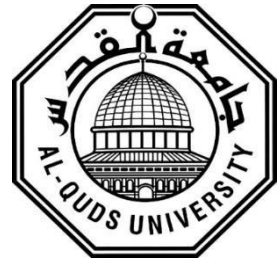


Deanship of Graduate Studies

Al-Quds University



**The Relationship Between Health-Related Quality of Life
and Early Diagnosis of Breast Cancer Among Palestinian
Women in the Northern West Bank: A Cross-Sectional
Study**

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M.Sc. Thesis

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The Relationship Between Health-Related Quality of Life and Early Diagnosis of BC Among Palestinian Women in the Northern West Bank: A Cross-Sectional Study

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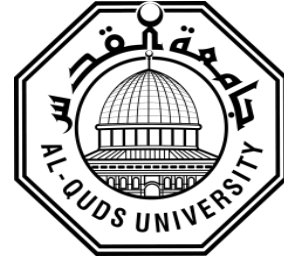
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Thesis Approval

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Dedication

First of all, I thank God for guiding me and strengthening me to continue my higher education and complete it. I would like to thank my first supporters in life, my dear parents, who supported and continue to support me, particularly my dad's soul. My husband, my family-in-law, and my dear friends, thank you all for your constant love and for always believing in me. Particularly, I deeply thank the brave Palestinian women who are fighting BC or who have survived it. My respected supervisor, Dr. Salam Al-Khatib, thank you for encouraging me and shaping my research experience through the thesis way.

Shahd Fahmi Ibrahim Akkawi

Declaration

I certify that this thesis which is submitted for the degree of master is the result of my research, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Name: Shahd Fahmi Ibrahim Akkawi

Signature: 

Date: 3 / 1 / 2026

Acknowledgement:

I want to express my sincere gratitude to everyone who helped me finish my thesis.

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To the Courageous Palestinian Women Participants: I express my heartfelt gratitude to every woman who took the time to participate in this research.

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Abstract

Introduction: Breast cancer is a global health issue, and each country around the world reported cases. Most of the studies reported the impact of the diagnosis of BC in different stages on the health-related quality of life among patients; thus, it is essential to understand the role of health-related quality of life in the early diagnosis of BC among women, since the women are at higher risk than men.

Aim: To assess the relationship between the health-related quality of life (level and its domains) and the early diagnosis of BC among Palestinian women in the northern of the West Bank in Palestine.

Methods: A cross-sectional study was conducted in the northern of the West Bank in three cities (Nablus, Jenin, and Tulkarem). Data were collected from 385 participants; response rate was 100%. Researchers used a self-reported questionnaire consisting of three sections: sociodemographic characteristics, clinical data, diagnosis of BC, and the health-Related Quality of Life (HRQoL) EORTC QLQ-BR-SURV40 scale. The convenience sampling technique was used to collect data from two private clinics and three PMoH clinics. For data analysis, the SPSS version 24 program was used, and the researchers applied the following tests: frequency and percentages, mean and standard deviation, independent T-test sample, and chi-square test.

Results: This research, which included 385 Palestinian women, indicated that 91.4% of participants had moderate to high overall Health-Related Quality of Life (HRQoL) (moderate or high QoL). The majority of participants (71.2%, N=274) were present for screening, and most of them (89.9%, N=346) reported seeking healthcare immediately upon recognizing signs and symptoms. Mammography was the most common screening method (83.4%, N=321). In contrast to the non-diagnosed participants, women with a current diagnosis of BC (9.9%, N=38) had significantly lower HRQoL and higher symptom complaints across all domains (e.g., Body Image $p < 0.001$, Arm symptoms $p < 0.001$). Diagnosis condition was also shown to be highly statistically significant with marital status ($p < 0.001$), with single women having the highest prevalence (36%, N=9) to have BC compared to married, divorced or widowed women, and with having a previous history of BC ($p < 0.001$) and a first-degree relative with a history of BC ($p = 0.045$).

Conclusion: While the study found that the overall HRQoL among the total sample was excellent, a key finding was the significantly poorer HRQoL and higher symptom severity reported by women with a BC diagnosis across all four domains. These results support the worldwide recognition of the diagnosis's detrimental physical and psychological impact. The data also demonstrated a high proportion of immediate medical consultation and effective screening techniques (utilize mammography) among the participants. Statistically significant characteristics associated with a BC diagnosis were marital status and current job status.

Key Words: BC, Quality of life, HRQoL, Women, Palestine, West Bank.

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List of abbreviations

ASR	Age Standardized Rates
BC	BC
HRQoL	Health-Related Quality of Life
LMIC	Low-and-Middle Income Countries
NCI	National Cancer Institute
QoL	Quality of Life
SBE	Self-Breast Exam
SDGs	Sustainable Development Goals

Chapter One

Introduction:

In this chapter, the researcher provides a scope of view about Breast Cancer (BC) and the health-Related Quality of Life (HRQoL). The term health-related quality of life (physical, mental, social, and economical) covers different dimensions that will be presented in the background, such as sociodemographic, economic, cultural, and social norms, etc. Also, this chapter contains the study aim, objectives, research question, sub-research questions, problem statement, importance of the study, and the hypothesis.

1.1 Background:

Breast Cancer (BC) aligns with the third goal of the Sustainable Development Goals (SDGs), which is “Health and Well-Being” (Menne et al., 2020) and it is considered as a key Non-Communicable Diseases (NCDs) targeted for mortality reduction, given its profound global impact (Nemutlu et al., 2020). Palestine remains committed to achieving the SDGs by 2030 (Ibrahim, 2020).

In the early stage of BC, the abnormal cells, or canceroma cells, begin inside both of the milk ducts and milk lobules that produce milk in the breast (in situ); this early form is considered not life-threatening and can be detected early (WHO, 2024a).

Globally, BC remains a leading cause of death among women according to BC Research Foundation (BCRF, 2024). Cases of BC have been in every country worldwide (World Health Organization [WHO], 2024a), underscoring its pervasive impact. BC In 2022, there were an estimated 2.5 million new diagnoses and approximately 670,000 deaths attributed to BC, (BCRF, 2024). This shocking frequency amounts to nearly one new woman being diagnosed with BC every 14 seconds around the world (BCRF, 2024). However, compared to men, women face a higher risk of BC diagnosis. And according to the World Health Organization (WHO), BC occurs 99% in women and from 0.5% to 1% in men (WHO, 2024a).

Based on 2024 National Cancer Institute (NCI) data (up to 2023), BC (BC) mortality among women stands at 19.3 per 100,000 annually, with incidence at 129.4 new cases per 100,000 women yearly. BC the lifetime risk is approximately 13.1% among women, with a survival rate ranging from 31.9% up to 99.6% based on the stage in the first 5 years after diagnosis:

unstaged (69.7%), metastasized (31.9%), regional lymph nodes (86.7%), and localized (99.6%) (NCI, 2024).

The top 10 countries with the highest age-standardized rates (ASR) of new BC cases per 100,000—per World Cancer Research Fund (WCRF) data—are: France (105.4), United Kingdom (94), United States (95.9), Germany (77), Japan (74.4), Brazil (63.1), Russian Federation (57.7), Indonesia (41.8), China (33), and India (26.6) (WCRF, 2024). BC taking into consideration that ASR varies between countries from low to high based on population (WCRF, 2024). In Palestine ASR was 8.8 per 100,000 from years 2017-2021 (PMoH, 2022a).

In Palestine, based on the Palestinian Ministry of Health (PMoH) annual report, BC is the most common type of cancer, with an incidence rate of 18.5% per 100,000 of the total population and 37.4 per 100,000 of females. The total number of registered BC cases among women in Palestine was 934 in 2022: 540 women in the West Bank (WB) and 394 women in the Gaza Strip (GS). After lung and colorectal cancers, BC is the third cause of total reported cancer deaths in 2022, with a percentage of 11.7% (PMoH, 2022b).

The total number of females in Palestine in 2022 is 2,633,485: 1,564,769 in the West Bank and 1,068,716 in the Gaza Strip, with a life expectancy of 75.4 years (PMoH, 2022a). BC is reported to be one of the most common types of cancers among Palestinian women aged 25 years old up to 74 years and older; the proportion of cases and deaths were as follows: 39.8% cases and 33.2% deaths of the age group 25–49 years, 31.7% cases and 27.2% of the age group 50–74 years old, and 19.1% cases and 17.2% of the age of more than 74 years old (PMoH, 2022a).

Health-related quality of life (HRQoL) is defined as the perceived physical and mental health of group or an individual over time (Karimi & Brazier, 2016), and its different domains (physical, mental, social, economic) among women are affected by different factors, and these factors. Critically, these same factors also constitute important components in the early diagnosis of BC (Al-Shiekh et al., 2022; El Haidari et al., 2020). However, the awareness of women about the serious changes of the breast and the crucial need for seeking medical health care remain insufficient, highlighting a knowledge gap regarding BC in the occupied Palestinian territories (oPt). Furthermore, there is a need to enhance the skills and knowledge of medical teams for early detection of BC (Al-Shiekh et al., 2022).

In addition, inadequate diagnostic facilities, limited resources, and insufficient services for early BC detection remain significant challenges for Palestinian women in the oPt (Mansour et al., 2022). From an economic perspective—a key domain of HRQoL—while the Palestinian Ministry of Health (PMoH) covers direct medical costs, patients still bear substantial indirect burdens such as transportation and lost companionship (Mansour et al., 2022). Besides, advanced diagnostic tools and specialized care are urgently required, and the oPt's cancer care infrastructure is inadequate and has to be improved. Laboratory, diagnostic tools, radiation oncology, bone marrow transplantation, cancer rehabilitation, and palliative care ward shortages must be addressed through capacity building (Portaluri et al., 2017). To meet the oncologic demands of all Palestinians, for instance, there are only two linear accelerators accessible for use in radiation oncology equipment (1 machine per 1,000,000 population) (Portaluri et al., 2017). Because these devices are exclusively found in East Jerusalem, patients from the Gaza Strip and the West Bank are experiencing delays due to Israeli travel restrictions and transportation challenges (Portaluri et al., 2017).

In oPt, Palestinian women face unique challenges and limitations in BC early detection and treatment, such as access to healthcare due to the geopolitical context (AL-Tell et al., 2019). For the Palestinian women, the deficit in care is also linked to asymmetrical racial policies and logistics (Portaluri et al., 2017). They may experience significant diagnosis and treatment delays due to the state of inaccessibility set by these policies (Keelan, 2016). These patients are subjected to a myriad of military checkpoints, administrative approvals (e.g., security paperwork and checkups), and permanent roadblocks, all of which may affect the quality of care delivered to and accessed by those patients (Keelan, 2016).

To sum up, a high number of new cases of BC were reported all over the world, and the late detection of it increases the mortality rate. The woman's health-related quality of life before diagnosis effects on the early detection of BC and the process of screening, diagnosis, treatment, and survival or death. The condition in Palestine is not different; it needs more attention and more interventions. Understanding the level of health-related quality of life among Palestinian women and its relation with the early diagnosis of BC, and identify the relation with the women's sociodemographic characteristics is essential and help in improving women's health and achieving the SDGs goals with the time.

1.2 Problem statement:

BC (BC) occurs in every single country around the world (Elengoe, 2024; WHO, 2024a). Low Human Development Index (HDI) countries, in particular Low-Middle Income Countries (LMIC) like Palestine, 1 in 27 women will be newly diagnosed with BC, and 1 in 48 die due to BC, while in the high-income countries or the countries with a high HDI, 1 in 12 women diagnosed newly with BC, and 1 in 71 die (WHO, 2024a). Females at any age after puberty are at risk of being diagnosed with BC (Elengoe, 2024). In 2022 the percentage of women who represented the BC examination is 2.8%, a low percentage that is alarming the PMoH about the early diagnosis of BC among Palestinian women (PMoH, 2022b).

In low- and middle-income countries (LMICs), various factors—such as lack of knowledge, stigma, taboos, economic status, cultural beliefs, limited health access, and employment constraints—can affect the early diagnosis of breast cancer (Ammar-Shehada et al., 2024; Elshami et al., 2024; Omari et al., 2024; Thawabteh, 2024). In Palestine, these challenges make it particularly important to examine women's health-related quality of life (HRQoL) and its influence on the breast cancer diagnosis process.

HRQoL effects on the early diagnosis of BC by early detection and increasing the survival rate, decreasing the mortality rate. Also, highlighting the factors related to the QoL among women could be a major way to increase the screening rate. It is important in Palestine since the low rate of women who attended to BC screening stands for different factors related to the QoL.

1.3 Significance of the study:

The early diagnosis of BC (BC) is critical, as the five-year survival rate exceeds 99% for localized disease but drops dramatically for advanced stages. BC. Due to the low rate of presented Palestinian women to health care facilities for examination and screening for BC, it is important to highlight the factors that play a role in early detection and diagnosis of BC.

The HRQoL domains (physical, mental, social, economic, and spiritual) are an essential process that can be measured and assessed among females in all stages of BC diagnosis to the treatment and to the phase of being survived or death. Because HRQoL domains

influence health-seeking behavior, understanding them can explain low screening rates and inform targeted solutions.

Understanding the Palestinian women's needs and the level of their HRQoL and its domains before the diagnosis with BC will highlight the unmet needs, the role of HRQoL in early diagnosis of BC, helps the policymakers to cover, solve, or/and manage marked barriers to enhance the quality of Palestinian women's lives, encourage them to seek medical care, enhance their health, and reduce the mortality rate.

1.4 Aim:

To assess the relationship between the health-related quality of life (level and its domains) and the early diagnosis of BC among Palestinian women in the northern of the West Bank in Palestine.

1.4.1 Objective:

1. To determine the level of HRQoL among Palestinian women.
2. To examine if there are significant differences between the total level of HRQoL among Palestinian women and early diagnosis.
3. To examine if there are significant differences between HRQoL domains (arm symptoms, body image, breast symptoms, and systematic symptoms) and the early diagnosis of BC among Palestinian women.
4. To examine if there are significant differences between sociodemographic characteristics (age, marital status, level of education, place of residency, current job status, and family monthly income) and the early diagnosis of BC among Palestinian women.
5. To examine if there are significant differences between sociodemographic characteristics (age, marital status, level of education, place of residency, current job status, and monthly income) and the HRQoL of Palestinian women.
6. To examine if there are significant differences between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting signs and symptoms and seeking medical advice) and the early diagnosis of BC.
7. To examine if there are significant differences between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting sign and symptoms and seeking medical advice) and the early diagnosis of BC and the HRQoL of Palestinian women.

1.5 Research question:

What is the relationship between the health-related quality of life (level and its domains) and the early diagnosis of BC among Palestinian women in the northern of the West Bank in Palestine?

1.5.1 Sub-research questions:

1. What are the levels of HRQoL among Palestinian women?
2. Is there a significant difference between the total level of HRQoL among Palestinian women and early diagnosis?

3. Is there a significant difference between the HRQoL domains (arm symptoms, body image, breast symptoms, and systematic symptoms) and the early diagnosis of BC among Palestinian women?
4. Are there significant differences between sociodemographic characteristics (age, marital status, level of education, place of residency, current job status, and family monthly income) and the early diagnosis of BC among Palestinian women?
5. To examine if there are significant differences between sociodemographic characteristics (age, marital status, level of education, place of residency, current job status, and monthly income) and the HRQoL of Palestinian women?
6. Are there significant differences between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting sign and symptoms and seeking medical advice) and the early diagnosis of BC?
7. Are there significant differences between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting sign and symptoms and seeking medical advice) and the early diagnosis of BC and the HRQoL of Palestinian women?

1.6 Hypothesis:

H0: There is **no significant relationship** between the sociodemographic characteristics and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between the total level of HRQoL among Palestinian women and early diagnosis, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between the HRQoL (level and domains) and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between sociodemographic characteristics and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between sociodemographic characteristics and the HRQoL of Palestinian women, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between clinical data and the early diagnosis of BC of Palestinian women, at the level of P value ≤ 0.05 .

H0: There is **no significant relationship** between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting sign and symptoms and seeking medical advice) and the early diagnosis of BC and the HRQoL of Palestinian women, at the level of P value ≤ 0.05 .

H1: There is **a significant relationship** between the levels of health-related quality of life and the early diagnosis of the BC, at the level of P-Value ≤ 0.05 .

H1: There is **a significant relationship** between the total level of HRQoL among Palestinian women and early diagnosis, at the level of P value ≤ 0.05 .

H1: There is a significant relationship between the sociodemographic characteristics and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H1: There is **a significant relationship** between the HRQoL (level and domains) and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H1: There is a **significant relationship** between sociodemographic characteristics and the early diagnosis of BC, at the level of P value ≤ 0.05 .

H1: There is a **significant relationship** between sociodemographic characteristics and the HRQoL of Palestinian women, at the level of P value ≤ 0.05 .

H1: There is a **significant relationship** between clinical data and the early diagnosis of BC of Palestinian women, at the level of P value ≤ 0.05 .

H1: There is a **significant relationship** between the clinical data (weight, history of BC, a first degree relative with a BC, breast screening examination, time of discovering changes, presenting sign and symptoms and seeking medical advice) and the early diagnosis of BC and the HRQoL of Palestinian women, at the level of P value ≤ 0.05 .

1.7 Definitions of terms:

Breast anatomy:

The normal anatomy of the human breast of women consists of skin layers (skin and subcutaneous tissues), ducts, and lobules that consist of the breast parenchyma; fat, which varies among women according to age, in particular postmenopausal; fascial layers; ligaments; fibroglandular tissue; arteries and veins; nerves; and lymphatics and neurovascular structures. The breast is positioned over the chest wall, extending from the second rib superiorly to the sixth rib inferiorly, with the sternum medially and the mid-axillary line laterally (Jesinger, 2014).

Breast cancer:

In the early stage of BC, the abnormal cells, or canceroma cells, begin inside both of the milk ducts and milk lobules that produce milk in the breast (in situ); this early form is considered not life-threatening and can be detected early. While the invasion, in this stage the cancer is spreading to reach the surrounding tissues, which are causing the lumps or thickening tumors. In case of the extension of the cancer cells to the lymph nodes or other organs (metastasis), it is life-threatening and fatal (WHO, 2024a).

Quality of life:

It has different ways to be defined, which left its measure in different studies hard. In the context of Health-Related quality of life (HRQoL), it is defined as an optimal level of maintaining a good level of mental, social, and physical health, including the perceptions of health, life satisfaction, fitness, and well-being. And the level of satisfaction among patients towards treatment, outcome, and health status (Theofilou, 2013).

Chapter Two

Conceptual Framework and Literature Review

2.1 Introduction

This chapter presented the relative studies that provide a review of existing literature and published papers about the health-related quality of life concept, related factors, prevalence of BC worldwide, regionally, and in Palestine, stages of BC, diagnosis of BC, importance or effect of early diagnosis, barriers and challenges of diagnosis, and early diagnosis of BC worldwide, in Arabic countries, and in Palestine. To find the literature, searching through data bases “google scholar, research gait, spring link, and PubMed was done, repeated studies were removed and studies not related to this study aim were excluded.

2.2 Prevalence of BC:

BC is the most diagnosed cancer and the most prevalent cause of cancer-related mortality among women globally, regardless of a country's economic condition (Freihat et al., 2025). In 2022, approximately 670,000 out of 2.3 million reported new cases died (Deng et al., 2025). Globally the ASIR is approximately 48 per 100,000 (Freihat et al., 2025). According to predictions, the global burden would increase significantly, with cases exceeding 6 million by 2050, linked mainly to population aging and growth (Deng et al., 2025). While greater incidence rates are frequently observed in countries with a high Human Development Index (HDI), LMICs with more severe healthcare issues account for more than half of all new cases and two-thirds of deaths (Freihat et al., 2025).

The distribution and prevalence of BC in the Arab region has been highlighted by a lower baseline incidence than in Western countries, although it is increasing at an alarming rate (WHO, 2024c). BC is the leading cause of cancer-related deaths among women in the Eastern Mediterranean (WHO, 2024c). In 2016, the Arab region's ASIR was 28 per 100,000, far lower than the global average of 46 per 100,000, but regional incidents are expected to quadruple by 2030 (Deng et al., 2025). Furthermore, regions in Africa and Asia have high

Mortality-to-Incidence Ratios (MIR), with Africa's MIR of 0.510 in 2022, revealing serious gaps in early identification and treatment access (Freihat et al., 2025).

In the occupied Palestinian territory (oPt), BC is the most frequent cancer in women (Titi & El Sharif, 2024). According to the PMoH (2024), the incidence rate has reached 39.2 cases per 100,000 (PMoH, 2025). There is variation within the region; the West Bank had an ASIR of 61.1 per 100,000 in 2017, whereas Gaza had 48.86 per 100,000 from 2017 to 2018 (AlWaheidi et al., 2024). Late-stage diagnosis is a critical issue in the Palestinian setting; in the West Bank, only 31% of cases are classified as localized, whereas in Gaza, up to 74.5% of cases are recognized as Stage III or IV (Al-Shiekh et al., 2022). As a result, BC is the third biggest cause of cancer death in Palestine, with the number of patients expected to climb by 135% by 2040 (AlWaheidi et al., 2024).

2.3 Breast cancer stages:

Globally, the availability of organized screening programs has a significant impact on the stage of diagnosis. In high-income countries (HICs), 60-70% of BC cases are identified at the localized stage (Stage I or II), resulting in five-year survival rates more than 90% (Deng et al., 2025; WHO, 2024b). In contrast, LMICs, late-stage presentation (Stages III and IV) is still common, accounting for more than half of new diagnoses (Freihat et al., 2025; Nemutlu et al., 2020).). This "stage shift" toward more advanced disease in low- and middle-income countries is linked to a lack of awareness, socioeconomic challenges, and fragmented healthcare infrastructure (Deng et al., 2025).

The Arab world has an extremely high rate of advanced-stage BC compared to Western countries (Elhadi et al., 2025). The literature reveals that a significant proportion of women in Arab nations are diagnosed at Stage III or IV, with many patients being premenopausal and under the age of 50 (WHO, 2024b). Studies in the Eastern Mediterranean region reveal that cultural taboos, fear of mastectomy, and dependence on traditional treatment frequently lead to diagnostic delays (Elhadi et al., 2025; WHO, 2024b). Consequently, the mortality-to-incidence ratio is higher in this location because tumors often grow larger and more malignant by the time medical care can be obtained (Elhadi et al., 2025; Freihat et al., 2025).

In Palestine, the stage of diagnosis reflects the unique challenges of a fragmented health system and limited mobility (Nasrallah, 2025). In the West Bank, recent data (2017-2021) shows that only 31% of registered cases were detected at a localized stage, while a disturbing 16% were already in a distant metastatic stage (Stage IV) at the time of first presentation (Al-Shiekh et al., 2022; Titi & El Sharif, 2025a). The situation in the Gaza Strip is even more grave; study reveals that up to 74.5% of patients with a known stage were identified as Stage III or IV (AlWaheidi et al., 2024; Ammar-Shehada & Bracke, 2023). These delays are linked to patient-related factors, such as "normalizing" signs and symptoms, stigma, taboo, and system-related factors, including the collapse of health screening programs and delays in obtaining permits for advanced diagnostics abroad the territory (Al-Shiekh et al., 2022; AlWaheidi et al., 2024; Nasrallah, 2025).

2.4 Methods and barriers of BC diagnosis:

In HICs, BC is diagnosed using a "Triple Assessment" approach that includes a clinical evaluation, imaging, and biopsy (AGCA, 2025). Mammography remains the most effective method for screening, but recent research (2024-2025) emphasizes the use of Artificial Intelligence (AI) and Deep Learning (DL) to improve diagnosis accuracy, with some models approaching 99% accuracy in diagnosing lesions (Rahman et al., 2025). Advanced methods such as Digital Breast Tomosynthesis (3D Mammography), Magnetic Resonance Imaging (MRI), and Liquid Biopsies are increasingly used to overcome the limits of dense breast tissue and to allow personalized medication (Khan et al., 2025).

Diagnostic procedures in the Arab region are progressing beyond self-breast examination (SBE) and clinical breast examination (CBE) in favor of structured mammography programs. However, a 2025 systematic analysis found that approximately 46% of Arab women are still identified in advanced stages (III-IV), showing considerable gaps in early diagnostic availability (Elhadi et al., 2025). While Gulf Cooperation Council (GCC) countries have made investments in advanced imaging technology, other countries face "financial toxicity" and socio-cultural challenges, such as modesty concerns and negative health belief that prevent women from using available diagnostic services (Titi & El Sharif, 2025b; WHO, 2024c).

Political instability and inadequate resources in Palestine make diagnostic methods extremely difficult to use. While the Palestinian Ministry of Health offers free mammography, use is limited due to socio-cultural stigma and fear (Khan et al., 2025; WHO, 2024c). (Khan et al., 2025; WHO, 2024). A key concern in the Palestinian setting is diagnostic delay caused by a shortage of specialist radiologists and the lack of modern tools such as Positron Emission Tomography-Computed Tomography (PET-CT) or radiation, which frequently requires patients to obtain travel permissions (AlWaheidi et al., 2024). Recent 2025 studies in Gaza demonstrate that the continuous violence has depleted diagnostic capacity, resulting in "missed windows" for early detection and a depending on palpable lumps as a crucial trigger for seeking care (Al-Shiekh et al., 2022; Titi & El Sharif, 2025b).

The American College of Radiology (ACR) developed a standardized classification system for the examination of BC, which is the Breast Imaging-Reporting and Data System (BI-RADS) (ACR, 2025). This system consists of one shared diagnostic language between doctors all over the world for interpreting the results of mammograms, MRIs, and ultrasounds, which helps them to determine the following step in women's care (Orel et al., 1999). The BI-RADS consists of 6 categories for assessment and treatment as follows: 0 = Incomplete (Need additional imaging evaluation or prior images for comparison) (Elezaby et al., 2018), 1 = Negative (Continue routine screening), 2 = Benign "Non-cancerous" (Continue routine screening) (Orel et al., 1999). 3 = Probably Benign (Short-interval follow-up, usually 6 months) (Fazeli et al., 2024), 4 = Suspicious (Tissue biopsy is strongly recommended) (Strobel et al., 2015), 5 = Highly Suggestive (Tissue biopsy and immediate

clinical action) (Yao et al., 2019), and 6 = Malignancy (Biopsy-proven; imaging used to monitor response to treatment) (ACR, 2025; Elezaby et al., 2018).

2.5 Concept of HRQoL:

In relation to BC, this section provides the concept of HRQoL, its definition, findings in Arabic countries and particularly in Palestine, and the early detection or diagnosis of BC implications.

Globally, HRQoL known as a multi-dimensional concept which reflects the perception of people about their well-being, this includes the impact of disease and treatment on their social, psychological, physical, and functional health.

It can be measured by using a valid Patient-Reported Outcome Measure (PROMs). In the case of evaluating the HRQoL among cancer patients, the most common valid and reliable tool is the EROTC QoL scale, which is the European Organization for Research and Treatment of Cancer Quality of Life, and the other tool is the Functional Assessment of Cancer Therapy-Breast (FACT) (Biparva et al., 2022; Salas et al., 2022).

2.6 Health-related quality of life in the context of BC:

Health-Related Quality of Life (HRQoL) forms an important point in cancer, and evaluation of the patients' HRQoL plays a major role in enhancing the treatment and the health outcomes (Paraskevi, 2012). Most of the studies and research are interested in measuring the patient's HRQoL after diagnosis as well as the women's HRQoL after being diagnosed with BC regardless of the stage, early stage or late, based on the classifications of the BC.

Poor or low HRQoL among women can delay seeking medical consult for diagnosis and treatment from BC; this delay is associated with different factors, including low income, lack of education and poor knowledge, poor access to health care facilities, occupation restrictions, and lack of resources (Saldaña-Téllez et al., 2024; Subedi et al., 2024).

2.7 Status and unmet needs of HRQoL in Palestine among women with BC:

Coming to an overall evaluation of HRQoL in Palestine, while some studies highlight positive overall HRQoL among West Bank survivors, comprehensive assessments disclose specific limitations. The average for the overall QoL score has been recorded at around 60.5 (Al-Jabi et al., 2018; Titi & El Sharif, 2025a). Also, when comparing the functional domains, the emotional function was reported as the lowest score compared to the physical function score. which indicates better recovery on the physical side but distress on the psychological level (Titi & El Sharif, 2025a).

Diagnosed Palestinian women with BC have a high level of unmet supportive care in different aspects, including psychological needs such as depression, anxiety, and stress (Elsous et al., 2023); education and information about health-related care (Elsous et al., 2023; Titi & El Sharif, 2024); and the daily life associated with physical function and complaints like pain and general fatigue (Elsous et al., 2023; Titi & El Sharif, 2024).

In Palestine, sociodemographic characteristics like high level of education, high family income, and positive coping strategies are important factors linked with improved HRQoL (Al-Jabi et al., 2018; Titi & El Sharif, 2025a). Research underlines the essential need for the early implementation of supportive cancer care services (including psychological and educational support) as an essential aspect of comprehensive healthcare management to improve patient treatments and their quality of life (Elsous et al., 2023). Also, women with advanced stages of BC had a lower score of HRQoL, which is consistent with global findings (Al-Jabi et al., 2018).

The political condition in the State of Palestine creates a unique challenge. The instability of sociopolitical concerns, particularly the recent war in the Gaza Strip, has a significant negative impact on HRQoL (Hejaz, 2025). The continuous war is significantly associated with low HRQoL domains (physical, psychological, cognitive function, social, and emotional) (Hejaz, 2025). Also, significant barriers are reported due to war, which are lack of resources, poor access to health care (psychological, physical, and emotional), and delays in early detection of BC and treatment (Hejaz, 2025). Besides, the most common reported challenges, which were exacerbated by the stressors of displacement for many times and continuous violence, were the economic status, general fatigue, and pain (Hejaz, 2025).

To sum up, HRQoL is an important outcome measure in BC care worldwide. While universal criteria such as disease stage, treatment, and socioeconomic status are reliable predictors, research in the Arabic region emphasizes the importance of cultural context, religious faith, and social stigma and taboo in influencing QoL. In Palestine, the issues are exacerbated by high levels of unmet need, specifically for psychological and informational support, as well as the negative effects of war on access to care and overall well-being.

2.8 Factors associated with HRQoL in BC:

In BC, the global determinants of HRQoL are influenced by a variety of factors, such as early diagnosis of BC, the stage of it, the status of treatment, socioeconomic and demographic factors, and psychological status.

BC survivors who completed the treatment reported high QoL scores compared to patients who are undergoing treatment (Biparva et al., 2022). In terms of QoL and stage of cancer, the more advanced the stage of BC, the lower the QoL found (Al-Jabi et al., 2018; Chen et al., 2022; Ngo et al., 2023).

People with high monthly income, who are educated and have a high level of education, and who have a job are the group of BC patients who have better HRQoL than those with low income, less education or illiteracy, and who are unemployed (Ngo et al., 2023). Financial abilities of people in Low-and-Middle-Income Countries (LMIC) are more vulnerable and with poor HRQoL (Belhaj Haddou et al., 2024; Ngo et al., 2023).

However, the psychological status is also associated with the BC patients' HRQoL. As it is one of the determinant factors of HRQoL in BC, anxiety, stress, and depression have a

significant relation with poor Quality of Life (QoL) (Biparva et al., 2022; Chen et al., 2022). Early diagnosis of BC is a cornerstone to manage, treat, and decrease the risk of developing more advanced stages and increase the survival rate of BC among women, and it will enhance their QoL (Belhaj Haddou et al., 2024).

There is a lack of studies across the 22 Arab countries, but more studies started to appear, and the interest increased among researchers about the HRQoL in BC. From the point of sociodemographic factors associated with the HRQoL among BC patients, 50% of reported cases were aged under 50 years old, and the rate of cases in developed countries was at 25% (Haddou Rahou et al., 2016).

In Oman, significant psychological and emotional distress is reported to be a challenge that faces the survivors of BC in the young age group. Most of them have a strong and remarkable faith since they consider this disease as a part of a divine plan (Al-Azri et al., 2024).

Women in Jordan share some faith with women in Oman; Jordanian women reported that their practices and perceptions are guided by religious beliefs. Besides, psychological factors related to poor HRQoL among BC women included depression, anxiety, poor quality of sleep, and sexual dysfunction (Al-Sharman et al., 2024).

In Saudi Arabia, lower HRQoL among BC women was significantly associated with different sociodemographic data, such as marital status (being divorced or widowed), nulliparity (having no children), being diagnosed with BC beyond 50 years old, which increases the worseness of emotional function, and having comorbid diseases (Aljadani et al., 2025).

2.9 Screening and BC services in Palestine:

In Palestine, in the West Bank and the Gaza Strip, the health care is provided by four sectors: the governmental sector through the Palestinian Ministry of Health (PMoH), the Non-Governmental Organizations (NGOs), the private sector, and the United Nations Relief and Works Agency (UNRWA) (Jubran et al., 2018; PMoH, 2022a). All of them are working under the PMoH's umbrella and provide cancer treatment with no cost (PMoH, 2022a).

The screening (examination), diagnosis, and treatment are the core components of the BC journey (Jubran et al., 2018). However, having a good knowledge of the normal anatomy of the breast can be a key point to determine any pathologic and abnormal growth in the breast based on the examination (Jesinger, 2014). The first center for BC in Palestine was founded in the West Bank in Ramallah City (Jubran et al., 2018). The total number of facilities that provided BC services in Palestine is 208; 98 of them are in the Gaza Strip, and 110 in the West Bank provided the following services: mammography, breast ultrasound, Magnetic Resonance Imaging (MRI), Tubular Carcinoma of the Breast(TCB), histopathology, BC surgical treatment, chemotherapy, and radiotherapy only in one facility in the West Bank by NGOs (Jubran et al., 2018).

With all of these efforts, in 2022 the percentage of women who represented to BC examination is 2.8%, a low percentage that is alarming the PMoH about the early diagnosis of BC among Palestinian women (PMoH, 2022b).

2.10 Published studies in Palestine:

A qualitative study conducted among Arab-Palestinian women aimed to understand the factors that led to the late detection of BC and to examine the BC detection practices. Using semi-structured interviews among 45 participants (36 women diagnosed with BC and 9 with doctors). The results were presented after a thematic analysis applied by the researchers. They showed that health-related beliefs and socio-cultural norms are factors that cause a late diagnosis of BC. Dilemma one of the other detected causes, besides the misdiagnosis and a lack of well-skilled and qualified doctors. Other factors include a restriction in mobility due to the occupation in Palestine and the lack of access to the medical care (Almuhtaseb & Alpy, 2021).

To investigate opportunities and barriers for screening of BC among Palestinian women. Data were collected using a survey from 100 women living in the Gaza Strip and 55 Palestinian women living outside of the Gaza Strip. In this study, the findings showed that 86% of women in the Gaza Strip and 85% of women outside of the Gaza Strip believe that early detection of BC increases the survival rate among women. Also, 90% of participants were willing to do a mammogram for diagnosis. From one hand, the religion and culture were not identified as a barrier to doing a mammogram, while lack of knowledge, awareness, lack of access to medical care and BC services, and limited resources were reported as barriers among women in Gaza and women outside Gaza, 55% and 15%, respectively (Shaheen et al., 2011).

In a national quantitative, cross-sectional study conducted in Palestine, aimed to assess Palestinian women's awareness about the BC lifetime risks, risk factors, age-related, and the associated factors for good knowledge or awareness. The researchers collected the data from 11 governorates in Palestine, targeting participants in public spaces, primary health care centers, and governmental hospitals by using a self-reported questionnaire that contained the Arabic version of a valid and reliable BC measure in addition to three levels of BC risk based on the number of recognized factors among 5434 participants out of 6269 (the response rate was 86.7%). The study results highlighted modifiable and non-modifiable factors. For the modifiable factors, the risk of BC was age-related (3.3%), lifetime risk (27.9%), and not breastfeeding (98.9%). Having a child in old age or not having a child at all accounted for 33.4%. For non-modifiable factors, we are starting with early menstrual periods (19.6%) and exposure to radiation (87.1%). From all samples, 38.4% demonstrated good awareness about BC risk factors (Elshami et al., 2022).

In a paper conducted based on a context review to know about the BC situation in Palestine, including the West Bank and Gaza Strip, the researcher used all relevant published and unpublished literature. The results showed that the poor access to medical care provided BC

services, in particular in Gaza Strip women suffering from the lack of resources and poor infrastructure that impacts the early diagnosis of BC as well as the treatment, which pushes women to seek the medical services out of Palestine or at least reach the West Bank. Even in the West Bank, women seeking screening, diagnosis, and treatment out of Palestine due to different factors, including cultural norms, associated stigma, lack of awareness, lack of cancer services (surgery, pathology, and radiotherapy), and poor access due to the political situation (AlWaheidi, 2019).

In 2022, a quantitative, cross-sectional study aimed to determine factors that delay Palestinian women with BC signs and symptoms in presenting to seek medical care and services to improve the diagnosis. The researchers collected data from two governmental cancer hospitals from 130 participants. This consecutive sample of newly diagnosed women with BC in the Gaza Strip failed a self-reported questionnaire. The researcher considered the delay in presenting to the medical care if the interval between the self-discovery of signs and symptoms of BC and the first visit was 3 months or more. According to this study's results, women did not consider the signs and symptoms as serious and in need of attention, did not feel pain, had low income, had low socioeconomic status, had age factors (old age), had low educational levels (low education), and had free history of BC in the family (Al-Shiekh et al., 2022).

Palestinians with cancer were usually referred to King Hussein Cancer Center (KHCC) by the Palestinian Ministry of Health (PMoH). A study aimed to describe Palestinian patients' characteristics with cancer was conducted using a retrospective chart review between 2018 and 2019 among 480 confirmed diagnosed cancer patients out of 521, since the excluded files were for misdiagnosis. In this study, which included men and women, the most common cancer in women was BC (46%). The study results highlighted that most of the patients presented to the KHCC in the last or developed stage of cancer, standing on the factors of lack of awareness, campaigns, and the screening programs, misdiagnosis, and limited human resources, which are also some of the important factors that play a role in early diagnosis and treatment of cancer among Palestinian patients living in the occupied Palestinian territories (oPt) (Mansour et al., 2022).

As time is important in BC, early detection is crucial for early treatment and decreasing the death rate. Thus, in a cross-sectional, quantitative study that aimed to evaluate the level of awareness about BC among Palestinian females in the Gaza Strip, the researchers used a validated measure, which was the BC Awareness Measure (BCAM), among 2774 out of 3055 participants (the response rate was 90.8%) from four hospitals and seven female schools. The results showed 64.2% of participants checked their breasts rarely or never, 32.8% were not confident about the breast changes, and 60.7% have an awareness that BC screening programs are available. Also, most of the adolescents reported their feeling embarrassed (62.8%) and being scared, which was a barrier to seeking medical care (50.2%). This study highlighted that females lack awareness about BC signs and symptoms, the associated factors, and the screening programs (Elshami et al., 2018).

In the West Bank, a published paper aimed to assess screening behaviors among Palestinian women in relation to environmental and cultural barriers. A self-reported questionnaire was filled by 397 women. Results showed 70% of women did not undergo a clinical examination of breasts or mammography screening, while 62% performed self-breast examination. Education, residency place, religion, history of BC in the family, culture, and environment were the factors presented in this study and addressed as factors that play a role in early detection and treatment of BC among Palestinian women in the West Bank (Azaiza et al., 2010).

In the Gaza Strip, a needs assessment was conducted of care of BC; data were collected using interviews among 100 women and a survey among 100 health professionals (medical, surgical, and obstetrics-gynecology). Results highlighted that 15% perform self-breast exams, 13% of women believe that mammography is one of BC's causes, 4% believe that BC is contagious, 48% do not know that radiotherapy treatment is not available in the Gaza Strip, and 80% of women positively agreed to seek medical care when needed. Also, a gap in knowledge among health care providers existed, as well as among women, and a lack of awareness about BC diagnosis and treatment was presented in these assessment results (Lafi & Shaheen, 2016).

Among 406 Palestinian women aged less than 40 years' old who lived in the West Bank and Jerusalem, a quantitative, cross-sectional study aimed to assess the awareness level among young Palestinian women and the early practices of BC screening. By a self-reported questionnaire, data was collected from the participants. The analysis of the results showed that Palestinian women at a young age are less likely to be engaged and targeted in the available programs of BC. And most of them, 91.38%, have never visited a medical center that provided BC services, and 76.85% have never performed a self-breast exam (Aladien, 2024).

Another study in the Gaza Strip was conducted to identify awareness, barriers, and practices of breast self-exams among Palestinian women. The researchers used descriptive analytical methods with a valid and reliable questionnaire administered among 390 participants who were eligible to participate. Presented results identified a low practice of breast self-exam in the Gaza Strip; the prevalence of women who reported never applying breast self-exam was 40%, even though 76.7% were aware of this practice. Standing on the barriers faced by women in performing self-breast exams were the lack of knowledge and the associated wrong perception (Baloushah et al., 2020).

A new cross-sectional study conducted in Palestine in 2025, entitled "Quality of Life and Coping Strategies of Palestinian Women with BC in the West Bank," aimed to evaluate coping strategies among Palestinian women who are newly diagnosed with BC and these strategies' impact on their quality of life. A total of 147 women participated in this study from 2 governmental hospitals in the Hebron and Bethlehem governorates and were newly diagnosed with BC. Participants filled out a self-reported survey that included an EORTC QLQ-C30 scale and the Cancer Coping Questionnaire (CCQ). The study findings

highlighted that the newly diagnosed women with BC had moderate QoL scores; the lowest scores were for the emotional functions, like fatigue, pain, and insomnia, which were most common. For the coping strategies, like positive focus ($R^2 = 0.342$, $p < 0.001$) and diversion ($R^2 = 0.406$, $p < 0.001$), the QoL was significantly improved. The same for education ($R^2 = 0.052$, $p = 0.005$) and family support ($R^2 = 0.080$, $p = 0.041$), which were remarkable predictors for better QoL (Titi & El Sharif, 2025a).

In 2025, a new published paper about the newly diagnosed with BC among Palestinian women's QoL and their satisfaction, this one-year follow-up study aimed to evaluate the changes in women's QoL and to assess the satisfaction of patients with care in Palestine. Researchers used a prospective method for 144 participants who were newly diagnosed with BC. The Arabic versions of the EORTC QLQ-C30 and QLQ-BR23 were used to assess QoL, while the EORTC IN-PATSAT32 was used to assess satisfaction with care. Results showed that QoL among women declined post diagnosis. Age is linked negatively with sexual functioning ($B = -14.44$, 95% CI: $-20.4-8.4$) and sexual enjoyment ($B = -13.66$, 95% CI: $-21.1-6.1$) and positively with body image ($B = 22.61$, 95% CI: $14.6-30.5$). Marital status improved sexual functioning ($B = 33.89$, 95% CI: $25.2-42.5$) and enjoyment ($B = 26.50$, 95% CI: $15.5-37.4$). Satisfaction with healthcare providers was associated with clean, comfortable services and skilled nurses ($B = -0.24$, 95% CI: $-0.3-0.1$) (Titi & El Sharif, 2025b).

In terms of evaluation of the factors associated with perception of body image and Palestinian women's quality of life who are diagnosed with or undergoing treatment for BC, a cross-sectional study was conducted in 2024. Data were collected from 376 women with BC by using a self-reported questionnaire among women in 4 hospitals in the West Bank where women attended screening or received treatment. Findings showed that 74.7% of women cared about their body image, while 43.1% were not satisfied, and 58.8% did not think that their body image was attractive. Factors that were associated with women's perception of body image, as this study found, were age, place of residency, employment, level of education, marital status, time of diagnosis with BC and treatment, and presence of comorbid diseases (Omari et al., 2024).

To sum up, most of the studies' results were similar, since the factors of health-related quality of life such as sociodemographic, economic status, culture, social norms, geographic, access to health services, awareness, knowledge about BC, screening, delay in screening, misdiagnosis, lack of recourse, lack of well qualified medical care providers, fear, stigma, and other psychological factors, were identified as a barriers and challenges in early detections of BC.

2.11 Published studies in Arabic countries:

To identify barriers to early detection of BC, screening, and diagnosis. A systematic review was conducted across the Middle East and North Africa region (MENA) in Egypt, Oman, Saudi Arabia, Kuwait, the United Arab Emirates, and Jordan. The barriers based on the 55

included studies out of 11936 were infrastructure, health care providers, health insurance, recommendations of physicians, doctor gender, having a regular health provider, fear from the procedure and system, and knowledge among the health system (Bowser et al., 2017).

A systematic review published in 2020 aimed to determine the factors that affect women's Health-Related quality of life (HRQoL) with BC in the Middle East. The used studies were collected from Scopus journals and published in different databases depending on the Newcastle-Ottawa scale to evaluate every single study method. From a total of 5668 studies, 33 were excluded. Only 39% of studies were high quality. Based on this study, the researchers identified various factors classified as modifiable and non-modifiable factors associated with HRQoL, including clinical presentation, sociodemographic characteristics, behaviors, and psychological factors (El Haidari et al., 2020).

In Saudi Arabia, a quantitative, cross-sectional study was conducted to investigate the perceived barriers of BC screening. Using a semi-structured interview, data was collected from 816 women aged 30 years old or more who attended for primary health care at one of the 12 selected health care centers. Findings reported a significant relation between low utilization screening of BC and a woman's age, high level of education, high family income, using hormonal contraceptives, and a history of previous BC. Also, factors like fear from doctors, examination, hospitals, health facilities, and results of screening (Abdel-Aziz et al., 2017).

Another meta-analysis and systematic review study in Saudi Arabia was published in 2024, aimed at identifying barriers to the screening of BC among women to provide a scope about the challenges hindering screenings. Through a comprehensive search in databases and grey literature between 2017 and 2023, a total of 14 studies were eligible to be included and were cross-sectional studies. Results highlighted the following barriers: feeling embarrassment, fear of diagnosis, and lack of awareness about BC screening (Alsalamh et al., 2024).

In Arab countries, screening for BC is not practiced even though the prevalence of mortality rate due to BC is high. A study by Alatrash (2021) included 196 participants of Arab women recruited from the area of Detroit metropolitan highlighted that it is crucial to perform screening as prevention is highly recommended. Results identified a variety of barriers influencing the early detection of BC from beliefs, attitudes, and behavioral points; barriers were religion, spirituality, social norms, and personal challenges (Alatrash, 2021).

A qualitative study was done among women living in the Emirate of Abu Dhabi, aimed at exploring beliefs and attitudes of women in relation to screening of BC and treatment. The researchers divided the sample of 329 women into two groups (regular screeners and well women) who participated in 46 focus groups and 30 individual interviews. Results showed that beliefs and perceptions were different in relation to BC; in addition, factors like economic status, trust in medical care providers and health services, preferences regarding provided health care services for BC, and cultural attitudes (Sabih et al., 2012).

2.12 Published studies worldwide:

In a study aimed at identifying the barriers to BC screening among Palestinian and Jordanian women living in the United States, a descriptive analysis of 107 interviews was analyzed using a thematic analysis approach. In the results, the reported barriers were cultural barriers and feeling embarrassed to seek medical care, fatalism, the relationship in family, and a consultation from traditional herbal therapists; barriers related to citizenship (language and immigration), stigma, fear, ignoring BC, lack of knowledge, and irrelevant barriers (Kawar, 2013).

A published review paper in 2014 entitled “Challenges to the early diagnosis and treatment of BC in developing countries” was done to compare the available published data on BC stages, the interval needed to care, and the barriers to access in different countries. Comparing the diagnosis of BC in stage 1 between countries, 70% of them diagnosed in stage 1 in most high-income countries, while 20%-50% in low- and middle-income countries (LMIC), the association was between delay in early detection of BC symptoms after three months and the advanced stage of BC. There is a deficiency in research in countries on the quality of care for the early detection and treatment of BC (Unger-Saldaña, 2014).

In an exploratory qualitative study conducted in 2024 among 19 indigenous Otomí women that aimed to identify both facilitators and barriers for early diagnosis of BC. The result of the interviews that were at several levels of the Social Ecological Model (SEM) included different aspects: women’s beliefs about BC, associated stigma, cultural norms (gender-based), barriers to access to medical care, and mistreatment and discrimination by the providers of health care. For the results too, the facilitators were education or the provided information by the physician, social support, the notable seeking of care for BC and the perceived its severity (Saldaña-Téllez et al., 2024).

A study was conducted using a baseline questionnaire data of 320 participants to explore the relationship between health-related quality of life and contextual factors between systemic-individual levels in survivors of BC in a cohort of African American and Latina. The results showed that there is a relationship between the health-related quality of life and BC, since the BC is influenced by multiple factors such as the status of health (stage of BC at the time of diagnosis and psychological status), the health care system (infrastructure), social and cultural context, behaviors, and demographics (Miller et al., 2015).

Globally, BC is still diagnosed in late stages; screening programs are offered in developed countries only. As this published paper entitled “Global Perception of Women on BC and Barriers to Screening” showed, the differences in screening vary between countries and inside the same country between local and immigrant populations. Low awareness about BC, geographical challenges and barriers, psychological factors, and social norms factors were associated with low attendance of screening of BC (Mascara & Constantinou, 2021).

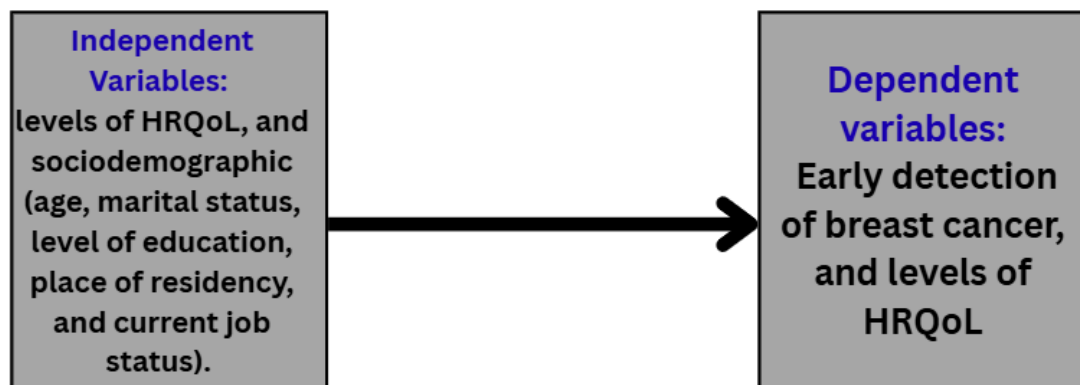


Figure 2.1: Conceptual framework

Chapter Three

Research Methodology

3.1 Introduction:

In this section of the study, the researcher illustrated the methodology used to conduct the study, including study design, population, site and setting, sample and sampling, participant criteria, variables, and data collection and analysis.

3.2 Study design:

To obtain the primary aim and objectives of this study, which aimed to identify the relation between the levels of the health-related quality of life and its domains with early diagnosis of BC among Palestinian women in the northern of the West Bank in Palestine, the researcher used a quantitative, cross-sectional, and descriptive research design. This design of the study allows data collection at a single point in time (Watson, 2015), in particular the time that the researcher collects data from the clinic when the woman presents to seek BC services. Also, it utilizes numerical data predominantly gathered through questionnaires that describe the relation, levels, and prevalence in results post-analysis (Watson, 2015).

3.3 Study population:

The population consisted of Palestinian females presenting to get BC services from Palestinian Ministry of Health (PMoH) primary health care clinics or private centers in three cities in the North of the West Bank (Nablus, Jenin, and Tulkarem).

3.4 Site and setting:

The study was conducted at the primary health care clinics which provide BC services in the North of West Bank in the three selected governorates (Nablus, Jenin, and Tulkarem). The total number of clinics were three from PMoH and two private centers.

The Palestinian centers, regardless of whether they are private or governmental, follow the same steps to follow up with women who present for early detection of BC. Usually, the women presented to clinics might be either transferred from another doctor or self-referred after obtaining a self-breast examination at home and suspecting signs and symptoms.

During data collection, the researcher collected data about how clinics deal with their clients. First of all, post registration, the woman opens a file and gives contact data and sociodemographic data. Then she will be assessed and evaluated by a specialist doctor who decides the proper and most appropriate screening test for the woman. A mammogram is the most common screening method that Palestinian centers use, beside other methods. The decided method, follow-up plan, treatment care plan sessions, and the stage of BC are all decided and categorized based on the BI-RADS (the global strategy system).

3.5 Sample size and sampling methods:

3.5.1 Sample size:

By using G-Power online calculator which depends on the Stephen Thompson Equation formula to determine the sample size (Thompson, 2012), the population size is the total number of females in Palestine in the West Bank which is 1,564,769 (PMoH, 2022a), the sample size is 385 at minimum and the respond rate was 100%. To calculate the sample, the researcher used 0.05 for the Error proportion, Confidence level at 95%, and Population proportion of 0.50.

3.5.2 Sampling method:

The researcher in this study used a convenience sample technique. It is one of the forms of non-probability sampling methods that focuses on gathering data from participants of the study population who are readily available to participate in the study (Etikan et al., 2016).

3.6 Inclusion and Exclusion Criteria:

The participant should be:

1. Female.
2. Aged 18 years old and more.
3. Not diagnosed with documented mental disorder.
4. Newly diagnosed with BC stage 1 and presenting to screening (diagnosis done in the screening day)
5. Presented to one of the selected clinics.
6. Presented to do screening for BC in one of the selected participated clinics and centers in one of the three cities (Nablus, Jenin, or Tulkarem)

The following individuals should be excluded:

1. If the age less than 18 years old.
2. Having a documented mental disorder.
3. With BC in second, or third, or last stage.

3.7 Data collection process:

After receiving Ethical approval from the Research Ethics Committee at Al-Quds University and the General Administration of Health Education and Scientific Research in the MOH

started in February 2025 and completed by the end of November 2025; see appendix A. Data were collected by using a self-reported questionnaire. The time needed to complete the questionnaire ranged from three to five minutes for each participant at the PMoH clinics or BC screening centers in the three selected cities in the Northern of the West Bank.

1. The researcher attended to the PMoH clinics and the BC centers to meet the participants.
2. All participants who were present in the clinic and met the inclusion criteria on the day that the researcher went to collect data were included in the study.
3. The researcher explained the study's aim for the participants verbally to ask them to participate and checked the eligibility criteria.
4. After obtaining oral permission from the participants, they signed an informed consent.
5. Each participant had time to complete the questionnaire independently in a private room.
6. The researcher was ready to answer the participant's questions or provide clarifications if requested.
7. The researcher reviewed the answer quickly to make sure that the participant did not miss any of the questionnaire's items.
8. In case of unanswered questions based on the right of the participant to refuse to answer any question, this participant was excluded (No participants excluded all questions were answered).
9. Answers in every single questionnaire were coded.
10. Data were entered into SPSS for analysis.

3.8 Study instrument:

The data was collected from February 2025 and completed by the end of November 2025 by a self-reported questionnaire that included the sociodemographic data, clinical data, and the Health-related Quality of Life Scale EORTC QLQ-BR-SURV40 (EORTC, 2020), a valid and reliable scale to assess the quality of life among women with early BC or with early signs and symptoms of BC. The expected time needed to fill out the questionnaire range from three to five minutes. Permission of using the English and Arabic versions of the EORTC BC40 questionnaire was obtained from EORTC Quality of Life Group website.

The questionnaire consisted of three sections:

The first section consists of two parts, which are the sociodemographic characteristics of the participants and the clinical data.

Sociodemographic section: the participants completed information about sociodemographic data as the following:

- The participants' age.

- Marital status is categorized as single, married, divorced, and widowed.
- Place of residency includes Nablus, Jenin, and Tulkarem.
- Level of education: the level of education is categorized as illiterate, primary education, secondary education, or higher education, based on survey responses.
- Job status is categorized as employee, volunteer, student, housewife, and do not work.

Clinical data section: the participants complete three questions about their current weight, having a first-degree relative with BC or a history of BC, and the third question about the participant herself if she has a previous history of BC or not.

BC-related medical history: items BC-related medical history were adopted from previous studies about early detection of BC (Abdel-Aziz et al., 2017; Aladien, 2024; Azaiza et al., 2010; El Haidari et al., 2020; Elshami et al., 2022) the BC-related medical history section includes:

- Weight
- Previous history of BC
- First-degree relative (mum or sister) with a history of BC
- Early detection of BC: includes three choices: age at menarche, diagnosed or BC with not diagnosed, and screening
- Breast exam screening practices: includes questions about self-breast examination, professional breast palpation by a specialist, mammography, breast ultrasound and the “Do not do breast exam” choice.
- Time of discovering changes in their breast: includes questions about 5 choices. One week ago, two weeks ago, three weeks ago, one month ago and more than one month ago
- Presented signs and symptoms that they have: includes six choices: skin changes, breast discharges, weight loss or gain, breast tenderness, decreased appetite and increased in breast size.
- Seeking medical advice “when did you seek a medical care after you have had signs and symptoms of BC?”

EORTC BC40 scale: EORTC QLQ-BR40, which stands for European Organization for Research and Treatment of Cancer Quality of Life Questionnaire BC Module. The EORTC QLQ- BC40 is a reliable and valid questionnaire developed to assess the quality of life (QOL) of cancer patients, which has been translated and validated in many studies.

Its principal purpose is to assess Health-Related Quality of Life (HRQoL), particularly in BC patients. It determines the symptoms of cancer as well as the disease's psychosocial consequences, which general questionnaires may lack. EORTC QLQ-BC 40 consists of 40 items (coded Q1-Q40), including five multi-items (domains):

Table 3.1: domains of EROTC QLQ-BR 40 scale

Domain type	Domain (Scale)	No. of items	Item No.
Functional	Body image	4	9,10,11,12
Symptoms	Future outlook	1	13
	Breast satisfaction	2	22, 23
	Systemic symptoms	7	1,2,7,8,14,15,16
	Arm symptoms	3	17,18,19
	Breast symptoms	4	20,21,24,25
	Endocrine therapy symptoms	10	26,27,28,29,30,31, 32,33,34,35
	Skin/Mucosa symptoms	3	36,37,38
	Vaginal loss	2	39,40
	Hair loss	2	3,4
	Taste (Food/Drink)	2	5,6

In this study, we included only 4 domains. During pilot testing, the items concerning sexual functioning (Items 39,40 of the QLQ-BR40) were identified as culturally sensitive and intrusive. Pilot participants consistently declined to answer these items, citing significant discomfort. In consultation with cultural advisors and adhering to the principles of cultural validity, these three items were omitted from the final administered questionnaire to ensure acceptability and minimize participant burden.

Another 7 items were removed after a rapid need assessment done by asking 3 gynecologists about the scale in relation to the study purpose. Four of these items are 24, 25, 27, 35, 36, 37 and 28 due to asking questions about treatment and if the patient conducted a surgery or not, which do not fit the purpose of our study.

Like item 24 "Have you had tightness in the area of surgery", item 25 "Have you been upset with the appearance of your scar?", item 27 "Have you felt that the treatment has left your body less whole?", item 35 "Overall, how satisfied have you been with the result of your breast surgery?", item 36 "Have you had problems with the appearance of the affected nipple?", Item 37 "Has it been a problem for you that your breasts have a different shape?", and item 38 "Have you been satisfied with the cosmetic result?"

Scoring of EORTC BC40 questionnaire:

The researcher depending on the major scoring of the original scale, quartiles analysis.

Validity and reliability of the questionnaire: The test was valid and reliable, with a Cronbach's alpha of 0.823.

Pilot study: 10% of the total sample size ($n = 33$), which the researcher excluded from the total sample, were tested for piloting.

Quality of life was assessed using the QLQ-BR40 module. Prior to the main study, a pilot was conducted with 33 participants from the selected clinics and from an external one clinic in Ramallah city to avoid missing participants. This pilot revealed that the BR40 items on sexual functioning (Items 39, 40) were culturally prohibitive, resulting in uniform non-response and verbalized discomfort. Consequently, these two items were removed for the main study to ensure cultural appropriateness and protocol feasibility. The researchers used the Arabic valid version from the EROTC 40 scale after obtaining an online permission from the web site (EROTC, 2020).

3.9 Variables:

Dependent variables: Early detection of BC.

Independent Variables: levels of HRQoL, and sociodemographic (age, marital status, level of education, place of residency, and current job status).

Control Variables: family history of BC, BC, current diagnosis/ history of BC, and current weight.

3.10 Data analysis:

The analysis of data was conducted by using the Statistical Package for Social Science (SPSS) version 24. Frequencies and percentages were used to describe the participant's demographics and clinical data with mean and standard deviation. Independent t-test samples and chi-square tests were used to define relationships between variables, specifically to identify associations between the levels of health-related quality of life and its domains and the early diagnosis of BC.

3.11 Ethical Consideration:

Ethical approval from the Research Ethics Committee at Al-Quds University and the General Administration of Health Education and Scientific Research in the MOH was approved to collect data from Palestinian clinics in Nablus, Jenin, and Tulkarem. And permission was obtained from each private center provided BC services in the three selected cities in this study.

Informed consent was obtained from the participants after explanation the purpose of this study and sign it.

A permission and coordination were made with the health authorities from PMoH to refer affected patients for psychological counseling after collecting data from them see (Appendix J).

The five principles of ethics: Autonomy, beneficence, justice, non-maleficence, and fidelity were applied in this study.

Every participant in this study received an explanation about the aim of the study and data collection and had the right to refuse participation or withdraw from the study anytime without any negative repercussions.

Also, confidentiality was taken into consideration during the obtaining the data, all the information was taken anonymously (names of all participants was not included), no any potential harms could affect participants.

For data, were kept confidential, after obtaining it by the researchers themselves without any research's assistance, was saved in a single, securely locked drawer with the researcher, then coding done prior of analysis. Data were accessible to the researcher (Sh.) and her supervisor (S.). All data dumped out after finishing all study results and writing the final report.

Chapter Four

Results

4.1 Introduction:

In this chapter, the researcher presents the study's outcomes, obtained from data analysis of 385 participants in tables accompanied by explanations. These tables encompass a range of information, including sociodemographic data, early diagnosis of BC among participants, HRQoL levels among participants, relation between the HRQoL domains and the early diagnosis of BC among Palestinian women, relation between early diagnosis of BC and sociodemographic characteristics and clinical data among Palestinian women.

4.2 Sociodemographic data:

Table (4.1) shows the sociodemographic characteristics of the participants of the study. The total number of participating women was 385 ($n = 385$), with a response rate of 100%. Using frequencies (N) and percentages, the results were presented.

4.2.1 Age Distribution:

The age distribution of the participants indicates that the majority are in the older age groups. The age range of 46 to 55 years was the largest group, accounting for 43.6% ($N=168$) of the total sample. This was followed by the older than 56 years' age group, which accounted for 27.8% ($N=107$). In contrast, the younger age groups were minority groups, with just 0.8% ($N=3$) falling into the Less than 25 years' age group.

4.2.2 Marital Status:

Most of the women were married, representing 81.3% of the total sample ($N=313$). The other participants were widowed ($N = 27$), single ($N = 25$), and divorced ($N = 20$), representing 7%, 6.5%, and 5.2% of the total sample, respectively.

4.2.3 Place of Residency:

Participants were distributed almost equally across the three primary living regions. Tulkarem had the largest percentage (35.8%, $N=138$), with Nablus coming in second (35.6%, $N=137$) with a difference of one participant. At 28.6% ($N=110$), Jenin participants represent the smallest group.

4.2.4 Level of Education:

In general, the sample showed high levels of academic achievement. Bachelor's degree (33.2%, N=128) and two-year diploma (33%, N=127) were the two most common groups. Collectively, these two groups made up two-thirds of the sample. Twenty percent of participants (N=77) had only completed secondary school, and 10.9% (N=42) were classified as illiterate. Representation at the level of graduate study (Master's and PhD) was small (2.9%).

4.2.5 Current Job Status:

Data on current job status highlighted that most of the participating women were housewives, which represented an overwhelming 74.3% (N=286) of the total sample. Employees were the second following group at 17.9% (N=69). The "I do not work" category was 6.8% (N=26), while volunteer and student statuses were poorly represented (0.8% and 0.3%, respectively).

Table 4.1: Sociodemographic characteristics of participants (n=385).

Characteristics	N (%)
Age	
Less than 25 years	3 (0.8)
26 - 35 years	10 (2.6)
36 - 45 years	97 (25.2)
46 – 55 years	168 (43.6)
More than 56 years	107 (27.8)
Marital Status	
Single	25 (6.5)
Married	313 (81.3)
Divorced	20 (5.2)
Widowed	27 (7)
Place of residency	
Nablus	137 (35.6)
Jenin	110 (28.6)
Tulkarem	138 (35.8)
Level of education	
Illiteracy	42 (10.9)
Secondary school	77 (20)
Diploma 2 years	127 (33)
Bachelors' degree	128 (33.2)
Masters' degree	8 (2.1)
PhD degree	3 (0.8)
Current job status	
Employee	69 (17.9)
Volunteer	3 (0.8)
Student	1 (0.3)
Housewife	286 (74.3)
I do not work	26 (6.8)

4.3 Clinical data of participants:

The clinical data of the 385 participants, including their current body weight and BC-related medical history, are presented in Table (4.2).

4.3.1. Current body weight:

Nearly half of the participants at 46.5% (N=179) of the overall sample, weighted between 61 kg and 70 kg, which was the largest group. The categories 51 – 60 kg and 71 kg or higher were also considerably represented, at 27% (N=104) and 26% (N=100), respectively. Only a very small proportion (0.5%, N=2) reported a weight of 50 kg or less.

4.3.2. History of diagnosis of BC:

The majority of the participants (91.9%, N=354) had no previous history of diagnosis with a BC. Participants who were diagnosed with a previous history of BC were 8.1% (N=31).

4.3.3. First-degree relative with a history of BC:

Only 22.3% (N=86) of the participants had a first-degree relative (mother or sister) with a previous history of BC. While the rest of the sample, which forms the majority, did not have a first-degree relative in their family history (77.7%, N=299).

Table 4.2: Clinical data of participants (n=385).

Characteristics	N (%)
Current weight	
50 kg or less	2 (0.5)
51 – 60 kg	104 (27)
61 – 70 kg	179 (46.5)
71 kg or more	100 (26)
History of BC	
Yes	31 (8.1)
No	354 (91.9)
First degree relative with a history of BC	
Yes	86 (22.3)
No	299 (77.7)

4.4 Early diagnosis practices of BC and detection among participants:

Table (4.3) displays the frequency (N) and percentage (%) distribution of participants for BC diagnosis condition and their early detection practices.

4.4.1. Diagnosis condition:

The majority of the women in this study (71.2%, N=274) were present for screening, indicating they were not currently diagnosed. Those who answered "No" to a prior diagnosis of BC accounted for 19% (N=73). A total of 38 participants, or 9.9% of the sample, said they had a current diagnosis of first-degree BC.

4.4.2. Breast exam screening practices:

Mammography was the most popular screening method identified by 83.4% (N=321) of the participated women. The second most popular procedure, as stated by 66.2% (N=255), was self-breast examination (SBE). On the other hand, only 11.4% (N=44) had a breast

ultrasound and only 12.5% (N=48) had a professional breast palpation by a specialist. A few women (4.4%, N=17) responded that they never perform breast exams.

4.4.3. Time of discovery of breast changes:

Taking into consideration the study time and data collection time, regarding the timing of detecting changes in the breast, the majority of respondents (75.1%, N=289) said they discovered changes one week ago. With 8.8% reporting within the last two weeks and less than 6.0% reporting discovery before one month ago or more, relatively few women experienced a delay in discovery.

4.4.4. Presented signs and symptoms:

Prior to seeking medical care, participants were asked to list the signs and symptoms they experienced (Note: This was a multiple-response item; thus, percentages may sum up to more than 100%). The most commonly reported symptom was skin changes (63.1%, N=243), followed by breast tenderness (58.7%, N=226). Other commonly stated symptoms included breast changes (45.7%, N=176), decreased appetite (40.8%, N=157), and weight loss or increase (40.5%, N=156). The least frequent symptom (27.3%, N=105) was an increase in breast size.

4.4.5. Seeking medical care:

Data show that women demonstrated a high level of seeking medical health care, since 89.9% (N = 346) of women reported that they went to consult the physician immediately after recognizing the signs and symptoms of first BC. In contrast, a small group of women (4.9%, N=19) consulted the physician after one month of recognizing signs and symptoms, and a combined 4.2% (N=16) reported a delay in consultation for more than 6 months.

Table 4.3.A: Early diagnosis practices of BC and detection among participants (n=385).

Characteristics	N (%)
Diagnosed with BC	
Yes	38 (9.9)
No	73 (19)
I am here to do screening	274 (71.2)
Breast exam screening	
Self-breast examination	255 (66.2)
Professional breast palpation by specialist	48 (12.5)
Mammography	321 (83.4)
Breast ultrasound	44 (11.4)
I do not do breast exam	17 (4.4)

Table 4.3.B: Early diagnosis practices of BC and detection among participants (n=385).

Characteristics	N (%)
Time of discover changes in the breast	
One week ago,	289 (75.1)
Two weeks ago,	34 (8.8)
Three weeks ago,	9 (2.3)
One month ago,	10 (2.6)
More than one month	2 (0.5)
Presented signs and symptoms	
Skin changes	243 (63.1)
Breast changes	176 (45.7)
Weight loss of gain	156 (40.5)
Breast tenderness	226 (58.7)
Decrease appetite	157 (40.8)
Increase in breast size	105 (27.3)
Seeking medical advice	
Consult the physician immediately	346 (89.9)
Consult the physician after one month	19 (4.9)
1.1 to 2 months	1 (0.3)
2.1 to 3 months	2 (0.5)
3.1 to 4 months	0 (0)
4.1 to 5 months	1 (0.3)
5.1 to 6 months	0 (0)
More than 6 months	16 (4.2)

4.5 Overall, Health-Related Quality of Life (HRQoL) levels:

Table (4.4) illustrates the overall levels of Health-Related Quality of Life (HRQoL) for the study participants (N=385), categorized into four bands: poor, accepted, intermediate, and high.

The results show that participants' self-reported quality of life was mainly good. Most of the women scored either intermediate QoL (30.9%, N=119) or high QoL (60.5%, N=233) for their HRQoL. Overall, 91.4% of participants gave their HRQoL an good level. On the other hand, a very, very small percentage indicated poorer quality of life ratings, with 5.7% (N=22) experiencing an accepted QoL and only 2.9% (N=11) had a poor QoL. This distribution suggests that the sample as a whole considers their health-related quality of life to be excellent.

Table 4.4: HRQoL levels for the participants (n=385).

HRQoL levels	N (%)
Poor QoL	11 (2.9)
Accepted QoL	22 (5.7)
Intermediate QoL	119 (30.9)
High QoL	233 (60.5)

4.6 Relation between HRQoL domains and BC diagnosis condition:

Table (4.5) displays the comparison of mean scores for the four Health-Related Quality of Life (HRQoL) domains between women diagnosed with first degree BC (n=38) and women who were not diagnosed and were present for screening (n=347).

The results showed that highly statistically significant differences existed between the two groups (diagnosed women and not diagnosed women) across all of the HRQoL domains. The diagnosed women experienced significantly poorer quality of life and more symptom suffering compared to the non-diagnosed group.

Body Image: a highly significant difference was found with diagnosed women who reported a lower body image (M=2.22, SD=0.84) compared to non-diagnosed women (M=1.33, SD=0.39), (p = 0.000).

Arm symptoms: severity of arm symptoms significantly higher among diagnosed women (M=2.32, SD=0.75) compared to non-diagnosed women (M=1.54, SD=0.55), (p=0.000).

Breast Symptoms: The symptoms of the breast were significantly higher among diagnosed women (M=2.29, SD=0.54) compared to non-diagnosed women (M=2.00, SD=0.43), (p = 0.000).

Systemic symptoms: a statistically significant difference was identified in different systemic symptoms, with diagnosed women experiencing higher mean scores (M=2.13, SD=0.54) compared to non-diagnosed women (M=1.25, SD=0.43), (p = 0.003).

These outcomes strongly indicate that a BC diagnosis is associated with a negative influence on women's perceived body image and physical symptoms related to the disease.

Table 4.5: Relation between the HRQoL domains and the early diagnosis of BC among Palestinian women (n=385).

HRQoL domains	Diagnosed women (n = 38) M (SD)	Not diagnosed (screening) (n = 347) M (SD)	P – Value
Body image	2.22 ± 0.84	1.33 ± 0.39	0.000
Arms symptoms	2.32 ± 0.75	1.54 ± 0.55	0.000
Systematic symptoms	2.13 ± 0.54	1.25 ± 0.43	0.003
Breast symptoms	2.29 ± 0.54	2.00 ± 0.43	0.000

4.7 Relation between BC early diagnosis and sociodemographic characteristics:

Table (4.6) displays the association between participants' sociodemographic characteristics and their BC diagnosis condition (Diagnosed, n=38 vs. Not Diagnosed/Screening, n=347).

There is no statistically significant association between the women's diagnosis status and the following sociodemographic characteristics: age (p = 0.283), place of residency (p = 0.073), and level of education (p = 0.660). While marital status (p = 0.000) and current job status (p = 0.024) were highly statistically significant with the diagnosis status of women with BC.

Regarding marital status, the prevalence of diagnosed single women was the highest (36%, N=9), while the prevalence of diagnosed married women was the lowest (8.6%, N=27), as well as the widowed (7.4%, N=2) participants. For the divorced participants (0%, N=0), they were not in the diagnosed group.

Also, the highest prevalence of diagnosed women was found among the volunteer group (33.3%, N=1) and among women who do not work (26.9%, N=7). In contrast, employees (8.7%, N=6) and housewives (8.4%, N=24), which comprise the highest working groups, showed lower proportions of diagnosed women.

Table 4.6: Relation between early diagnosis of BC and sociodemographic characteristics among Palestinian women (n = 385).

Characteristics	Diagnosed women (n = 38) N (%)	Not diagnosed (screening) (n = 347) N (%)	Total N (%)	P –Value
Age				0.283
Less than 25 years	0 (0)	3 (100)	3 (100)	
26 - 35 years	2 (20)	8 (80)	10 (100)	
36 - 45 years	11 (11.3)	86 (88.7)	97 (100)	
46 – 55 years	11 (6.5)	157 (93.5)	168 (100)	
More than 56 years	14 (13.1)	93 (86.9)	107 (100)	
Marital Status				0.000*
Single	9 (36)	16 (64)	25 (100)	
Married	27 (8.6)	286 (91.4)	313 (100)	
Divorced	0 (0)	20 (100)	20 (100)	
Widowed	2 (7.4)	25 (92.6)	27 (100)	
Place of residency				0.073
Nablus	15 (10.9)	122 (89.1)	137 (100)	
Jenin	5 (4.5)	105 (95.5)	110 (100)	
Tulkarem	18 (13)	120 (87)	138 (100)	
Level of education				0.660
Illiteracy	4 (9.5)	38 (90.5)	42 (100)	
Secondary school	11 (14.3)	66 (85.7)	77 (100)	
Diploma 2 years	13 (10.2)	114 (89.8)	127 (100)	
Bachelors' degree	9 (7)	119 (93)	128 (100)	
Masters' degree	1 (12.5)	7 (87.5)	8 (100)	
PhD degree	0 (0)	3 (100)	3 (100)	
Current job status				0.024*
Employee	6 (8.7%)	63 (91.3)	69 (100)	
Volunteer	1 (33.3)	2 (66.7)	3 (100)	
Student	0 (0)	1 (100)	1 (100)	
Housewife	24 (8.4)	262 (91.6)	286 (100)	
I do not work	7 (26.9%)	19 (73.1%)	26 (100)	

4.8 Relation between BC early diagnosis and clinical data:

Table (4.7) presents the association between the diagnosis condition of BC of the women and their clinical data (Diagnosed, n=38 vs. Not Diagnosed/Screening, n=347).

The displayed results showed that there is no statistically significant association between the diagnosis condition of BC of the women and their current weight ($p = 0.745$), compared to high statistically significant among women who have a previous history of BC ($p = 0.000$), and women who had a first-degree relative (mother or sister) who had a history of BC ($p = 0.045$).

Table 4.7: Relation between early diagnosis of BC and clinical data among Palestinian women (n = 385).

Characteristics	Diagnosed women (n = 38) N (%)	Not diagnosed (screening) (n = 347) N (%)	Total N (%)	P -Value
Current weight				0.745
50 kg or less	0 (0)	2 (100)	2 (100)	
51 – 60 kg	11 (10.6)	93 (89.4)	104 (100)	
61 – 70 kg	15 (8.4)	164 (91.6)	179 (100)	
71 kg or more	12 (12)	88 (88)	100 (100)	
History of BC				0.000*
Yes	13 (41.9)	18 (58.1)	31 (100)	
No	25 (7.1)	329 (92.9)	354 (100)	
First degree relative with a history of BC				0.045
Yes	13 (15.1)	73 (84.9)	86 (100)	
No	25 (8.4)	274 (91.6)	299 (100)	

Chapter Five

Discussion

5.1 introduction

The researcher in this chapter interprets these study outcomes with the existing literature about the early diagnosis of BC, health-related quality of life and its domains, and the associated sociodemographic data and clinical data among Palestinian women.

The study findings showed that the HRQoL among Palestinian women was highly excellent and positive, based on existing results of 91.4% reporting intermediate or high-quality levels. Supported by a study on newly diagnosed Palestinian women who were reported a moderate score of Quality of Life (QoL) (Titi & El Sharif, 2025b).

Comparing diagnosed women with non-diagnosed women, poorer quality of life and higher suffering of various symptoms and their severity were reported among women with first-degree BC on all four domains of HRQoL: body image ($P = 0.000$), arm symptoms ($P = 0.000$), breast symptoms ($P = 0.003$), and systemic symptoms ($P = 0.000$).

Supporting these results, a previous study highlighted the negative influence of diagnosis with BC on the patient's HRQoL. The results of a published cross-sectional study in 2024 in the West Bank align with the body image domain; participants were unsatisfied with their body image (Omari et al., 2024). While a study conducted by Titi and El Sharif (2025) had different results, it showed that the newly diagnosed Palestinian women suffered from different systematic symptoms with the lowest scores including emotional functions, fatigue, pain, and insomnia (Titi & El Sharif, 2025b).

The relationship between the early or new diagnosis of BC with the low or poor HRQoL among Palestinian women in this study aligns with and supports the global understanding about the early diagnosis of BC, its relation to HRQoL, its potential treatment (Paraskevi, 2012), and the negative influence on the women's physical and psychological status (Mascara & Constantinou, 2021; Miller et al., 2015; Saldaña-Téllez et al., 2024).

The notably poorer body image scores among diagnosed women can be attributed to the powerful cultural symbolism attached to the breast. Within conservative societies, it transcends being a mere body part, serving as a central emblem of femininity, maternal function, and marital bonds. A threatening diagnosis thus directly challenges a woman's personal and societal identity. This effect is intensified by the consequences of surgery. Mastectomy, often necessitated by late presentation, carries severe stigma, fostering fears of being seen as "incomplete" by one's partner and driving women to hide their status—a secrecy that exacerbates social withdrawal and fragments self-perception.

The screening (examination), diagnosis, and treatment are the core components of the BC journey (Jubran et al., 2018). Lack of education was found to be one of the factors affecting women delaying seeking health care for early diagnosis of BC and starting treatment, as shown in the previous studies (Saldaña-Téllez et al., 2024; Subedi et al., 2024), which is not the same in this study, since no significant association was presented between the level of education ($p = 0.660$) and the Palestinian women's diagnosis condition (diagnosed or non-diagnosed), the same for age ($p = 0.283$), and place of residency ($p = 0.073$). In contrast, in a cross-sectional study conducted in Palestine, the risk of BC was age-related (3.3%) (Elshami et al., 2022). While the risk factors in this study were marital status ($p = 0.000$), with single women being the highest (36%, $N = 9$), while the prevalence of diagnosed married women was the lowest, and current job status ($p = 0.024$), with the highest prevalence of diagnosed women found among the volunteer group (33.3%, $N = 1$) and among women who do not work (26.9%, $N = 7$).

In Saudi Arabia, a significant relation between low utilization screening of BC and a woman's age, high level of education, high family income, using hormonal contraceptives, and a history of previous BC (Abdel-Aziz et al., 2017).

Data show that women demonstrated a high level of seeking medical health care, since 89.9% ($N = 346$) of women reported that they went to consult the physician immediately after recognizing the signs and symptoms of first BC. Previous study results showed that 86% of women in the Gaza Strip and 85% of women outside of the Gaza Strip believe that early detection of BC increases the survival rate among women (Azaiza et al., 2010; Shaheen et al., 2011). Based on another study results the delay in presenting to the medical care if the interval between the self-discovery of signs and symptoms of BC and the first visit was 3 months or more (Al-Shiekh et al., 2022). On the same level of supportive studies globally, 70% of women diagnosed in first stage of BC in most high-income countries, while 20%-50% in low- and middle-income countries (LMIC) (Unger-Saldaña, 2014).

Mammography was the most popular screening method, identified by 83.4% ($N=321$) of the participating women in this study, while a study in the Gaza Strip showed that 90% of the women were willing to do a mammogram for diagnosis, which is a close proportion between both of the studies (Shaheen et al., 2011). The second most popular procedure, as stated by 66.2% ($N=255$), was self-breast examination (SBE) in this study which was also nearly similar to the result presented in a previous study in the West Bank, since 62% of women performed self-breast examination (Azaiza et al., 2010). From the other hand, in a study in

the Gaza Strip results highlighted that 15% perform self-breast exams, 13% of women believe that mammography is one of BC's causes (Lafi & Shaheen, 2016), same in another study in the Gaza Strip identified a low practice of breast self-exam in the Gaza Strip; the prevalence of women who reported never applying breast self-exam was 40% (Baloushah et al., 2020).

The study's findings, which demonstrated a generally excellent HRQoL among Palestinian women overall, were compared to the body of existing literature in this chapter. The comparison revealed a significant difference: women newly diagnosed with BC reported a significantly poorer QoL and higher symptom severity across all four HRQoL domains (Body Image, Arm Symptoms, Breast Symptoms, and Systemic Symptoms), supporting the global understanding of the negative impact of cancer diagnosis. While the majority of participants reported seeking medical care immediately, the study identified marital status and current job status as key sociodemographic factors associated with diagnosis, while showing no significant association with education, age, or residency place, which contrasts with some regional findings. The high utilization of mammography and SBE detected in this group of women indicates a relatively proactive screening practice.

5.2. Conclusion:

This study aimed to identify the relationship between HRQoL and the early diagnosis of BC, along with associated factors, among Palestinian women in the West Bank.

While the majority of the overall sample reported good “intermediate (30.9%) or high (60.5%)” HRQoL, a definitive conclusion is that a BC diagnosis significantly and negatively impacts a woman's HRQoL. Diagnosed women reported poorer QoL and higher symptom severity across all of the HRQoL domains compared to the non-diagnosed group. The results do not merely show that "cancer makes you feel worse." They demonstrate that in the Palestinian context, a BC diagnosis activates a powerful, culturally-specific syndrome of suffering where physical symptoms, identity crisis, and systemic failures are inextricably linked. The enormous effect sizes (especially in Body Image and Systemic Symptoms) point to this synergistic, context-driven devastation.

The women in this study demonstrated high rates of early seeking for medical care, with nearly 90% seeking medical consultation immediately after detecting signs and symptoms of BC and utilizing effective screening procedures, including mammography and SBE.

In contrast to some existing literature and studies, this study found no significant association between diagnosis condition and a woman's age, level of education, or place of residency. However, the data clearly identify marital status and current job status as statistically significant factors related to BC diagnosis in this sample, in addition to the previous personal or family history of BC, which remains a highly significant non-modifiable clinical risk factor.

In summary, this research confirms the profound negative influence of a BC diagnosis on HRQoL and highlights specific sociodemographic and clinical risk factors relevant to the Palestinian context.

5.3. Recommendations:

For Healthcare Policy and Practice:

Implement comprehensive psychosocial support programs within cancer care to address the quick and significant decline in HRQoL, body image, and symptom distress experienced by newly diagnosed women.

1. Integrate Psychosocial-Oncology & Survivorship Care

To treat mental discomfort and problems with body image, oncology-trained psychologists and psychiatrists should staff specialized supportive care clinics within oncology centers. Oncology social workers to negotiate stigma, family relationships, and social support.

2. Conduct regular, culturally responsive distress screenings with defined referral procedures at each visit.

3. Create peer support groups facilitated by a trained survivor and a mental health professional. Safe, shared environments may normalize feelings, minimize isolation, and rebuild identity based on resilience, not just physical form.

4. Introduce "Body Acceptance & Self-Compassion" programs that: Reframe femininity beyond physically, stressing power, wisdom, and spiritual importance. Teach practical methods for overcoming self-critical thoughts connected to scarring or hair loss

5. Improve Symptom Management Pathways

6. Launch Culturally-Informed Public Awareness Campaigns

7. Change the focus of the story from stigma to survivorship. Use respected community figures (religious leaders, educators, survivor advocates) in media efforts to: Frame BC as a treatable health problem, not a shameful secret.

8. Emphasize early detection as an act of strength and family duty.

9. Develop educational materials that address the symbolic fear directly, reassuring women and families that femininity and marital worth are not defined by a breast.

10. Create counseling materials for husbands and families to assist them provide emotional (not just practical) support, comprehend the treatment's influence on body image, and confirm the woman's value.

11. Design particular BC awareness and screening strategies for high-risk populations, particularly single women and women who are volunteers/not formally working, as these groups experienced a higher percentage of diagnosis in the study. Also, establish a clinical follow-up plan for women with a first-degree family history or past personal history of BC.

For researchers:

Prioritize Context-Specific Research: Design and validate a culturally-specific body image scale for Arab and Muslim BC survivors, capturing dimensions of stigma, marital worry, and spiritual coping not covered by Western tools.

Conduct experimental studies to test the feasibility and effectiveness of the recommended peer-support models and psychosocial interventions within the resource-constrained Palestinian health system.

Investigate the longitudinal impact of integrated care models on not just QoL scores, but also on treatment adherence, family functioning, and economic productivity.

Conduct a qualitative study to explore the specific factors and causes why marital status and current job status (e.g., being single or a non-employee) significantly correlate with BC diagnosis in this context like conduct follow-up studies to assess level of QoL among women who diagnosed with BC.

5.4. Limitations of the study:

One potential limitation of this study is related to the cross-sectional design, a self-administered questionnaire may limit the depth of responses compared to interviews or focus groups that could provide a capture of health-related quality of life and its relation with early detection of BC among Palestinian Women, response bias may occur with participant response. The accuracy of the data is influenced by the participants' honesty and self-awareness.

This study employed a culturally adapted version of the QLQ-BR40. Due to pronounced cultural sensitivities regarding the discussion of sexual health, items related to sexual functioning (Items 25,26,28,35,36,37,38,39,40) were removed prior to administration, as pilot testing confirmed they would lead to non-response and potential distress. Consequently, our findings do not capture the sexual health-related quality of life in this cohort, which is an important, albeit culturally challenging, aspect of comprehensive BC care. Future research should explore culturally congruent methods to assess this sensitive domain."

Limited resources, time, and financial constraints limit the size and scope of the study, which may affect the comprehensiveness of the findings.

Despite these potential limitations, the study aims to maximize the validity and reliability of its findings through careful questionnaire design, rigorous sampling methods, and transparent reporting of results, acknowledging and addressing these limitations where possible.

References:

- Abdel-Aziz, S. B., Amin, T. T., Al-Gadeeb, M. B., Alhassar, A. I., Al-Ramadan, A., Al-Helal, M., Bu-Mejdad, M., Al-Hamad, L. A., & Alkhalaf, E. H. (2017). Perceived barriers to BC screening among Saudi women at primary care setting. *Asian Pacific journal of cancer prevention: APJCP*, 18(9), 2409.
- ACR. (2025). *ACR Breast Imaging Reporting and Data System*. American College of Radiology. <https://www.acr.org/Clinical-Resources/Clinical-Tools-and-Reference/Reporting-and-Data-Systems/BI-RADS>
- AGCA. (2025). *BC diagnosis*. Cancer Australia. <https://www.canceraustralia.gov.au/cancer-types/breast-cancer/health-professionals/breast-cancer-diagnosis>
- Al-Azri, M., Al-Kiyumi, Z., Al-Bimani, K., & Al-Awaisi, H. (2024). The impact of a BC diagnosis on the social interaction patterns of young Omani women: A qualitative study approach. *Current Oncology*, 31(12), 7979-7993.
- Al-Jabi, S. W., Yahya, R., Salameh, R. a., Jabi, H., Msaim, W., Daraghme, M., Zyoud, S. e. H., & Sweileh, W. M. (2018). Health-related quality of life in patients with BC in Palestine: an assessment of a cross-sectional study using the EuroQoL-5 dimensions scale. *The Lancet*, 391, S34.
- Al-Sharman, A., Al-Sarhan, A., Aburub, A., Shorman, R., Bani-Ahmad, A., Siengsukon, C., Bani Issa, W., Abdelrahim, D. N., Hijazi, H., & Khalil, H. (2024). Quality-of-life among women with BC: application of the international classification of functioning, disability and health model. *Frontiers in Psychology*, 15, 1318584.
- Al-Shiekh, S. S. A., Alajerami, Y. S., Abushab, K. M., Najim, A. A., AlWaheidi, S., & Davies, E. A. (2022). Factors affecting delay in the presentation of BC symptoms among women in Gaza, occupied Palestinian territory: a cross-sectional survey. *BMJ open*, 12(10), e061847.
- AL-Tell, M., Natour, N., & Younes, D. (2019). Barriers to BC Screening among Palestinian Women in Nablus Region, North-ern West Bank. *Palestinian Medical and Pharmaceutical Journal*, 5(2), 2.
- Aladien, Y. (2024). *ASSESSMENT OF WOMEN'S KNOWLEDGE AND AWARENESS ABOUT BC EARLY DETECTION AND SCREENING IN WOMEN AGED BELOW 40 YEARS IN PALESTINE* Faculty of Graduate Studies ASSESSMENT OF WOMEN'S KNOWLEDGE AND AWARENESS ...].
- Alatrash, M. (2021). Cultural barriers to BC screening in Arab Women. *Handbook of healthcare in the Arab world*, 177-205.

- Aljadani, F. F., Nughays, R. O., Alharbi, G. E., Almazroy, E. A., Elyas, S. K., Danish, H. E., Alanazi, R. T., Aldrees, B. A., Jadkarim, G. A., & Mikwar, Z. (2025). Quality of Life in BC Patients in Saudi Arabia: A Systematic Review. *BC: Targets and Therapy*, 171-186.
- Almuhtaseb, M. I., & Alpy, F. (2021). SOCIO-CULTURAL FACTORS AND LATE BC DETECTION IN ARAB-PALESTINIAN WOMEN. *TPM: Testing, Psychometrics, Methodology in Applied Psychology*, 28(3).
- Alsalamh, R., Al-Harbi, F. A., Alotaibi, R. T., Al-Harbi, O. N., Alshahrani, N., Alfadhel, S. M., Fatani, E. R., Al-Harbi, A., Lasloom, R. A., & Alzahrani, R. M. (2024). Barriers to BC Screening in Saudi Arabia: A Systematic Review and Meta-Analysis. *Cureus*, 16(7), e65103.
- AlWaheidi, S. (2019). BC in Gaza—a public health priority in search of reliable data. *ecancermedicalscience*, 13.
- AlWaheidi, S., Sullivan, R., & Davies, E. A. (2024). BC in Women in Gaza: A Review of Clinical Characteristics and Short-Term Survival. *JCO Global Oncology*, 10, e2300170.
- Ammar-Shehada, W., & Bracke, P. (2023). The influence of socio-demographic factors on the stage at which women's BC is diagnosed and treatment prescribed in the Gaza Strip, occupied Palestinian territory. *ecancermedicalscience*, 17, 1522.
- Ammar-Shehada, W., Bracke, P., & Ceuterick, M. (2024). Experiences of social burden amongst survivors of BC in Gaza: A qualitative study. *European Journal of Oncology Nursing*, 73, 102716.
- Azaiza, F., Cohen, M., Awad, M., & Daoud, F. (2010). Factors associated with low screening for BC in the Palestinian Authority: relations of availability, environmental barriers, and cancer-related fatalism. *Cancer*, 116(19), 4646-4655.
- Baloushah, S., Salisu, W. J., Elsous, A., Muhammad Ibrahim, M., Jouda, F., Elmodallal, H., & Behboodi Moghadam, Z. (2020). Practice and barriers toward breast self-examination among Palestinian women in Gaza City, Palestine. *The Scientific World Journal*, 2020(1), 7484631.
- BCRF. (2024). *BC Statistics And Resources*. BC Research Foundation. <https://www.bcrf.org/breast-cancer-statistics-and-resources/>
- Belhaj Haddou, M., Igarramen, T., Khouchani, M., & Elkhoudri, N. (2024). Determinants of Health-related Quality of Life in BC Patients: A Comprehensive Study in Marrakech, Morocco. *The Open Public Health Journal*, 17(1).
- Biparva, A. J., Raoofi, S., Rafiei, S., Kan, F. P., Kazerooni, M., Bagheribayati, F., Masoumi, M., Doustmehraban, M., Sanaei, M., & Zarabi, F. (2022). Global quality of life in BC: systematic review and meta-analysis. *BMJ Supportive & Palliative Care*, 13(e3), e528-e536.

- Bowser, D., Marqusee, H., El Koussa, M., & Atun, R. (2017). Health system barriers and enablers to early access to BC screening, detection, and diagnosis: a global analysis applied to the MENA region. *Public health*, 152, 58-74.
- Chen, X., Wu, C., Bai, D., Gao, J., Hou, C., Chen, T., Zhang, L., & Luo, H. (2022). Health-related quality of life in BC patients in Asia: A meta-analysis and systematic review. *Frontiers in Oncology*, 12, 954179.
- Deng, T., Zi, H., Guo, X. P., Luo, L. S., Yang, Y. L., Hou, J. X., Zhou, R., Yuan, Q. Q., Liu, Q., & Huang, Q. (2025). Global, Regional, and National Burden of BC, 1990–2021, and Projections to 2050: A Systematic Analysis of the Global Burden of Disease Study 2021. *Thoracic Cancer*, 16(9), e70052.
- El Haidari, R., Abbas, L. A., Nerich, V., & Anota, A. (2020). Factors associated with health-related quality of life in women with BC in the Middle East: a systematic review. *Cancers*, 12(3), 696.
- Elengoe, A. (2024). A Short Review on BC. *International Journal of Biotechnology and Biomedicine (IJBB)*, 1(1), 1-11.
- Elezaby, M., Li, G., Bhargavan-Chatfield, M., Burnside, E. S., & DeMartini, W. B. (2018). ACR BI-RADS assessment category 4 subdivisions in diagnostic mammography: utilization and outcomes in the national mammography database. *Radiology*, 287(2), 416-422.
- Elhadi, Y. A. M., Al-Rifai, R. H., Elbarazi, I., Suliman, A., Alabass, S. O., Abufatima, I. O., Mohamed, S. O. O., Khogali, M., & Masuadi, E. (2025). Prevalence of advanced-stage BC at diagnosis in Arab countries: A systematic review and meta-analysis. *Cancer Epidemiology*, 99, 102930.
- Elshami, M., Abu Kmeil, H., Abu-Jazar, M., Mahfouz, I., Ashour, D., Aljamal, A., Mohareb, N., Elbalaawi, R., Dabbour, R., & Ghaith, J. (2018). BC awareness and barriers to early presentation in the Gaza-strip: a cross-sectional study. *Journal of global oncology*, 4, 1-13.
- Elshami, M., Qawasmi, M. A., Ghithan, R. J., Al-Slaibi, I., Alser, M., Shurrab, N. R., Ismail, I. O., Mahfouz, I. I., AbdulQader Fannon, A., & Hawa, M. R. (2024). Barriers to Timely Seeking of BC Care Among Palestinian Women: A Cross-Sectional Study. *JCO Global Oncology*, 10, e2300373.
- Elshami, M., Usrof, F. D., Alser, M., Al-Slaibi, I., Okshiya, H. M., Ghithan, R. J., Shurrab, N. R. S., Ismail, I. O., Mahfouz, I. I., & Fannon, A. A. (2022). Awareness of Palestinian women about BC risk factors: A national cross-sectional study. *JCO Global Oncology*, 8, e2200087.
- Elsous, A., Radwan, M., Najjar, S., Masad, A., & Abu Rayya, M. (2023). Unmet needs and health-related quality of life of BC survivors: survey from Gaza Strip, Palestine. *Acta Oncologica*, 62(2), 194-209.
- EROTC. (2020). *EORTC QLQ-BR-SURV40*. EORTC. <https://qol.eortc.org/>

- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- Fazeli, S., Stepenosky, J., Guirguis, M. S., Adrada, B., Rakow-Penner, R., & Ojeda-Fournier, H. (2024). Understanding BI-RADS Category 3. *RadioGraphics*, 45(1), e240169.
- Freihat, O., Sipos, D., & Kovacs, A. (2025). Global burden and projections of BC incidence and mortality to 2050: A comprehensive analysis of GLOBOCAN data. *Frontiers in Public Health*, 13, 1622954.
- Haddou Rahou, B., El Rhazi, K., Ouasmani, F., Nejari, C., Bekkali, R., Montazeri, A., & Mesfioui, A. (2016). Quality of life in Arab women with BC: a review of the literature. *Health and quality of life outcomes*, 14(1), 64.
- Hejaz, H. (2025). Cross-sectional investigation of the effects of the war in Gaza on quality-of-life of BC patients.
- Ibrahim, M. (2020). Implementing the 2030 agenda for sustainable development in Palestine: an innovation-centric economic growth perspective. *United Nations Department of Economic and Social Affairs (UNDESA)*. New York, NY, USA.
- Jesinger, R. A. (2014). Breast anatomy for the interventionalist. *Techniques in vascular and interventional radiology*, 17(1), 3-9.
- Jubran, J., Ali Nashat Shaar, M. M., Sawsan Hammad, M., & Khadija Jarrar, M. M. (2018). *Pathway to survival: The story of BC in Palestine, Analytical mapping of BC care in Palestine; Current services, challenges and recommendations for improvement*. UNFPA.
- Karimi, M., & Brazier, J. (2016). Health, health-related quality of life, and quality of life: what is the difference? *Pharmacoeconomics*, 34(7), 645-649.
- Kawar, L. N. (2013). Barriers to BC screening participation among Jordanian and Palestinian American women. *European Journal of Oncology Nursing*, 17(1), 88-94.
- Keelan, E. (2016). Medical care in Palestine: working in a conflict zone. *The Ulster medical journal*, 85(1), 3.
- Khan, A. Q., Touseeq, M., Rehman, S., Tahir, M., Ashfaq, M., Jaffar, E., & Abbasi, S. F. (2025). Advances in BC diagnosis: a comprehensive review of imaging, biosensors, and emerging wearable technologies. *Frontiers in Oncology*, 15, 1587517.
- Lafi, M. A., & Shaheen, R. (2016). Needs assessment of breast health care in the Gaza Strip. *Journal of Emergency Medicine, Trauma and Acute Care*, 2016(2-International Conference in Emergency Medicine and Public Health-Qatar Proceedings), 83.
- Mansour, R., Amarin, J. Z., Al-Ani, A., Al-Hussaini, M., & Mansour, A. (2022). Palestinian Patients with cancer at king Hussein cancer center. *Frontiers in Oncology*, 12, 997492.

Mascara, M., & Constantinou, C. (2021). Global perceptions of women on BC and barriers to screening. *Current Oncology Reports*, 23, 1-9.

Menne, B., Aragon de Leon, E., Bekker, M., Mirzikashvili, N., Morton, S., Shriwise, A., Tomson, G., Vracko, P., & Wippel, C. (2020). Health and well-being for all: an approach to accelerating progress to achieve the Sustainable Development Goals (SDGs) in countries in the WHO European Region. *European journal of public health*, 30(Supplement_1), i3-i9.

Miller, A. M., Ashing, K. T., Modeste, N. N., Herring, R. P., & Sealy, D.-A. T. (2015). Contextual factors influencing health-related quality of life in African American and Latina BC survivors. *Journal of Cancer Survivorship*, 9, 441-449.

Nasrallah, A. (2025). *BC in Palestine – Barriers, Challenges, and the Way Forward*. <https://oncodaily.com/voices/breast-cancer-388574>

NCI. (2024). *Cancer Stat Facts: Female BC*. National Cancer Institute <https://seer.cancer.gov/statfacts/html/breast.html>

Nemutlu, G., Thayumanavan, E., Blauvelt, B., & Chhatwal, J. (2020). PCN174 Achievability of the 2030 United Nations Sustainable Development Goals in BC Control. *Value in Health*, 23, S453.

Ngo, N. T., Nguyen, H. T., Nguyen, P. T. L., Vo, T. T. T., Phung, T. L., Pham, A. G., Vo, T. V., Dang, M. T. N., Nguyen Le Bao, T., & Duong, K. N. (2023). Health-related quality of life in BC patients in low-and-middle-income countries in Asia: a systematic review. *Frontiers in Global Women's Health*, 4, 1180383.

Omari, B., Riash, S. A., Arfat, A., Amer, R., Mosleh, S., & Shawahna, R. (2024). Assessing the factors associated with body image perception and quality of life of Palestinian women undergoing BC treatment: a cross-sectional study. *BMC Women's Health*, 24(1), 565.

Orel, S. G., Kay, N., Reynolds, C., & Sullivan, D. C. (1999). BI-RADS categorization as a predictor of malignancy. *Radiology*, 211(3), 845-850.

Paraskevi, T. (2012). Quality of life outcomes in patients with BC. *Oncology reviews*, 6(1).

PMoH. (2022a). *Cancer in Palestine; Annual Cancer Report*. PMoH. https://site.moh.ps/Content/Books/cAYNKTYvDWobRBNfvYEWrD3auYlmbGSLqFdyyjakuWfy6npu4OiflW_y63JG6bdtVEWzmh61jrdaBZ8h49GfGyiB3BJguzxDo2xiazO54gut z.pdf

PMoH. (2022b). *Health Annual Report Palestine 2022*. PMoH. https://site.moh.ps/Content/Books/qEbwa3OkFYRzxTPkZMgjNqWmUHxyrrY2NPBI5lui4Fu5kUPtNtDIva_jdAtJuL53McCo1cwhdKheWcMLNwVMRo2a7EJhCs7LE5jQklgULmBUj.pdf

PMoH. (2025). *Health Annual Report 2024*. P. H. I. C. (PHIC). chrome-extension://efaidnbmninnibpcapjpcglclefindmkaj/https://site.moh.ps/Content/Books/JsOcOwZxWZU7SAEraJ6SFLhq2Udwv2qmunFGMam4YzqmQINtdzdsDv_XdvvM4qXsgWQDF1MjLKh8TLosrZ2ENPebOot4bCKj68sItYbuKzBhX.pdf

- Portaluri, M., Abu-Rmeileh, N., & Gianicolo, E. (2017). Radiation therapy in Palestine: Not only money, but also real accessibility.
- Rahman, M. A., Khan, M. S. H., Watanobe, Y., Prioty, J. T., Annita, T. T., Rahman, S., Hossain, M. S., Aitijjo, S. A., Taskin, R. I., & Dhruvo, V. (2025). Advancements in BC detection: a review of global trends, risk factors, imaging modalities, machine learning, and deep learning approaches. *BioMedInformatics*, 5(3), 46.
- Sabih, W. K., Taher, J. A., El Jabari, C., Hajat, C., Adib, S. M., & Harrison, O. (2012). Barriers to BC screening and treatment among women in Emirate of Abu Dhabi. *Ethnicity & disease*, 22(2), 148-154.
- Salas, M., Mordin, M., Castro, C., Islam, Z., Tu, N., & Hackshaw, M. D. (2022). Health-related quality of life in women with BC: a review of measures. *BMC cancer*, 22(1), 66.
- Saldaña-Téllez, M., Meneses-Navarro, S., Cano-Garduño, L., & Unger-Saldaña, K. (2024). Barriers and facilitators for BC early diagnosis in an indigenous community in Mexico: voices of otomí women. *BMC Women's Health*, 24(1), 33.
- Shaheen, R., Slanetz, P., Raza, S., & Rosen, M. P. (2011). Barriers and opportunities for early detection of BC in Gaza women. *The Breast*, 20, S30-S34.
- Strobel, K., Schrading, S., Hansen, N. L., Barabasch, A., & Kuhl, C. K. (2015). Assessment of BI-RADS category 4 lesions detected with screening mammography and screening US: utility of MR imaging. *Radiology*, 274(2), 343-351.
- Subedi, R., Houssami, N., Nickson, C., Nepal, A., Campbell, D., David, M., & Yu, X. Q. (2024). Factors influencing the time to diagnosis and treatment of BC among women in low- and middle-income countries: A systematic review. *The Breast*, 103714.
- Thawabteh, S. A. M. (2024). *Awareness, Attitude and practice among Palestinian women regarding BC screening (breast self-examination and mammography)* [Al-Quds University].
- Theofilou, P. (2013). Quality of life: definition and measurement. *Europe's journal of psychology*, 9(1).
- Thompson, S. K. (2012). *Sampling* (Vol. 755). John Wiley & Sons.
- Titi, I., & El Sharif, N. (2024). Factors associated with supportive care needs among Palestinian women with BC in the west bank: a cross-sectional study. *Cancers*, 16(21), 3663.
- Titi, I., & El Sharif, N. (2025a). Quality of Life and Coping Strategies of Palestinian Women with BC in the West Bank: A Cross-Sectional Study. *Healthcare*,
- Titi, I., & El Sharif, N. (2025b). Satisfaction and quality of life of Palestinian women with newly diagnosed BC: a one-year follow-up study. *Frontiers in Psychology*, 16, 1614851.
- Unger-Saldaña, K. (2014). Challenges to the early diagnosis and treatment of BC in developing countries. *World journal of clinical oncology*, 5(3), 465.

- Watson, R. (2015). Quantitative research. *Nursing standard*, 29(31).
- WCRF. (2024). *BC statistics*. World Cancer Research Fund. <https://www.wcrf.org/preventing-cancer/cancer-statistics/breast-cancer-statistics/>
- WHO. (2024a). *BC*. The World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>
- WHO. (2024b). *Global cancer burden growing, amidst mounting need for services*. World Health Organization. <https://www.who.int/news/item/01-02-2024-global-cancer-burden-growing--amidst-mounting-need-for-services>
- WHO. (2024c). *Women's cancer in the WHO Eastern Mediterranean Region*. World Health Organization Eastern Mediterranean Region. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://applications.emro.who.int/docs/9789292743369-eng.pdf>
- Yao, M. M.-S., Joe, B. N., Sickles, E. A., & Lee, C. S. (2019). BI-RADS category 5 assessments at diagnostic breast imaging: outcomes analysis based on lesion descriptors. *Academic radiology*, 26(8), 1048-1052.

Appendices

Appendix (A) Informed Consent:



الموافقة للمشاركة في بحث علمي

أنا الطالبة شهد عكاوي من ماجستير برنامج صحة الأمومة والطفل التابع لجامعة القدس، أقوم بدراسة بحثية حول مستوى جودة الحياة وعلاقتها في التشخيص المبكر لسرطان الثدي عند النساء الفلسطينيات، دراسة مقطعية، فأرجو من حضرتك المشاركة في هذا البحث، علماً أنه بمشاركتك في هذا البحث لن يتم ذكر اسمك، أو أي معلومات شخصية عنك، ولن يتم تعرضك لأي أذى، وكذلك لا يوجد أي فائدة مباشرة لك، وإنما كافة المعلومات الموجودة سيتم أخذها لغرض البحث العلمي مع الحفاظ على الخصوصية الكاملة لك والحفاظ على هذه المعلومات بما يستوجب ويتناسب مع أخلاقيات البحث العلمي، وسيتم نشر نتائج الدراسة ومشاركتها معكم.

كما وأن المشاركة في هذا البحث هي مشاركة طوعية بالكامل، وبإمكانك الانسحاب في أي وقت دون أي قيود أو شروط، وبإمكانك عدم الإجابة على الأسئلة التي لا تريدين الإجابة عليها بكامل الحق.

إذا كان لديك أي استفسار بإمكانك التواصل مع الباحثة مباشرة شهد عكاوي من خلال الايميل:

shahd.akkawi@students.alquds.edu

أو مع الدكتورة المشرفة على الباحثة د. سلام الخطيب من خلال الايميل:

salam.khatib@staff.alquds.edu

موافقة المشاركة:

هل توافقين على المشاركة في البحث؟ _____

التوقيع (يرجى عدم كتابة الاسم الصريح كاملاً): _____

أشكر لك حسن المشاركة والقبول

Appendix (B) Questionnaire in English:

Research tool/Questionnaire

❖ Section one: Sociodemographic characteristics

1. Age: _____

2. Marital status:

1. Single
2. Married
3. Divorced
4. Widowed

3. Place of residency:

1. Nablus
2. Jenin
3. Tulkarem

4. Level of education:

1. Illiteracy
2. Secondary school.
3. Diploma degree 2 years
4. Bachelor's degree.
5. Master's degree.
6. PhD degree.

6. Your current job status:

1. Employee.
2. Volunteer.
3. Student.
4. Housewife.
5. Do not work.

❖ Section Two: Clinical data

1. Your current weight:

1. 50 Kg or less.
2. 51 to 60 kg.
3. 61 to 70 kg.
4. 71 kg or more.

2. Do you have a history of breast cancer?

1. Yes
2. No

3. Do you have a first degree relative (Mum or sister) with a history of breast cancer?

1. Yes
2. No

❖ Section three: Health-Related Quality of Life “EORTC QLQ – BR40 scale”:

Women with breast cancer sometimes report that they have the following symptoms or problems. Please indicate the extent to which you have experienced these symptoms or problems during the past week.

	Item	Not at all	A little	Quite a bit	Very Much
1	Have you had problems with your teeth?	1	2	3	4
2	Have you had a dry mouth?	1	2	3	4
3	Have your eyes been painful, irritated or watery?	1	2	3	4
4	Have you had problems with your nails (e.g., change in color, splitting nails, inflammation, losing the whole nail)?	1	2	3	4
5	Have you lost any hair?	1	2	3	4
6	Have you been upset by the loss of your hair?	1	2	3	4
7	Have you had hot flushes?	1	2	3	4
8	Have you had night sweats?	1	2	3	4
9	Have you sweated excessively?	1	2	3	4
1	Have you had headaches?	1	2	3	4
1	Have you been dizzy?	1	2	3	4
1	Have you had pain in your arm or shoulder?	1	2	3	4
1	Have you had pain in the area of your affected breast?	1	2	3	4
1	Has the area of your affected breast been oversensitive?	1	2	3	4
1	Have you had a swollen arm or hand?	1	2	3	4
1	Have you had pain in your hands or feet?	1	2	3	4
1	Have you had problems raising your arm or moving it sideways?	1	2	3	4
1	Have you had problems with your joints?	1	2	3	4
1	Have you had stiffness in your joints?	1	2	3	4
2	Have you had swollen joints?	1	2	3	4
2	Have you had aches or pains in your bones?	1	2	3	4
2	Have you had any numbness or tingling in your arm or shoulder?	1	2	3	4

2	Have you had numbness in your affected breast?	1	2	3	4
2	Have you been satisfied with the appearance of the skin of your affected breast (thoracic area)?	1	2	3	4
2	Have you felt that cancer diagnosis has left your body less whole?	1	2	3	4
2	Have you felt physically less attractive as a result of your disease or treatment?	1	2	3	4
2	Have you felt less feminine as a result of your disease?	1	2	3	4
2	Have you been dissatisfied with your body?	1	2	3	4
2	Have you had problems looking at yourself naked to do breast examination?	1	2	3	4
3	Have you gained weight?	1	2	3	4
3	Has weight gain been a problem for you?	1	2	3	4
3	© 2020 EORTC Quality of Life Group. All rights reserved. Phase IV module.				

❖ Section Four: Early Detection of Breast Cancer

1. Your age at menarche _____

2. Are you diagnosed with breast cancer?

1. Yes
2. No
3. I am here to do screening

3. What kind of breast examinations test do you usually do? (Select all that apply)

1. Self-breast examination
2. Professional breast palpation by specialist
3. Mammography
4. Breast ultrasound
5. I do not do breast exam

4. When did you discover changes in your breast?

1. One week ago
2. Two weeks ago
3. Three weeks ago
4. One month ago
5. More than one month ago

5. What are the signs and symptoms do you have? (Select all that apply)

1. Skin changes
2. Breast discharges
3. Weight loss or gain
4. Breast tenderness
5. Decrease appetite
6. Increase in breast size

Appendix (C) Questionnaire in Arabic:

أداة البحث/ الاستبيان

❖ القسم الأول: الخصائص الاجتماعية والديموغرافية

1. العمر: _____

2. الحالة الاجتماعية:

1. عزباء

2. متزوجة

3. مطلقة

4. أرملة

3. مكان الإقامة:

1. نابلس

2. جنين

3. طولكرم

4. غير ذلك (حددي) _____

4. المستوى التعليمي:

1. غير متعلمة

2. الثانوية العامة

3. دبلوم

4. درجة البكالوريوس

5. درجة الماجستير

6. درجة الدكتوراة

5. حالتك الوظيفية الان:

1. موظفة

2. متطوعة

3. طالبة

4. ربة منزل

5. لا أعمل

❖ القسم الثاني: البيانات الإكلينيكية

1. وزنك الحالي:

1. 50 كغم أو أقل

2. 51 كغم الى 60 كغم

3. 61 كغم الى 70 كغم

4. 71 كغم أو أكثر

2. هل لديك تاريخ للإصابة بسرطان الثدي؟

1. نعم

2. لا

3. هل لديك قريبة من الدرجة الأولى (أمك أو أختك) مصابة بسرطان الثدي؟

1. نعم

2. لا

❖ القسم الثالث: جودة الحياة المرتبطة بالصحة مقياس "EORTC QLQ – BR40"

تبلغ السيدات المرضى بسرطان الثدي وجود العلامات والمشاكل التالية لديهم. رجاء حدي الى أي مدى

عانيتي من هذه العلامات او المشاكل خلال الأسبوع الماضي.

العنصر	على الاطلاق	قلي لا	نوعاً ما	كث يراً
هل لديك مشاكل في أسنانك؟	1	2	3	4
هل عانيتي من جفاف الفم؟	1	2	3	4
هل كان لديك ألم في عيناك أو التهاب او دموع؟	1	2	3	4
هل تعانيين من مشاكل في أظافرك؟ (مثل تغير اللون، تكسر الاظافر، التهاب، فقدان ظفراً كمله؟	1	2	3	4
هل عانيت من تساقط الشعر؟	1	2	3	4
هل أنت منزعة من تساقط شعرك؟	1	2	3	4
هل عانيت من الهبات الساخنة؟	1	2	3	4
هل عانيت من التعرق الليلي؟	1	2	3	4
هل تتعرقين بشكل مفرط؟	1	2	3	4

4	3	2	1	هل عانيت من الصداع؟
4	3	2	1	هل كنت تشعرين بالدوار؟
4	3	2	1	هل عانيت من ألم في ذراعك أو يدك؟
4	3	2	1	هل عانيت من ألم في منطقة الثدي المصابة؟
4	3	2	1	هل أصبحت المنطقة المتأثرة من ثديك أكثر تحسسا؟
4	3	2	1	هل عانيت من تورم في ذراعك أو يدك؟
4	3	2	1	هل تعانين من ألم في يديك أو قدميك؟
4	3	2	1	هل واجهت مشاكل في رفع ذراعك أو تحريكها جانبا؟
4	3	2	1	هل عانيت من ألم في المفاصل؟
4	3	2	1	هل عانيت من تصلب في المفاصل؟
4	3	2	1	هل عانيت من تورم المفاصل؟
4	3	2	1	هل عانيت من ألم في عظامك؟
4	3	2	1	هل شعرت بخدر أو وخز في ذراعك أو كتفك؟
4	3	2	1	هل شعرت بخدر في ثديك المصاب؟
4	3	2	1	هل أنت راضية عن مظهر جلد الثدي المصاب (منطقة الصدر)؟
4	3	2	1	هل شعرت ان العلاج جعل جسدك أقل اكتمالا؟
4	3	2	1	هل شعرت بانخفاض جاذبيتك الجسدية نتيجة مرضك ؟
4	3	2	1	هل شعرت بانخفاض انوثتك نتيجة مرضك ؟
4	3	2	1	هل كنت غير راضية عن جسدك؟
4	3	2	1	هل واجهتك مشكلة عند النظر الى جسدك عارية لاجراء فحص الثدي؟
4	3	2	1	هل زاد وزنك؟
4	3	2	1	هل كانت لديك مشكلة في زيادة الوزن؟

❖ القسم الرابع: الكشف المبكر عن سرطان الثدي

1. عمرك عند البلوغ _____

2. هل تم تشخيصك بسرطان الثدي؟

1. نعم

2. لا

3. أنا هنا لاجراء الفحص

3. ما هو نوع فحص الثدي الذي تقومين به عادة؟ (اختاري كل الخيارات المنطبقة)

1. فحص الثدي الذاتي
 2. فحص الثدي بواسطة أخصائي
 3. تصوير الثدي بالأشعة
 4. التصوير التلفزيوني للثدي
 5. لا أقوم بأي فحص
4. متى اكتشفتي وجود تغييرات في ثدييك؟

1. منذ أسبوع
2. منذ أسبوعين
3. منذ ثلاثة أسابيع
4. منذ شهر
5. منذ أكثر من شهر

5. ما هي العلامات والأعراض التي ظهرت لديك؟ (اختاري كل الخيارات المنطبقة)

1. تغييرات في الجلد
2. إفرازات من الثدي
3. نقصان في الوزن أو زيادة
4. ألم في الثدي عند لمسه
5. فقدان الشهية
6. زيادة في حجم الثدي

Appendix (D) Permission to use EORTC QLQ-BR-SURV40

Dear Salam Khatib,

Thank you for registering on the EORTC Quality of Life Group website.

Your registration to obtain permission to use our tools has been approved. During the registration process you agreed to our terms and conditions regarding the academic use of our questionnaires. You can review the terms and conditions [here](#).

Please find below the links to the requested tools:

[Breast Module \(BR42\) - Arabic \(Jordan\)](#)

Scoring Manuals:

[BR45 Scoring Manual](#)

EORTC

<http://www.eortc.org>

<http://qol.eortc.org>

NOTE:

This email was automatically generated. Since this email is an automatic notification, we are unable to receive replies. Please do not respond to this email address.

 http://www.eortc.be/signatures/signature_stats_525x16pg

[Disclaimer](#) | [Twitter](#) [Facebook](#) [LinkedIn](#)

Appendix (E) Research Ethical Committee Approval

Al-Quds University
Jerusalem
Deanship of Scientific Research

بسم الله الرحمن الرحيم



جامعة القدس
القدس
عمادة البحث العلمي

Research Ethics Committee
Committee's Decision Letter

Date: April 26, 2025
Ref No: 538/REC/2025

Dears Dr. Salam Khatib, Ms. Shahd Akkawi,

Research ethics application. After reviewing your submission titled: "The Relationship Between Health-Related Quality of Life and Early Diagnosis of Breast Cancer Among Palestinian Women in the Northern West Bank: A Cross-Sectional Study", the Research Ethics Committee (REC) at Al-Quds University confirms that your application aligns with our ethics guidelines, which are based on the principles outlined in the Declaration of Helsinki.

Please note that this approval does not replace other required permissions, such as for sample shipment or data sharing. We also request a copy of your final report or publication when available.

This approval is valid for two years. If your research extends beyond this period, a renewal request will be necessary. The approval remains valid as long as there are no changes to the research protocol.

Sincerely,

Suheir Ereqat, PhD
Associate Professor of Molecular Biology

Research Ethics Committee Chair

Cc. Prof. Hanna Abdel Nour - President
Cc. Members of the committee
Cc. file

Abu-Dies, Jerusalem P.O.Box 20002
Tel-Fax: #970-02-2791293

research@admin.alquds.edu

أبوديس، القدس ص.ب. 20002
تلفاكس: #970-02-2791293

Appendix (F) Permission of Data Collection from PMoH

State of Palestine
Ministry of Health
Education in Health and Scientific
Research Unit



دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي
والبحث العلمي

Ref.:
Date:.....

الرقم: ٢٠٢٠/٩٣٦/١٣٥
التاريخ: ٢٠٢٠/٤/١٤

عطوفة الوكيل المساعد لشؤون الصحة العامة وصحة الاسرة المحترم،،
تعية واحترام،،

الموضوع: تسهيل مهمة بحث

يرجى تسهيل مهمة الطالبة: شهد فهمي عكاوي- ماجستير تمريض الام والطفل/ جامعة القدس، وياشرف د. سلام الخطيب، في عمل بحث بعنوان:
العلاقة بين جودة الحياة و التشخيص المبكر لسرطان الثدي عند النساء الفلسطينيات، دراسة مقطعية
من خلال السماح للطالبة بجمع معلومات عن طريق تعبئة استبانة من قبل السيدات بعد اخذ موافقتهم، وذلك في:

- مراكز الصحة الأولية في محافظات: - جنين - طولكرم - نابلس
على ان يتم الالتزام باساليب واخلاقيات البحث العلمي، وعدم التعرض للمعلومات التعريفية للمشاركين.
على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة الوزارة على نتائج البحث.

مع الاحترام،،

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

نسخة: منسقة برنامج الماجستير/ دائرة التمريض المحترمة/ جامعة القدس

Appendix (G) Permission of Data Collection from Donya Center

Al- Quds University
Faculty of Health professions
Clinical training unit
Jerusalem-Abu Dies



جامعة القدس
كلية المهن الصحية
وحدة التدريب العملي
القدس-أبوديس

التاريخ: 2025/4/23

حضرة الدكتورة نفوز مسلماني المحترمة / مديرة مركز دنيا

الموضوع: تسهيل مهمة طالبة ماجستير في جمع بيانات لغرض البحث العلمي

تحية طيبة وبعد ،،،

يرجى من حضرتكم تسهيل مهمة طالبة الماجستير "شهد فهمي ابراهيم عكاوي" ورقمها الجامعي (22312307) ، وهي طالبة ماجستير تمرّض صحة الام والطفل/ كلية المهن الصحية / جامعة القدس في جمع بيانات المعلومات اللازمة عن طريق توزيع استبيان على عن طريق توزيع استبيان على المريضات المشخصات حديثا بسرطان الثدي وذلك لغرض اجراء دراسة بحثية لرسالتها الماجستير بعنوان (العلاقة بين جودة الحياة والتشخيص المبكر لسرطان الثدي لدى النساء الفلسطينيات في شمال الضفة الغربية: دراسة مقطعية) بإشراف الدكتورة سلام الخطيب، وذلك في الفترة الواقعة ما بين 2025/4/25 حتى

2025/6/20

وتفضلوا بقبول فائق الاحترام والتقدير،،،

منسقة برنامج الماجستير/ دائرة التمريض

د. سلام الخطيب

مرفق: استبانة الدراسة ونموذج الموافقة المستنيرة

Appendix (H) Permission of Data Collection from The Palestinian Charitable Family Planning and Protection Society

THE PALESTINE CHARITABLE FAMILY
PLANNING and PROTECTION SOCIETY
Nablus - Palestine Str
Email : fbbsnablus@hotmail.com
Nablus - Al-Shwatra Str. Opp Municipal Library
Nablus - Palestine Street
Telefax: 092389080 & 2371515
P.O. Box 932 - Nablus

الجمعية الخيرية لتنظيم وحماية الأسر الفلسطينية
نابلس - شارع فلسطين
نابلس - شارع الشويطرة مقابل مكتبة بلدية نابلس
تلفاكس : ٠٩-٢٣٧١٥١٥ & ٠٩-٢٣٨٩٠٨٠
ص.ب ٩٣٢ - نابلس

حضرة الدكتورة سلام الخطيب المحترمة.

تحية طيبة وبعد،

الموضوع : تسهيل مهمة طالبة

يسعدنا في جمعية تنظيم الأسرة / نابلس ان نقوم على تسهيل مهمة الطالبة " شهد العكاوي "
لجمع المعلومات في استبيانها الخاص مع مرضى سرطان الثدي.

آملين التعاون المستمر .

وتفضلوا بقبول فائق الاحترام

رئيس الهيئة الادارية
د.مازن عبد الغني عنباتوي

مازن
٢٠٢٥/٤/٢٤

الجمعية الخيرية لتنظيم وحماية
الأسر الفلسطينية
Nablus
Palestine
1983
THE PALESTINIAN CHARITABLE
FAMILY PLANNING & PROTECTION SOCIETY

Appendix (I) Approval to Transfer Cases Post Data Collection



Appendix (J) Prevalence of items of EORTC QLQ-BR-SURV40 scale

	Item	Not at all N (%)	A little N (%)	Quite a bit N (%)	Very Much N (%)	M (SD)
	Have you had problems with your teeth?	40 (10.4)	257 (66.8)	65 (16.9)	23 (6)	2.18 ± 0.69
2.	Have you had a dry mouth?	66 (17.1)	236 (61.3)	70 (18.2)	13 (3.4)	2.08 ± 0.69
3.	Have your eyes been painful, irritated or watery?	68 (17.7)	221 (57.4)	89 (23.1)	7 (1.8)	2.09 ± 0.69
4.	Have you had problems with your nails (e.g., change in color, splitting nails, inflammation, losing the whole nail)?	92 (23.9)	192 (49.9)	93 (24.2)	8 (2.1)	2.04 ± 0.75
5.	Have you lost any hair?	39 (10.1)	209 (54.3)	103 (26.8)	34 (8.8)	2.34 ± 0.78
6.	Have you been upset by the loss of your hair?	56 (14.5)	201 (52.2)	93 (24.2)	35 (9.1)	2.28 ± 0.82
7.	Have you had hot flushes?	62 (16.1)	219 (56.9)	84 (21.8)	20 (5.2)	2.16 ± 0.75
8.	Have you had night sweats?	73 (19)	223 (57.9)	69 (17.9)	20 (5.2)	2.09 ± 0.75
9.	Have you sweated excessively?	93 (24.2)	226 (58.7)	41 (10.6)	25 (6.5)	1.99 ± 0.78
10	Have you had headaches?	113 (29.4)	196 (50.9)	46 (11.9)	30 (7.8)	1.98 ± 0.85
11	Have you been dizzy?	195 (50.6)	130 (33.8)	37 (9.6)	23 (6)	1.71 ± 0.87
12	Have you had pain in your arm or shoulder?	251 (65.2)	80 (20.8)	28 (7.3)	26 (6.8)	1.55 ± 0.89

13	Have you had pain in the area of your affected breast?	286 (74.3)	57 (14.8)	23 (6)	19 (4.9)	1.41 $\pm$ 0.81
14	Has the area of your affected breast been oversensitive?	308 (80)	48 (12.5)	19 (4.9)	10 (2.6)	1.30 $\pm$ 0.68
15	Have you had a swollen arm or hand?	224 (58.2)	124 (32.2)	29 (7.5)	8 (2.1)	1.54 $\pm$ 0.72
16	Have you had pain in your hands or feet?	158 (41)	159 (41.3)	48 (12.5)	20 (5.2)	1.82 $\pm$ 0.84
17	Have you had problems raising your arm or moving it sideways?	153 (39.7)	164 (42.6)	57 (14.8)	11 (2.9)	1.81 $\pm$ 0.79
18	Have you had problems with your joints?	78 (20.3)	217 (56.4)	66 (17.1)	24 (6.2)	2.09 $\pm$ 0.79
19	Have you had stiffness in your joints?	99 (25.7)	213 (55.3)	59 (15.3)	14 (3.6)	1.97 $\pm$ 0.75
20	Have you had swollen joints?	113 (29.4)	205 (53.2)	53 (13.8)	14 (3.6)	1.92 $\pm$ 0.76
21	Have you had aches or pains in your bones?	111 (28.8)	200 (51.9)	55 (14.3)	19 (4.9)	1.95 $\pm$ 0.79
22	Have you had any numbness or tingling in your arm or shoulder?	234 (60.8)	104 (27)	31 (8.1)	16 (4.2)	1.56 $\pm$ 0.81
23	Have you had numbness in your affected breast?	320 (83.1)	36 (9.4)	18 (4.7)	11 (2.9)	1.27 $\pm$ 0.68
24	Have you been satisfied with the appearance of the skin of your affected breast (thoracic area)?	315 (81.8)	27 (7)	26 (6.8)	17 (4.4)	1.34 $\pm$ 0.79
25	Have you felt that the cancer diagnosis has left your body less whole?	333 (86.5)	23 (6)	21 (5.5)	8 (2.1)	1.23 $\pm$ 0.64

26	Have you felt physically less attractive as a result of your disease?	335 (87)	25 (6.5)	17 (4.4)	8 (2.1)	1.22 $\pm$ 0.62
27	Have you felt less feminine as a result of your disease?	334 (86.8)	26 (6.8)	15 (3.9)	10 (2.6)	1.22 $\pm$ 0.64
28	Have you been dissatisfied with your body?	322 (83.6)	29 (7.5)	22 (5.7)	12 (3.1)	1.28 $\pm$ 0.71
29	Have you had problems looking at yourself naked to do breast examination?	83 (21.6)	153 (39.7)	127 (33)	22 (5.7)	2.23 $\pm$ 0.85
30	Have you gained weight?	111 (28.8)	216 (56.1)	39 (10.1)	19 (4.9)	1.91 $\pm$ 0.76
31	Has weight gain been a problem for you?	118 (30.6)	211 (54.5)	40 (10.4)	16 (4.2)	1.88 $\pm$ 0.75

Appendix (K) Abstract in Arabic:

العلاقة بين جودة الحياة المرتبطة بالصحة والتشخيص المبكر لسرطان الثدي لدى النساء الفلسطينيات في شمال الضفة الغربية: دراسة مقطعية

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الملخص:

المقدمة: يُعد سرطان الثدي مشكلة صحية عالمية، وقد سجلت كل دولة حول العالم حالات إصابة. وقد أشارت معظم الدراسات إلى تأثير تشخيص سرطان الثدي في مراحله المختلفة على جودة الحياة الصحية لدى المريضات؛ لذا، من الضروري فهم دور جودة الحياة الصحية في التشخيص المبكر لسرطان الثدي لدى النساء، نظرًا لارتفاع خطر الإصابة به لديهن مقارنةً بالرجال.

الهدف: تقييم العلاقة بين جودة الحياة الصحية (المستوى ومجالاتها) والتشخيص المبكر لسرطان الثدي لدى النساء الفلسطينيات في شمال الضفة الغربية.

المنهجية: أجريت دراسة مقطعية في شمال الضفة الغربية في ثلاث مدن (نابلس، وجنين، وطولكرم). جُمعت البيانات من 385 مشاركة؛ وبلغ معدل الاستجابة 100%. استخدم الباحثون استبيانًا ذاتيًا يتكون من ثلاثة أقسام: الخصائص الاجتماعية والديموغرافية، وتشخيص سرطان الثدي، ومقياس جودة الحياة الصحية. استُخدمت طريقة أخذ العينات الملائمة لجمع البيانات من عيادتين خاصتين وثلاث عيادات تابعة لوزارة الصحة العامة. ولتحليل البيانات، استُخدم برنامج SPSS، وطَبَّقَ الباحثون الاختبارات التالية: التكرارات والنسب المئوية، والمتوسط الحسابي والانحراف المعياري، واختبار "ت" للعينات المستقلة، واختبار مربع كاي.

النتائج: أشارت هذه الدراسة، التي شملت 385 امرأة فلسطينية، إلى أن 91.4% من المشاركات يتمتعن بجودة حياة صحية عامة ممتازة (متوسطة أو عالية). حضرت غالبية المشاركات (71.2%)، عدد المشاركات = 274) للفحص، وأفادت معظمهن (89.9%)، عدد المشاركات = 346 بتوجههن للرعاية الصحية فور ظهور العلامات والأعراض. كان تصوير الثدي بالأشعة السينية (الماموغرام) أكثر طرق الفحص شيوعًا (83.4%)، عدد المشاركات = 321). وعلى عكس المشاركات غير المشخصات، كانت جودة الحياة الصحية لدى النساء المصابات بسرطان الثدي (9.9%)، عدد المشاركات = 38) أقل بشكل ملحوظ، وأعراضهن أعلى في جميع المجالات (مثل: صورة الجسم، قيمة الاحتمال = 0.000، أعراض الذراع، قيمة الاحتمال = 0.000). كما أظهرت حالة التشخيص أهمية إحصائية عالية مع الحالة الاجتماعية (ص = 0.000)، حيث سجلت النساء العازبات أعلى معدل انتشار (36%، ن = 9)، ومع وجود تاريخ سابق للإصابة بسرطان الثدي (ص = 0.000) وقريب من الدرجة الأولى لديه تاريخ للإصابة بسرطان الثدي (ص = 0.045).

الاستنتاج: وجدت الدراسة أنه على الرغم من ارتفاع جودة حياة المرأة بشكل عام، إلا أن تشخيص سرطان الثدي قلل بشكل ملحوظ من جودة حياة المرأة وزاد من شدة الأعراض في جميع المجالات. وأظهرت المشاركات معدلات عالية لطلب الرعاية الطبية المبكرة. وكانت العوامل الرئيسية المرتبطة إحصائيًا بالتشخيص هي الحالة الاجتماعية، والوضع الوظيفي الحالي، والتاريخ العائلي أو الشخصي السابق لسرطان الثدي.

الكلمات المفتاحية: سرطان الثدي، جودة الحياة، جودة الحياة المتعلقة بالصحة، المرأة، فلسطين، الضفة الغربية.