



An-Najah National University

Faculty of Graduate Studies

**ASSESSMENT OF WOMEN'S KNOWLEDGE
AND AWARENESS ABOUT BREAST
CANCER EARLY DETECTION AND
SCREENING IN WOMEN AGED BELOW 40
YEARS IN PALESTINE**

By

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Dedication

This effort is dedicated to the purest spot on this Earth, Jerusalem. It is also dedicated to those who martyred before achieving their dreams. I extended my gratitude to my Mother and Father, my very first source of knowledge. I am also thankful to my family, sisters, and brother, who never ceased supporting me and my educational journey. I would like to express my appreciation to Sarah, who inspired me to bring this idea to light. Profound appreciation for all my friends who have stood by me and shared my journey in life and education. Lastly, I want to thank my late grandmother, who I will always love. My greatest love and gratefulness to you all.

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Yassmin Aladien


Declaration

I, the undersigned, declare that I submitted the thesis entitled:

ASSESSMENT OF WOMEN'S KNOWLEDGE AND AWARENESS ABOUT BREAST CANCER EARLY DETECTION AND SCREENING IN WOMEN AGED BELOW 40 YEARS IN PALESTINE

I declare that the work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: Yassmin Aladien

Signature: 

Date: 07/03/2024

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**ASSESSMENT OF WOMEN’S KNOWLEDGE AND AWARENESS ABOUT
BREAST CANCER EARLY DETECTION AND SCREENING IN WOMEN
AGED BELOW 40 YEARS IN PALESTINE**

By

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Abstract

Background: Palestinian Women's incidence and mortality rate of breast cancer reflects an urgent need for target intervention to a wide range of age groups to enhance awareness and early detection to improve outcomes. Research has shown the essential role of screening programs in reducing breast mortality rate; early detection is instrumental in identifying breast cancer in its initial stage, which facilitates timely intervention to enhance survival rates. This study aims to assess the level of awareness and early screening practices related to breast cancer among young women in Palestine.

Methodology: In a cross-sectional study, an online questionnaire was distributed, and data were collected from 406 females below the age of 40 years from Jerusalem and the West Bank.

Results: Our analysis of the response demonstrated insufficient focus on young women in breast cancer awareness projects as shown in their attitudes regarding breast cancer, where 91.38% never visited a breast cancer center, and 76.85% never did a self-check, from a particular perspective that they are not within the target age group of breast cancer as it also was the main barrier of not seeking medical help.

Conclusions: We conclude that young women are less likely to be aware of breast cancer symptoms and the importance of local breast cancer clinics to expand the target group to reach the most significant number of women of all ages. This research proposes innovative ideas that hold significant potential for contributing to public health. **Recommendations:** To maximize the impact of this research, we recommend establishing a comprehensive online database aggregating information from various sources, including associations, doctors, campaigns, and screening centers; ensuring the

database is regularly updated with the latest information on breast cancer, covering prevention, early detection, treatment options, and support resources.

Keywords: Breast Cancer; Awareness; Early Detection; Screening; Women; Under 40; Palestine.

Chapter one

Introduction and Theoretical Background

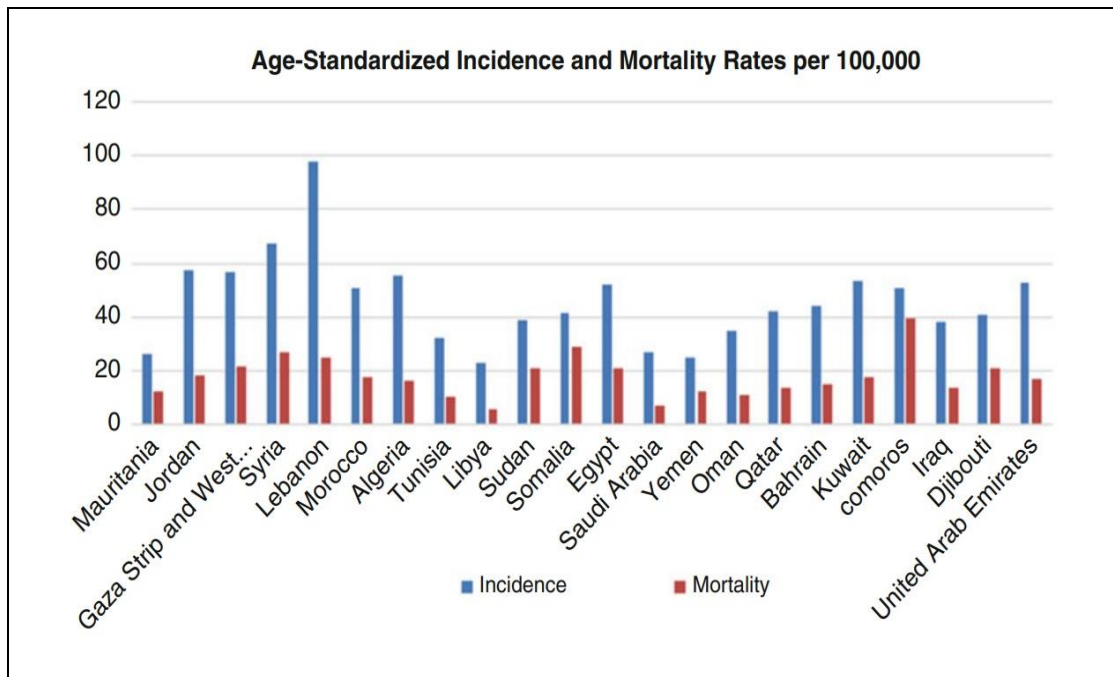
1.1 Introduction

Breast cancer is one of the leading causes of death in women worldwide. It is estimated that around 7.8 million women died because of breast cancer, and around 2.3 million new cases were reported in 2020 (WHO, 2021). In the USA, approximately 1 in 8 women are diagnosed with breast cancer, and about 1 in 39 women die from it (American Cancer Society, 2022). According to the Australian Institute of Health and Welfare (2019), approximately 5% of breast cancer cases are diagnosed in women who are younger than 40 years old. Breast cancer formed at least 21.8% of the overall cancer among young adult (YA) women and became the leading cancer in this group in Japan; overall, 50% of breast cancer cases were among adolescents and YAs. (Ahmad et al., 2021). As per the evidence-based reports, it is also a leading cause of cancer deaths among women in the Eastern Mediterranean Region and is the third most common type of cancer in Jordan (Chaudhary, 2018; Abdel-Razeq et al., 2020). In Palestine, breast cancer has emerged as a leading cause of mortality among women, with significant health and socioeconomic implications. The prevalence of breast cancer in Palestine is alarmingly high, accounting for a considerable proportion of all deaths among women; the prevalence of breast cancer in Palestine accounts for 12.3% of all deaths among women in Palestine. It is reported that the incidence rate of breast cancer in Palestinian women is 53.5%, and the mortality rate is 22.6% per 100,000 women (Elshami et al., 2022). According to a study by UNFPA Palestine conducted in the Gaza Strip in 2022, 394 new cases of breast cancer in females in the year 2022, and 17.7% of these new cases were in women under 40 years old (UNFPA, 2022). Palestinian women's incidence and mortality rates reflect the urgent need for targeted interventions to enhance early detection and improve treatment outcomes.

Breast cancer has emerged as a significant public health challenge in the Arab world, demanding focused attention. Data from the International Agency for Research on Cancer (IARC), a division of the World Health Organization (WHO), has highlighted a notable and rapid increase in breast cancer incidence throughout the Arab region. Figure 1 depicts the age-standardized incidence and mortality rates per 100,000 women affected by breast cancer in the Arab world in 2018 (IARC, 2019).

Figure1

Incidence and Mortality Rates of Breast Cancer in Arab Countries– Globocan 2018



Adopted from International Agency for Research on Cancer website

The breast cancer incidence and mortality rates in several Arab countries reveal varying levels of impact on women's health. In Lebanon, the incidence rate is reported at 98 cases per 100,000 women, with a mortality rate of 25 deaths per 100,000 women. Syria exhibits an incidence rate of 62 and a mortality rate of 26, suggesting a significant health challenge. Jordan reports an incidence rate of 58 and a mortality rate of 19, reflecting positive strides in managing the disease. Egypt demonstrates a moderate incidence at 50, with a mortality rate of 20. Kuwait and the UAE exhibit similar incidence rates at 58 and 57, respectively, with mortality rates of 19 and 18, indicating effective healthcare interventions. The data underscores the importance of sustained efforts in early detection, awareness campaigns, and accessible healthcare services across the Arab region to mitigate the impact of breast cancer on women's health.

According to the American cancer society, breast cancer predominantly affects women over 40, although there is growing recognition of its occurrence among younger women. Consequently, there is a pressing need to focus on breast cancer awareness, early detection, and screening practices specifically targeting women under the age of 40 in Palestine.

In terms of early detection and screening, numerous studies have demonstrated the effectiveness of screening programs in reducing breast cancer mortality rates. Early detection plays a crucial role in identifying breast cancer at its early stages when treatment outcomes are generally more favorable. Research has shown that screening programs have led to an increase in the detection of early-stage breast cancer cases, enabling timely intervention and improving survival rates (Sun et al., 2017).

For instance, in some developed countries, early detection through screening has resulted in a significant increase in the survival rate, with reports suggesting an 80% improvement (Sun et al., 2017). These findings highlight the importance of regular screening practices and their positive impact on breast cancer outcomes.

Screening methods such as mammography, clinical breast examination, and self-examination have been widely recommended for early detection. Mammography, in particular, has been shown to detect breast cancer at earlier stages, allowing for prompt treatment initiation. However, it is essential to note that the effectiveness of these screening methods may vary depending on factors such as age, breast density, and individual risk profiles.

Although mammography screening typically begins for women between the ages of 40 and 44, and Arab women are often diagnosed with breast cancer at younger ages, several studies have indicated that older Arab women are more likely to participate in breast cancer screening. Conversely, younger women tend to perceive screening as unnecessary, believing they are too young to develop breast cancer and that screening is not needed until they reach the age of 50. This pattern suggests that older women, who may have more frequent healthcare visits due to other health concerns, receive more education about breast cancer screening compared to their younger counterparts, (Abuidhail et al., 2021). In Palestine, women are encouraged to start getting screening mammograms at the age of 40. At this age, they can have these screenings for free or for a nominal fee (Elshami et al., 2022).

Younger women with breast cancer face challenges leading to delayed diagnosis and poorer outcomes. Misconceptions about youth and breast cancer lead to disregarding warning signs like lumps. Dismissive attitudes from healthcare providers worsen this, as they may adopt a dismissive "wait and see" approach when faced with breast lumps or

symptoms. Chappy (2004). coping with breast cancer also involves unique challenges like sexuality, fertility, and post-treatment issues. Addressing these is crucial for better management. Inclusion in awareness and screening programs empowers young women with knowledge. This proactive approach enables early detection, reducing complications and mortality.

By emphasizing the significance of early detection and screening, we can underscore the importance of raising awareness and encouraging women, especially those under 40, to engage in breast health practices actively. Implementing screening programs and promoting regular check-ups can contribute to the early identification of breast cancer and improve survival rates.

Breast Cancer

Breast cancer, a condition characterized by the uncontrolled proliferation of cells in the breast, affects different parts of the breast, including the lobules, ducts, and connective tissues. The most prevalent forms of breast cancer are invasive ductal carcinoma and invasive lobular carcinoma, with the potential to spread to other parts of the body through the bloodstream and lymphatic system. It is essential to recognize that not all breast lumps or tumors are cancerous, but specific types of lumps increase the risk of developing breast cancer, underscoring the importance of comprehensive screening and accurate diagnosis.

The uncontrolled proliferation of cells in the breast leads to breast cancer. There are three main parts of the breast; 1) lobules (milk-producing glands), 2) ducts (tubes that transfer milk to the nipples) and 3) connective tissues. The most common types of breast cancer are invasive ductal carcinoma and invasive lobular carcinoma. In invasive ductal carcinoma, cancer starts in lobules and then spread into connective tissue while in invasive lobular carcinoma, cancer begins in lobules and then spread into the breast tissue. These types of breast cancer can also spread to other parts of the body (metastasize) through blood circulation and the lymphatic system (Harback et al., 2019).

It is essential to know that not all lumps or tumors in the breast are cancerous. However, certain types of lumps increase the chance of developing breast cancer. Therefore, screening all types of breast lumps and diagnosing whether they are benign or cancerous is important (Seely & Alhassan, 2018).

Breast cancer is a prevalent and significant health concern worldwide, accounting for a substantial proportion of cancer diagnoses and mortality in women (WHO, 2022). Various factors contribute to the risk of developing breast cancer, including gene mutations such as those in the BRCA gene, high body mass index (BMI), early onset of menstruation, childbirth after the age of 30, menopause, use of contraceptives or hormone therapies, lifestyle choices, exposure to radiation, and a family history of breast or ovarian cancer (Watkins, 2019). These risk factors are relevant for women of all ages, including young women who have their own distinct set of modifiable risk factors. While the association between obesity and breast cancer is well-established in older women, further research is needed to understand the relationship between obesity and breast cancer in younger women (Cathcart-Rake et al., 2018).

The article studied the modifiable risk factors linked to the onset of breast cancer in young women, specifically concentrating on individuals aged 15 to 39 years. Breast cancer stands out as the predominant malignancy among adolescents and young adults within this age range. The findings indicate that elevated levels of physical activity, a diminished consumption of red meat, and an increased intake of plant-based foods may contribute to lowering the risk of breast cancer development in young women. This understanding is critical for formulating effective strategies aimed at diminishing the occurrence of breast cancer among adolescents and young adults (Cathcart-Rake et al., 2018).

In addition to these factors, breast cancer in women is influenced by a range of other risk factors, including genetic predisposition, abnormal hormone levels, stress, unhealthy lifestyle choices, menopause, use of contraceptives, infertility, exposure to radiation, and absence of breastfeeding (Wogu et al., 2019). Understanding these risk factors is crucial in addressing the incidence and impact of breast cancer, particularly among young women. By identifying and modifying these modifiable risk factors through awareness, education, and preventive strategies, we can strive to reduce the burden of breast cancer and promote better health outcomes for women of all ages.

These factors contribute to the development of breast cancer and highlight the importance of awareness, preventive measures, and early detection among women under 40 in Palestine. Understanding these risk factors empowers women to make informed decisions about their health, adopt healthy lifestyles, and discuss personalized screening

and prevention strategies with healthcare providers. By addressing these factors, we can work towards reducing the incidence of breast cancer and promoting overall breast health. Understanding AYA Cancer: Challenges, Insights, and Guidelines.

This section underscores the vital need to tailor comprehensive care to meet the unique requirements of adolescent and young adult (AYA) patients facing cancer, as outlined in the NCCN Guidelines for AYA Oncology. These guidelines, provided by the National Comprehensive Cancer Network, offer valuable insights into various aspects of care, including treatment, fertility counselling, psychosocial considerations, and supportive care services. While advancements in cancer treatment have led to decreased mortality rates among the broader AYA patient population, challenges persist due to gaps in knowledge related to etiology, basic biology, treatment, and survivorship.

AYA patients exhibit distinct biology, epidemiology, and clinical outcomes compared to younger and older cancer patients. AYA patients' genetic, physiologic, and pharmacologic changes can impact their ability to tolerate therapy and respond to treatment. The potential short- and long-term toxicities, including effects on fertility and sexual function, may lead to adherence gaps and suboptimal outcomes. Addressing these issues and providing empowering options during the initial stages of cancer treatment is essential for successful therapy implementation (Bhatia et al., 2023).

Unlike comprehensive geriatric assessment tools for older patients, no equivalent assessment is tailored for AYA patients. Evidence-based data guiding the treatment of AYA patients are limited. Recognizing AYA patients with cancer as a distinct age group with unique medical and psychosocial needs is imperative. Consideration of the disease's unique biology and age-related issues, such as fertility, long-term side effects, insurance or financial concerns, transportation, child care, psychosocial support, and treatment adherence, is crucial in decision-making and during the transition of care from pediatric to adult medical teams (Bhatia et al., 2023).

Based on the recommendations of the National Cancer Institute's Progress Review Group, an "AYA patient" is typically defined as an individual aged 15 to 39 years at the time of initial cancer diagnosis. In 2020, the estimated incidence of cancer in the AYA population in the United States was 89,500, resulting in 9,270 cancer-related deaths. Approximately 1.19 million cancer cases are diagnosed in AYA patients annually

(Alvarez et al., 2022).

The spectrum of cancer types affecting AYA individuals is distinct, encompassing thyroid cancers, lymphomas, melanoma, testicular cancer, cervical cancer, bone and soft tissue sarcomas, leukemias, central nervous system cancers, breast cancer, and colorectal cancer. Quality care for AYA patients depends on timely detection, treatment initiation, treatment adherence, and access to a multidisciplinary healthcare team well-known for age-related and developmental issues. These issues include fertility and sexual function, long-term side effects, behavioral, psychosocial, and socioeconomic concerns, transportation, school and work obligations, child care, treatment adherence, and the unique biology of the disease. Certain institutions have established specialized centers to address the specific needs of AYA patients.

The prior objectives of the NCCN Guidelines for Adolescent and Young Adult Oncology include identifying and enhancing awareness of challenges unique to AYA patients, proposing distinctive interventions for these individuals, educating physicians about cancer prevalence and its prolonged effects in the AYA population, recognizing specific factors relevant to managing cancer in AYA patients to enhance treatment tolerance, adherence, and clinical results, and encouraging active involvement in clinical trials and enrolment in tumor banking and biologic protocols.

Our research aims to build upon the invaluable insights the NCCN Guidelines for Adolescent and Young Adult Oncology provide. Our focus revolves around conducting a comprehensive analysis of the awareness levels and barriers associated with early cancer detection within the same age group that the NCCN guidelines address. The unique characteristics and challenges this specific population face in Palestine will be at the forefront of our study assessment.

By undertaking this study, we aim to contribute a refined understanding of the contextual factors in Palestine that may influence awareness and early detection practices among young adult women. This research is set to shed light on the difficulties of the local landscape, considering cultural, social, and healthcare systems that may impact the cancer awareness and detection journey for young adults.

Furthermore, our ultimate goal aligns with the broader objective of enhancing healthcare outcomes by raising awareness among young adult women. Through a targeted probe of the barriers to early detection, we aspire to identify challenges and propose recommendations and interventions tailored to the specific needs of this demographic in Palestine. This multi-faceted approach seeks to foster a positive impact on healthcare practices, emphasizing the significance of early detection and encouraging proactive health-seeking behaviors among young women in the region.

Awareness

By promoting awareness about these screening methods and encouraging regular check-ups, women can take proactive steps towards early detection and timely intervention. It is essential to educate women about the benefits and limitations of each screening tool, as well as the recommended frequency and age guidelines for their utilization. Through comprehensive screening programs and accessible healthcare services, we can improve early detection rates, reduce the burden of advanced-stage breast cancer, and ultimately enhance survival rates and overall outcomes for women affected by the disease.

In Palestine, the detection of breast cancer often occurs at later stages, primarily due to limited resources, inadequate screening facilities, and a lack of comprehensive education regarding breast cancer. Recognizing the urgency of the situation, the primary healthcare sector and the Ministry of Health in Palestine have taken steps to address this issue. Mammography and screening facilities are available in 13 West Bank districts, demonstrating a commitment to reducing the mortality rate among Palestinian women affected by breast cancer (Halahleh & Gale, 2018).

Efforts have been made to increase accessibility to mammography and screening facilities in certain regions of Palestine. These facilities, along with medical centers and non-governmental organizations (NGOs) dedicated to breast cancer diagnosis, treatment, and awareness, play a crucial role in addressing the challenges faced by Palestinian women. Prominent institutions such as Al-Makassed Hospital and Augusta Victoria Hospital in East Jerusalem, Al Ahli Arab Hospital and European Gaza Hospital in Gaza, and the Palestinian Medical Complex in Ramallah are actively involved in providing comprehensive breast cancer services.

Furthermore, organizations like the Palestinian Medical Relief Society, Palestinian Breast Cancer Society, and Women's Health Center in Nablus, among others, are dedicated to raising awareness about breast cancer, promoting early detection, and offering support to patients and their families. The collective efforts of these medical centers, NGOs, and healthcare professionals contribute to a comprehensive approach to breast cancer management in Palestine.

Breast Cancer Awareness Month, Pink October, is an annual global health campaign marked in October. In Palestine, like in many other parts of the world, this campaign is significant in raising awareness about breast cancer, promoting early detection, and supporting those affected by the disease. The efforts in Palestine include various activities such as educational events, free screenings, and support programs for women who have breast cancer. These efforts aim to increase awareness about the importance of early detection and access to quality healthcare services in the region, where healthcare resources can be limited due to political and social challenges. Despite these challenges, individuals and organizations in Palestine work diligently to promote breast cancer awareness and support those affected by the disease during Pink October.

By enhancing resources, expanding screening facilities, and implementing educational programs, these organizations are striving to improve early detection rates and ensure timely intervention for breast cancer cases. Through their collaborative efforts, they aim to empower Palestinian women with knowledge, resources, and support, ultimately leading to improved breast cancer outcomes and reduced mortality rates in the region.

Early detection and screening practices

In addition to understanding the risk factors associated with breast cancer, it is crucial to emphasize preventive measures, early detection, and screening practices. Breast self-examination (BSE) plays a vital role in empowering women, particularly young women, to monitor their breast health. By regularly conducting BSE, women can identify any changes in breast shape, color, or the presence of lumps. It serves as a proactive approach to detecting potential abnormalities and seeking further medical evaluation. The American Cancer Society encourages BSE to promote breast awareness, helping early detection of potential breast cancer. However, it is essential to note that Breast Cancer (BC) cases in women in their 30s are rare but still significant. The American

Cancer Society's major guidelines do not recommend routine screening for this age group because the risks of false positives, additional procedures, and overdiagnosis outweigh the potential benefits, and Routine screening does not reduce cancer-related deaths in women under 40 (Breast cancer screening guidelines: FAQ breast cancer, 2015).

Mammography and ultrasonography are commonly used tools for the early detection of breast cancer. Mammograms, X-ray images of the breast, can detect small tumors or calcifications that may not be palpable during a physical examination. They are especially effective for women aged 40 and above, as recommended by many health organizations.

The comparative accuracy of breast self-examination was assessed in both physician examination and mammography. However, it is essential to note that mammography, a widely employed screening procedure, is not recommended for women below 40, also, it remains inaccessible to many women in the United States due to financial constraints or other related factors (Kondro, 2012).

Ultrasonography, which uses sound waves to create images of the breast tissue, can provide additional information and help differentiate between benign and malignant masses. Magnetic resonance imaging (MRI) is another imaging technique that can be utilized for more accurate results, particularly in certain high-risk individuals or cases where further evaluation is required (Coleman, 2017).

Media

Mass media refers to various forms of communication that can reach a large and diverse audience simultaneously. These channels can transmit information, entertainment, and messages to many people across different locations. The advent of digital technologies and the internet has expanded the reach and capabilities of mass media to include online platforms, social media, and streaming services, further changing the dynamics of how information is shared and consumed globally.

Indirect media is crucial in breast cancer awareness campaigns for several key reasons. Firstly, it helps combat stigma by focusing on relatable stories and emotional connections. This approach also appeals to a diverse audience, bridging gaps and fostering understanding. Moreover, indirect media emphasizes early detection, encouraging proactive health behavior. It is also adaptable to cultural norms, ensuring sensitivity across communities. Lastly, its lasting impact fosters empathy and support, sustaining awareness efforts and research progress. Overall, indirect media is influential in creating comprehensive and impactful breast cancer awareness campaigns.

1.2 problem statements

Despite ongoing efforts to raise awareness about breast cancer, there remains a significant gap in knowledge and awareness among young women regarding this disease. This lack of understanding poses a critical challenge, hindering early detection, screening, and timely intervention efforts. Therefore, there is a pressing need for a study to systematically identify and analyze these knowledge gaps among young women in Palestine regarding breast cancer. By uncovering these gaps, the study can provide valuable insights to inform the development of targeted educational campaigns and interventions. Addressing these gaps is essential to empower young women in Palestine with the knowledge and resources necessary for early detection and proactive management of breast cancer, significantly improving health outcomes and reducing mortality rates associated with this disease.

1.3 The importance of study

It is crucial to conduct a study to determine young women's awareness of breast cancer, as it can yield highly effective and beneficial results. Such a study can provide crucial insights into the level of knowledge, awareness, and understanding of breast cancer among young women in Palestine. There is no doubt that conducting such a study can be incredibly effective for several reasons:

Identify Gaps in Knowledge: A study can help identify gaps in young women's knowledge and awareness regarding breast cancer. It can shed light on misconceptions, myths, and areas lacking education. This information can guide the development of targeted educational campaigns and interventions to address these gaps.

Tailor Awareness Programs: Understanding young women's specific needs and knowledge gaps can help design awareness programs tailored to their requirements. By identifying the most effective channels and methods of communication, the study can ensure that awareness campaigns reach young women effectively and provide them with the necessary information.

Improve Early Detection Rates: Early detection is crucial for better treatment outcomes in breast cancer. By assessing young women's awareness levels, the study can identify areas where improvement is needed and develop strategies to promote early detection practices, such as breast self-examination, clinical breast exams, and seeking medical attention for any breast abnormalities.

Address Cultural Taboos: Breast cancer awareness studies can help uncover cultural taboos or social stigmas that hinder open discussions about breast health. By understanding the cultural context and barriers, interventions can be designed to address these issues and create a supportive environment that encourages young women to prioritize their breast health.

Measure the Impact of Awareness Campaigns: If awareness campaigns have been previously conducted, a study can assess their effectiveness and measure changes in awareness levels over time. This evaluation can help refine and improve future campaigns to ensure maximum impact.

Policy and Resource Allocation: Findings from the study can be used to advocate for policy changes, allocate resources, and prioritize breast cancer awareness and early detection initiatives targeting young women. It can help inform decision-makers and healthcare authorities about this population's specific needs and challenges, leading to more effective interventions and improved healthcare services.

Conducting a study on breast cancer awareness among young Palestinian women could contribute to the existing knowledge, inform interventions, and potentially improve breast cancer outcomes.

1.4 Aim of study

General Aim of the Study:

This research study aims to assess the level of awareness and early screening practices related to breast cancer among young women in Palestine.

1.5 Specific objectives

1. To investigate the awareness of the signs and symptoms of breast cancer among women.
2. To examine the Knowledge of age-related risk group of breast cancer among young women
3. To explore Self-reported breast checking at a young age.
4. To estimate the acceptance of healthy young women for early detection and overcome barriers to screening.

By addressing these specific objectives, the study aims to provide valuable insights into the level of awareness, knowledge, and screening practices related to breast cancer among young women in Palestine. The findings will help guide future interventions, educational programs, and initiatives to improve early detection rates and promote better breast health among this population.

1.6 Questions of study

- What is the validity and reliability of the breast module of a breast cancer awareness measure (BCAM) among young women in Palestine?
- What is the awareness level of breast cancer among young women in Palestine?
- What is the ability to seek help for screening and early detection of breast cancer among young women in Palestine?

1.7 Concepts and Operational Definition

Concepts and operational definitions related to breast cancer awareness, early detection, and screening for women under the age of 40 in Palestine can provide a theoretical background for studying the topic.

The conceptual model illustrates how sociodemographic factors and awareness levels affect women's early detection and screening behaviors for breast cancer, taking into account individual and contextual influences.

Independent Variables:

1. Sociodemographic Factors:

- Age
- Education level
- Income level
- Ethnicity
- Geographic location
- Marital status
- Employment status

2. Awareness:

- Knowledge about breast cancer
- Familiarity with early detection methods (such as ultrasound, mammograms, and self-examination)
- Understanding of risk factors
- Exposure to informational campaigns or educational materials

Dependent Variable:

1. Early Detection and Screening Behavior:

- Frequency of self-examination
- Adherence to recommended screening guidelines
- Utilization of mammography services
- Promptness in seeking medical attention for suspicious symptoms

Mediating Variables:

1. Healthcare Access and Utilization:

- Availability of healthcare facilities
- Accessibility of screening service
- Health insurance coverage
- Regularity of healthcare visits

Contextual Variables:

1. Cultural Norms and Beliefs:

- Attitudes towards health and illness
- Cultural perceptions of breast cancer
- Influence of family and community on health-seeking behavior

Healthcare System Factors:

- Quality of healthcare services
- Availability of screening programs
- Physician recommendation for screening

Operational Definitions:

1. **Breast Cancer Awareness:** Breast cancer awareness refers to the knowledge, understanding, and recognition of breast cancer as a health concern, including its risk factors, symptoms, and the importance of early detection and screening among women under the age of 40 in Palestine. Breast cancer awareness can be assessed by measuring the level of knowledge through surveys or questionnaires that include questions about breast cancer risk factors, symptoms, recommended screening guidelines, and awareness of available screening methods.
2. **Early Detection:** Early detection of breast cancer refers to the identification and diagnosis of breast cancer at its earliest stages, before it has spread to other parts of the body, in women under the age of 40 in Palestine. Early detection increases treatment options and improves survival rates. Early detection can be operationalized by assessing self-reported practices of breast self-examination, clinical breast examinations by healthcare professionals, and utilization of

mammography or other imaging techniques for breast cancer screening among women under 40 years old in Palestine.

3. **Screening:** Screening for breast cancer involves the use of specific tests or examinations to detect breast cancer in asymptomatic individuals, aiming to identify the disease at an early stage when treatment outcomes are generally more favorable. Screening can be measured by assessing self-reported participation in breast cancer screening programs, including mammography or other recommended screening methods, among women under 40 years old in Palestine.
4. **Knowledge Gaps:** Knowledge gaps refer to areas where individuals lack understanding or accurate information about breast cancer, its risk factors, symptoms, or screening methods specifically relevant to women under the age of 40 in Palestine. These gaps highlight areas for improvement in educational interventions. Knowledge gaps can be assessed through surveys or questionnaires that measure specific knowledge areas related to breast cancer in young women, including risk factors, symptoms, recommended screening guidelines, and misconceptions. The difference between correct and incorrect responses can indicate the extent of knowledge gaps.

These concepts and operational definitions provide a framework for studying breast cancer awareness, early detection, and screening practices among women under the age of 40 in Palestine. It is important to adapt these definitions to the specific context and population being studied to ensure the relevance and accuracy of the research.

1.8 Literature review

Breast Cancer

Cancer, a challenging and pervasive adversary, throws its shadow across various age groups, profoundly affecting individuals. Within the spectrum of cancer, the impact on young women, typically defined as those below the age of 40, introduces unique challenges and considerations. The journey through cancer, marked by its physical, emotional, and societal dimensions, takes on notable differences when experienced during the productive years of adulthood. Into the broader landscape of cancer in young women, studies exploring the prevalence, types, and implications of cancer diagnoses in this specific demographic. It underscores the importance of understanding the complexities associated with cancer in young women, from risk factors to developing treatment approaches, aiming for improved outcomes and enhanced support for those facing this challenging health challenge.

A study sheds light on the often-overlooked global burden of cancer among adolescents and young adults (aged 15-39 years), utilizing data from the Global Burden of Diseases (GBD), Injuries, and Risk Factors Study GBD in 2019. The assessment includes disability-adjusted life-years (DALYs) as a crucial outcome measure. In 2019, the age group noticed 1.19 million incident cancer cases and 396,000 deaths globally. The regions with the highest incidence rates were classified as high Socio-demographic Index (SDI) countries, whereas the highest mortality rates were observed in low-middle and middle SDI countries. Adolescent and young adult cancers significantly contributed to the global burden of disease, constituting 23.5 million DALYs. These findings underscore the necessity for targeted cancer control measures, recognizing variations across SDI settings (Alvarez et al., 2019).

The importance of healthcare for breast cancer patients, especially among the younger population, is highlighted by the persistent rise in the number of new BC cases each year. The notable increase in premenopausal BC patients, coupled with the absence of clearly defined risk factors and well-established screening tools, demands a targeted and comprehensive approach to addressing breast cancer in young women. The difficulty is further compounded by the fact that cases of breast cancer in "young" individuals often display as asymptomatic, presenting significant challenges for timely diagnosis and the implementation of effective treatment strategies. This underscores the critical need for

tailored healthcare interventions and heightened awareness to address the unique challenges associated with breast cancer in the younger demographic (Kudela et al., 2019).

The article 'Diagnosis and Treatment of Breast Cancer in Young Women,' 2019, addresses the unique challenges posed by breast cancer in women under the age of 40, comprising approximately 7 to 10% of cases. These younger patients exhibit distinct risk factors, tumor biology, and psychosocial concerns, such as fertility preservation, family planning, and job reintegration. However, the decision on treatment aggressiveness should not just depend on age; factors like tumor aggressiveness, potential long-term toxicities, and patient preferences must be considered. Fertility preservation discussions are crucial before initiating any cancer treatment. Despite the significant percentage of younger breast cancer patients, few studies have focused explicitly on this population's characteristics and outcomes, with therapies often tested in older patients.

Additionally, young women with breast cancer face higher risks of sexual and psychological distress, emphasizing the need for tailored support. The article underscores the importance of following guidelines specifically tailored to young women and outlines additional procedures for treating pregnant patients with breast cancer (Rossi et al., 2019).

The review article "Breast Cancer in Young Women", by Courtney A Gabriel and Susan M Domchek, 2010, explores the distinct challenges in managing breast cancer in young women, emphasizing issues such as fertility preservation, inherited syndromes, bone health, secondary prevention, and psychosocial aspects. The incidence of breast cancer in women under 40 is around 7%, with notable differences in risk factors, outcomes, and tumour biology compared to older women. Younger women, particularly those under 35, exhibit unique tumour characteristics and gene expression patterns, suggesting breast cancer in this group is a distinct clinical entity. Managing breast cancer in young women (ages 35 to 40) differs significantly from older cases, presenting with more aggressive features, later diagnoses, and inferior outcomes. Radiographic diagnosis is challenging due to increased breast density. Genetic testing for BRCA1, BRCA2, and TP53 is recommended. While treatments align with those for older women, optimal hormonal therapy is uncertain. Fertility preservation is crucial,

requiring early referral to specialists. Treatment-related menopause may impact bone health, prompting consideration of bisphosphonates. Prophylactic mastectomies are considered, but their impact on survival is unclear. Young women with breast cancer face a higher risk of psychological distress, underscoring the need for early support service referrals (Gabriel & Domchek, 2010).

Breast cancer is the leading cause of cancer-related deaths in women aged 40 and younger in developed countries. Despite overall improvements, survival rates for young women with breast cancer remain lower than for older women. Young women are more likely to develop aggressive subtypes of breast cancer, and research suggests that their age is an independent risk factor for disease recurrence and death. Unique biological and psychosocial differences influence the management of breast cancer and survivorship concerns in young women compared to their older counterparts. Standard treatment involves multi-agent chemotherapy and biologic therapy, mirroring approaches used in older women. Special attention is given to addressing unique survivorship issues, including genetics, infertility, and psychosocial factors. While some young women may fare well with hormone therapy alone, the optimal hormonal therapy for very young women is currently unclear (Freedman & Partridge, 2013).

Despite the increased occurrence of breast cancer in young women in less developed nations, there is a lack of information regarding their treatment. An article discussed the clinical and pathological characteristics as well as treatment outcomes for women aged 35 or younger with breast cancer in an environment with limited resources.

It concluded that young women with breast cancer in resource-limited settings exhibit comparable adverse clinical and pathological features to those in developed countries. Their disease is often diagnosed at a more advanced stage, resulting in a poorer outcome. Enhancing awareness, improving systemic therapy, and conducting more thorough genetic studies are crucial for reducing the down prognosis in these cases (Basro & Apffelstaedt, 2009).

from "Breast Cancer in Young Women: An Overview." This study underscores the increasing complexity of breast cancer in women under 45 globally despite progress in cancer research. It emphasizes the unique and aggressive nature of breast cancer in young women, accentuating the necessity for age-specific management strategies

(Anastasiadi et al., 2017).

The relevance of this study to Palestine lies in its indication of the urgent need for tailored approaches to address the specific challenges posed by breast cancer in young women. Understanding the complex biology highlighted in the study allows for targeted awareness campaigns and screening programs to be developed. These initiatives can be instrumental in achieving Early Detection, improving treatment outcomes, and ultimately enhancing the well-being of young women in Palestine.

In conclusion, the study serves as a compelling rationale for prioritizing research and initiatives related to Breast Cancer Awareness, Early Detection, and Screening for women under 40 in Palestine. It provides valuable insights into the unique aspects of breast cancer in young women, urging the implementation of multidisciplinary approaches to improve health outcomes in this demographic.

The closing of studies on breast cancer, both in the general population and among young women, underscores the imperative to focus specifically on breast cancer in Palestine. As we guide the comprehensive research and knowledge, it becomes clear that tailoring interventions to the unique circumstances of Palestinian women is essential. By shedding light on the difficulties of breast cancer in this setting, these studies empower healthcare professionals and policymakers to develop targeted strategies for early detection, prevention, and effective management. In essence, these studies serve as guiding lights, urging a deeper exploration of breast cancer in Palestine for the improvement of women's health in the region.

Awareness

A study, titled "The Impact of Breast Awareness on the Early Detection of Breast Cancer in Young Women: A Systematic Review," in 2022, aimed to assess the influence of "breast awareness" on breast cancer outcomes in women under the age of 40, who are at average risk and not yet suitable for mammographic screening. Conducted through a systematic review, the study did not find any suitable studies exclusively focusing on young women. Two partially suitable studies with mixed-age cohorts suggested some benefits regarding earlier stages at diagnosis and improved survival—however, the evidence needed to be of higher quality. The absence of studies exclusively evaluating breast awareness in young women highlights a gap in research

(Banihashemi & Brennan, 2022).

An article describes a community-based prospective cross-sectional analysis conducted among college-going women in Rajasthan, India, aiming to assess awareness about breast cancer and its risk factors. All respondents had heard of breast cancer, but only 65% recognized breast mass or lump as an essential symptom. Awareness about mammography, a critical early diagnostic modality, was limited to 19% of respondents, while 49% were aware of ultrasonography. Additionally, 28% of women were not aware of self-breast examination. The findings highlight knowledge deficits among women regarding breast cancer and related factors in the studied population. (Breast Cancer: Awareness and Risk Factors in College-going Younger Age Group Women in Rajasthan, 2010).

The research article assesses the barriers to early presentation of breast cancer among women in Soweto, South Africa, focusing on those diagnosed at the Chris Hani Baragwanath Academic Hospital in 2015-2016. The study reveals that advanced-stage diagnosis of breast cancer in urban South African communities using public healthcare services is linked to barriers related to both patients and the healthcare system. Among the women in the study, roughly half were diagnosed at early stages, and the other half were diagnosed at advanced stages. Completing high school or beyond and having excellent breast cancer knowledge was associated with a lower-stage breast cancer presentation. Advanced stages were linked to specific subtypes, longer delays from first symptoms to accessing the health system, and multiple visits within the referral health system. The article suggests that implementing awareness and education programs for the community and healthcare workers, along with efficient diagnostic processes and referral procedures, may help overcome these barriers and consequently decrease breast cancer morbidity and mortality (Joffe et al., 2018).

A study conducted at Ain Shams University, Egypt, aimed to assess breast cancer awareness among female students. It utilized a descriptive cross-sectional design to investigate knowledge regarding risk factors, symptoms, and early detection methods, explicitly focusing on breast self-examination (BSE) practices. The majority of participants demonstrated a low level of awareness regarding breast cancer risk factors, with smoking, radiation to the chest, and genetic factors being the most widely recognized. While many students identified breast lumps as a symptom, non-lump

symptoms were less known. Mass media, particularly TV and radio, emerged as the primary source of information for breast cancer, followed by relatives.

A small percentage of students correctly identified the appropriate time for performing BSE, and only a fraction reported practicing it regularly. Reasons for not engaging in BSE included a lack of knowledge about performing it and a general lack of interest. The study's findings highlight a concerning gap in knowledge on breast cancer risk factors, warning signs, and BSE practices among female university students, emphasizing the need for targeted breast health programs. Healthcare workers are urged to develop practical initiatives for young individuals, fostering healthy habits and awareness from the early formative years (Boulos & Ghali, 2013).

A study among Jordanian Women in 2020 aims to highlight the effects of marketing advertisements on encouraging Jordanian women to maintain an early examination of breast cancer. The results showed that many resources were used for these marketing advertisements that familiarize women with the early detection of breast cancer and have a strong significant effect on encouraging women to early examination. The researchers further recommended that there should be more advertising campaigns that can improve audience predilection concerning early detection of breast cancer (The Relationship Between Media Marketing Advertising and Encouraging Jordanian Women to Conduct Early Detection of Breast Cancer, 2020).

In 2020, a study conducted in Palestine aimed to assess women's awareness of breast cancer symptoms and identify factors associated with good awareness. The study recruited adult women from hospitals, primary healthcare centers, and public spaces across 11 governorates. The results of the study revealed that the most commonly recognized breast cancer symptom was the presence of a 'lump or thickening in the breast' (92.9%), followed by a 'lump or thickening under the armpit' (83.6%). However, the symptoms that were least frequently identified by the participants were 'pulling in of the nipple' (50.7%) and 'change in the position of the nipple' (26%) (Elshami et al., 2022).

An article at An-Najah University, 2017, studied the awareness, knowledge, and practices related to breast self-examination among female students at An-Najah National University in Palestine. Despite 96.2% acknowledging the importance of

breast self-examination, only 36% reported performing the test. Lack of knowledge emerged as a prominent barrier, with 9.2% expressing uncertainty about what to do if a breast mass is noticed. The study highlights insufficient awareness and practice of breast self-examination among university students, emphasizing the need for targeted health education and interventions to increase awareness and promote breast cancer screening in this demographic. The findings underscore potential social and cultural barriers, emphasizing the importance of addressing these issues to improve women's health outcomes (Al Zabadi, 2017).

The collective research examining awareness of breast cancer among women, specifically among young women, highlights the pressing need for a reliable focus on understanding and enhancing awareness in Palestine. As these studies evolve, it becomes evident that tailoring awareness campaigns and interventions to Palestine's unique cultural, social, and healthcare landscape is crucial. By emphasizing the importance of studying breast cancer awareness in this specific context, these findings unlock the way for targeted initiatives that can significantly impact early detection, education, and overall healthcare outcomes for the women of Palestine. The spotlight launched by these studies underscores the urgency and significance of advancing our understanding of breast cancer awareness in the Palestinian population.

Early detection improves survival among young

The early detection of breast cancer can improve the survival rate of patients through effective and individualized treatment (Larsen, 2022).

Early detection of breast cancer is of critical importance, especially among young adult (YA) women. In Japan, breast cancer comprises a significant proportion, at least 21.8%, of the overall cancer burden in this demographic, emerging as the leading cancer among YA women. The prevalence is notably high, with 50% of breast cancer cases occurring among adolescents and young adults (AYA). Highlight the encouraging 5-year survival rates in the age group of 15–44 years old, underscoring the significance of early detection. The survival rates reach almost 90% for localized cancer, showing the effectiveness of timely identification and intervention. Even in cases of regional cancer, the survival rate remains substantial at 80%, emphasizing the critical role of early detection in improving outcomes. Furthermore, the study reveals a 35% survival rate for

cases with distant metastasis, reinforcing the importance of early intervention in minimizing the impact of breast cancer in young women (Ahmad et al., 2021).

A study in the United Kingdom, 1994, indicated that breast cancer is a predominant form of cancer in women, contributing to nearly 30,000 new cases and over 15,000 deaths annually in the United Kingdom. The implementation of mammography in breast screening programs for women aged 50 and over has demonstrated a reduction in breast cancer mortality, prompting the establishment of the National Health Service breast screening program in the UK in 1988. The program aims to decrease breast cancer mortality by 25% among the screened population. The program's success hinges significantly on mammography uptake, emphasizing the crucial role of primary care teams in encouraging participation and providing support throughout the screening process. While the research underscored the importance of screening for women aged 50 and above, it did not provide any data about young women. Moreover, routine breast self-examination has not proven effective as a primary screening method; there is a recognized importance for women to enhance their "breast awareness" (Austoker, 1994).

A conducted study on the Evolution of Breast Self-Examination to Breast Awareness showed the available evidence from randomized Breast Self-Examination trials does not justify a significant allocation of resources to BSE education programs. Women still require education and encouragement to identify any changes in their breasts. However, the specific technique of performing BSE is now understood to be unnecessary. The approach to breast health has undergone a paradigm shift or evolution from breast self-examination to breast awareness in the early detection of breast cancer.

While BSE involves monthly palpation of the breasts using a specific method formally trained for women, the transition to breast awareness signifies a woman being acquainted with her breasts. This awareness enables her to notice any changes that may occur and promptly bring them to the attention of her healthcare provider. This concept of breast awareness is crucial in the early detection of breast cancer and should be an integral part of general breast health education (Mac Bride et al., 2012).

A study in Surabaya, Indonesia, detecting breast cancer at an early stage is crucial for improving the prognosis of the disease. Therefore, it is essential to make efforts towards early detection. Breast Self-Examination is significant in empowering women to take charge of their health, particularly in low- and middle-income countries where resources and access to preventive healthcare may be limited. BSE is an essential initial step, encouraging women to monitor their breasts for abnormalities or changes. By promoting BSE, we can enable women to play an active role in the early detection of breast cancer, even in settings with fewer healthcare resources (Dewi et al, 2019).

An examination in 2019 aims to estimate the knowledge, attitude, and routine of females in the UAE toward BC and BSE practices in the seven Emirates. On a sample of females across the UAE. Found that (28%) did the clinical Breast Examination at least once, (and 46%) practiced BSE. Only 33% of participants were aware of the incidence of BC in the UAE, and those females were additionally likely to practice BSE ($P<0.05$).

Knowledge of breast cancer symptoms was good, as 41–87% of respondents could identify at least one symptom. The lack of awareness of BC among females in the UAE is of matter as it leads to standard screening practices and early detection, finally resulting in increased morbidity, mortality, and treatment costs (Kharaba, et al; 2021).

According to the MAP organization, timely detection plays a pivotal role in the successful recovery from breast cancer. In Israel, breast cancer screening is widely adopted, with 70 percent of women aged 50-69 undergoing mammogram screenings. However, the occupied Palestinian territory lags in breast cancer screening rates. Research on Palestinian women in the West Bank reveals that over 60 percent of women above 50 have never participated in a mammography session.

In the West Bank, mammography services are accessible in major cities through Ministry of Health facilities, private clinics, and NGO-run hospitals. Nevertheless, geographical barriers, such as the remoteness of communities and the requirement to navigate through Israeli checkpoints, pose challenges for some women in attending these services. Additionally, social, cultural, and environmental factors, coupled with a lack of health information, contribute to the low attendance of screening and diagnostic services by Palestinian women.

In Gaza, screening and diagnostic mammography availability are limited, as Dr. Sawsan Hamad, the Head of the Gaza Ministry of Health Women's Health Department, highlighted. Only two of the seven mammography machines in Gaza are designated for screening, while the remaining five cater to diagnostic services. Unfortunately, the screening machine at the Women's Health Department has been non-functional for 18 months, necessitating the referral of women to the NGO-run Al Ahli Arab Hospital for screening. The cost of a private appointment in Gaza, ranging from 50-60NIS, proves prohibitively expensive for many women, given the challenging economic conditions where 39 percent of the population lives in poverty.

The delayed diagnosis of breast cancer is a concerning consequence for Palestinian women. A 2005 report from 'Physicians for Human Rights – Israel' indicates that 60 percent of Palestinian women in Gaza were diagnosed after the disease had already metastasized. In contrast, during the same period in Israel, metastasis was identified in only 5 to 7 percent of diagnosed cases (MAP, 2019).

The comprehensive exploration of studies emphasizing the critical role of early detection in improving survival rates among young women underscores the urgency and importance of delving into the subject of breast cancer awareness, particularly in Palestine. These findings shed light on the profound impact of promoted awareness on timely diagnosis and subsequent survival outcomes. As we guide the difficulties of breast cancer research, it becomes clear that tailoring awareness initiatives to the unique socio-cultural context of Palestine is pivotal. The call to study and enhance breast cancer early detection in this region resonates as a crucial step toward better healthcare outcomes, emphasizing the need for targeted efforts that consider the specific challenges and opportunities within the Palestinian community.

Media

The importance of utilizing information sources efficiently in public health campaigns for promoting breast cancer care has consistently recognized the significant roles played by mass media. Mass media platforms, with their broad reach, have the potential to educate diverse audiences effectively in this regard (Nelson et al., 2014).

The pervasive use of social media has reached the engagement of over half the global population, marking it as an influential medium in public health endeavours. Intervention encompasses a spectrum of initiatives, ranging from expansive campaigns such as Breast Cancer Awareness Month to more tailored approaches utilizing social media features, like targeted discussion groups. These interventions hold power by influencing cognitive and emotional responses and reshaping societal norms. Furthermore, social media's ability to share health-related information swiftly and inexpensively across extended geographical expanses underscores its significance.

Numerous national public health campaigns have leveraged social media platforms to bolster early cancer detection efforts. Their objectives include heightening awareness regarding cancer symptoms, promoting proactive help-seeking behaviours, and cultivating positive social attitudes about seeking assistance (Plackett et al., 2020).

In 2022, a comprehensive study conducted in the United States examined the influence of Breast Cancer Awareness Month (BCAM), an annual event held in October for over three decades, on the level of public awareness regarding breast cancer. The investigation encompassed an analysis of BCAM's effect on public awareness from the years 2012 to 2021, utilizing the relative search volume (RSV) data from Google Trends as a surrogate metric. The findings of this study revealed a substantial and statistically significant rise in the weekly RSVs, increasing from 21.9% to 46.7% over the specified period (Nishimura & Acoba, 2022).

The unique attributes of social media, marked by interactivity and collaboration, offer promising roads for advancing health awareness, especially in breast cancer initiatives among Malaysian women of Generation Y. This research investigates the effectiveness of social media in fostering breast cancer awareness, emphasizing its potential impact on users' attitudes and awareness. The study's outcomes bear significant implications for stakeholders aiming to enhance women's awareness of breast cancer, highlighting social media as a low-cost, convenient, and impactful tool for widespread health campaigns.

As daily use of social applications becomes routine, there is a subsequent rise in health awareness and understanding of cost-effective healthcare measures. In exploring the transformative potential of social media in breast cancer awareness, this study aims to explore its impact on screening for women under 40. taking from the Malaysian study

promises meaningful comparisons and an in-depth exploration of cultural differences, contributing to a comprehensive understanding of how media shapes breast cancer perceptions and behaviors across diverse populations (Majali et al., 2021).

Research exited from the University of Connecticut studied the investigation delved into the Breast Cancer Organization's (BCO) Facebook Page, aiming to unravel its role in health communication, specifically its impact on breast cancer awareness. The scrutiny focused on user engagement, content analysis, and the potential ramifications for health communication practices within social networking sites. The findings indicated a notable gender disparity in participation, with women being more active on the BCO Facebook Page, aligning with broader social media usage trends. The page predominantly concentrates on fundraising initiatives, particularly 'Click to Fund Mammogram' programs, emphasizing shopping, product promotion, and fundraising, with minimal explicit health information. The study raised critical inquiries regarding the effectiveness of health-related Facebook Pages in influencing awareness and attitudes toward specific health conditions. It highlighted the importance of active interactions and fan engagement for improving awareness.

Furthermore, the study underscored the need for health organizations to carefully moderate and monitor content accuracy on their Pages. It advocated for future research to comprehend user interactions on diverse health-related Facebook Pages and evaluate the efficacy of health communication strategies on social media. The challenges inherent in evaluating social media-based health promotion efforts were emphasized, necessitating innovative methodologies and theory-based evaluation methods in participative media. At the core, the study contributes valuable insights into the complex dynamics of health communication on social media, calling for a satisfactory understanding and suggesting directions for future research to harness the potential of social media for health communication (Abramson et al., 2014).

The conclusion of studies examining the impact of media and awareness campaigns on raising awareness and promoting early detection of breast cancer resonates as a clear call to study this subject in the context of Palestine. The evidence points towards the significant role that media and targeted campaigns play in sharing vital information, promoting awareness, and encouraging proactive measures for early detection. Recognizing Palestine's unique cultural and societal nuances, these findings underscore

the importance of tailoring awareness strategies to address specific challenges and enhance understanding within the Palestinian community. The importance of studying breast cancer awareness within this context becomes clear, paving the way for informed interventions that can contribute to improved healthcare outcomes in Palestine.

Chapter Two

Methods

In this chapter, methods that were used to answer the study objective are presented in detail. This reflects on the study design, study setting, participants, used tool, study sample and sampling technique.

2.1 Study designs

A descriptive cross-sectional convenient quantitative study the methodology adopted for this research study is quantitative. In the quantitative research methodology, statistical analysis is performed on numerical data. Quantitative research is very methodical and helps a researcher to find accurate results by accepting or rejecting the null hypothesis (Watson, 2015; Vogt, 2011).

2.2 Study settings

This study has been conducted in multiple locations within the West Bank and Jerusalem in Palestine. The selected governorates for data collection encompassed a diverse range of regions, including:

1. Jerusalem
2. Jenin
3. Tubas
4. Tulkarm
5. Nablus
6. Qalqilya
7. Salfit
8. Ramallah
9. Jericho
10. Bethlehem
11. Hebron

These areas were chosen to ensure a representative sample from various parts of the West Bank and Jerusalem.

2.3 Study population

Females from the areas of West Bank and Jerusalem. The target age group for this study is females under the age of 40 years old. The sample size for this research is 385 based on sample size calculator.

Including criteria

The study inclusion criteria comprised females below 40 residing in the West Bank and Jerusalem. A comprehensive sampling strategy was employed across diverse governorates, including Jerusalem, Jenin, Tubas, Tulkarm, Nablus, Qalqilya, Salfit, Ramallah, Jericho, Bethlehem, and Hebron, totaling 406 participants. This age and gender-specific focus aimed to capture the perspectives and awareness levels of young females regarding breast cancer in the Palestinian context.

Excluding criteria

Exclusion criteria were applied to refine the participant pool. Females above 40 were excluded from the study to maintain a consistent age group. Additionally, males were not considered for participation. Furthermore, questionnaires from Gaza and areas within occupied Palestine were excluded to ensure the study's geographical scope remained focused on the West Bank and Jerusalem.

2.4 Study sample

In this study, we used convenience sampling to conscript participants for our research on women's knowledge and Awareness about Breast Cancer Early Detection and Screening for breast cancer. The focus of the study was on females below the age of 40. The data collection process involved distributing video link with questionnaires, resulting in 558 responses. However, during the analysis phase, 152 questionnaires were excluded from the dataset. The exclusion criteria may include incomplete responses, inconsistencies, or deviations from the specified age range. This careful selection and exclusion process contributes to the rigor and reliability of the study's findings, ensuring that the final dataset used for analysis meets the study's objectives and maintains high quality in the collected data.

2.5 Study time frame

The study collected questionnaire data between July 21 and September 8, 2023. This time frame provides an image of participant responses within a defined period.

2.6 Data collection tool

Instruments of study and validation indicators:

Breast Cancer Awareness Measure Questionnaire Validation indicators a modified version of the (BCAM) was used to collect data. The original BCAM questionnaire was translated into Arabic to make it suitable for the Palestinian community. A pilot study was conducted with 35 participants to assess the clarity of the questions in the Arabic version of the BCAM. This step helps ensure that the translation is accurate, the questions are easily understood by the target population, and they are culturally relevant and suitable for the community. It was found that all the questions in the study tool were understandable and appropriate for the Palestinian culture, eliminating the need for further modifications. The results of the pilot study (n=35) were not included in the main study sample, indicating that this data was used primarily for validation and refinement of the questionnaire.

Overall, this process ensures that the BCAM questionnaire is linguistically and culturally suitable for the Palestinian community. The validated tool can now be used to collect data on breast cancer awareness in the target population.

This study report focuses on the psychometric analysis of items in exemplar domains 1 and 4 (knowledge, confidence, and perceived barriers) as showed in Table 1 and Table 2. For instrument refinement, we adapted the BCAM questionnaire content that included demographic factors plus question items in 7 domains:

1. knowledge of symptoms
2. confidence, skills, and behavior about breast changes
3. anticipated delay in contacting the doctor
4. barriers to seeking medical help
5. knowledge of age-related and lifetime risk
6. knowledge of breast screening
7. knowledge of risk factors for breast cancer.

Table 1

Breast Cancer Awareness Measure Questionnaire domain 1: Knowledge of breast cancer symptoms

Knowledge of breast cancer symptoms:	Yes	No	Don't know	Refused
1. Do you think a change in the position of your nipple could be a sign of breast cancer?				
2. Do you think pulling in of your nipple could be a sign of breast cancer?				
3. Do you think pain in one of your breasts could be a sign of breast cancer?				
4. Do you think puckering or dimpling of your breast skin could be a sign of breast cancer?				
5. Do you think abnormal discharge from your nipple could be a sign of breast cancer?				
6. Do you think a lump in your breast could be a sign of breast cancer?				
7. Do you think if your breasts change skin color, this could be a sign of breast cancer?				
8. Do you think a lump under your armpit could be a sign of breast cancer?				
9. Do you think changes in the size of your breast could be signs of breast cancer?				
10. Do you think changes in the size of your nipple could be signs of breast cancer?				
11. Do you think changes in the shape of your breast could be signs of breast cancer?				

Table 2

Breast Cancer Awareness Measure Questionnaire domain 4: Barriers to screening

Barriers to screening	Yes often	Yes sometimes	No	Don't know
1. Would you be too embarrassed to go and see the doctor?				
2. Would seeing the doctor be too expensive and you don't have enough money?				
3. Would it be too difficult to arrange transport to the doctor's clinic?				
4. Would worrying about what the doctor might find stop you from going to the doctor?				
5. Would significant people in your life (e.g. husband/wife, partner, sibling, relative or friend) not approve of you seeing a doctor or nurse?				
6. Would your doctor not understand your culture?				

The Strategic Impact of Introductory Video in Questionnaire

An introductory video before the questionnaire emerges as a critical strategy, as it is recognized for its high accessibility and user-friendly attributes and serves as an effective medium for the seamless absorption of information. It engages participants more profoundly, ensuring a comprehensive understanding of the subject. Furthermore, videos uniquely stimulate emotions and establish a personal connection, prompting viewers to critically assess potential misinformation within breast cancer databases. This dynamic approach fosters interest and encourages thoughtful responses in the subsequent questionnaire.

Video Content Overview: Breast Cancer Awareness in Palestine.

The video serves as a dynamic platform intended to engage viewers and spark their interest in breast cancer awareness topics within the Palestinian context. It is designed to encourage participation rather than solely imparting educational content. Through its interactive features and focused questioning, the video aims to prompt viewers to reflect on the prevalence of breast cancer, the significance of self-examination practices, and the imperative of data collection and research initiatives in Palestine's healthcare landscape. The video seeks to amplify awareness and catalyze collective action toward addressing breast cancer challenges in the Palestinian community.

1. Google Search and Auto-Suggestions:

The video begins with a description of a Google search page featuring "breast cancer signs" next to the search bar. As the user begins typing "Does breast cancer," Google's auto-suggestion feature prompts with common questions, reflecting prevalent concerns about breast cancer.

2. Breast Self-Examination (BSE) at Home:

Following the Google search segment, practical demonstrations and guidance on performing breast self-examinations at Home are provided. Emphasis is placed on the importance of regular self-examinations for early detection and intervention.

3. Breast Cancer in All Age Groups:

The video addresses the misconception surrounding breast cancer affecting specific age groups. It explores the question of whether breast cancer affects women of all ages, aiming to emphasize the importance of awareness across all demographics.

4. Diagnostic Modalities: BC Ultrasound and BC Mammography:

Diagnostic techniques such as breast ultrasound and mammography are discussed to highlight their role in detecting breast abnormalities and facilitating early diagnosis and treatment.

5. Database on Breast Cancer in Palestine:

The video explores the availability and utilization of databases related to breast cancer in Palestine. It highlights the need for comprehensive data collection and research initiatives to inform healthcare policies and interventions.

6. Challenges in Data Accessibility:

An error page indicating the absence of a breast cancer database in Palestine underscores the challenges in accessing relevant data for research and policymaking purposes.

7. Questionnaire for Data Collection:

The video presents a sample questionnaire designed to assess women's knowledge and awareness of breast cancer in Palestine, particularly among those under the age of 40. Participants are encouraged to submit responses to contribute to ongoing data analysis and research efforts.

8. Promoting Data Enrichment:

The video emphasizes the importance of participant engagement in enriching the breast cancer database in Palestine and improving overall health outcomes.

9. Visual and Musical Approach:

The video employs a straightforward and engaging format, accompanied by appropriate music, to maintain viewer interest and highlight the importance of the subject matter.

The video concludes by reinforcing the significance of community engagement, data collection, and research initiatives in combating breast cancer in Palestine. It calls for continued efforts to raise awareness, improve access to healthcare resources, and promote data-driven interventions for better health outcomes.

Beyond its value in data collection, this method aligns with the objectives of health organizations seeking comprehensive insights into breast cancer awareness. Additionally, it resonates positively with feminist organizations addressing gender-specific health concerns, contributing to a nuanced understanding of women's health in Palestine. Including an introductory video and questionnaire in the research signifies a

cultured and progressive step. It inspires the main research idea and captures the audience's attention, effectively bridging the gap for recipients. This approach reflects a clear commitment to utilizing multimedia and modern technology in addressing health issues. It serves dual purposes: facilitating engagement and participation across various age groups and appealing to young men and women, among the most significant users of multimedia. This approach is poised to broaden the scope of the research. It extends an open invitation for institutions and individuals involved in awareness campaigns to consider this example as a reference for enhancing their mechanisms and promotional methods.

Based on the view of psychology and social science

The video starts with the Google search engine and the pink breast cancer badge, which creates a state of familiarity for the viewer that attracts his eyes to continue watching the video because he feels that it contains what he knows and is familiar with regarding tools and techniques. Then the video moves to the purpose, which is to research in general the topic of breast cancer and suggests transparency by showing several possible options for researching the topic and adding the research topic, which is "a database on breast cancer in Palestine," which sheds light on a recent topic that may attract the viewer to track this information and research. More about it, especially since it has specific terminology that stimulates the passion to understand and distinguishes it from other standard terms. Also, following the video by clicking on this topic and giving a mark as "Error" may motivate the viewer as an active subject to try the process individually. When they do not find it, questions begin about how to contribute to finding it. Which in turn is presented by the video by participating in the questionnaire.

This research tool is based on Kurt Lewin's model of change management. It may be expected to use this model for companies and institutions. However, it is possible to use it at the societal level, considering that societies and countries are self-contained systems, as this model provides a systematic framework for achieving change effectively, including motivating. Participate, raise awareness, and ensure continuous improvement. This model consists of three primary stages: ice-breaking (introduction), change, and stabilization. In the ice-breaking phase, actors are motivated to accept the idea of change and remove resistance to it. While in the change phase, necessary changes are implemented in structures and processes to achieve desired goals. Finally,

in the stabilization phase, new changes are installed, and their continuity is ensured by integrating them into the institutional culture of the system and providing ongoing support to actors.

This video tool is like an ice-breaking stage towards change, meaning that the video contributes to presenting what is familiar to members of society, as they are active subjects in the state system, and presents alongside it the new terminology with a new topic "Is there a database on breast cancer in Palestine" to create awareness of the need for this rule and preparation to bring about change in the following stages of the system. When clicking on this question and showing the defect status "No information available," this page represents the identification of the desired need and proof of its necessity, mainly since the act of resisting or denying this necessity will be reflected in the viewer's curiosity to try performing the same process on her familiar search engine. The fact that this video is attached and motivates people to fill out the questionnaire helps the viewer feel satisfied that she has taken a step towards change, which will facilitate the process of accepting it and benefiting from it in subsequent stages and even create interest to track her impact in trying to change.

Data collection tool

The data have been collected online through a prepared Platform containing a questionnaire that begins with a video presentation, Informed Consent in Arabic Since participation in this study was voluntary, and information about the objective of this study was provided to the participants. They were also informed that they could withdraw from the study anytime. It was emphasized to maintain the privacy of the study and that it is for scientific research purposes throughout the study period to the start of the study.

The five sections of the study tool were given to the participants in the Arabic version

The first section: Discuss the socio-demographic (Age Distribution, educational level, Governorates, Geographical area).

The second section measured Attitudes regarding Breast Cancer (Visiting centers for breast health, Attendance at Breast Cancer Events, engaging in self-check practices, seeking information, and learning about breast cancer)

The third Section measured Awareness about Breast Cancer Age Group.

The fourth Section evaluation of participants' awareness regarding signs associated with breast cancer.

The fifth Section focus on understanding the barriers and challenges that individuals may face when seeking medical help for breast cancer.

These sections cover a comprehensive range of aspects related to breast cancer awareness, including demographics, attitudes, awareness levels, recognition of signs, and obstacles to seeking medical assistance. The data collected from these sections can contribute to a thorough analysis of breast cancer awareness in the studied population associated with awareness of the breast cancer age group.

Data collection and variables

Variables

- Dependent variables:
 1. Age
 2. Educational level (More than elementary vs. elementary)
 3. Place of residence
 4. Attended or did not attend the screening event
 5. Having a Self-check
 6. Visiting Breast cancer center or not

Independent variables

1. Knowledge of breast cancer Symptoms.
 2. barriers to seek help.
- Internal influences:
 - a. Not within the age risk group
 - b. Unfamiliar with local breast cancer clinics
 - c. Transportation
 - d. High cost of screening
 - e. Worried about the Pain while screening

f. Embarrassing to discuss with the physician

- External influences:

- a. Social barriers

- b. Cultural barriers

2.7 Validity and Reliability of the Questionnaire

Validity and Reliability Assessment for Breast Cancer Awareness Measure (BCAM) Questionnaire:

Validity:

Subject matter experts from the Public Health Administration specialty reviewed the BCAM questionnaire to ensure comprehensive coverage of all relevant aspects of breast cancer awareness. The input from professionals in the field confirms that the questionnaire is aligned with the intended construct.

Reliability:

Test-Retest Reliability:

The BCAM questionnaire, in its Arabic version, was administered to a subset of participants at two different time points, and the correlation between the scores was calculated.

Pilot Study:

A pilot study with 35 participants assessed the clarity of the questions in the Arabic version of the BCAM questionnaire. The pilot study ensures the translated questionnaire is clear and easily understood by the target population.

Interdisciplinary Feedback:

Professionals from the Public Health Administration specialty provided feedback on the BCAM questionnaire. Interdisciplinary feedback enhances the questionnaire's validity by incorporating insights from various perspectives.

By employing these validity and reliability assessment measures, the BCAM questionnaire is positioned to provide accurate and consistent insights into breast cancer awareness within the Palestinian community.

2.8 Statistical Analysis

Descriptive tests and t-test analyses have been used for this research study. Descriptive test analysis checks the normality of collected data by calculating mean, median, and mode. For instance, the data is normally distributed if the mean, median, and mode values are similar.

A t-test compares two groups' means. Hypothesis testing is used to evaluate if a procedure or treatment affects the population of interest or if two groups are different. STATA and Excel software have been used to perform the above-mentioned statistical analyses (Hsu & Lachenbruch, 2014).

2.9 Study procedures

The study involves distributing a questionnaire on breast cancer awareness via social media platforms such as YouTube, Facebook, and Instagram. A link to the questionnaire is provided in the description or bio section of a video or reel post, which includes questioning material about Breast cancer in Palestine. Participants are pressed to click the link to access the questionnaire and provide their responses. Data collection is conducted online using Google Forms over a period of two months. This approach allows for the systematic collection of responses to the questionnaire. The collected data have been analyzed at An-Najah University; the analysis phase took two months. The subsequent analysis phase at An-Najah University involves processing and interpreting the collected data to draw meaningful conclusions regarding breast cancer awareness in the studied population.

2.10 Ethical approval

The study objectives and protocol were reviewed and approved by An-Najah National University Institutional review board (Ref: Mas. June. 2023/7).

Chapter Three

Results

3.1 Section 1: Demographic characteristics

In this section, the study outlines the demographic profile of a targeted sample comprising 406 female individuals from Palestine, all under 40. The analysis primarily focuses on several critical demographic attributes:

Age Distribution, Educational Attainment, Regional Distribution - Governorates, Geographical Segmentation.

This study segment examines these demographic attributes. The comprehensive analysis aims to provide a refined understanding of the socio-demographic landscape within this specific cohort, thereby contributing to a more vital comprehension of the studied population.

More than half of the sample (63.3%) were female between 20-30 years old, with a majority of Bachelor's educational level (74.38%). Sociodemographic data is summarized in table 3 below:

Table 3

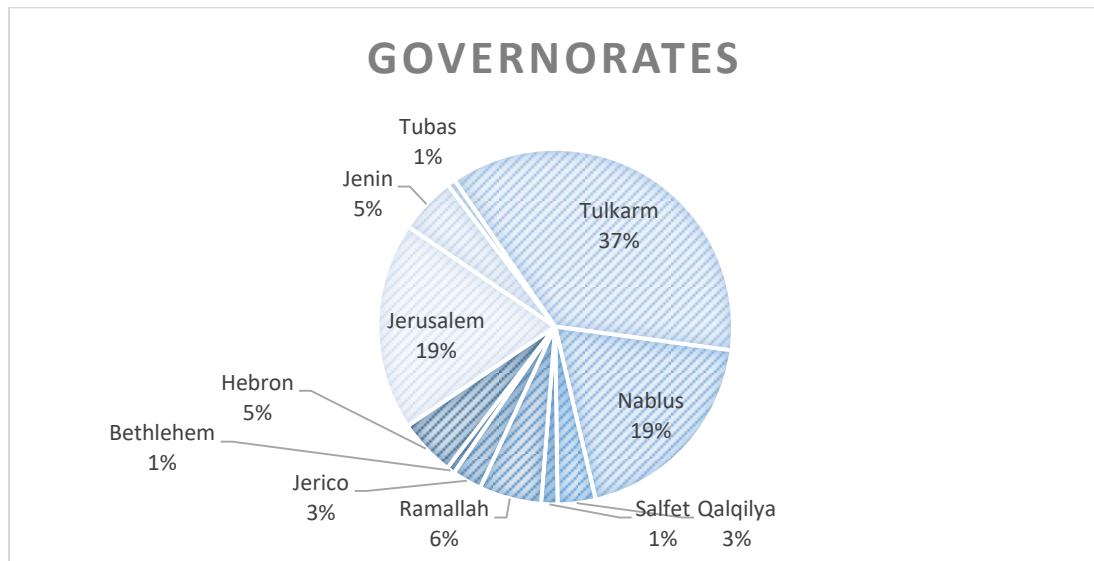
Sociodemographic characteristics. N= 406

Category	Freq.	Percent (%)
Age group		
>20	55	13.55
20-30	257	63.30
30-40	94	23.15
Educational level		
High School	50	12.32
Bachelor's	302	74.38
Master's	47	11.58
Uneducated	7	1.72

Most of our sample is centralized in the North of West Bank (Tulkarem and Nablus) and Jerusalem, as shown in Figure 2 below

Figure 2

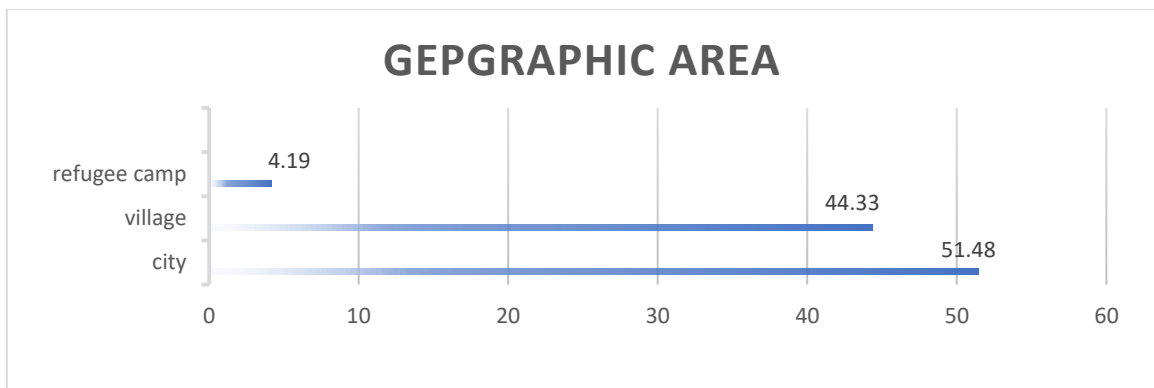
Geographical Distribution of the Sample in West Bank and Jerusalem. (406 Females)



The majority of our sample (51.48%) is based in the city, as explained in Figure 3.

Figure 3

Sample Distribution by Area sample of 406 Females



3.2 Section 2: Attitudes regarding Breast Cancer

This section of the study delineates the attitudes of females under 40 from Palestine toward breast cancer. The analysis specifically centers on critical attitudes encompassing Visiting centers for breast health, Attendance at Breast Cancer Events, engaging in self-check practices, seeking information, and learning about breast cancer.

This study segment examines these attitudes to offer a fine understanding of the landscape of attitudes toward breast cancer within this particular cohort. The goal is to contribute to a more comprehensive comprehension of the studied population's perspectives and behaviors concerning breast cancer awareness and engagement.

Most of our sample (91.38%) did not visit a Breast cancer centres, only (26.6%) attended a Breast cancer event, (76.85%) never did a breast check and only (41.63%) learned about BC. A Total of 406 Females as observed in Table 4:

Table 4

Attitudes Regarding Breast Cancer. N= 406 females

Category		N	%
Centre visit	Never	371	91.38
	At least once	35	8.62
Breast cancer Event	Never	298	73.40
	at least once	108	26.60
Self-check	Never	312	76.85
	At least once	94	23.15
Learn about breast cancer	Never Learn	219	53.94
	Learned	169	41.63
	Maybe	18	4.43

3.3 Section 3: Awareness about Breast Cancer age group

The statistics were noteworthy in many variations in a sample of females 406, as the area, Centers Visit, self-check, and attending a breast cancer event stated that breast cancer may occur in women in their 20s or 30s.

- The area was significantly associated with awareness-targeted age groups, where refugee camps showed the highest result, with (17.65%).
- According to Centra visit, Females who visited Breast cancer centers at least once were significantly associated with the awareness targeted group. With percentage of (11.43%).

- Meanwhile, Females who did a Breast self-check were significantly associated with awareness about the Breast cancer age group. With percentage of 8.51%
- Women who attended a Breast cancer event were significantly associated with the awareness-targeted age group. With percentage of 11.11%.

Table 5

Women who declared that breast cancer may occur in women in their 20s or 30s. N= 406

Category		Yes		No		p-value
Age group	>20	4	7.27%	51	92.73%	0.523
	20s	12	4.67%	245	95.33%	
	30s	3	3.19%	91	96.51%	
Educational level	High school	1	2%	49	98%	0.680
	Bachelor's	15	4.97%	287	95%	
	Master's	3	6.38%	44	93.62%	
	Uneducated	0	0	7	100%	
Area	City	11	5.26%	198	94.78%	0.018*
	Village	5	2.78%	175	97.22%	
	Refugee camp	3	17.65%	14	82.35%	
Centre Visit	At least once	4	11.43%	31	88.57%	0.048*
	Never	15	4.04%	356	95.96%	
Self-check	At least once	8	8.51%	86	91.49%	0.045*
	Never	11	3.53%	301	96.47%	
Breast cancer event	Attended	12	11.11%	96	88.89%	>0.001*
	Never	7	2.35%	291	97.65%	

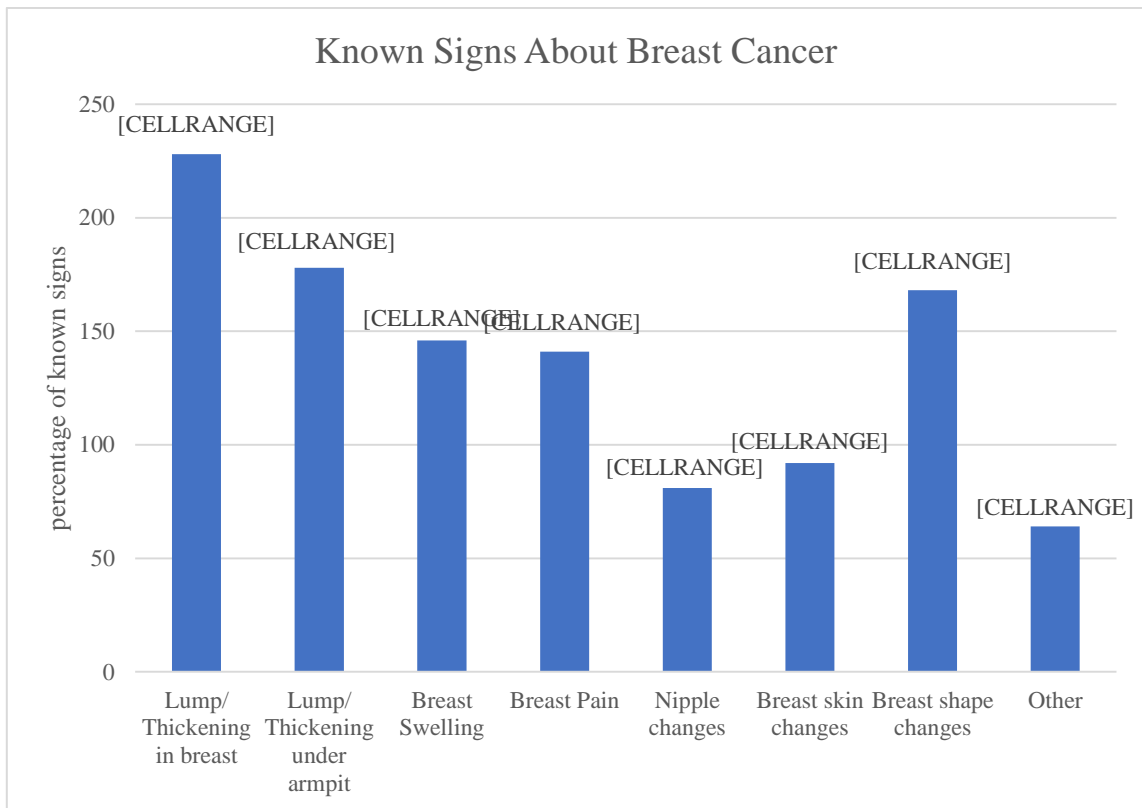
* Significant value

3.4 Section 4: Awareness of signs related to breast cancer

The figure below shows that the most wearing signs for females below 40 in Palestine in Our sample of 406 females were lumped or thickening in the breasts and armpits (56.2%),(43.8%) continuously women have chosen this sign, and breast shape changes (41.4%) women have consider it as a warning sign of Breast Cancer, Breast Swelling and Breast pain (36%),(34.7%) sequentially, and the least wearing signs were Nipple changes (20%) and Breast skin changes (22.7%).

Figure 4

Dominant Awareness of Breast Cancer-Related Signs in Females Under 40 in Palestine.
N= 406

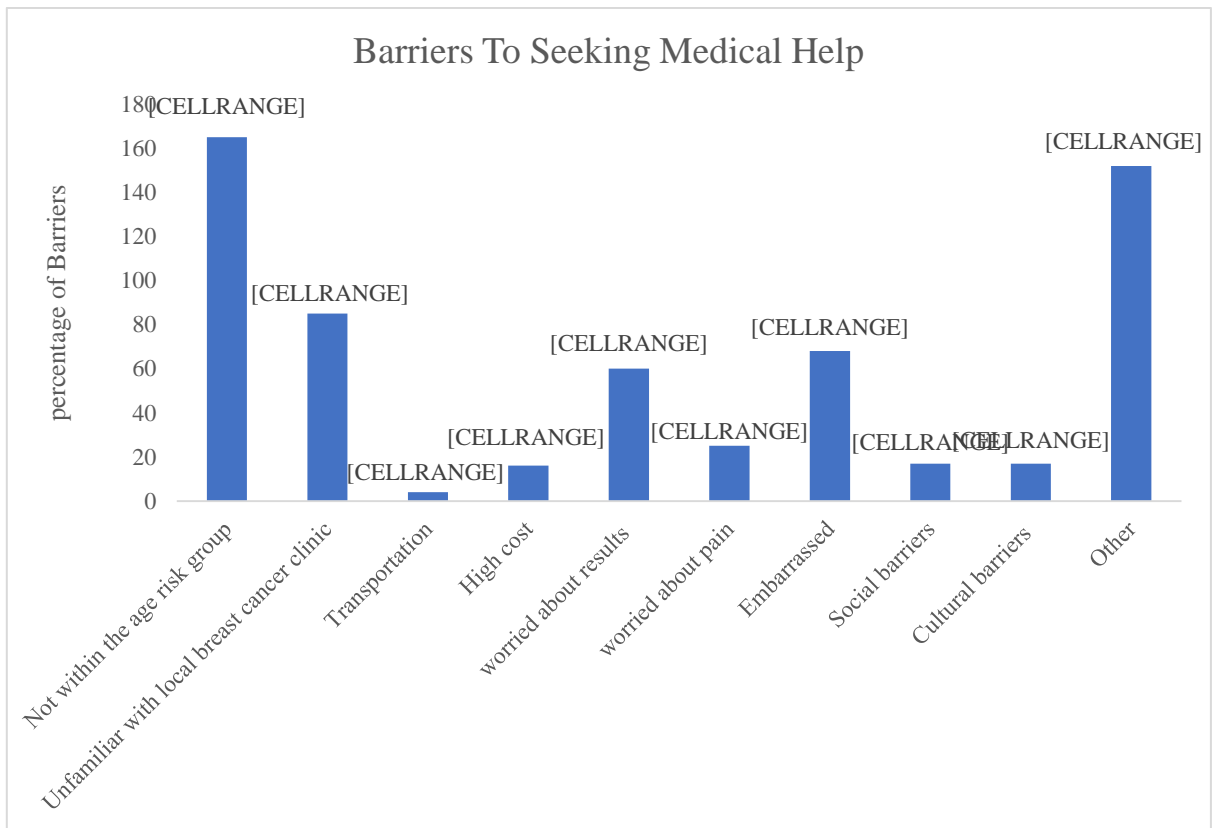


3.5 Section 5: Obstacles to Seeking Medical Assistance

The figure below displays the findings from a sample of 406 females below 40 regarding the primary reasons for not seeking medical help in the context of breast cancer. The most commonly cited barriers include a perception of not falling within the age group at risk for breast cancer (40.6%), women sign it as one of the barriers, a lack of awareness about the existence of breast cancer clinics in their area (20.9%) women mention it as a barrier, feelings of embarrassment when discussing the issue with healthcare providers get a (16.7%), and worried about the results (14.8%). Meanwhile, worrying about pain (6.2%), cultural and social barriers (4.2%), high cost (3.9%), and transportation (1%) were the minor barriers for this sample that prevented them from seeking medical help.

Figure 5

Primary Barriers to Seeking Medical Help for Breast Cancer in Females Under 40. (Sample of 406 Females)



After examining the barriers that prevent women from seeking medical help in the context of breast cancer, it is critical to explore deeper into these barriers across different demographics, such as geographic area, educational level, and age. This allows us to gain a comprehensive understanding of the barriers that women face when accessing healthcare services.

3.5.1 Obstacles to Seeking Medical Assistance according to age group

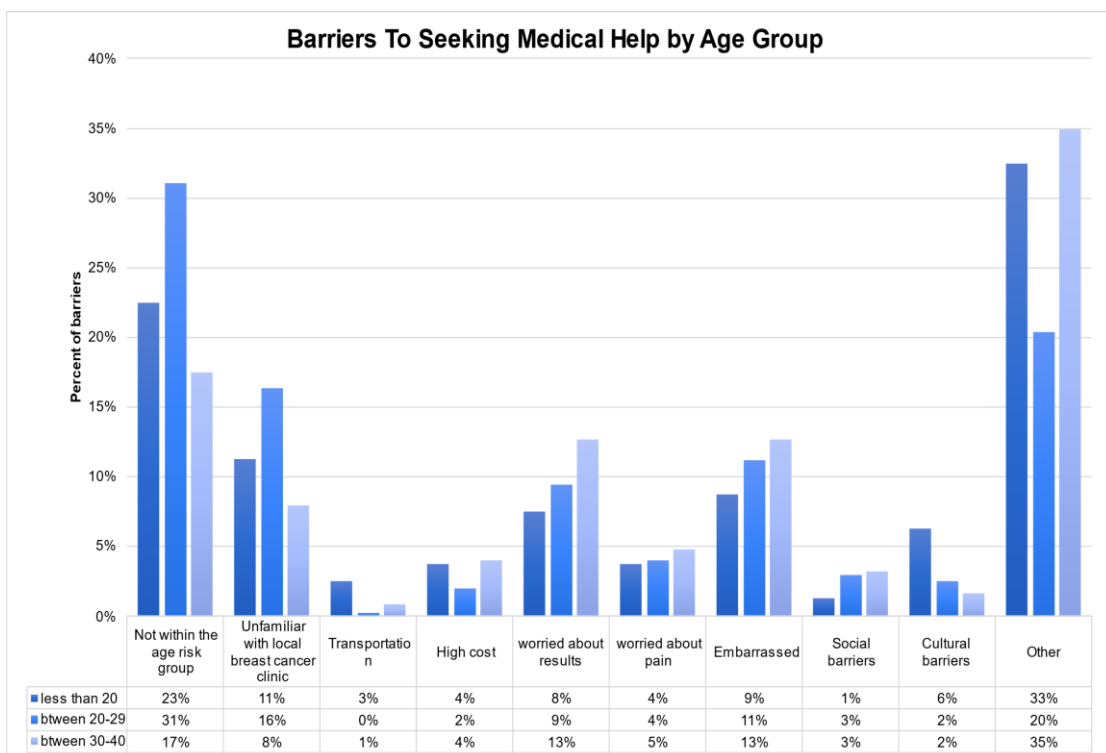
Our sample population's barriers to accessing medical assistance varied significantly by age group. The percentage represents the proportion of barriers within each age group compared to the overall barriers faced by females. Among females aged between 20-29, not being within the age risk group was the most significant barrier, constituting 31% of the total barriers. This challenge was also notable for younger females under 20 years old, accounting for 23% of the overall barriers, and females aged between 30-40, comprising 17% of the total barriers. Additionally, 16% of females aged between 20-29

reported unfamiliarity with local breast cancer clinics as a barrier, whereas it was 11% for those under 20 years old and only 8% for females aged between 20-30. Transportation emerged as a notable barrier for young adult women, particularly those under 20. Worrying about the result was another significant concern, especially among females aged between 30-40, with their barriers representing 13% of the overall barriers. In comparison, it was 9% for those aged between 20-29 and 8% for those under 20. Worries about pain were consistently reported across all age groups as a barrier to seeking medical assistance for breast cancer.

Embarrassment was most prevalent among women aged between 30-40, while social barriers were consistent across the 20-29 and 30-40 age groups. Cultural barriers were identified as a challenge, particularly for women under 20, with 6% of their barriers being cultural obstacles. as shown in figure 6.

Figure 6

Primary Barriers to Seeking Medical Help for Breast Cancer in Females Under 40 by Age Group. (Sample of 406 Females)

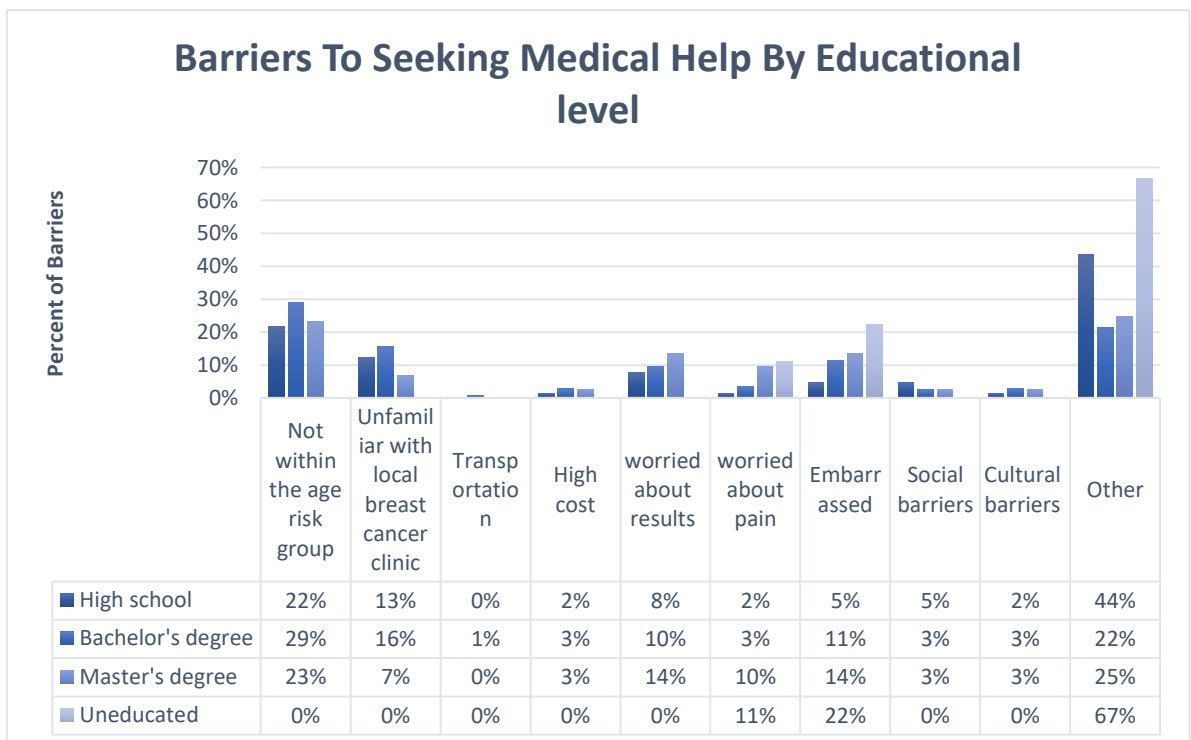


3.5.2 Obstacles to Seeking Medical Assistance according to educational level.

Our analysis observed significant variations in women's barriers to accessing medical assistance based on their educational level. Among females with a Bachelor's degree, the most significant barrier was not being within the age risk group, accounting for 29% of the total barriers. This challenge was also notable for those with a high school education and a Master's degree, comprising 22% and 23% of the overall barriers, respectively. Furthermore, 16% of the total barriers that females with a Bachelor's degree face are unfamiliarity with local breast cancer clinics, compared to 13% for those with a high school education and only 7% for those with a Master's degree. Worries about the results were notable for barriers at the Master's degree level, comprising 14%, while 10% for Bachelor's degree level barriers. Concerns about pain were a significant barrier, particularly among uneducated females, representing 11% of the overall barriers. Embarrassment was most prevalent among uneducated women, with 22% citing it as a barrier, while social barriers remained consistent across different educational levels. As shown in figure 7:

Figure 7

Primary Barriers to Seeking Medical Help for Breast Cancer in Females Under 40 by educational level. (Sample of 406 Females)



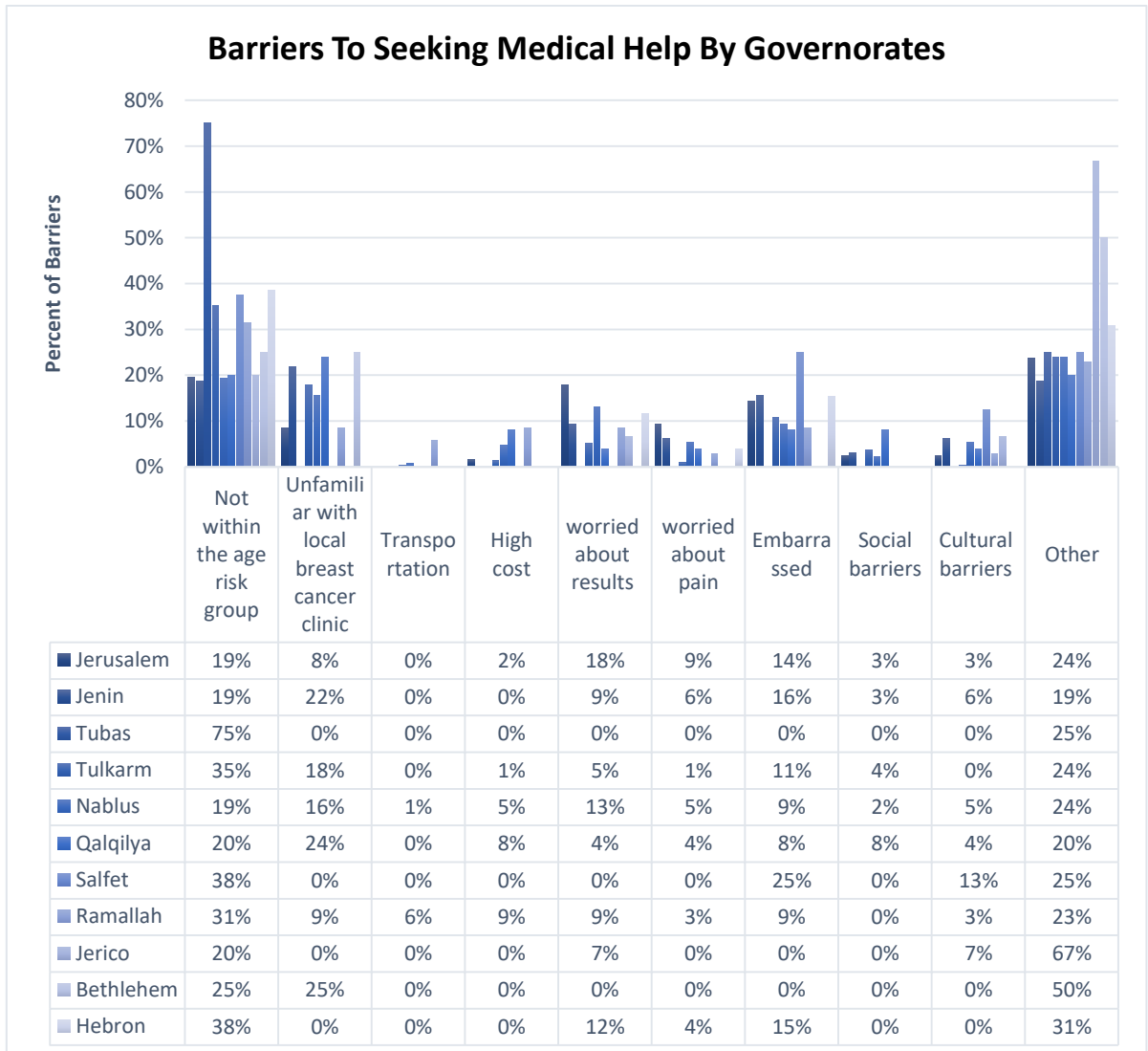
3.5.3 Obstacles to Seeking Medical Assistance according to Geographical Distribution

In Jerusalem, the most significant barrier for females seeking medical help was not within the age risk group, accounting for 19% of the barrier's percent. This was followed by 18% worried about the results and 14% feeling embarrassed. In Jenin, a notable barrier was unfamiliarity with the local breast clinic, with 6% of the barriers being cultural barriers. In Tubas, 75% were not within the age risk group. Tulkarem faced issues, with 18% unfamiliar with the local breast cancer center, 11% feeling embarrassed, and 4% facing social barriers. In Nablus, 16% were unfamiliar with the local breast cancer center, 13% worried about the results, 9% felt embarrassed, and 5% faced cultural barriers. Qalqilya showed that 24% were not aware of the local breast cancer center, and 8% faced social barriers. In Salfit, 38% were not within the age risk group, and 25% felt embarrassed. Ramallah had 31% not within the age risk group, and 9% faced high costs. Jericho encountered 7% facing cultural barriers. Bethlehem saw 25% not within the age risk group and 25% unfamiliar with the local breast cancer clinic. Hebron faced 38% not within the age risk group, 15% feeling embarrassed, and 12% worried about the results. as shown in Figure 8 Bellow and detailed in the data table.

These percentages indicate the various barriers to seeking medical help across different cities in Palestine, particularly in the West Bank. They do not represent the percentage of females sampled.

Figure 8

Primary Barriers to Seeking Medical Help for Breast Cancer in Females Under 40 by geographic Distribution. (Sample of 406 Females)

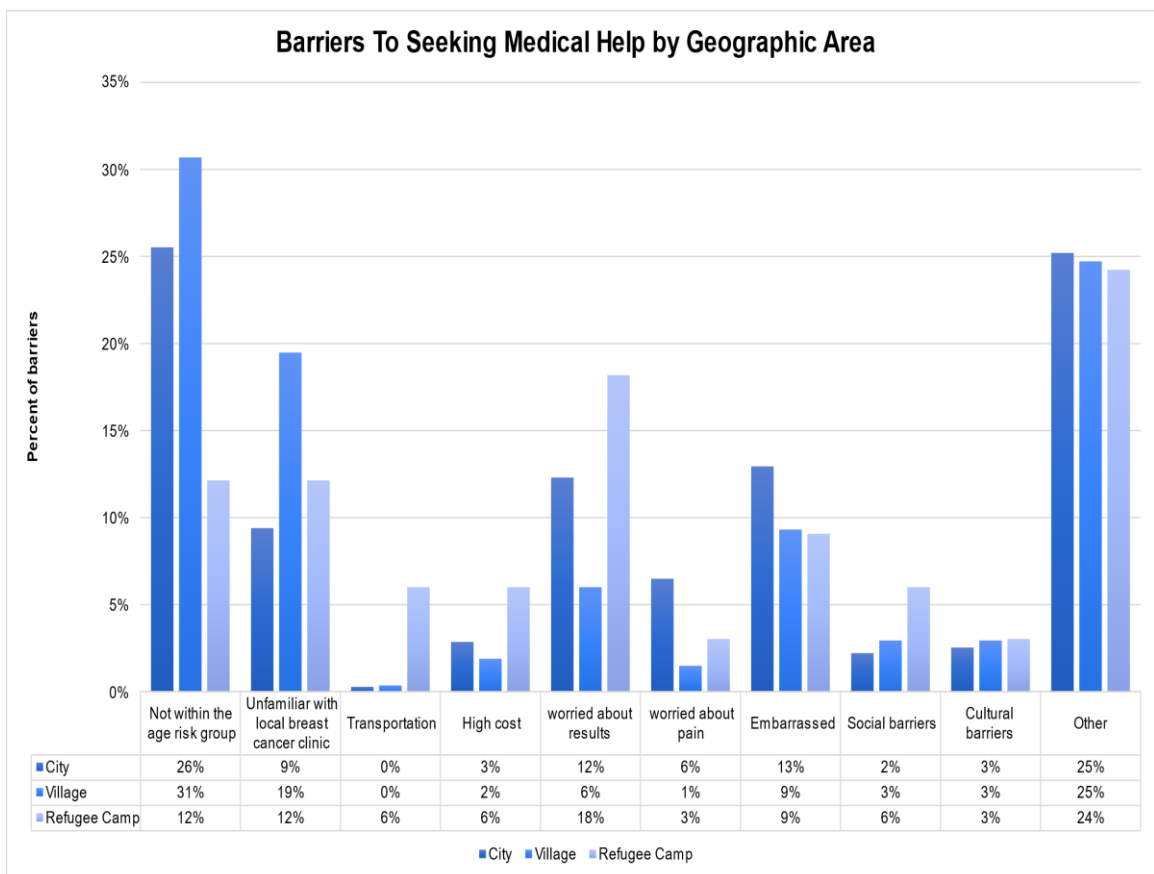


3.5.4 Obstacles to Seeking Medical Assistance according to geographic areas:

Our sample population's barriers to accessing medical assistance varied significantly across different urban, rural, and refugee camp settings. Specifically, 26% of female barriers in urban areas faced challenges due to not falling within the age risk group. In contrast, this figure rose to 31% for women residing in villages and 12% for those in refugee camps. Additionally, 9% of urban female barriers reported unfamiliarity with local breast cancer clinics, compared to 19% in villages and 12% in refugee camps. Transportation and high costs emerged as significant obstacles, particularly 6% of female barriers in refugee camps. Furthermore, 13% of urban women barrier's cited embarrassment as a barrier, while cultural barriers were consistently reported across all regions of Palestine at the same percentage. as shown in figure 9.

Figure 9

Primary Barriers to Seeking Medical Help for Breast Cancer in Females Under 40 by geographic area. (Sample of 406 Females)



Chapter Four

Discussions and Conclusions

4.1 Discussions

4.1.1 Awareness

Awareness of breast cancer symptoms: a study in Palestine (Elshami et al., 2022) recruited adult women from hospitals, primary healthcare centers, and public spaces across 11 governorates. The results of the study revealed that the most commonly recognized breast cancer symptom was the presence of a 'lump or thickening in the breast' (92.9%). Our study shows a (56.15%), followed by a 'lump or thickening under the armpit' (83.6%). In our data, we get (43.84%). However, the symptoms that the participants least frequently identified were 'pulling in of the nipple' (50.7%) and 'change in the position of the nipple' (26%). At the same time, we got a (22.66%) in our study. The overall result concludes that younger women are less likely to be aware of BC symptoms than adult women.

4.1.2 Early detection

As the study of Abuidhail et al., (2021) said, older women have more frequent healthcare visits due to other health concerns, and Our study showed that only 8.62% of females below the age of 40 have visited Breast cancer centres and older women receive more education about breast cancer screening compared to their younger counterparts. Our study showed that 41.63% of younger women have learned about breast cancer.

Meanwhile, a study in Palestine Elshami et al., (2022), said screening mammograms at the age of 40 is free or at a low cost; the cost was a barrier for 3.9% of our sample below the age of 40 to take a screening test or seek medical help.

The American Cancer Society's major guidelines do not recommend routine screening for young women because of the risks of false positives; for our sample, 76.85% have never accomplished a breast self-check.

Defiant to the American Cancer Society's significant guidelines, many health professionals and advocacy groups emphasize the importance of routine breast cancer screening for women under the age of 40. Early detection of breast cancer in younger

women is crucial as it can lead to timely intervention, improved treatment outcomes, and potentially save lives. While the risks of false positives and additional procedures exist, advancements in screening technologies and diagnostic tools have significantly improved accuracy, minimizing unnecessary anxiety and interventions. Routine screening for women under 40 is essential as it allows healthcare providers to identify abnormalities, including aggressive forms of breast cancer, at an earlier and more treatable stage. Additionally, awareness of one's breast health and proactive engagement in screenings empower women to take charge of their well-being, fostering a culture of preventive healthcare. It is imperative to balance potential risks and the life-saving benefits of early detection, emphasizing the significance of tailored healthcare approaches considering age-specific risk factors.

Even though there are 13 Screening facilities on the West Bank Halahleh & Gale, (2018), 20.9% of our sample were unfamiliar with local breast cancer clinics in their regions; this emphasizes the importance of these centers expanding the target group to reach the most significant number of women of all ages.

4.2 Strength of the study

This study stands out as the first of its kind, exploring breast cancer awareness among women under 40 in Palestine. Highlighting the gap in breast cancer awareness and screening events sheds light on an important yet neglected area. Using a media intervention—a video questionnaire—offered an engaging way to gather data, allowing for more comprehensive insights into participants' knowledge.

In the conclusion of the research, the strength of the study lies in its pioneering exploration of breast cancer awareness among women under 40 in Palestine. This research has broken new ground by delving into a demographic often overlooked in breast cancer studies, shedding light on an area of vital importance that has previously been neglected. By focusing on this specific demographic, the study has uncovered significant gaps in breast cancer awareness and screening events, revealing a critical need for targeted interventions and educational campaigns tailored to younger women in Palestine.

One notable aspect of the study's strength is its innovative use of a media intervention in the form of a video questionnaire. This approach facilitated data collection and offered an interactive and engaging platform for participants to express their knowledge and perceptions regarding breast cancer. By leveraging multimedia technology, the study captured a more nuanced understanding of participants' awareness levels, attitudes, and barriers to screening.

Furthermore, including diverse participants from various socio-economic backgrounds and geographic locations enhances the study's credibility and generalizability of findings. By ensuring representation across different sectors of Palestinian society, the research provides a comprehensive overview of the challenges and opportunities in addressing breast cancer awareness among young women.

Moreover, the study's contribution extends beyond academia, offering valuable insights for healthcare practitioners, policymakers, and advocacy groups involved in cancer prevention and early detection efforts in Palestine. By identifying critical areas for intervention and raising awareness of the importance of early detection, the study paves the way for collaborative initiatives aimed at improving breast cancer outcomes among young Palestinian women.

In conclusion, this study's strength lies in its groundbreaking exploration of breast cancer awareness among women under 40 in Palestine and its innovative methodology, comprehensive approach, and potential for real-world impact. By addressing a significant gap in research and highlighting the urgent need for targeted interventions, this study catalyzes advancing breast cancer awareness and prevention efforts in Palestine.

4.3 Limitations of the Study

The primary limitation of this study is the relatively small sample size used for data collection; the restricted sample may limit the generalizability of the findings to a broader population. Secondly, the study focused exclusively on females, omitting the valuable perspectives of males in understanding breast cancer. Considering their potential roles as supporters within families and communities, the exclusion of males limits the comprehensiveness of the research. Additionally, the decision to exclude individuals above the age of 40 assumed they were a target group for breast cancer

events and screening programs. This exclusion may overlook the unique experiences and needs of this age group, limiting the applicability of the findings to a broader demographic. Finally, limitation of Previous Studies on the Target Age group, notable limitation of this study is the scarcity of previous research explicitly focusing on breast cancer awareness, knowledge, and early detection among young women below 40, particularly in the context of Palestine.

Some possible research limitations using an online questionnaire:

1. **Limited Reach:** Online questionnaires may only reach some population segments, as access to the Internet and digital literacy levels vary among different demographic groups.
2. **Technical Issues:** Technical glitches or compatibility issues with different devices or browsers can affect the respondent's ability to complete the questionnaire, leading to data loss or incomplete responses.
3. **Limited Ability to Clarify Questions:** Unlike in-person interviews, respondents may be unable to seek clarification on unclear or unclear questions, potentially leading to misinterpretation and inaccurate responses.

To overcome these limitations and further enrich the understanding of breast cancer awareness and early detection, future research should consider the following: diversifying the sample size and demographic representation, including males to provide a holistic perspective on breast cancer awareness. Recognizing these limitations will contribute to the ongoing improvement and refinement of research in the field.

4.4 Conclusions

The key finding in our study of a group of females below 40 years old, most of them between 20 and 30 years old, with bachelor's degrees educational level, from Palestine distributed in the West Bank, most from Nablus, Tulkarem, and Jerusalem. According to their Attitudes regarding Breast Cancer, most of our female sample did not visit Breast cancer centers, did not attend a Breast cancer event, never did a breast check, and only a few of the selection learned about Breast cancer. Regarding awareness about the Breast Cancer age group, the statistics were noteworthy in many variations as the area, Centers Visit, self-check, and attending a breast cancer event stated that breast cancer might occur in women in their 20s or 30s. Concerning awareness of signs related to

breast cancer, most wearing signs were lumped or thickening in the breasts and armpits, and breast shape changes. About obstacles to seeking medical assistance: The main reasons for not seeking medical help are a perception of not being within the age group at risk for breast cancer, a lack of awareness about the existence of breast cancer clinics in their area, and feelings of embarrassment when discussing the issue with healthcare providers. More specifically, our analysis shows a diverse collection of barriers hindering women's access to medical assistance for breast cancer across urban, rural, and refugee camp settings in Palestine. The findings underscore significant differences, with age restrictions and unfamiliarity with local clinics posing notable challenges, particularly in rural areas and refugee camps. Moreover, transportation issues and high costs emerged as significant obstacles, significantly impacting women in refugee camps. Embarrassment and cultural barriers were prevalent across all regions, indicating a need for culturally sensitive healthcare approaches. Also, age significantly influenced the types and majority of barriers women face. Younger females, particularly those aged between 20-29, faced different challenges related to not being within the age risk group and unfamiliarity with local breast cancer clinics. In contrast, older women, especially those aged between 30-40, expressed concerns such as worrying about the results and experiencing embarrassment. Educational achievement played a role in shaping the types and majority of barriers faced. Women with Bachelor's degrees experienced challenges related to age restrictions and unfamiliarity with local breast cancer clinics. Concerns regarding results were notably noticeable among women with Master's degrees. Conversely, uneducated women faced specific barriers, such as worries about pain and embarrassment.

Our research underscores the critical need for targeted interventions and strategic policy measures to attack the obstacles hindering access to breast cancer screening and treatment services in Palestine. These initiatives must be tailored to the specific needs and circumstances of diverse demographic groups within the population. Only through such tailored approaches can we guarantee fair and inclusive access to essential breast cancer healthcare services for all women, irrespective of their socio-economic background, geographic location, or cultural factors.

Our analysis of barriers to seeking medical help for breast cancer across various cities in Palestine, particularly in the West Bank, reveals significant disparities in access to healthcare services. Jerusalem, Jenin, and Tubas show notable challenges, with a significant percentage of barriers that females are not within the age risk group. Additionally, issues such as unfamiliarity with local breast clinics, worries about diagnostic results, and feelings of embarrassment are prevalent in several cities, highlighting the importance of addressing social and cultural barriers to healthcare-seeking behavior.

Tulkarem, Nablus, Qalqilya, Salfit, Ramallah, Jericho, Bethlehem, and Hebron also face unique challenges, ranging from a lack of awareness about breast cancer centers to financial constraints and cultural barriers. These findings underscore the necessity of implementing comprehensive and tailored strategies to enhance breast cancer awareness, screening, and treatment initiatives across the region.

Moving forward, policymakers, healthcare professionals, and community stakeholders must collaborate to develop and implement targeted interventions that address the specific barriers identified in each locality.

In addition to the identified barriers, it is essential to admit the presence of other potential barriers to seeking medical help for breast cancer that were not captured in this study. Therefore, it is recommended that further research be conducted to investigate these potential barriers comprehensively. By gaining a deeper understanding of these additional factors, we can develop more effective interventions and policies to address the multifaceted challenges faced by women seeking breast cancer care in Palestine.

To overcome these difficulties, combining approaches that directly deal with the issues at hand is necessary. Significantly enhances breast cancer awareness and facilitate early detection efforts. This proactive approach empowers women to take charge of their health and spreads the foundation for timely interventions that can save countless lives. Finally, collective efforts in overcoming these barriers will contribute to a healthier and more resilient society where every woman has the opportunity to receive the care and support she needs to combat breast cancer effectively.

Implications:

1. Insufficient Focus on young women in Breast Cancer Awareness Projects:

The findings align with the alternative hypothesis, suggesting that breast cancer awareness campaigns in Palestine may not sufficiently target young women under 40.

2. Barriers to Seeking Medical Help:

The study confirms the alternative hypothesis that barriers significantly affect young women under 40 in Palestine, hindering their access to timely healthcare services for breast cancer detection.

4.5 Recommendations

This research proposes innovative ideas that hold significant potential for contributing to public health. To maximize the impact of this research, I recommend the following enhancements:

1. Database Development:

a. Holistic Data Collection:

- Establish a comprehensive online database aggregating information from various sources, including associations, doctors, campaigns, and screening centers.
- Ensure the database is regularly updated with the latest information on breast cancer, covering prevention, early detection, treatment options, and support resources.

b. Collaborative Platform:

- Foster collaboration with relevant stakeholders to encourage their active participation in contributing to the database.
- Implement a user-friendly platform that allows continuous contributions and updates from healthcare professionals, associations, and other contributors.

2. Expansion of Target Groups:

a. Breast Cancer Events:

- Modify BC events outreach strategy to expand the target group of females attending breast cancer events to include women under the age of 40.
- Tailor event content to address the unique concerns and questions that younger women may have regarding breast cancer.

b. Screening Program:

- Advocate for the expansion of screening programs to include women under the age of 40 at affordable costs.
- Collaborate with healthcare providers and policymakers to implement age-appropriate screening protocols for early detection in younger women.

3. Impact Study of Educational Videos:

a. Video Production:

- Develop educational videos specifically targeting women under the age of 40, addressing their unique concerns and highlighting the importance of breast cancer awareness and early detection in this demographic.

b. Assessment Metrics:

- Incorporate a complete assessment framework to measure the impact of these videos on knowledge, awareness, and behavioral changes related to breast cancer among the targeted age group.

c. Qualitative Interviews:

- Conduct qualitative interviews with a sample from the target group to gather in-depth insights into the emotional and psychological impact of the videos.

4. Policy Advocacy for Mandatory Breast Self-Examination Education:

- It is recommended to advocate for developing and implementing a policy in collaboration with the Ministry of Health to make BSE education mandatory.
- Collaborate with the university and the Ministry of Health to establish BSE education as a compulsory activity within university clinics.

By implementing these recommendations, this thesis will contribute to academic knowledge and offer practical insights that can positively influence breast cancer awareness and early detection efforts among young women in Palestine.

List of Abbreviations

Abbreviation	Meaning
AYA	Adolescent and Young Adult
BC	Breast Cancer
BCAM	Breast Cancer Awareness Measure
BSE	Breast Self-Examination
BMI	Body Mass Index
BCAM	Breast Cancer Awareness Month
BCO	Breast Cancer Organization's
DALYs	Disability adjusted life years
GBD	Global Burden of Diseases
IARC	International Agency for Research on Cancer
IRB	Institutional Review Board
NCI	National Cancer Institute
RSV	Relative Search Volume
SDI	Socio demographic Index
WHO	World Health Organization
YA	young adult

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Appendices

Appendix A

Questioner

الاستبيان باللغة العربية

استبيان قياس الوعي حول سرطان الثدي

القسم الأول: المعلومات الديموغرافية

1. الجنس
2. الفئة العمرية
3. المستوى التعليمي
4. مكان الإقامة
5. المحافظة

القسم الثاني: المعرفة بأعراض سرطان الثدي

حدد العلامات المعروفة لديك المرتبطة بسرطان الثدي

- ظهور تكتل أو كتلة لحمية في الثدي
 - ظهور تكتل تحت الإبط
 - حدوث انتفاخ أو تورم في كل الثدي أوجزء منه
 - حدوث تهيج بالبشرة
 - حدوث ألم بالثدي أو الحلمات أو تحت الإبط.
 - انكماش وارتداد الحلمات للداخل
 - حدوث احمرار أو جفاف أو سماكة في الحلمة أو بشرة الثدي
 - تغير في حجم الصدر أو الحلمة.
1. بوجهة نظرك من هي الفئة العمرية الأكثر عرضة للإصابة بسرطان الثدي
 - النساء في عمر 20
 - النساء في عمر 30
 - النساء في عمر ال40
 - النساء في عمر ال50 وما فوق

القسم الثالث: التوجه لمراكز الفحص الطبي المختصة بالكشف عن سرطان الثدي

هل سبق وتوجهت إلى أحد مراكز الفحص؟ نعم أو لا

حدد المعوقات أو أسباب عدم الرغبة في التوجه إلى مراكز الفحص

• لست ضمن الفئة العمرية المعرضة للإصابة بسرطان الثدي

• لا أعلم بوجود مراكز فحص لسرطان الثدي في منطقتي

• تكلفة الوصول إلى المراكز الطبية للفحص

• التكلفة المادية للفحص

• الخوف من نتائج الفحوصات

• الخوف من الشعور بالألم أثناء الفحص

• عوائق اجتماعية من أحد أطراف الأسرة

• عوائق ثقافية

Google Forms - استبيان قياس الوعي حول سرطان الثدي

Appendix B

IRB Approval Letter

An-Najah National
University
Faculty of Medicine &
Health Sciences
Institutional Review Board



جامعة النجاح الوطنية
كلية الطب وعلوم الصحة
لجنة أخلاقيات البحث العلمي

Ref: Mas. June. 2023/7

IRB Approval Letter

Title of Research:

Media Impact on Breast Cancer Awareness, Early Detection, and Screening for Women Under the Age of 40 in Palestine

Submitted by:

Yassmin Aladien

Supervisor:

Abdulsalam khayyat

Approved:

6th June. 2023

Your Study Title "*Media Impact on Breast Cancer Awareness, Early Detection, and Screening for Women Under the Age of 40 in Palestine.*" reviewed by An-Najah National University IRB committee and was approved on 6th, June . 2023


Hasan Fitian, MD

IRB Committee Chairman



Nablus - P.O Box :7 or 707 | Tel (970) (09) 2342902/4/7/8/14 | Faximile (970) (09) 2342910 | E-mail : IRB@najah.edu



جامعة النجاح الوطنية
كلية الدراسات العليا

تقييم معرفة ووعي النساء حول سرطان الثدي الكشف المبكر
والفحص لدى النساء اللواتي تقل أعمارهن عن
40 سنة في فلسطين

إعداد

ياسمين علاء الدين

إشراف

د. عبد السلام الخياط

قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في إدارة الصحة العامة، من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين.

2024

تقييم معرفة ووعي النساء حول سرطان الثدي الكشف المبكر والفحص لدى النساء اللواتي تقل أعمارهن عن 40 سنة في فلسطين

إعداد

ياسمين علاء الدين

إشراف

د. عبد السلام الخياط

المُلخَص

مقدمة: يعكس معدل الإصابة والوفيات بسرطان الثدي بين النساء الفلسطينيات الحاجة الملحة للتدخل المستهدف لمجموعة واسعة من الفئات العمرية لتعزيز الوعي والكشف المبكر لتحسين النتائج. أظهرت الأبحاث الدور الأساسي لبرامج الفحص في تقليل معدل وفيات الثدي؛ الاكتشاف المبكر له دور فعال في تحديد سرطان الثدي في مرحلته الأولية، مما يسهل التدخل في الوقت المناسب لتعزيز معدلات البقاء على قيد الحياة. تهدف هذه الدراسة إلى تقييم مستوى الوعي وممارسات الفحص المبكر المتعلقة بسرطان الثدي بين الشباب في فلسطين.

المنهجية: هي عبارة عن دراسة مقطعية، تم توزيع استبيانات وتم جمع البيانات من 406 إناث دون سن 40 سنة من القدس والضفة الغربية.

التحليل: أظهر تحليلنا للاستجابة عدم التركيز الكافي على الشباب في مشاريع التوعية بسرطان الثدي كما هو موضح في مواقفهم فيما يتعلق بسرطان الثدي، حيث لم تقم 91.38% منهن بزيارة مركز سرطان الثدي، و76.85% منهن لم يقمن بإجراء فحص ذاتي، من منظور إنهم ليسوا ضمن الفئة العمرية المستهدفة بسرطان الثدي لأنه كان أيضاً العائق الرئيسي لعدم طلب المساعدة الطبية.

الاستنتاج: نستنتج أن الشباب لديهم وعي أقل بأعراض سرطان الثدي، وأن على عيادات سرطان الثدي المحلية توسيع الفئة المستهدفة لديها للوصول إلى أكبر عدد من النساء في جميع الأعمار. التوصيات: يقترح هذا البحث أفكارًا مبتكرة تحمل إمكانات كبيرة للمساهمة في الصحة العامة. لتعظيم تأثير هذا البحث، نوصي بإنشاء قاعدة بيانات شاملة عبر الإنترنت تجمع المعلومات من مصادر مختلفة، بما في ذلك الجمعيات والأطباء والحملات ومراكز الفحص؛ ضمان تحديث قاعدة البيانات بانتظام بأحدث المعلومات حول سرطان الثدي، بما في ذلك الوقاية والكشف المبكر وخيارات العلاج وموارد الدعم.

الكلمات المفتاحية: سرطان الثدي، الوعي، الفحص المبكر، الكشف المبكر، النساء دون سن 40 عام، فلسطين.