosed cancer cases and >70% of the cancer deaths. Female breast cancer is the most commonly diagnosed cancer (11.7% of total cases), closely followed by lung (11.4%), colorectal (10.0%), prostate (7.3%), and stomach (5.6%) cancers. Lung cancer is the leading cause of cancer death (18.0% of the total cancer deaths), followed by colorectal (9.4%), liver (8.3%), stomach (7.7%), and female breast (6.9%) cancers. Lung cancer is the most frequently occurring cancer and the leading cause of cancer death in men, followed by prostate and colorectal cancer for incidence and liver and colorectal cancer for mortality. In women, breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death, followed by colorectal and lung cancer for incidence, and vice versa for mortality.

Figure 2.2:

Distribution of Cases and Deaths for the Top 10 Most Common Cancers in 2020 for (A) Both Sexes, (B) Men, and (C) Women. For each sex, the area of the pie chart reflects the proportion of the total number of cases or deaths; non-melanoma skin cancers (excluding basal cell carcinoma for incidence) are included in the "other" category. Source: GLOBOCAN 2020 (Bray *et al*., 2018).

In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent cancer. There are more lost disability-adjusted life years (DALYs) by women to breast cancer globally than any other type of cancer(WHO, 2021). Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life.

Breast cancer mortality changed little from the 1930s through to the 1970s. Improvements in survival began in the 1980s in countries with early detection programs combined with different modes of treatment to eradicate invasive disease(DeSantis *et al*., 2015; Stoltenberg et al., 2020).

In Yemen, breast cancer is the most common cancer among females where it constitutes about 21% of all cancer cases where the mean age at diagnosis is 47 years and about one-quarter of cases are diagnosed below the age of 40 years(Bashamakha, bin Sumait, Bashamakha, Al Serouri, & Khader, 2019; HO, Bawazir, Moore, & Al-Sakkaf, 2010). Breast cancer is the most common malignancy and first cause of cancer mortality in women worldwide with a world number of new cases estimated at 1,384,155 in 2008(DeSantis *et al*., 2015).

In figure 3 it shows the top cancer per country, estimated age-standardized incidence rates (World) in 2020, both sexes, all ages, and according to it, Yemen first cancer is breast(WHO, 2020a).

Its worldwide prevalence is still on the rise (Al-Haddad, Al-Adwani, Abu-Rukbah, Al-Otaibi, & Al-Hayfani, 2016; Forouzanfar *et al*., 2011) and nowadays breast cancer is considered to be an increasing public health problem among populations in low- and middle- income countries (LMICs). Moreover, a recent population- based study of cancer survival in Africa, Asia and Central America found unacceptably low breast cancer survival rates in African countries especially in Gambia where the 5- year age-standardized relative survival did not exceed 12%.(Sankaranarayanan *et al*., 2010)

Besides poverty, low public awareness of breast cancer is a barrier to breast cancer control in LMICs where women seek medical help late and cancers are often diagnosed at advanced

stages when very little can be done in terms of curative treatment. The Breast Health Global Initiative (BHGI) panel(Anderson *et al*., 2011; El Saghir *et al*., 2011) has recommended implementation strategies to optimize breast cancer management in LMICs concerning health- care systems, breast cancer diagnosis, treatment and early detection. For early detection, efforts must be devoted to improve community awareness. Civil society, represented by non- governmental organizations (NGOs), can play an important role in breast cancer control(Azenha *et al*., 2011).

The Eastern Mediterranean region (EMR) encompasses 22 countries spanning from Morocco in the west to Pakistan in the east, and contains a population of almost 600 million people. Like many other developing regions, the burden of disease in the EMR has shifted in the past four decades from primarily communicable diseases to non- communicable diseases, such as cancer and cardiovascular diseases(Taha & Eltom, 2018)

Table 2.1: Incidence of top five cancers according to income of countries in the Eastern Mediterranean Region in 2018 (GLOBOCAN 2018)

		first	second	third	fourth	fifth
High income countries (Qatar, Bahrain, Kuwait, Oman,United Arab Emirates,Saudi Arabia)	**Incidence (both sexes)**	Breast	colorectal	uterus	prostate	thyroid
	Mortality (both sexes)	Breast	colorectal	lung	liver	uterus
	Incidence (male)	colorectal	prostate	lung	liver	leukemia
	Incidence (female)	Breast	Uterus	thyroid	colorectal	leukemia
Middle income countries (Lebanon,Iran,Jordan, Tunisia,Eygpt,Libya, Morocoo,Syria,Pakistan, Iraq,Palestine)	**Incidence (both sexes)**	Breast	prostate	lung	liver	colorectal
	Mortality (both sexes)	Breast	lung	liver	prostate	colorectal
	Incidence (male)	lung	prostate	liver	bladder	colorectal
	Incidence (female)	Breast	colorectal	uterus	ovary	Liver
Low income countries (Afghanistan,Yemen, Somalia,Djibouti)	**Incidence (both sexes)**	Breast	uterus	esophagus	stomach	Prostate
	Mortality (both sexes)	Breast	uterus	esophagus	stomach	Prostate
	Incidence (male)	stomach	esophagus	lung	prostate	Oral cavity
	Incidence (female)	Breast	uterus	esophagus	stomach	uterus

There is a considerable diversity in the population size, economy, risk factors profile ,healthcare infrastructure, political stability, health expenditures, and access to health.Burden of Cancer in the Arab World. Six countries of the EMR(Qatar, Bahrain, Kuwait, Oman, United, Arab Emirates, and Saudi Arabia) have a high per capita gross national income, while 12 countries (Lebanon, Iran, Jordan ,Tunisia, Egypt, Libya, Morocco, Sudan, Syria, Pakistan, Iraq, and Palestine) are considered middle-income countries.

Whereas the remaining four countries (Afghanistan, Yemen, Somalia, Djibouti) are low-income countries (Lyons *et al*.2018). The diversity in economy and the incidence of the top five cancers of various countries in the EMR is summarized in Table2.1.

Breast cancer is the most common cancer in females of the Gulf Cooperation Council (GCC) countries (Table2.1). It constituted 22.7% in Kuwait, 22.4% in UAE, and 21.7% in Bahrain to the new cases of all cancers of both sexes during 2018, while the lowest incidence in the GCC was reported in Oman (13.7%)followed by Saudi Arabia (14.8%) and Qatar (15.1%) (IARC and WHOGLOBOCAN2018). Breast cancer has been associated with frequency of pregnancy and breast feeding because of the high levels of oxytocin and estrogen during lactation and reduced ovulation lowering the possibility of breast cancer .The incidence and mortality of breast cancer can be significantly reduced if it is diagnosed and treated before progression to a malignant state. Early detection of breast cancer varies from self- examination to screening and mammography at least once a year, and awareness of early detection can reduce the chances of metastasis. Unfortunately, most women in Arab countries have little self-awareness of breast cancer and the disease is diagnosed at late stages. (Rahou *et al*., 2016)

The Arab world has a total of 22 countries spread across Northern Africa and Western Asia, including the Middle East. Data from Arab countries on breast cancer vary according to region and country. In Arab countries, the breast cancer represents 14 % to 42 % of all female cancers Age-adjusted standardized incidence rates (ASR) were reported to vary from 9.5 to 50 cases per 100,000 women per year 50 % of cases are younger than 50 years compared to 25 % in developed countries .Cancer remains a taboo in most Arab countries. The majority of people still refer to it as “other disease” and remain afraid of mentioning it

by name .Arab women share a set of different cultural, norms and beliefs and studies have shown that patient-based outcomes could be affected by cultural experiences and ethnic backgrounds(Rahou *et al*., 2016)

From September 2004 to December 2010, 2654 women from different regions in Yemen diagnosed with breast cancer were registered in the National Oncology Centre for treatment. Breast cancer represented 22% of all cancers registered in women between the years 2004 and 2010. Seventy-one percent of the women were aged 50 or younger at the time of diagnosis. The most common age group affected was women aged 41-50 years, 940 (35%). Invasive ductal carcinoma was the most common pathology and 79% of the patients had lymph node involvement at time of diagnosis. A small percentage had bilateral disease and the frequency of left and right breast cancer were similar (Rana F Obeidat).

This study showed breast cancer is a disease of young women in Yemen. The majority of patients presented with a lymph node involvement. Hence efforts are needed to increase breast cancer awareness in Yemen for early detection at all age groups.

2.2 Previous Studies

1.A study was done in **Turkey** in 2008, to study (This is a descriptive and cross-sectional study Awareness of breast cancer risk factors and practice of breast self-examination among high school students in Turkey)

Results: The female high school students had insufficient knowledge about breast self-examination and a low percentage of students reported that they had performed breast self-examination monthly. The most common reason for not doing breast self- examination was "not knowing how to perform breast self-examination" (98.5%). Most of the students had

little knowledge of the risk factors for breast cancer. The most widely known risk factor by the students was personal history of breast cancer (68.7%). There was a significant relation between breast self-examination practice and age, school grade, knowledge about breast cancer and knowledge about breast self- examination. This study concluded , here is a need to increase knowledge of adolescent females about the risks of breast cancer and benefits of early detection. In fact, health care professionals can develop effective breast health care programs and help young women to acquire good health habits(Karayurt *et al*., 2008).

2.A Study conducted in **Nigerian** this study was done in 2009 to study (A cross-sectional descriptive study was carried out among female health workers to study Knowledge, attitudes and practice of breast cancer screening)

Results:Three hundred and ninety-three (393) female health workers out of five hundred and five eligible subjects completed and returned the questionnaires, giving a response rate of 77.8%. One hundred and two (26%) were Doctors, two hundred and fifty-four (64.6%) Nurses, and thirty-seven (9.4%) were Radiographers, Laboratory Scientists and Pharmacists. A high proportion of our respondents had very poor knowledge about risk factors for breast cancer (55%). The awareness of mammography as a diagnostic method was very high (80.7%), but an extremely low knowledge of mammography as a screening method was found. Mammography practice of only 3.1% was found among those above 40 years of age who qualify for routine annual screening. Relatively low knowledge (45.5%) about Breast Self-Examination (BSE) as a screening method was found(Akhigbe & Omuemu, 2009).

3.A Study conducted in **Malaysia** this study was done in 2010 to study (A cross-sectional survey was conducted for Evaluation of breast cancer awareness among female university students in Malaysia)

Results: The mean age of the respondents was 26.7 (SD=1.9) years. The results showed that the vast majority of the female university students had inadequate knowledge of breast cancer. The mean total knowledge score of the students was 60.7%. Indian students had significantly less knowledge of breast cancer compared to their Chinese and Malay counterparts ($p<0.05$). However, more than two third of the students were aware of breast self-examination (BSE) and clinical breast examination (CBE) recommendations. Furthermore, the students had positive perceptions towards the treatment outcomes of breast cancer(Hadi, Hassali, Shafie, & Awaisu, 2010).

4.A Study conducted in **china** this study was done in 2017 to study (Institutional based cross-sectional study was conducted among 261 women selected by systematic random sampling.

Result:The study showed that 46.7% of the respondents had good awareness. Breast lump was the most commonly known symptom of cancer by 61.7% of the respondents. Slightly more than half of the study participants acknowledged having a past history of breast cancer, drinking alcohol and having close relative with breast cancer as potential risk factors for breast cancer (63.6%, 58.6%, and 55.6% respectively). Nevertheless, a vast majority of the study participants were unable to appreciate modifiable risk factors of the disease. More than half of the participants had never/rarely checked their breasts and all of the participants wrongly answered breast cancer knowledge age related risk. Awareness level was

significantly associated with entertainment preference (OR=3.57; 95%CI=1.71, 7.44) and residence setting areas (OR=2.4; 95%CI=1.04, 5.69) (Dinegde & Xuying, 2017)

5.A study was conducted in **Addis Ababa in 2019** (Factors associated with breast cancer screening awareness and practices of women in Addis Ababa, Ethiopia). The study was conducted in public health centers in Addis Ababa which is the largest and the capital city of Ethiopia. Socio demographic characteristics of the study population A total of 633 women who visit the health centers were interviewed. Majority of the respondents 422(66.7%) were orthodox Christians, 90(14.2%) Muslims, 82(12.9%) Protestants, 36(5.7%) Catholics and 3(0.5%) are others. One hundred eighty three (28.9%) of the women attended secondary school, 264(41.7%) attended primary school and 186(29.4%) attended college. Of all the respondents 482(76.1%) were married and 118(18.6%) have never been married. One hundred and sixty (25.3%) were housewives while 136(21.5%) were government employee and the rest 337(53.2) were merchants, self-employed, private employee or others.

Thirty-six (5.7%) reported that they have a family history of breast illness while only 16 (2.5%) of them mentioned that they have family history of breast cancer. From the total study participants, 336 women (53.1%) had heard about breast cancer. Among these 259 (77.1%) of them mentioned that breast cancer is non-communicable. Breast lump was mentioned by the majority (61.3%) as being a common sign and symptom of breast cancer. Smoking was recognized as a common risk factor for breast cancer and nearly 41% of the respondents mentioned initiating breast feeding and no smoking as the main preventive measures for breast cancer(Abeje, Seme, & Tibelt, 2019)

6.A study was done in **Cameroon** in 2017 to study a cross-sectional study Awareness of breast cancer and breast self-examination among female undergraduate students in a higher teachers training college in Cameroon

Results: The mean age of the respondents was 22.5±3.2years and a vast majority (n = 304, 88.1%) had heard about BCa primarily from the television/radio (n=196, 64.5%). Overall, less than a quarter (n=65, 21.4%) of respondents who had heard about BCa had sufficient knowledge on its risk factors and signs/symptoms. A plurality (53.3%) thought BCa can be prevented via vaccination while over a third (38.7%) opined that BCa can be treated spiritually. Less than half (47%) of respondents who had heard about BCa had heard about BSE amongst which only 55 (38.5%) had ever practiced it. Conclusion: Though most students are aware of the existence of breast cancer, their overall knowledge on its risk factors and clinical presentation is insufficient with a concomitant low practice of BSE. These highlighted gaps warrants intensification of sensitization campaigns and educational programs in order to raise knowledge levels and enhance prevention strategies that would aid in reducing the burden of breast cancer in Cameroon(Sama *et al*., 2017).

7.A study conducted **in Dearborn, Michigan in 2019,** with title of knowledge Assessment and Screening Barriers for Breast Cancer in an Arab American Community in Dearborn, Michigan)

Result: Most participants were aware that breast cancer is the most frequent type of cancer occurring in women, that breast cancer is treatable, that breastfeeding reduces the risk of developing breast cancer, and that breast cancer can occur in women with no family history of the disease. Almost 70% of BC survivors knew that breast cancer doesn't necessarily

have to present in a form of a painful lump, compared to 40% of non-BC survivors and men answering correctly. 78% of non-BC survivors, on the other hand, were aware that breast cancer is not rare in women over the age of 65 years compared to 39% of BC survivors and 48% of men answering correctly. Slightly lower than a quarter of BC survivors thought that younger women are more likely to develop breast cancer than older women. Around half of all participants within each category knew that obesity increases the risk of breast cancer, that a family history of male breast cancer could increase the risk of female breast cancer within the same family, and that diet could affect the risk of developing breast cancer. Most participants in each category were not aware that women of all races and ethnicities have different risks for developing breast cancer. The number of correct answers among all participants was 64%. More specifically, the number of correct answers among non-BC survivors was 68% compared to 61% for each of the BC survivors and men. This higher value for knowledge in non-BC survivors was statistically significant (p=0.0148) (Ayyash *et al*., 2019)

8.A study was done in **Muscat, Sultanate of Oman** in 2011 to study (A cross sectional survey was conducted For Knowledge and Awareness of breast cancer among university female students in Muscat, Sultanate of Oman

Result: The students' ages ranged from 28-37 yrs and the mean age was 25.7 (SD ±5.7) years (Table 3). The majority of the participants were Omani (78.34%) followed by other group (11.46%) representing Non Omani other than Indian and Pakistani women. Fifty one percent of the total participants were post graduate students and around 43% of them were in the age group an(Al Junaibi & Khan, 2011)

9.A study was done **in Egypt** in 2014 to study (This is a descriptive cross sectional study for Awareness of Breast Cancer among Female Students at Ain Shams University, Egypt Result: Most students had low level of knowledge of breast cancer risk factors. The most widely known risk factors by the students were smoking 66.9%, radiation to the chest 63.7% and genetic factors 63.7%. Age at first full term pregnancy >30 years and never being pregnant were not known as risk factors for breast cancer by most of the students' Knowledge of Symptoms, Early Detection Measures and Lines of Treatment

Most of the students 81.6% identified breast lump as a symptom for breast cancer. However, non-lump symptoms were less known and less than half were aware of other warning signs such as change in shape/or retraction of nipple and bloody nipple discharge accounting for 25.6% and 24.7% respectively. Further, as many as 74.2% of students identified breast self-examination as an early detection measure for breast cancer. The most widely known lines of treatment were surgery followed by chemotherapy accounting for 71.8% and 67.7% respectively Breast Self-Examination More than half of the students (63.4%) heard about BSE. Only 8.8% of students identified correctly the appropriate time to perform BSE. The percentage of students performing BSE regularly every month was 1.3% and 6.1% reported that they performed it irregularly. The most common reasons for not practicing BSE were "did not know how to perform it" (47.7%) and lack of interest (35%.

This study concluded revealed that health behaviors acquired early in life have an influence on future health. The findings of this study showed that there is low level of knowledge on breast cancer risk factors, early warning signs and BSE among female Ain Shams University students and that only few students practice BSE monthly. There is a need to raise the knowledge of university students about the risks of breast cancer and benefits of

early detection. Health care workers should develop effective breast health programs targeting youth to help females to gain healthy habits starting very early during their formative years(Boulos & Ghali, 2014).

10.A study was done in **United Arab Emirates** for assessment of Breast Cancer Awareness among Female University Students in Ajman, United Arab Emirates study. Results: The participants (n = 392) were most frequently between 18 and 22 years old (63.5%), non-Emirati (90.1%) and never married (89%). A family history of breast cancer was reported by 36 (9.2%) of the students. The percentage of participants who had low/below average knowledge scores regarding risk factors, warning signs and methods for early detection of breast cancer was 40.6%, 45.9% and 86.5%, respectively. Significantly higher knowledge scores on risk factors were noticed among participants with a family history of breast cancer (P = 0.03). The misconception most frequently identified was that "treatment for breast cancer affects a woman's femininity" (62.5%).

This study concluded that (A profound lack of knowledge about breast cancer was noted among female university students in the three UAE universities studied. The most prominent gaps in knowledge identified were those concerning breast cancer screening methods(Al-Sharbatti, Shaikh, Mathew, & Al-Biate, 2014).

11.A study was done in **Jordanian** students in 2014 to study (a cross-sectional research design for Awareness and attitudes regarding breast cancer and breast self-examination among female Jordanian students)

Results: The overall response rate was 93.3%. Approximately half of the respondents 435 (51.8%) were aware of breast cancer. Of these, 99 (22.7%) believed that it was caused by a

medical condition, followed by old age (71; 16.4%), lack of breastfeeding (58; 13.3%), heredity (56; 12.8%), late marriage (44; 10.3%), pregnancies in older women (33; 7.5%), the use of brassieres (18; 4.1%), excessive breastfeeding (17; 3.9%), being unmarried (14; 3.2%), and spirituality (11; 2.6%). Overall, 152 participants (34.9%) were aware of BSE, but only 93 (11%) had performed it.

This study concluded with title of "the current status of awareness of breast cancer in Jordanian students and their use of BSE are insufficient". Women need to be encouraged to self-monitor in order to detect abnormalities in their breasts. Appropriate educational interventions are urgently required to encourage women to engage in regular BSE (Suleiman, 2014)

12.A This study was done **in Saudi Arabia** in 2017 to study "cross sectional design to study Knowledge and Perceptions of Common Breast Cancer Risk Factors in Northern Saudi Arabia".

Results: With regard to breast cancer risk factors, 427/566 (75.4%) of participants answered in the affirmative to whether breast cancer could be inherited. For early puberty and late menopause, 209/566 (37%) were in agreement with increased risk, for low and delayed child birth, 261/566 (46%), and for overweight and obesity, 210/566(37%). For the question of whether natural breast feeding can reduce the risk of breast cancer, only 35/566 (6.2%) said yes. The study was concluded that there is a general lack of knowledge regarding several BC risk factors among the northern Saudi community which necessitates urgent implementation of educational programs(Alshareef *et al*., 2020).

13.A study performed in Saudi Arabia in 2018 in "Breast Cancer Awareness among Female School Teachers in Saudi Arabia: A Population Based Survey". The aimed of the study to investigate the level of BC awareness among Saudi female's teachers in Makah. As we can see, only 3.8% know what a mammogram is and only 8% know that it should be started at the age of 50. These results, unfortunately, reflect the poor knowledge of the study group and when we looked at the literature, there was no similar study which asked the same questions. When it comes to the treatment options, we also found that there is relatively poor knowledge about choices of treatment for breast cancer (57% know that it depends on the stage). Our findings show that the overall mean score for the participants' information levels about breast cancer is 15.6±4.19. Most of the participants' (67%) had a weak knowledge score of 49-25%, four percent had an average knowledge score of 50-74%, and the lowest percentage of participants' (6%) had a good knowledge score of ≥75%.

Regarding the screening methods: 50% of our sample had a weak knowledge and 1.5% had a good score. The results showed that knowledge and attitude about BC amongst the female teachers differed significantly by age and marital status. Those aged 46-55 ($F=8.5$, $p>0.002$) and those who are married ($F=2.7$, $p>0.04$) had more knowledge about BC than others. The majority of respondents had a limited level of knowledge and understanding of BC symptoms. However, it also showed that the teachers are very enthusiastic to learn about BC, and its prevention. Most participants (40/%) reported that they had not performed any breast exams before.(Ashareef *et al*., 2020)

14.A Study was conducted **in Yemen** in 2019 with tilte of "A cross-sectional descriptive study Breast Cancer Screening Awareness and Practices Among Women Attending Primary Health Care Centers in the Ghail Bawazir District of Yemen".

Results: A very limited information on breast cancer was obtained from health care providers (14%). Around one-half of the respondents had satisfactory levels of breast cancer knowledge and awareness, whereas 30.3% were practicing self-breast examination, and only 1.6% had ever been exposed to a mammogram test. A significant association between marital status, level of education, working status, and level of knowledge and breast screening practice was reported (P = .01). By regression analysis, age and limited level of knowledge on self-breast examination were found determinant (P < .015) in factors associated with the use of clinical breast examination. The study reveals the satisfactory knowledge of women about breast cancer along with inadequate awareness of breast cancer screening and screening practices(Bawazir, Bashateh, Jradi, & Breik, 2019).

15.A study was done in **Yemen** in 2019 "A case–control study was conducted Risk Factors of Breast Cancer in Hadramout Valley and Desert, Yemen".

Results: A total of 105 patients and 210 controls were included in this study. About 70.5% of cases and 72.4% of control were 50 years old or younger. Compared with married women, divorced women had higher odds of breast cancer [odds ratio (OR) = 2.2]. The odds of breast cancer was higher for women who had never breastfed a child (OR = 1.7). Having hypertension (OR = 2.5), family history of malignancy (OR = 2.4), and postmenopausal status (OR = 2.0) were significantly associated with higher odds of breast cancer in multivariate analysis.

This study concluded that the main risk factors for breast cancer among women in Yemen are divorced marital status, never breastfed a child, having hypertension, family history of

malignancy, and post menopause. Regular screening especially among women with high risk is needed (Bashamakha *et al*., 2019)

CHAPTER 3: MATERIAL AND METHODS

3.1 Introduction

This chapter 3 contains methodological issues regarding the study setting, study design study area and duration, study population, sampling frame, study participants, inclusion and exclusion criteria, sampling technique, study variables. Data collection instrument and technique, the statistical analysis used, operational definition of study variables and ethical considerations are also discussed in this chapter

3.2 Study Design

This is a cross-sectional study was conducted between 30 April 2021 and 11 July 2021 and included female students from Emirate international university in Sana'a, Yemen.

3.3 Study Setting

This study was conducted at Sana'a Capital City of Yemen between 30 April 2021 and 11 July 2021. The study was performed in Sana'a City ,which is the capital city of the Yemen. It is located in the center of Yemen and situated at an altitude of 2300 meters and has a dry, mild climate with 200 mm of rainfall annually and minimum–maximum average monthly temperatures of 6–30 °C. The area of the capital is about (5.6) square kilometers spread over ten districts, according to the administrative division authority of Sana'a City for the year 2004. Sana'a City has a population of 2,345,000 people. The population is growing at a rate

of (5.55%) per annum, with a population (8.9%) of the total population of the Republic of Yemen (REF).

3.4 study population

Undergraduate students at EIU in all faculties were included. The study sample included 1200 female students at EIU in all faculties , who were available on the days of data collection, who agreed to participate in the study and who returned a completely filled questionnaires (Response rate=92.5%).

3.5 Inclusion and exclusion criteria

3.5.1 Inclusion criteria of cases:

- Female participants of 18 years of age or older
- Female students who were registered students in any of the three selected faculty of universities
- Female students who were available during the data collection period in the study.

3.5.2 Exclusion Criteria of cases:

- Students who were male or who were attending other universities and who are not willing to participate in this study were excluded from the study

.

3.6 Sample size determination:

OpenEpi, version 3 (Open source of calculator for sample size and power for population survey or descriptive study) was used with considering the following:

population size was 1200 students, expected frequency (the prevalence rate of breast cancer in Yemen between 2001 and 2005 estimated to be 42.4 per 100,000 women (Aziz Alsafi,

2008) , level of confidence was 95%, acceptable margins of error were 5%, and design effect was 1.0. Based on these estimations, the sample size was 286 students. The non-response rate was 13%. Thus, the final sample size was 324 students.

Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(*N*):	1200
Hypothesized % frequency of outcome factor in the population (*p*):	42.2%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*):	5%
Design effect (for cluster surveys-*DEFF*):	1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	286
80%	142
90%	217
97%	333
99%	421
99.9%	563
99.99%	663

Equation

Sample size $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$

Results from OpenEpi, Version 3, open source calculator--SSPropor
Print from the browser with ctrl-P
or select text to copy and paste to other programs.

Figure 3.1: Sample size determination(OpenEpi version3)

3.7 **Sampling methods**

The sample size was selected from each faculty, through a list obtained from the authority of the EIU, systematic random sampling method was used to select eligible participants were sent an online questioner using by an email and the response was received through google form.

Table 3.1: Sampling method to selected sample size from each stratum

Name of faculty	Number of female Students	Sample size for each faculty
Medical	645	(645/1200) *324 =174
Engineering	130	(130/1200) *324 =35
Business Administration	425	(425/1200) *324 =115
Total	1200	324

3.8 **Data Collection technique and Tools**

A self-administered questionnaire in Arabic language was distributed by searchers medical students as questions in Google forms(Appendix I).

Moreover, the questionnaire was pilot tested on 20 students (not included in study sample) to check

the clarity of the questions. Results of the pilot test were used to adjust the wording of some questions in order to make them easier to understand. The questionnaire(Appendix I) covered the following items:

Section one: Socio-demographic data such as age, faculty, faculty year, marital status.

Section two: Knowledge of risk factors for breast cancer was determined with 14 questions. The answers were "true", "false" and "don't know". This part assessed the knowledge of breast cancer risk factors using the guidelines of the American CancerSociety (2008).

Section three: Knowledge of warning signs, early detection and different lines of treatment of breast cancer.

Section four: Student Knowledge of Breast Self-Examination (BSE) term, correct time to perform it and reasons for not performing.

Section five: Sources of student's information.

3.9 **Validity and reliability of questionnaire:**

A questionnaire(Appendix I) was designed according to the specific objectives of the research, the validity of the English and Arabic version of the questionnaires was reviewed by three experts senior Epidemiology and Research. After reviewing the tools depending on the several previous studies, the most of this studies that validated, and tested. Also other questions added was formulated by the researcher with the help of literatures, supervisor and experts who make modified to add or omit to clearly and correct misinterpreted and doubtlessness from credence and completeness of study tools. The reliability by using Cronbach's Alpha (0.86), So, tool was found to be highly reliable for data collection.

3.10 **Data processing and statistical analysis**

The data analysis was performed on the cleaned datasets using SPSS Software (SPSS inc., Chicago.II.USA, version 25.0) prior to beginning of the analysis. Data collected were revised, coded and computerized. Descriptive Statistical analysis were used to analyze the data: Frequency, percentage, arithmetic mean, standard deviation, and relative importance. One-way ANOVA test was used to determine association between Knowledge of breast cancer and respondent characteristics. Two-sided test with level of significant at alpha < 0.05 was used.

3.11 **Ethical Considerations**

Approval of study conduction was obtained from the ethical review Committee at the faculty of Medicine EIU. In addition, the purpose of the study was explained to all participants and confidentiality was assured, an oral informed consent was obtained and the survey tool was anonymous.

CHAPTER 4: RESULTS

Of the (324) female students who participated in the research (96.0%) living in urban areas and (4.0%) in rural areas. The mean age was (23.2) years (SD 4.09), the majority of responders age from 20 to 30 years (78.7%).

(65.7%) of the respondent's study in the faculty of Medicine and Health Sciences, while (22.5%) in the faculty of Business management and (11.7%) in the faculty of Engineering and Information Technology. most students were single (61.1%) and (25.3) married. The study sample was distributed among the school year (25.9) in the first year, (12.7) in the second year, (20.7) in the third year, (17.9) in the fourth year, (9.6) in the fifth year,and (13.3) in the sixth year.

The majority of the studied group (68.2%) had no family history of breast cancer, while (9.9%) had a family history of breast cancer (Table 4.1).

Table 4.1: Distribution the demographic characteristics of the study sample (n=324)

Demographic Characteristics	frequency	%
Residence place		
Urban	**311**	**96.0**
Rural	**13**	**4.0**
Age Group		
Less than 20 years	**50**	**15.4**
From 20to30 years	**255**	**78.7**
More than 30	**19**	**5.9**
Faculty		
Medicine and health science	**213**	**65.7**
Engineering and information technology	**38**	**11.7**
Business management	**73**	**22.5**
Faculty year		
1st	**84**	**25.9**
2nd	**41**	**12.7**
3rd	**67**	**20.7**
4th	**58**	**17.9**
5th	**31**	**9.6**
6th	**43**	**13.3**
Marital status		
Single	**198**	**61.1**
Engaged	**44**	**13.6**
Married	**82**	**25.3**
Family history of Breast Cancer		
No	**221**	**68.2**
Don't know	**71**	**21.9**
Yes	**32**	**9.9**

Table 4.2 shows the results of the study revealed that the respondents had low knowledge about breast cancer risk factors which were significantly lower than in other sections. Where the general arithmetic mean for this axis was (2.25), and Relative Importance (75.0%) This indicates a low level of awareness of cancer risk factors among the sample members.

The results show the risk factors for breast cancer in order of their relative importance from the respondents' point of view are breast cancer growth (91.3%), Radiation to the chest (89.7%), genetic factors (87.0%), alcohol (83.7%), smoking and family history of breast cancer (83.3%), non-breastfeeding (79.0%). While other risk factors were underestimated by the respondents**.**

Table 4.2: Distribution the Knowledge regarding risk factors of breast cancer

Statement			NO	Don't know	YES	Total	mean	S.D	Relative Importance	mainstream
Students' Knowledge of breast cancer risk factors	Aging	N	113	50	161	324	2.15	0.91	71.7	Don't know
		%	34.9	15.4	49.7	100				
	High Fat Diet	N	73	90	161	324	2.27	0.81	75.7	Don't know
		%	22.5	27.8	49.7	100				
	Obesity	N	103	88	133	324	2.09	0.85	69.7	Don't know
		%	31.8	27.2	41	100				
	Smoking	N	50	61	213	324	2.5	0.75	83.3	YES
		%	15.4	18.8	65.7	100				
	Alcohol	N	44	72	208	324	2.51	0.72	83.7	YES
		%	13.6	22.2	64.2	100				
	Oral contraceptive use	N	86	112	126	324	2.12	0.8	70.7	Don't know
		%	26.5	34.6	38.9	100				
	Never breast fed	N	65	75	184	324	2.37	0.8	79	YES
		%	20.1	23.1	56.8	100				
	Family history of breast cancer	N	60	41	223	324	2.5	0.79	83.3	YES
		%	18.5	12.7	68.8	100				
		N	44	38	242	324				

Statement			NO	Don't know	YES	Total	mean	S.D	Relative Importance	mainstream
	Genetic Factors	%	13.6	11.7	74.7	100	2.61	0.71	87	YES
	Never being pregnant	N	165	109	50	324	1.65	0.73	55	NO
		%	50.9	33.6	15.4	100				
	Radiation to the chest	N	26	50	248	324	2.69	0.61	89.7	YES
		%	8	15.4	76.5	100				
	Age at first full term pregnancy > 30years	N	127	130	67	324	1.81	0.75	60.3	Don't know
		%	39.2	40.1	20.7	100				
	Early menarche (<12 years)	N	132	140	52	324	1.75	0.71	58.3	Don't know
		%	40.7	43.2	16	100				
	Late menopause (>55 years)	N	99	130	95	324	1.99	0.77	66.3	Don't know
		%	30.6	40.1	29.3	100				
	Breast cancer growth	N	11	61	252	324	2.74	0.51	91.3	YES
		%	3.4	18.8	77.8	100				
Mean average for breast cancer risk factors							2.25	0.8	75	Don't know

Table 4.3 presents the results of the study revealed that the respondents had high knowledge about the breast cancer warning signs. Where the general arithmetic mean for this axis was (2.68), and Relative Importance (89.3%) This indicates a high level of awareness of cancer warning signs among the sample members.

The results show the warning signs of Breast cancer in order of their relative importance from the respondents' point of view which are breast lump (97.0%), change in shape and/or breast size (94.0%), pain in breast (89.0%), bloody nipple discharge (88.3%), change in shape, site and/or retraction of nipple (87.0%) and redness of breast skin(80.3%).

Table 4.3: Distribution the Knowledge of warning signs of Breast cancer

Statement			NO	Don't know	YES	Total	mean	S.D	Relative Importance	mainstream
Knowledge of warning signs, of Breast cancer	Breast lump	N	11	6	307	324	2.91	0.38	97	YES
		%	3.4	1.9	94.8	100				
	Bloody nipple discharge	N	28	58	238	324	2.65	0.63	88.3	YES
		%	8.6	17.9	73.5	100				
	Pain in breast	N	44	18	262	324	2.67	0.7	89	YES
		%	13.6	5.6	80.9	100				
	Change in shape and/or breast size	N	19	19	286	324	2.82	0.51	94	YES
		%	5.9	5.9	88.3	100				
	Redness of breast skin	N	61	68	195	324	2.41	0.79	80.3	YES
		%	18.8	21	60.2	100				
	Change in shape,site and/or retraction of nipple	N	26	73	225	324	2.61	0.63	87	YES
		%	8	22.5	69.4	100				
Mean average for breast cancer warning signs							2.68	0.6	89.3	YES

Table 4.4 shows the results of the study revealed that the respondents had high knowledge about the early detection of breast cancer. Where the general arithmetic mean for this axis was (2.74), and Relative Importance (91.3%) This indicates a high level of awareness of early detection of breast cancer among the sample members.

The results showed that the majority of the studied group (99.3%) believed that early detection of breast cancer improves treatment.

When asked about the procedures that help in the early detection of breast cancer, the results of the responses were arranged in order of their relative importance from the respondents' point of view which are Breast self examination (95.3),mammogram(88.0%) and Breast U/S (82.7%).

Table 4.4: : Distribution the Knowledge regarding of early detection of breast cancer

Statement			NO	Don't know	YES	Total	mean	S.D	Relative Importance	mainstream
Do you think early detection of breast cancer is improving the therapy		N	2	1	321	324	2.98	0.17	99.3	YES
		%	0.6	0.3	99.1	100				
What are the procedures which help in early detection of breast cancer	Breast self examination	N	17	12	295	324	2.86	0.48	95.3	YES
		%	5.2	3.7	91	100				
	Mammogram	N	20	77	227	324	2.64	0.6	88	YES
		%	6.2	23.8	70.1	100				
	Breast U/S	N	33	103	188	324	2.48	0.67	82.7	YES
		%	10.2	31.8	58	100				
Mean average for breast cancer early detection							2.74	0.6	91.3	YES

Table 4.5 demonstrates the results of the study revealed that the respondents had high knowledge about the treatment for breast cancer Where the general arithmetic mean for this axis was (2.45), and Relative Importance (81.7%) This indicates a high level of awareness of treatment for breast cancer among the sample members.

The results showed that the majority of the studied group (88.3%) believed that there is an effective treatment for breast cancer. and about how is breast cancer treated the results showed that the majority of the studied group (81.2%) believed surgery was an effective treatment for breast cancer, where the relative importance was high (91.3%).

While other treatment methods, according to their relative importance from the respondents' point of view, were Chemotherapy (90.3%), Radiotherapy (77.3%), Targeted therapy (71.3%) and Hormonal therapy (71.0%).

Table 4.5: : Distribution the Knowledge regarding of treatment for breast cancer

Statement			NO	Don't know	YES	Total	mean	S.D	Relative Importance	mainstream
Do you think there is an effective treatment for breast cancer		N	21	71	232	324	2.65	0.6	88.3	YES
		%	6.5	21.9	71.6	100				
How to treat breast cancer?	Surgery	N	24	37	263	324	2.74	0.59	91.3	YES
		%	7.4	11.4	81.2	100				
	Radiotherapy	N	64	91	169	324	2.32	0.78	77.3	Don't know
		%	19.8	28.1	52.2	100				
	Chemotherapy	N	27	41	256	324	2.71	0.61	90.3	YES
		%	8.3	12.7	79	100				
	Hormonal therapy	N	63	155	106	324	2.13	0.71	71	Don't know
		%	19.4	47.8	32.7	100				
	Targeted therapy	N	43	194	87	324	2.14	0.62	71.3	Don't know
		%	13.3	59.9	26.9	100				
Mean average for breast cancer treatment							2.45	0.7	81.7	YES

Table 4.6 shows the results of the study where (79.9%) of the respondents had heard of breast self-examination before.

Also, (41.4%) know that the appropriate time to do the breast self-examination recommended for females is once a month, while (34.0%) do not know the appropriate time. Regarding the reason for not doing breast self-examination, the majority of respondents (39.5%) said that the reason for this is forgetfulness, while (36.7%) do not know how to do breast self-examination and (31.8) are not interested in breast self-examination. As for the student's sources of information about breast self-examination (73.5%) the source of their information is television/radio/internet, while (32.4%) university awareness campaigns and (26.5%) books/magazines/newspaper.

Table 4.6: : Distribution the Knowledge of breast self-examination

Breast self-examination	Frequency	%
heard about breast self-examination		
No	**65**	**20.1**
YES	**259**	**79.9**
Knowledge of appropriate time for BSE		
I don't know	**110**	**34.0**
Once each 5 years	**5**	**1.5**
Once a year	**75**	**23.1**
Once a month	**134**	**41.4**
Reasons for not doing BSE		
Forgetting	**128**	**39.5**
Don't know how to perform it	**119**	**36.7**
Not interested	**103**	**31.8**
Fear of positive finding	**63**	**19.4**
Not sure about it's ability in detection	**50**	**15.4**
Source of information		
internet\TV/ Radio /	**238**	**73.5**
Uni. information camping	**105**	**32.4**
news papers\books /magazines /	**86**	**26.5**
Relatives	**68**	**21.0**
Friends	**57**	**17.6**

In table 4.7 showed the results of the study. There is One-way ANOVA test of association between socio-demographic characteristics of participants and awareness of breast cancer where found a statistically significant association at the level (0.05) between the respondents' awareness of breast cancer and age, where the test value was (5.25) and the level of significance (P-value 0.006).

There is a statistically significant association at the level (0.01) between the respondents' awareness of breast cancer and faculty, where the test value was (13.60) and a significant level (P-value 0.000).

There is a statistically significant association at the level (0.05) between the respondents' awareness of breast cancer and the Faculty year, where the test value was (6.27) and the level of significance (P-value 0.002).

The results also showed that there was no statistically significant association between the respondents' awareness of breast cancer and other demographic variables (place of residence, marital status, family history of breast cancer).

Table 4.7: Association between of level of awareness and socio-demographic variables.

Demographic Characteristics	level of awareness	
	F Test Value	P-value
Residence place	.95	.387
Age Group	5.25	.006
Faculty	13.60	.000
Faculty year	6.27	.002
Marital status	1.84	.161
Family history of Breast Cancer	.86	.423

CHAPTER 5: DISCUSSION

1.1 Brief overview of research

The current study was conducted to describe awareness of breast cancer, and determine factors associated with level of awareness of breast cancer. In order to address these research objectives, we conducted an online cross sectional study of female students. This study was carried out in Emirates international university of Sana'a City. Systematic random sampling method was applied to select the respondents for this study. The selected female students were sent an online questionnaire using an email by using Self-administrated questionnaire (Appendix I) through google form.

This study found that the majority of responders age from 20 to 30 years (78.7%), (65.7%) of the respondents study in the faculty of Medicine and Health Sciences as it form the largest number of students compared to the other two faculties according the EIU authority which is higher than figures reported in some other previous study (18 and 22 years old) (63.5%) (Al-Sharbatti *et al.*, 2014).

In the current study, found that the study participants were having better knowledge of warning signs of breast cancer (89.3%) than the risk factors (75.0%). The most widely known risk factor among participants was breast cancer growth (91.3%), Radiation to the chest (89.7%). This finding is consistent with study was conducted in Egypt in 2014 revealed that most students had low level of knowledge of breast cancer risk factors. The most known risk factors by the students were smoking 66.9%, radiation to the chest 63.7% and genetic factors 63.7% (Boulos & Ghali, 2014).

Good knowledge of breast cancer symptoms is very essential for early diagnosis and treatment of breast cancer. The recent study results revealed that female students had adequate knowledge about breast cancer warning signs and a vast majority of the participants Breast lump (97.0%), Change in shape and/or breast size (94.0%) as the most common presenting warning signs. However, non-lump signs were less known as Bloody nipple discharge (88.3%), Change in shape, site and/or retraction of nipple (87.0%), while in another study in Egypt showed that students (81.6%) identified breast lump as the main warning signs for breast cancer. However, less than half were aware of other warning signs such as change in shape/or retraction of nipple and bloody nipple discharge accounting for (25.6%) and (24.7%) respectively (Boulos & Ghali, 2014).

This increased awareness about the level of awareness of breast cancer early sign and risk factors of breast cancer among female students could be attributed to their age and educational level. In our study, found that the age and faculty year (educational level) were statically significant (P= 0.006; P= 0.002), respectively associated with level of awareness of breast cancer.

This study also assessed the knowledge of Breast self-examination (BSE) among the study participants. BSE is one of the important steps for identifying breast tumors at an early stage and thus regular practice of BSE could protect women from severe morbidity and mortality due to Breast cancer (McCready, Littlewood, & Jenkinson, 2005).

In this study, found that (95.3%) respondents believed that BSE could help in early detection of breast cancer, mammography (88.0%) and Ultra sound screening (82.7%). This is in contrast to a study was conducted in Turkey in 2008 where the female high school students had insufficient knowledge about breast self-examination (Karayurt *et al*., 2008)

Furthermore, it was observed that only (41.4%) of all participants knew the appropriate time to perform BSE. However, (34.0%) respondents did not know the appropriate time to perform BSE.

Regarding the reason for not doing breast self-examination, the majority of respondents (39.5%) said that the reason for this is forgetfulness, while (36.7%) do not know how to do breast self-examination, while a study of Awareness of breast cancer and BSE among female undergraduate students in a higher teachers training college in Cameroon in 2017 showed less than half (47%) of respondents who had heard about BCa had heard about BSE amongst which only (38.5%) had ever practiced it (Sama *et al*., 2017), and other study revealed that the most common reason for not doing breast self- examination was "not knowing how to perform breast self-examination" (98.5%) (Karayurt *et al*., 2008).

These data suggest the need of more education programs on BSE and screening method of breast cancer to increase the knowledge and awareness about this deadly disease.

Good knowledge and awareness about breast cancer and the risk factors of the disease are the most important keys for reducing morbidity and mortality(Fletcher, Black, Harris, Rimer, & Shapiro, 1993). Early approaches for the detection of breast cancer (breast self-examination and clinical breast examination) increase the chance for successful treatment which results in the improvement of survival rate and quality of life*(*McCready *et al.,* 2005).

Limitation of the study

The present research is as a cross sectional study on female university students in one of the most eminent universities in the capital city of Yemen as a result it does not represent Yemeni female youth population as a whole. Also the results of the current study do not represent the entire population of Yemen female university students all over Yemen. This study was done through an online survey due to COVID-19 pandemic and lack of access to students during that period.

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CHAPTER 6: CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The awareness of breast cancer risk factors female students in Emirates international university was low 75.0%, whereas the respondents had high knowledge about the breast cancer warning signs, early detection of breast cancer and the treatment for breast cancer. Moreover, less than half of the respondents know the appropriate time to perform the breast self-examination recommended for females.

Furthermore, the level of awareness of breast cancer was statistically significant associated with age, faculty and faculty year of respondents.

6.2 Recommendations

Based on the low awareness of breast cancer risk factors among female students surveyed in this study, the promotion of future health policies, such as mandatory continuing education, which involves breast cancer screening guidelines and general breast cancer awareness, may be justified. There is need for the Ministry of Health, hospital management, training institutions and others to raise the knowledge of university students about the risks of breast cancer and benefits of early detection. Encourage health care workers should develop effective breast health programs targeting youth to help females to gain healthy habits starting very early during their formative years. Future studies to assess awareness in the community and public sector, in order to support successful implementation of national campaign programs.

REFERENCES

Abeje, S., Seme, A., & Tibelt, A. (2019). Factors associated with breast cancer screening awareness and practices of women in Addis Ababa, Ethiopia. *BMC women's health, 19*(1), 1-8.

Akhigbe, A. O., & Omuemu, V. O. (2009). Knowledge, attitudes and practice of breast cancer screening among female health workers in a Nigerian urban city. *BMC cancer, 9*(1), 1-9.

Al-Haddad, M. S., Al-Adwani, M., Abu-Rukbah, W., Al-Otaibi, A., & Al-Hayfani, M. (2016). Knowledge and practice of university female students toward breast cancer. *Archives of Pharmacy Practice, 7*(4).

Al-Sharbatti, S. S., Shaikh, R. B., Mathew, E., & Al-Biate, M. A. (2014). Assessment of breast cancer awareness among female university students in Ajman, United Arab Emirates. *Sultan Qaboos University Medical Journal, 14*(4), e522.

Al Junaibi, R. M., & Khan, S. A. (2011). Knowledge and Awareness of breast cancer among university female students in Muscat, Sultanate of Oman-A pilot study. *Journal of Applied Pharmaceutical Science, 1*(10), 146.

Albeshan, S. M., Mackey, M. G., Hossain, S. Z., Alfuraih, A. A., & Brennan, P. C. (2018). Breast cancer epidemiology in gulf cooperation council countries: a regional and international comparison. *Clinical breast cancer, 18*(3), e381-e392.

Alshareef, B., Yaseen, W., Jawa, W., Barnawe, Y., Alshehry, W., Alqethami, H., . . . Alqumaili, O. (2020). Breast Cancer Awareness among Female School Teachers in Saudi Arabia: A Population Based Survey. *Asian Pacific Journal of Cancer Prevention: APJCP, 21*(2), 337.

Anderson, B. O., Cazap, E., El Saghir, N. S., Yip, C.-H., Khaled, H. M., Otero, I. V., . . . Harford, J. B. (2011). Optimisation of breast cancer management in low-resource and middle-resource countries: executive summary of the Breast Health Global Initiative consensus, 2010. *The lancet oncology, 12*(4), 387-398.

Ayyash, M., Ayyash, M., Bahroloomi, S., Hamade, H., Makki, M., Hassouneh, S., & Blackwood, R. A. (2019). Knowledge assessment and screening barriers for breast cancer in an Arab American Community in Dearborn, Michigan. *Journal of community health, 44*(5), 988-997.

Azenha, G., Bass, L. P., Caleffi, M., Smith, R., Pretorius, L., Durstine, A., & Perez, C. P. (2011). The role of breast cancer civil society in different resource settings. *The Breast, 20*, S81-S87.

Aziz Alsafi, A. S. (2008). ESTIMATING PREVALENCE OF BREAST CANCER IN YEMEN, USING CAPTURE-RECAPTURE METHOD. *Malaysian Journal of Medical Sciences*.

Bashamakha, G., bin Sumait, H., Bashamakha, M., Al Serouri, A., & Khader, Y. (2019). Risk factors of breast cancer in Hadramout Valley and Desert, Yemen. *International journal of preventive medicine, 10*.

Bawazir, A., Bashateh, N., Jradi, H., & Breik, A. B. (2019). Breast cancer screening awareness and practices among women attending primary health care centers in the Ghail Bawazir District of Yemen. *Clinical breast cancer, 19*(1), e20-e29.

Boulos, D. N., & Ghali, R. R. (2014). Awareness of breast cancer among female students at Ain Shams University, Egypt. *Global journal of health science, 6*(1), 154.

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians, 68*(6), 394-424.

Bray, F., Laversanne, M., Weiderpass, E., & Soerjomataram, I. (2021). The ever-increasing importance of cancer as a leading cause of premature death worldwide. *Cancer*.

Cheng, S., Claggett, B., Correia, A. W., Shah, A. M., Gupta, D. K., Skali, H., . . . Folsom, A. R. (2014). Temporal trends in the population attributable risk for cardiovascular disease: the Atherosclerosis Risk in Communities Study. *Circulation, 130*(10), 820-828.

DeSantis, C. E., Bray, F., Ferlay, J., Lortet-Tieulent, J., Anderson, B. O., & Jemal, A. (2015). International variation in female breast cancer incidence and mortality rates. *Cancer Epidemiology and Prevention Biomarkers, 24*(10), 1495-1506.

Dinegde, N. G., & Xuying, L. (2017). Awareness of breast cancer among female care givers in tertiary cancer hospital, China. *Asian Pacific Journal of Cancer Prevention: APJCP, 18*(7), 1977.

El Saghir, N. S., Adebamowo, C. A., Anderson, B. O., Carlson, R. W., Bird, P. A., Corbex, M., . . . Gralow, J. R. (2011). Breast cancer management in low resource countries (LRCs): consensus statement from the Breast Health Global Initiative. *The Breast, 20*, S3-S11.

Ferlay, J., Shin, H., Bray, F., Forman, D., Mathers, C., & Parkin, D. (2008). GLOBOCAN 2008, Cancer incidence and mortality worldwide: IARC CancerBase No. 10. *Lyon, France: International Agency for Research on Cancer*.

Fletcher, S. W., Black, W., Harris, R., Rimer, B. K., & Shapiro, S. (1993). Report of the international workshop on screening for breast cancer. *JNCI: Journal of the National Cancer Institute, 85*(20), 1644-1656.

Forouzanfar, M. H., Foreman, K. J., Delossantos, A. M., Lozano, R., Lopez, A. D., Murray, C. J., & Naghavi, M. (2011). Breast and cervical cancer in 187 countries between 1980 and 2010: a systematic analysis. *The lancet, 378*(9801), 1461-1484.

Global Initiative for Breast Cancer Awareness Team. (2008). Community Profile: Summary of Findings. . Retrieved from www.haad.ae/HAAD/Portals/0/CP-28-1-2009_Jalaa[1].pdf

Hadi, M. A., Hassali, M. A., Shafie, A. A., & Awaisu, A. (2010). Evaluation of breast cancer awareness among female university students in Malaysia. *Pharmacy practice, 8*(1), 29.

HO, B. S., Bawazir, A. A., Moore, M., & Al-Sakkaf, K. A. (2010). Five years cancer incidence in Aden Cancer Registry, Yemen (2002-2006). *Asian Pacific Journal of Cancer Prevention: APJCP, 11*(2), 507-511.

Karayurt, Ö., Özmen, D., & Çetinkaya, A. Ç. (2008). Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey. *BMC public health, 8*(1), 1-8.

McCready, T., Littlewood, D., & Jenkinson, J. (2005). Breast self-examination and breast awareness: a literature review. *Journal of Clinical Nursing, 14*(5), 570-578.

Organization, W. H. (2014). *WHO position paper on mammography screening*: World Health Organization.

Rahou, B. H., El Rhazi, K., Ouasmani, F., Nejjari, C., Bekkali, R., Montazeri, A., & Mesfioui, A. (2016). Quality of life in Arab women with breast cancer: a review of the literature. *Health and quality of life outcomes, 14*(1), 1-13.

Rana F Obeidat, R. M. L. Health-related information exchange experiences of Jordanian women at breast cancer diagnosis. Retrieved from https://pubmed.ncbi.nlm.nih.gov/24158903/

Sama, C.-B., Dzekem, B., Kehbila, J., Ekabe, C. J., Vofo, B., Abua, N. L., . . . Angwafo III, F. (2017). Awareness of breast cancer and breast self-examination among female undergraduate students in a higher teachers training college in Cameroon. *Pan African Medical Journal, 28*(1), 164-164.

Sankaranarayanan, R., Swaminathan, R., Brenner, H., Chen, K., Chia, K. S., Chen, J. G., . . . Yeole, B. B. (2010). Cancer survival in Africa, Asia, and Central America: a population-based study. *The lancet oncology, 11*(2), 165-173.

Sasco, A. J. (2008). Cancer and globalization. *Biomedicine & pharmacotherapy, 62*(2), 110-121.

Stoltenberg, M., Spence, D., Daubman, B. R., Greaves, N., Edwards, R., Bromfield, B., . . . Shields, A. E. (2020). The central role of provider training in implementing resource-stratified guidelines for palliative care in low-income and middle-income countries: Lessons from the Jamaica Cancer Care and Research Institute in the Caribbean and Universidad Católica in Latin America. *Cancer, 126*, 2448-2457.

Suleiman, A. K. (2014). Awareness and attitudes regarding breast cancer and breast self-examination among female Jordanian students. *Journal of basic and clinical pharmacy, 5*(3), 74.

Taha, Z., & Eltom, S. E. (2018). The role of diet and lifestyle in women with breast cancer: an update review of related research in the Middle East. *BioResearch open access, 7*(1), 73-80.

WHO. (2020a). Cancer Today. Retrieved from http://gco.iarc.fr/today

WHO. (2020b). International Agency for Research on Cancer,Yemen, Globocan, 2020.

WHO. (2021). Breast Cancer. Retrieved from https://www.who.int/news-room/fact-sheets/detail/breast-cancer

WHO. (2020). Global Health Estimates 2020: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2019. WHO; 2020. . Retrieved from who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-leading-causes-of-death

Yemen National Cancer Center. (2020). *Annual statstical report,2019*.

Ashareef, B., Yaseen, W., Jawa, W., Barnawe, Y., Alshehri, W., Alqethami, H., Bukari, W. and Alqumaili, O. (2020). Breast Cancer Awareness among Female School Teachers in Saudi Arabia: A Population Based Survey. Asian Pacific Journal of Cancer Prevention, 21(2), pp.337–342.

Appendix I: Questionnaire

Republic of Yemen
Ministry of High Education & Scientific Research
Emirates University
Faculty of Medicine and Health Science
Community Medicine Department

الجمهورية اليمنية
وزراة التعليم العالي والبحث العلمي
الجامعة الامارتية
كلية الطب والعلوم الصحية

Assessment of Awareness Of Breast Cancer and its Risk Factor among Female in Emirates International university, Sana'a City, Yemen

Variables/Risk factors	Answer
Section 1: Characteristics of Study Participants	
Age of student (Years)	…….
Residence	
Urban	
Rural	
Faculty	
Medicine & Health Science faculty	
Engineering & Information technology	
Business Management faculty	
Faculty year	
First	
Second	
Therd	
Fourth	

Fifth	
Marital status	
Single	
Married	
Engaged	
Family history of Breast Cancer	
Yes	
No	
Do not know	
Believe that early detection improves treatment outcome	
Yes	
No	
Do not Know	
Believe that there is an effective treatment for Breast Cancer	
Yes	
No	
Do not Know	

Section 2: Knowledge of Risk Factors			
Aging	True ☐	False ☐	Don't know ☐
High Fat Diet	True ☐	False ☐	Don't know ☐
Obesity	True ☐	False ☐	Don't know ☐
Smoking	True ☐	False ☐	Don't know ☐
Radiation to the chest	True ☐	False ☐	Don't know ☐
Alcohol	True ☐	False ☐	Don't know ☐
Oral contraceptive use	☐	☐	☐

	True False Don't know
Never breast fed	True ☐ False ☐ Don't know ☐
Family history of breast cancer	True ☐ False ☐ Don't know ☐
Genetic Facto	True ☐ False ☐ Don't know ☐
Never being pregnant	True ☐ False ☐ Don't know ☐
Age at first full term pregnancy > 30years	True ☐ False ☐ Don't know ☐
Early menarche (<12 years)	True ☐ False ☐ Don't know ☐
Late menopause (>55 years)	True ☐ False ☐ Don't know ☐
Section 3: Knowledge of warning signs, early detection and treatment of Breast cancer	
Warning signs of breast cancer	
Breast lump	True ☐ False ☐ Don't know ☐
Bloody nipple discharge	True ☐ False ☐ Don't know ☐
Pain in breast	True ☐ False ☐ Don't know ☐
Change in shape and/or breast size	True ☐ False ☐ Don't know ☐
Redness of breast skin	True ☐ False ☐ Don't know ☐
Change in shape and/or retraction of nipple	True ☐ False ☐ Don't know ☐
Early detection measures	

Breast self examination	True ☐ False ☐ Don't know ☐
Mammogram	True ☐ False ☐ Don't know ☐
Breast U/S	True ☐ False ☐ Don't know ☐
Treatment of Breast Cancer	
Surgery	True ☐ False ☐ Don't know ☐
Radiotherapy	True ☐ False ☐ Don't know ☐
Chemotherapy	True ☐ False ☐ Don't know ☐
Hormonal therapy	True ☐ False ☐ Don't know ☐
Targeted therapy	True ☐ False ☐ Don't know ☐

Section 4: Student Knowledge, performing and reasons not performing BSE	
Heard about BSE	
Yes	
No	
Knowledge of appropriate time for BSE	
Correct Answer	
Incorrect answer	
Don't know	
Reason for not BSE	
Don't know how to perform	
Fear of positive finding	
Forgetting	
Not interested	

Not sure of its ability in detection	
Section 5: Sources of students information	
TV/Radio	
Relatives	
Books/Magazines, Newspapers	
Friends	
University education campaign	
*BSE-Breast Self-examination	

Republic of Yemen
Ministry of High Education & Scientific Research
Emirates University
Faculty of Medicine and Health Science
Community Medicine Department

الجمهورية اليمنية
وزراة التعليم العالي والبحث العلمي
الجامعة الاماراتية
كلية الطب والعلوم الصحية
قسم طب المجتمع

Assessment of Awareness Of Breast Cancer and its Risk Factor among Female in Emirates International University, Sana'a City, Yemen

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تقييم وعي الطالبات الجامعيات حول سرطان الثدي في الجامعة الدولية الاماراتية، صنعاء، اليمن

هذا البحث مقدم لقسم طب المجتمع ،
كلية الطب والعلوم الصحية ،الجامعة الإماراتيه الدولية كإيفاء جزئي ل بكالوريوس الطب والجراحة.

فريق البحث

نشوى احمد دحان
محمد نبيل صقران
عبدالوهاب قائد السماوي
أنوار خالد الجبلي
عبير عبدالاله البنوس

سماح محمود حنظل
ليال عمر المداوي
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اشراف:
أ.د.أحمد حمود الشاحذي
أستاذ مساعد في طب المجتمع والطب الوقائي
كليه الطب البشري
الجامعه الاماراتيه الدوليه
٢٠٢٠-٢٠٢١

الخلاصه

المقدمه: لا يزال سرطان الثدي يعد أحد الأسباب الرئيسية للوفيات بين النساء في جميع أنحاء العالم،في اليمن و البلدان النامية يعد نقص الوعي وبرامج الكشف المبكر عن سرطان الثدي سببًا رئيسيًا لتصاعد معدل الوفيات.

الاهداف: الدراسة الحالية كانت تقييم وعي الطالبات الجامعيات حول سرطان الثدي في الجامعة الدولية الاماراتية، صنعاء، اليمن من حيث معرفة الكشف عن عوامل خطر الإصابة بسرطان الثدي وعلامات الإنذار المبكر وعلاج سرطان الثدي وإجراء الفحص الذاتي للثدي.

الطرق: أجريت هذه الدراسة الوصفيه بين ٣٠ أبريل ٢٠٢١و ١١يوليو ٢٠٢١

وتضمنت طالبات الجامعة الدولية الاماراتية، صنعاء، اليمن تم استخدام أخذ العينات العشوائية المنهجية. تم جمع البيانات من خلال توزيع استبيان عن طريق الانترنت(Appendix I). تضمن الاستبيان ٣٥ سؤالاً تختبر المعرفة بعوامل الخطر وعلامات الإنذار المبكر وطرق العلاج والفحص الذاتي للثدي.
تم حساب الإحصاء الوصفي باستخدام النسبة المئوية والمتوسط والانحراف المعياري والعدد لتلخيص البيانات. وتم استخدام اختبار Anova لاختبار العلاقه بين معرفة المشاركين تجاه سرطان الثدي وخصائص المشاركين.

النتائج :كان عدد المشاركين (٣٢٤) في الغالب بين ٢٠ إلى ٣٠ سنة (٧٨,٧٪) وكان متوسط العمر (٢٣,٢) سنة (الانحراف المعياري ٤,٠٩). كانت النسبة المئوية للمشاركين الذين حصلوا على درجات معرفة منخفضة / أقل من المتوسط فيما يتعلق بعوامل الخطر ٧٥,٠٪ .كان لدى المشاركين معرفة عالية بعلامات الإنذارالمتعلقه بسرطان الثدي ، حيث بلغت نسبة الاكتشاف المبكر لسرطان الثدي وعلاج سرطان الثدي ٨٩,٣٪ و ٩١,٣٪ و ٨١,٧٪ .

أظهرت نتائج الدراسة أن هناك علاقة ذات دلالة إحصائية عند مستوى (٠,٠٥) بين وعي المشاركين عن سرطان الثدي والفئة العمرية للمشاركين ونوع التخصص ومستوى السنه الدراسيه للمشاركين.

الخلاصة: تؤكد هذه النتائج على الحاجة المستمرة لمزيد من التثقيف والتوعية من خلال البرامج التي تهدف إلى زيادة الوعي بين النساء.

كلمات رئيسيه: سرطان الثدي ، توعية ، الجامعة الإماراتيه الدولية ، صنعاء ، اليمن.