ÇANKIRI 2022

Çankırı Karatekin University

Graduate School of Health Sciences

Master of Science Thesis

EXAMINNG THE RELATIONSHIP BETWEEN QUALITY OF LIFE AND PERCEIVED SOCIAL SUPPORT IN BREAST CANCER PATIENTS IN IRAQ

LAYLA QAİS ABO SOOT

Assoc. Prof. Figen Erol Ursavaş

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BY

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The Institute of Health Sciences

The Department of Nursing

The Degree of Master of Science

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2022

ACCEPTANCE AND APPROVAL

Layla Qais Shalal Abo Soot, the graduate student of The Institute of Health Sciences with the student number 208205213, has successfully presented her thesis entitled "Examining The Relationshıp Between Quality Of Life And Perceived Social Support In Breast Cancer Patients In Iraq" before the jury whose signatures are below, after fulfilling all of the requirements determined by the relevant regulations for the degree of Master of Science:

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ETHICS STATEMENT

The thesis entitled “Examining The Relationshıp Between Quality of Life and Perceived Social Support in Breast Cancer Patients in Iraq” which was prepared and presented as a thesis, was written by myself and in accordance with the scientific, academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the used sentences and interpretations within the work belongs to me.

I declare the aforementioned issues to be correct.

ABSTRACT

EXAMINING THE RELATIONSHIP BETWEEN QUALITY OF LIFE AND PERCEIVED SOCIAL SUPPORT IN BREAST CANCER

Layla Qais Shalal Abo Soot

Master of Science in Nursing

Advisor: Assoc. Prof. Figen Erol Ursavaş

2022

Introduction:. Social support is a crucial factor that could improve breast cancer patients' quality of life . **Aim:** The aim of our study is to examine the relationship between the quality of life and perceived social support of patients diagnosed with breast cancer in Iraq. **Methoods:** The study is relational and descriptive. study was used to guide this study which was conducted at the Al-Zahraa Teaching Hospital and Alkarama Teaching Hospital in Kut, Iraq. The study included a sample of 150 patients with breast cancer. The sample size was determined based on the criteria of a significance level of 0.05. The data were collected from December 10th, 2021 to March 1st, 2022. Three forms were used to collect the data; sociodemographic and clinical characteristics form, multidimensional perceived social support scale, and European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30). Statistical Package for Social Sciences was used to analyze the data. **Results:** participants age means 39.27 ± 14.7. were married 79.3%. are high school graduates 26.7%. As per the work status, that they are officers 28.0%. family's monthly income is less than their expenses 64.7%. Most reported that they have children 70.7%. the majority reported that they live in urban areas 56.6%. That they have first-degree relatives who have breast cancer 44.7%. The mean score of social support from significant others was 16.71 ± 4.40, family 18.39 ± 3.29, friends 15.36 ±

5.72, and overall perceived social support 50.47 ± 8.12. Sub- dimension mean scores of the quality of life scale; general quality of life was 74.42 ± 8.69, role functioning was 25.46 ± 11.66, emotional functioning 10.58 ± 2.66, cognitive functioning 5.36 ± 1.36, social functioning 5.26 ± 1.39, global health status 6.42 ± 2.11, dyspnea 2.25 ± 0.91, insomnia 2.52 ± 1.00, appetite 2.44 ± 1.03, nausea and vomiting 4.58 ± 1.49, constipation 2.31 ± 1.02, diarrhea 2.43 ± 0.92, fatigue 7.29 ± 1.68, pain 4.90 ± 1.45, overall symptoms 28.73 ± 4.72. When the quality of life was compared with social support. that there is a moderate positive correlation between the global health status sub- dimension of the quality of life scale and Significant Other sub- dimension of the perceived social support scale ($r = 0.638$, $p < 0.05$). In addition to a moderate positive correlation between the global health status sub- dimension of the quality of life scale and perceived social support scale ($r=0.451$, $p < 0.05$), as well as a weak positive correlation between the overall quality of life scale and Significant Other sub-dimension of the perceived social support scale ($r=0.269$, $p < 0.05$). **Conclusion**: Breast cancer patients in Iraq have a moderate quality of life. It was determined that the majority of the patients had average social support and the most social support source came from the family. It scored higher on "symptoms" among other dimensions of patients' quality of life. Overall quality of life is significantly associated with social support in patients with breast cancer.

2022, 50 pages

Keywords: Breast Cancer, Quality of Life, Social Support, Iraq.

ÖZET

IRAK'TAKİ MEME KANSERLİ HASTALARDA YAŞAM KALİTESİ VE ALGILANAN SOSYAL DESTEK ARASINDAKİ İLİŞKİNİN İNCELENMESİ

Layla Qais Shalal Abo Soot

Hemşerilik, Yüksek lisans

Tez Danışmanı: Doç. Dr. Figen Erol Ursavaş

2022

Giriş: Sosyal destek, meme kanseri hastalarının yaşam kalitesini iyileştirebilecek çok önemli bir faktördür. **Amaç:** Çalışmamızın amacı Irak'taki meme kanserli hastalarda yaşam kalitesi ile algılanan sosyal destek arasındaki ilişkiyi incelemektir. **Yöntem:** Çalışma ilişkisel ve tanımlayıcı olup, Irak Kut'taki Al-Zahra Eğitim Hastanesi ve Al-Karama Eğitim Hastanesi'nde yapılmıştır. Araştırmanın örneklemini 150 meme kanseri hastası oluşturmuştur. Veriler 10 Aralık 2021- 1 Mart 2022 arasında toplanmıştır. Veriler, sosyodemografik ve klinik özellikler, Çok Boyutlu Algılanan Sosyal Destek Ölçeği ve Avrupa Kanser Tedavi ve Organizasyon Komitesi Yaşam Kalitesi Ölçeği (AKTOK YKÖ-C30) toplanmıştır. **Bulgular:** Katılımcıların yaş ortalaması 39.27 ± 14.7'dir, %79.3 evli, %26.7'si lise mezunudur, %28.0 memur, %64.7'sinin aylık geliri giderlerinden azdır. %70.7 çocuk sahibidir, %56.6'sı kentsel alanlarda yaşamaktadır. %44.7 Birinci derece akrabalarında meme kanseri vardır. Sosyal destek ölçeğinin özel insan alt boyut puan ortalaması 16.71 ± 4.40, aile alt boyut puan ortalaması 18.39 ± 3.29, arkadaş alt boyut puan ortalaması 15.36 ± 5.72'dir. Ölçeğin tamamı için algılanan genel sosyal destek puan ortalaması 50.47 ± 8.12'dir. Yaşam kalitesi ölçeğinin alt boyut puan ortalamaları; Genel yaşam kalitesi 74.42 ± 8.69. rol işlevsellik 25.46 ± 11.66, duygusal işlevsellik 10.58 ± 2.66, bilişsel işlevsellik 5.36 ± 1.36, sosyal işlevsellik 5.26 ± 1.39, genel sağlık durumu 6.42 ± 2.11, nefes darlığı

2.25 ± 0.91, uykusuzluk 2.52 ± 1.00, İştah 2.44 ± 1.03, bulantı ve kusma 4.58 ± 1.49, kabızlık 2.31 ± 1.02, ishal 2.43 ± 0.92, yorgunluk 7.29 ± 1.68, ağrı 4.90 ± 1.45, genel semptomlar 28.73 ± 4.72. Yaşam kalitesi ile sosyal destek karşılaştırıldığında, yaşam kalitesi ölçeğinin küresel sağlık durumu alt boyutu ile algılanan sosyal destek ölçeğinin özel insan alt boyutu arasında orta düzeyde pozitif korelasyon saptanmıştır ($r=0.638$, $p < 0.05$). Yaşam kalitesi ölçeğinin küresel sağlık durumu alt boyutu ile algılanan sosyal destek ölçeği ($r=0.451$, $p<0.05$) arasında orta düzeyde pozitif korelasyon ve genel yaşam kalitesi ölçeği ile algılanan sosyal destek ölçeğinin özel insan alt boyutu ($r=0.269$) arasında zayıf pozitif korelasyon belirlenmiştir ($p <0.05$). **Sonuç**: Irak'taki meme kanseri hastalarının orta düzeyde bir yaşam kalitesine sahiptir. Hastaların çoğunluğunun orta düzey sosyal desteğe sahip olduğu ve en fazla sosyal destek kaynağının aileden geldiği belirlenmiştir. Hastaların yaşam kalitesi ölçeğinin alt boyutları arasında "semptomlar" konusunda daha yüksek puan almıştır. Genel yaşam kalitesi meme kanserli hastalarda sosyal destek ile önemli ölçüde ilişkilidir.

2022, 50 sayfa

Anahtar Kelimeler: Meme kanseri, Yaşam Kalitesi, Sosyal Destek, Irak.

PREFACE AND ACKNOWLEDGEMENTS

I would want to express my gratitude to my supervisor, Assoc. Prof. Figen Erol Ursavaş for her encouragement, patience, and valuable comments and suggestions. I would also express my gratitude to my professors and instructors who educated me at ÇANKIRI KARATEKİN ÜNİVERSİTESİ

To those who get tired in their life for us (my parents)

To my dear brothers, Ahmed, Asaad, Mohammed,Ali

To my dear sisters, Lubna, Lina

Layla QAIS SHALAL ABO SOOT

Çankırı-2022

CONTENTS

INDEX OF ABBREVIATIONS AND SYMBOLS

ACS	American Cancer Society
AJCC	American Joint Committee on Cancer
BC	Breast Cancer
BRCA1	BReast CAncer Gene1
BRCA2	BReast CAncer Gene2
CI	Confidence Interval
EORTC	European Organization for Research and Treatment of Cancer
ER	Estrogen Receptor
HER2	Human Epidermal Growth Factor Receptor 2
HIV	Human Immunodeficiency Virus
HLA-G	Human Leukocyte Antigen G
HRQOL	Health-Related Quality of Life
MPSS	Multidimensional Perceived Social Support
MRI	Magnetic Resonance Imaging
MSPSS	Multidimensional Scale of Perceived Social Support
PR	Progesterone Receptor
QOL	Quality of Life
SD	Standard Deviation
SPSS	Statistical Package For Social Sciences
SSRAs	Selective Serotonin Receptor Antagonist
TCAs	Tricyclic Antidepressant
VEGF	Vascular Endothelial Growth Factor
WHO	World Health Organization

LIST OF TABLES

1 INTRODUCTION

Breast Cancer (BC) is the most frequently detected cancer in women in the world's large developed countries (140 of 184) with an estimated incidence of 2.3 million cases worldwide in 2020 alone (Sung et al. 2021). While it's considered the 5th leading cause of cancer-related mortality with 684,996 deaths (Sung et al. 2021). Both the incidence and mortality rates of BC have been increasing over the past decades. As formal per-country reported rates indicate, the BC incidence and prevalence are now at least 2 times greater than it was in 1990 in more than 40 countries out of a total of 102 investigated (Sharma, 2019). It is the most common cancer and the leading cause of cancer deaths among Iraqi women, among Iraqi women (Abdalzahra & Ali, 2017). It increased from 26.6/100,000 in 2000 to 31.5/100,000 in 2009 (Samad et al. 2020).

In recent years, cancer rates have worsened in Iraq, especially in the southern provinces, compared to the first years following the US invasion of the country in 2003. This has occurred as a result of environmental pollution, water pollution, psychological conditions, canned food, and problems with importing dirty food. A spokesman for the Iraqi Ministry of Health, Saif Badr, stated, in his statement to the AA reporter, that the annual incidence of cancer in Iraq is 2,500 cases, and 20 percent of them are BC (Alawadi et al. 2020).

Health-related Quality of Life (QOL) is a health-focused QOL concept that encompasses physical and mental components of health that influence QOL (e.g., "those aspects of self-perceived wellbeing that are related to or affected by the presence of disease or treatment" (Karimi & Brazier, 2016). The QOL of BC patients has improved dramatically in recent years due to simple but effective interventions like physical activity and psychosocial support (Mokhatri-Hesari & Montazeri, 2020).

Physical, emotional, social, and functional well-being all contribute to the quality of life (QOL), which is a subjective, complex, and dynamic notion. It refers to a person's perspective of their place in life in the context of the culture and value systems in which they live, as well as their objectives, expectations, standards, and worries, according to the World Health Organization (WHO, 2014). However, determining health-related QOL is more difficult, and there are numerous definitions in the literature (Karimi & Brazier, 2016).

The importance of the marital relationship as an element of social support should be handled differently. While the spouse is an important caregiver and supportive person for some patients, other patients complained that they had problems communicating or interacting with their spouse as a result of the diagnosis and that this situation negatively affected their QOL as a stressor (Ferrell et al. 1997). For this reason, the marriage of BC patients is sometimes seen as an additional burden (Hajj et al. 2021). However, the partnership status before diagnosis appears to be responsible for how it affects the partnership. Social networking can also become a stress factor when patients feel rejected or distanced from them (Berry & Ravdin, 2007).

There are so many studies on BC in Iraq that the Ministry of Higher Education and Scientific Research agreed in 2008 to establish a pioneering national program for cancer research and establish a research unit for early detection of breast and cervical cancer at the core. Although many studies have been conducted on BC in Iraq, a study on the relationship between QOL and social support in women with BC has not been found in the literature. The researcher thinks that the results of the study will contribute to the determination of the needs of cancer patients and will contribute to the literature by establishing a relationship between them (Alawadi et al. 2020).

Social support has a significant and favorable relationship with the participants' total QOL (Kugbey et al., 2020). Breast cancer patients' prognosis and quality of life are heavily influenced by the availability and/or accessibility of social support and other factors (Adam and Koranteng, 2020). In addition, another study revealed a correlation between social support and QOL (Ban et al., 2021). Therefore, it is essential to recognize the level of social support of women with breast cancer in Iraq in order to promote their health and well-being, which will influence their evaluation and satisfaction with the quality of their life.

1.1 General Objective

The aim of our study is to examine the relationship between the quality of life and perceived social support of patients with breast cancer in Iraq.

2 LITERATURE REVIEW

2.1 Breast cancer

Among all the possible types of cancer, it's BC that is the most common among women, with an estimated incidence of 2.3 million cases worldwide in 2020 alone (Sung et al. 2021). The different aspects of BC are well described in the literature and its impact is seen in the everyday life routine of millions of women.

2.2 Epidemiology

Recent estimations indicate that the yearly incidence of BC globally is more than 2 million cases, while it's considered the 5th leading cause of cancer-related mortality with 684,996 deaths (Sung et al. 2021). Both the incidence and mortality rates of BC have been increasing over the past decades. As formal per-country reported rates indicate, the BC incidence and prevalence are now at least 2 times greater than it was in 1990 in more than 40 countries out of a total of 102 investigated (Sharma, 2019).

By the year 2030, it is predicted that the annual incidence rate of BC will be as high as 2.7 million cases, while the yearly number of deaths due to BC is expected to be 870,000 (Sung et al. 2021).

The predicted increase in incidence rates will probably be more localized in low- and middle-income countries, which is expected to be the result of the enhanced cancer registration systems, better cancer detection, and screening programs, and the westernization of lifestyles (X. L. Du and Song, 2022). As discussed in the Risk factors section, multiple BC risk factors are more prevalent in western cultures than in non-western settings.

In BC, survival depends on the classification of the tumor as well as its grade. An estimation published in 2020 reported that BC had a mortality-to-incidence ratio of 0.30 worldwide (Sung et al. 2021). Meaning that 30% of BC cases are predicted to die in 5 years-time after diagnosis. An epidemiological disparity regarding the survival of BC cancer is that patients in high-income countries are significantly more likely to survive BC compared to women in low-income countries (Ginsburg et al. 2017).

2.3 Screening

Despite the advancements related to BC diagnosis and treatment, it remains a concerning public health problem. To control BC, a recent study suggests a combination of both population-scale interventions and selective preventive measures. The population-scale interventions include spreading BC awareness, reducing the exposure of the population to the risk factors, and routine mass screening. Selective interventions are directed toward those who are at higher risk of developing BC. In high-risk individuals, risk-reducing medications shall be started and adherence to medications should be routinely monitored (Britt et al. 2020).

The recommended technique to be used for mass screening differs according to the age of the woman and the individualized estimated risk of developing BC. In women asymptomatic women aged less than 50 years, screening seems to impose more harm than a benefit so mass screening it's not recommended. In women aged more than 50 years, results from various set of studies suggest regular mass screening as the health benefits screening introduces seem to dominate over the associated harm (Schünemann et al. 2020).

Mammography has been well-established as a screening method for BC. Women who had undergone mammography screening had a significantly lower BC mortality compared to those who weren't screened for BC. However, the significant effects of mammography screening were only detected in women aged 50 years or older. In high-risk women, MRI is preferred to mammography for purposes of BC screening (Sun et al. 2017).

Another study claimed that the density of the breast tissue might be used as a screening method for BC. This suggestion is based on scientific evidence and is a quick, non-invasive, and largely applicable method that fits the criteria of a screening method (Duffy et al. 2018).

The evidence regarding the benefits of self-examination is inconsistent. The mortality rate seems to be the same in women who perform self-examination and the women who don't. Self-examination may lead to the discovery of significantly more tumors, but many of those are benign tumors and interventional techniques for the

diagnosis of these benign tumors seem to introduce overall harm that overweight the benefits of self-examination (Akram et al. 2017).

2.4 Classification

The classification of BC is of optimal importance clinically, as it guides the treatment plans, and epidemiologically, as different types of BC seem to be linked with different exposures. For example, elder individuals aged more than 70 years are more commonly diagnosed with a specific subtype of BC known as the luminal A subtype, while patients aged 40 or younger are more commonly diagnosed with the resistant triple-negative subtype (Łukasiewicz et al. 2021). In this section, the researcher sheds light on the different methods of BC classification.

The most widely used method for staging cancer is TNM classification that developed by the International Union against Cancer. In which T is referred to clinical features of tumor, N is referred to regional lymph node and M is referred to the absence or presence of metastasis (Kufe et al., 2003).

Histological classification is the simplest. WHO identifies 18 histological BC categories. An invasive BC of no particular kind lacks a conventional histological classification. These are almost 40% of BC cases (Tsang and Tse, 2020).

Molecular classification is another popular method. Molecular classification organizes expression patterns into subtypes. Molecular expression of nucleic acids and proteins defines more than 300 BC subtypes. Cancer Genome Atlas documents these subtypes. Molecular profiling identified 5 BC subtypes. Luminal A, B, HER2-enriched, Basal-like, and Claudin-low BC. PAM50 relies on matching a BC biopsy's gene signature to one of five subtypes. Clinical settings widely employ PAM50 (Sun et al. 2017).

Let's examine the various BC molecular subtypes, starting with luminal BC. Nearly 70% of western BC cases are luminous. ER-positive luminal A and B. PR-positive Luminal A BC has an excellent prognosis. Luminal B BC has a bad prognosis. HER2 positive Luminal B cancers exist. PR and HER2 are used to differentiate luminal A from luminal B (ukasiewicz et al. 2021).

10% of BC patients are HER2-enriched. Tumors express HER2 receptors, intuitively. This subtype is negative for ER and PR, therefore it's easily distinguished from luminal subtypes (Raj-Kumar et al. 2019). This subtype's activated genes are proliferative and increase quicker than luminal genes. Anti-HER2 medications changed the disease's prognosis (Patel et al. 2020).

Triple-negative basal-like cancer. This subtype contains BCs negative for ER, PR, and HER2. This subtype is more frequent in young African-American women. Poor prognosis for basal-like BC (Plasilova et al. 2016).

By categorizing the tumor into a known subtype, targeted treatment can be commenced. The American Joint Committee on Cancer (AJCC) TNS staging system has been routinely used for years to classify tumors. T, N, and M stand for tumor size, nodal status, and metastasis. The current AJCC staging system includes biological considerations and physical symptoms (Amin et al. 2017). Classify the tumor according to the AJCC staging criteria and commence the suggested treatment strategy for an individual with this classification of BC, taking into account any patient medical history aspects that may affect therapy decision. Many commercially accessible molecular assays simply provide prognostic information (Sun et al. 2017).

2.5 Cancer stage

Cancer stages are classified into five categories according to TNM classification (0- 4) Breast Cancer Surgery (2021).

Stage 1: The illness is confined to the ducts and lobules of the breast at this stage. It has not spread to adjacent tissues. Also known as noninvasive cancer (Tis, N0, M0). Tis: means non-invasive ductal carcinoma in situ, abnormal cells are present but have not spread to nearby tissue.

N0: No cancer was found in the lymph nodes

M0: There is no evidence of distant metastases

Stage 2 illness is invasive, there are cancer cells in normal breast tissue. There are two kinds:

Stage 2A: The tumor is up to 2 centimeters in size (cm). It has not metastasized to lymph nodes (T1, N0, M0).

Less than 2 centimeters in size, the breast tumor is in the IB stage. Or the tumor is located in the breast lymph nodes but there is no tumor in the breast tissue.

Stage 3: Invasive breast cancer represents it, there are two kinds:

In stage 3A, a breast tumor may or may not be present, but cancer cells have progressed to at least one to three lymph nodes. Or, in Stage 3A, there may be a 2- to 5-centimeter tumor in the breast, with or without lymph node metastasis.

Stage 3B: The tumor is two to five centimeters in diameter, and the illness has spread to one to three axillary lymph nodes. Or, the tumor is greater than 5 centimeters in diameter but has not migrated to the axillary lymph nodes.

Stage 4: Invasive breast cancer is represented by this type. There are three kinds:

Stage 4A: The breast has a tumor of any size or there is no tumor in the breast, but stage has spread to the lymph nodes. More than four lymph nodes in the breast or axilla are infected. No other portions of the body have been affected.

Stage 4B: The tumor might be of any size, and the stage has expanded to the chest wall. It may induce breast enlargement and may affect up to nine lymph nodes. Inflammatory breast cancer is classified as being in Stage 4B.

Stage 4C: There may be no stage of breast cancer, or a tumor of any size may have spread to the chest wall or breast skin. The disease has expanded to at least 10 axillary lymph nodes, or lymph nodes located above or below the collarbone or breastbone.

Stage 5: The tumor can be of any size, and the cancer has spread to various organs and tissues, including the bones, lungs, brain, liver, distant lymph nodes, and chest wall (any T, any N, M1).

2.6 Treatment

Choosing a treatment strategy for a BC patient is largely influenced by the classification of the tumor, and it is common to combine different treatment modalities. Choosing the final treatment plan is a complex matter that only specialized professionals are authorized to do. This section only scratches the basics of the different BC treatment modalities.

Surgery is a possible treatment modality for BC. There are two broad categories of BC surgery: 1. Breast-conserving surgery: in this type of surgery the cancerous tissue is removed from the breast while conserving the intact breast tissue, hence the name. Plastic surgery techniques are often implemented to maintain an aesthetic and acceptable shape of the breast. 2. Mastectomy: in this technique, the breast is completely removed. Although it's not an appealing option for the patients, mastectomy is often done in patients who have undergone breast-conserving surgery, in which relapses and postoperative complications are common. Mastectomy is often followed by an immediate breast reconstruction operation (Waks and Winer, 2019).

Chemotherapy is another common intervention in BC. There are plenty of anti-neoplastic agents available, however, the choice of the drugs to administer depends on the patient's medical history and the tumor's classification. Different BC subtypes vary in their response to the different chemotherapy interventions. Chemotherapy is often used to set the scene for the surgical removal of the tumor, by restricting the growth of the tumor which makes its removal easier. It is also indicated in tumor subtypes that are known to have a poor prognosis. Despite its effectiveness, the prolonged use of chemotherapy is associated with many dangerous side effects, such as bone marrow suppression and being immunosuppressed which increases the susceptibility to infections with possibly fatal sequelae (Łukasiewicz et al. 2021).

Radiation therapy differs from chemotherapy in that it's a local intervention to the breast, not a systemic intervention with a dozen of side effects. Radiotherapy is often done post-operatively with the specific aim of ensuring that all the cancerous cells are destroyed. You can reform this and say that radiotherapy makes sure no relapse will occur. Radiotherapy is also effective in cases when the tumor has metastasized or the tumor is not resectable by surgery. The specific type of radiotherapy to use depends

largely on the previous interventions done to treat the BC. Radiotherapy is proven to significantly improve the survival of BC patients and is associated with a significantly lower risk of relapse (Waks and Winer, 2019).

Another systemic intervention for BC is hormonal therapy. Due to its systemic nature, hormonal therapy is particularly effective in cases of metastasis or relapse. Since the carcinogenesis of BC is mainly attributed to hormonal disturbances, hormonal therapy works by blocking the effects of these hormones. Namely, these interventions aim to reduce the blood levels of estrogen or block the ER receptors so that the cells can't be stimulated by estrogen in the first place. These interventions are most commonly used in luminal BC, all of which express ER. This is another example of how the classification of BC affects the choice of the treatment plan. A consideration regarding hormonal therapy is that, in time, the tumors develop resistance to them which makes them ineffective (Drãgãnescu and Carmocan, 2017).

The last treatment modality in this section is the so-called biological therapy. These are mostly monoclonal antibodies that are specifically developed to improve the quality of life of BC patients (Sun et al. 2017). Commonly used in HER2-enriched BC cases. You might recognize the drug trastuzumab, which targets HER2 receptors; this is an example of biological therapy. Anti-VEGF, which is an antibody that inhibits angiogenesis, is also a biological intervention. This category includes a wide variety of treatments each of which has a very specific function and may be used in virtually any phase of the treatment plan (Waks and Winer, 2019).

2.7 Quality of Life

Quality of life (QOL) is an important aspect of any healthcare services provided to individuals. The overall QOL is an interplay of various factors, the interaction of these factors may be thought of as the individual's life itself. Various definitions of QOL were proposed in the literature, ranging from definitions that only consider objective findings to definitions that are solely based on subjective perception and satisfaction. The complexity of the topic made it difficult to universally agree upon a certain definition of QOL. A definition that takes into consideration the multifaceted nature of QOL is (Karimi and Brazier, 2016): Quality of life is overall general well-being that comprises objective descriptors and subjective evaluations of physical,

material, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values.

Now let's shed light upon the various aspects involved in the overall QOL. A 2013 study identified seven main aspects of QOL: 1. Environmental aspect: This factor refers to the ecological characteristics of the surrounding geographical, 2. Physical aspect: This aspect concerns the provision of facilities and urban industrial products and services, 3. Mobility aspect: This aspect is mainly about the transportation options and the traffic status of the city/town, 4. Social aspect: This aspect is mainly an indicator of the positive or negative interaction between the individual and the surrounding people, 5. Psychological aspect: This aspect is about the mental perceptions of one's own life. This aspect has shown to be of critical importance to the overall satisfaction and self-perceived QOL; even if all the objective human needs are fulfilled, the individual's belief that 'all is good is what determines if the individual comprehends the quality of his life, 6. Financial aspect: This can be thought of as the objective/materialistic needs of the individual whose presence is of importance to his overall QOL, and 7. Political aspect: This aspect is concerned with the legalization of the local authorities and how the decisions they make affect the QOL of the citizens (Sinha, 2019).

Another point of view pays more attention to the aspects of QOL that are related to the health of the individual. Since the individual's health itself is multidimensional, the researcher argues that some of the factors that take part in the QOL are social, psychological, cultural, physical, ecological, financial, mental, political, and spiritual factors (Sinha, 2019).

As you might have noticed, the QOL definition proposed by (Karimi and Brazier, 2016), the multidimensional nature of QOL as dissected in Sinha, 2019, and the health-related aspects mentioned also in Sinha, 2019 have all agreed upon the importance of the social aspect to the overall QOL of an individual. The social aspects of one's life are explicitly mentioned in each of this proposal. The notable consistency and agreement upon the importance of the social support made a lot of researchers dedicate a plenty of studies to study the effect of social support as an add-on to medical interventions, especially in patients suffering from a disease that is known to negatively

affect the individual's QOL. On the top of these diseases comes cancer, and probable HIV. The profound significance of social support is what triggered the need for this research.

As a direct result of the complexity of the QOL topic, many various instruments were developed to assess it. These instruments are mostly questionnaires, they may be broadly categorized as either generic-purpose or specific-purpose instruments. The generic ones are applicable regardless of the settings or the context. On the other hand, the specific instruments are purposely designed to satisfy the tailored needs in a well-defined context and using them in different setting is inapplicable and/or misleading (Sinha, 2019).

When it comes to the specific settings of cancer patients, probably the most widely used instrument is the questionnaire developed by the European Organization for Research and Treatment of Cancer (EORTC). The EORTC QLQ-C30 questionnaire has been rigorously validated among cancer patients. It consists of only 30 items to be answered that collectively assess 9 different scales: physical scale, role scale, cognitive scale, emotional scale, and social scale, addition to nausea & vomiting scale, pain scale, fatigue scale, and a global health and QOL scale. If EORTC QLQ-30 is to be used in BC patients, more items are added to the core questionnaire (Imran et al. 2019).

A recent study examined fatigue and anxiety in cancer patients receiving chemotherapy and other treatments. The longitudinal study had BC patients and non-cancer controls fill out a questionnaire at different times. The researchers employed a linear mixed effect model to measure QOL by comparing fatigue and anxiety exacerbations. Comparing the regression model for BC patients to that of non-cancer controls showed that BC patients experienced significantly higher fatigue and anxiety before starting chemotherapy, after ending chemotherapy, and even six months after the conclusion of chemotherapy. The more weariness and anxiety BCs have, the lower their QOL. Age, ethnicity, BMI, and marital status were controlled for in this study (Williams et al. 2021).

A 2019 study described cancer discomfort and its impact on patients' QOL. Researchers used numerous data gathering technologies to identify cancer pain and its potential impact. Participants were asked if they are experiencing pain, how intense it

is, what kind of disturbance it causes, and how it affects their everyday activities. Two-thirds of subjects reported moderate to severe pain-related problems. 60% of patients reported that cancer pain interfered with daily life. Pain severity, not frequency, seems to be connected with more daily disruptions and interference. The researchers found that cancer pain affects patients' QOL and advocated including pain management in cancer therapy to improve QOL. The study also revealed pain-related barriers. Addressing these hurdles may reduce cancer pain. This is outside the scope of this study and won't be explored in this literature review (Rodriguez et al. 2019).

An earlier descriptive research was concerned about cancer-patient weariness. Fatigue was assumed to be an inherent adverse effect of cancer treatments. The study examined weariness in children with cancer to discover if this feeling is linked to neglecting health notes. Also investigated was fatigue's impact on QOL. Researchers said parents know weariness is a warning flag. Parents' reactions to children's weariness differed. Most participants said cancer-related weariness hurt their children's QOL. The researchers conclude that this study validates past findings in the literature and strengthens evidence-based suggestions to integrate tiredness monitoring and therapies into cancer healthcare, so the QOL of cancer patients, especially younger ones, can be enhanced (Antill Keener, 2019).

Another study looked at exercise with lung cancer. Regular exercise improves lung cancer patients' QOL by improving their overall health. The mechanism behind these effects is unknown. Heuristically, two impacts are likely. First, physical activity may generate molecular changes opposite of those seen in cancer. Physical activity may suppress or at least lessen the size of cancer treatment-related side effects, improving QOL in lung cancer patients who exercise consistently compared to those who don't. Physical activity reduces fatigue, improves cardiovascular function, and boosts mental health in lung cancer patients. Each effect has been linked to improvements in lung cancer patients' QOL, and their combined effects have also been proven (Avancini et al. 2020).

A 2018 study had a narrower focus. The study aimed to reveal the multifaceted nature of anxiety symptoms in cancer-affected youngsters. This study examined children's health-related QOL (HRQOL), which was fascinating. The study analyzes

how children's well-being mirrors the health (or ill) condition of their parents. Our type of direct unrecognized link between intimate persons is more common in art, but this study reveals it's also scientific. Case-control research with non-cancer-affected parents' children as controls. Cancer-affected children had higher physiological, psychological, and school-related symptoms than controls. Anxiety symptoms hampered HRQOL. These results didn't differ by gender or age. The researchers found that the complex impact parental cancer has on children demands a joint effort from specialists from diverse professions (Hauken et al. 2018).

A descriptive study was conducted to assess QOL in a group of cancer patients, collect data on demographic variables thought to be related to QOL, and hopefully find factors significantly associated with QOL. The study found that exhaustion and sleep difficulties negatively affected adolescents' QOL. Researchers found many QOL-related parameters. More recent diagnosis, physical weariness, relational difficulties, and less intact family structure were linked to lower QOL. A statistical modeling technique found that these characteristics accounted 64% of the overall variance in QOL final values, implying that in the sample recruited for that research, these factors alone could predict patients' QOL with 64% accuracy (Pan et al. 2017).

This study has a unique design and vital goal. The study assessed the evidence foundation for non-pharmacological therapies to improve QOL in cancer patients. This study's design widened its scope. The study analyzed systematic reviews on the topic. Non-pharmacological strategies to improve QOL in cancer patients and survivors were reviewed. CBT and exercise improve QOL. This study had a wide scope, and since these therapies improved QOL, they are beneficial for practically any cancer patient population (Duncan et al. 2017).

Al-Amal national hospital, a famous cancer treatment institution, may have undertaken a study on QOL in Iraqi BC patients. The study is relational and descriptive. Aimed to describe BC's impact on QOL. BC was linked to lower QOL scores. Some QOL features were more similar to BC's detrimental impact, according to the researchers. Happiness was the most badly affected element overall, followed by daily task performance, sleep disruptions, and housework. The researchers suggested that

healthcare providers who provide cancer-related services should monitor the four most sensitive aspects of QOL (Al-Shawi and Medhat, 2017).

Al-Basrah oncologist did a recent study. Instead of analyzing BC patients' QOL, this study focused on health-related QOL (HRQOL). Current investigation will employ EORTC-C30 scale. This study is relevant to our research because its population is the same as ours: Iraqi BC sufferers. Physical function, emotional function, cognitive function, role function, and sexual function were substantially linked with overall QOL score. Physical, cognitive, sexual, and role functions, along with future perspective and arm symptoms, explain 95% of worldwide QOL variability. Multiple other statistical models predicted physical and role function using questionnaire variables. This research reveals substantial research outcomes awaiting discovery. Such studies encourage further researchers to study BC and QOL. This study's sample was handy, and the sampling technique didn't incorporate probability sampling, so the results aren't representative of all female Iraqi BC patients; they're just indicative of Al-Basrah cancer center patients (AL-Tawri and Ajeel, 2021).

2.8 Social Support

Now it’s time to dive deep into the effect of social support on the overall QOL of cancer patients, by paying more attention to studies conducted on BC patients among all other types of cancer.

Social support refers to the cognitive assessment of being connected to people and knowing that support is there if needed (Barrera, 1986). Social support can be offered through informal networks of friends, families, as well as institutional networks of health care or social work practitioners (Guruge et al., 2015).

Different aspects of the social support female BC patients received and could successfully find some interesting relationships were investigated in a previous study. The most-needed demands the patients wanted were to receive nutrition and psychological support. The interesting part is that they needed psychological support exactly as they were in need of nutrition. You can think of it as the energy for the body and the energy for the soul. Having a partner, being younger, and taking care of one’s

appearance were associated with receiving more social support from family and friends (Melissant et al. 2019).

A 2020 systematic review and meta-analysis article examined the relationship between suicidal tendency and social support in cancer patients. The main outcome variable in that study was the correlation coefficient between social support and suicidal tendency. The researchers concluded that social support is significantly associated with a lesser suicidal tendency in cancer patient which emphasized the importance of social support in cancer patients (L. Du et al. 2021).

A more recent review article (published in 2021) investigated the effect of social support on children who suffer from cancer. In specific, only children patients who had siblings were included in the study. This review pooled results from 57 primary research articles. Various types of social support had shown significant improvements in the adaptation of the children. Better adaptation is significantly associated with more support. However, the researchers point out a knowledge gap in the literature. More research should be dedicated to finding the specific types of social support that are most associated with improvements in the adaptive behaviors of the children (Wawrzynski et al. 2021).

On the other hand, a 2019 review article reports that social support has shown to be significantly linked to better cancer outcomes in older patients. The study proposed different forms of social support that are applicable in healthcare facility settings and beneficial for the patients. Such interventions include setting-up group activities and facilitating the engagement of the patient in shared interests of theirs. In general, the article recommends that social support shall be integrated into the healthcare services provided to geriatric cancer patients (Kadambi et al. 2020).

A 2019 study used a questionnaire with open-ended questions to investigate what kind of help the cancer patients wanted to receive. The most frequent demands were to have companionship and empathy. The researchers recommend that individualized social support plans should be taken into consideration to the same degree as medical treatment plans (Korotkin et al. 2019).

A more broad-scope systematic review and meta-analysis article investigated the relationship between perceived social support and the release of inflammatory mediators. The inflammatory mediators are the molecules and particles that account for the inflammation processes within our body. The review included data from more than 40 original research articles that collectively included data from more than 70 thousand participants. Surprisingly, the researchers reported that receiving social support was significantly linked to reduced levels of inflammatory mediators. The results suggest that inflammation may be triggered due to not only physical causes but also psychological reasons (Grey et al. 2018).

Let's finish this section with results from a 2021 systematic review. The study investigated the evidence base for the established effects of social support, not on the cancer patients, but on the parents of children with cancer. Previous research has yielded only inconsistent results regarding the importance of social support to the overall QOL of such caregivers, and that was the knowledge gap the study aimed to fill. Data from thirty-seven studies were included in the final form of the review. The study proved that many parents of children with cancer thought of social support as a coping mechanism. The participants reported receiving significantly more social support compared to others, however, they were less likely to seek social support by themselves. The researchers concluded that social support was significantly linked to improved well-being (QOL) and less stress and anxiety symptoms. These results are valid regardless of the population considered in any primary research article (Gise and Cohen, 2021).

3 METHODOLOGY

3.1 Study Design

The study is relational and descriptive.

3.2 Study Setting

The study was conducted at Al-Zahraa Teaching Hospital and Alkarama teaching hospital, in Kut, Iraq

3.3 Study Sample

Patients diagnosed with BC at the Al-Zahraa Teaching Hospital in Kut, Iraq, and Alkarama teaching hospital. The population is 240 patients. As a result of the statistical analysis of the sample of the study, it was determined that there should be at least 150 patients with a significance level of 0.05 (APPENDIX 1). The data were collected from 10th December 2021 to 1st March 2022.

3.4 Eligibility Criteria

3.4.1 Inclusion Criteria

Being a woman, being 18 years or older, agreeing to participate in the study, and speaking Arabic

3.4.2 Exclusion Criteria

Refusal to participate in the study, Having a cognitive and psychological illness

3.5 Study Tool

Three forms were used to collect the data; Socio-demographic and clinical characteristics form, Multidimensional Perceived Stress Scale (MPSS) scale, and European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30 (APPENDIX 2).

3.5.1 Sociodemographic and Clinical Characteristics Form

It consists of 12 questions, including the patient's age, marital status, educational level, employment status, income, number of children, place of residence,

family history of BC, duration of BC diagnosis, stage of cancer, surgical treatment used, and therapies used.

3.5.2 Multidimensional Scale of Perceived Social Support (MSPSS)

It is a 12-item scale that measures three sources of support: family, friends, and special people (Zimet et al. 1988). The validity and reliability of the translated Arabic version have been tested several times among Arabs. The 12-item questionnaire is a Likert-type rating scale (1 very strongly disagree to 7 very agree), higher scores indicate higher PSS. Merhi and Kazarian (2012) found that the Arabic translation of MSPSS is a reliable and culturally valid measure of social support in the Lebanese context. The internal consistency of the 12-item Arabic questionnaire was as high as Cronbach's alpha (0.87).

3.5.3 European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30)

It is a 30-item questionnaire evaluating QOL. It consisted of five subscales (physical, role, cognitive, emotional, and social), three symptom scales (fatigue, pain, and nausea or vomiting), and general health and QOL items. Scores of subscales are calculated according to the scoring guide of the measuring tool. All subscale scores range from 0 to 100, where higher scores represent higher levels of functioning, in contrast to symptom scales, where higher scores indicate higher levels of problems (Groenvold, M. et al, 1997).

In 1986, the EORTC launched a research program to develop an integrated, modular approach to assessing the QOL of patients participating in international clinical trials. In 1993, the questionnaire was examined for its reliability and validity in 13 countries. The results supported that the EORTC QLQ-C30 is a reliable and valid measure of cancer patients' QOL (Cronbach's alpha ≥ 0.70 for all items).

Bener et al. translated the scale into Arabic. The questionnaire's reliability (internal consistency) has been assessed using Cronbach's alpha, and the acceptable value is greater than 0.70. Cronbach's alpha was used for internal reliability in the reliability analysis. Cronbach's alpha for the EORTC QLQ-C30 scale was 0.65. The MDPSS scale has an internal reliability of 0.67. Internal consistency is fairly acceptable

on both measures. According to the study, the scale is valid and trustworthy for usage among Arab populations (Bener et al. 2017).

3.6 Data Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS), version 26. The descriptive statistical measures of frequency and percent were used. The Kolmogorov–Smirnov test showed that the data are not subject to a normal distribution, So the Spearman Correlation Coefficient was used .

3.7 Ethical Approval

Ethical approval was obtained from the ethical committee through an official letter (APPENDIX 3). Approval from the scientific research ethical committee in its numbered session 3rd on 5/12/2021 at the college of nursing, university of Baghdad (APPENDIX 4). Approval from the training and developing center, directorate Wasit of health, Ministry of health numbered 360 on 21.11.2021 (APPENDIX 5). A consent form was collected from the participants stating the aims of the study and that their participation is optional (APPENDIX 6).

4 RESULTS

Table 4.1 Subjects' sociodemographic characteristics (N = 150)

Variable	Min-Max	Mean±SD
Age (Years)	**19-83**	39.27 ± 14.7
	N	%
Marital status		
Single	31	20.7
Married	119	79.3
Level of Education		
Illiterate or literate	21	14.0
Elementary School	29	19.3
Middle school	26	17.3
High school	40	26.7
Bachelor's degree	34	22.7
Work Status		
Housewife or not working	38	25.3
Officer	42	28.0
Worker	37	24.7
Retired	17	11.3
Self-employed	16	10.7
Monthly Income		
Income equals expense	37	24.7
Income less than expense	97	64.7
Income outweighs	16	10.6

The study results display that the mean age is 39.27 ± 14.7. were married 79.3%. are high school graduates 26.7%. As per the work status, that they are officers 28.0%. family's monthly income is less than their expenses 64.7%. Most reported that they have children 70.7%. the majority reported that they live in urban areas 56.6% . That they have first-degree relatives who have breast cancer 44.7% (Table 4.1)

Table 4.2 Descriptive statistics for the social support dimensions (N = 150)

Social support dimensions	**Minimum**	**Maximum**	**Mean ± SD**
Significant Other	4.00	28.00	16.71 ± 4.40
Family	6.00	26.00	18.39 ± 3.29
Friends	4.00	27.00	15.36 ± 5.72
Perceived Social Support	31.00	71.00	50.47 ± 8.12

The study results displays that the mean score of social support from significant others was 16.71 ± 4.40, family 18.39 ± 3.29, friends 15.36 ± 5.72, and overall perceived social support 50.47 ± 8.12 (Table 4.2).

Table 4.3 Descriptive statistics for the quality of life dimensions (N = 150)

Quality of Life Dimensions	Minimum	Maximum	Mean ± SD
Role functioning	3.00	74.00	25.46 ± 11.66
Emotional functioning	4.00	15.00	10.58 ± 2.66
Cognitive functioning	2.00	8.00	5.36 ± 1.36
Social functioning	2.00	8.00	5.26 ± 1.39
Global health status	3.00	12.00	6.42 ± 2.11
Dyspnea	1.00	4.00	2.25 ± 0.91
Insomnia	1.00	4.00	2.52 ± 1.00
Appetite	1.00	4.00	2.44 ± 1.03
Nausea and vomiting	2.00	8.00	4.58 ± 1.49
Constipation	1.00	4.00	2.31 ± 1.02
Diarrhea	1.00	4.00	2.43 ± 0.92
Fatigue	3.00	12.00	7.29 ± 1.68
Pain	2.00	8.00	4.90 ± 1.45
Symptoms	18.00	41.00	28.73 ± 4.72
Quality of Life	54.00	98.00	74.42 ± 8.69

Std. Dev. = Standard deviation;

The study results displays that the mean score of role functioning was 25.46 ± 11.66, emotional functioning 10.58 ± 2.66, cognitive functioning 5.36 ± 1.36, social functioning 5.26 ± 1.39, global health status 6.42 ± 2.11, dyspnea 2.25 ± 0.91, insomnia 2.52 ± 1.00, appetite 2.44 ± 1.03, nausea and vomiting 4.58 ± 1.49, constipation 2.31 ± 1.02, diarrhea 2.43 ± 0.92, fatigue 7.29 ± 1.68, pain 4.90 ± 1.45, overall symptoms 28.73 ± 4.72, and overall quality of life 74.42 ± 8.69 (Table 4.3).

Table 4.4 The correlations between quality of life and social support (N = 150)

	Domains	Significant Other	Family	Friends	Social Support
1	Physical functioning	-0.06	-0.09	0.005	-0.082
2	Role functioning	0.018	0.076	0.003	0.078
3	Emotional functioning	0.042	-0.127	0.07	0.035
4	Cognitive functioning	0.067	-0.021	-0.007	0.011
5	Social functioning	0.082	0.061	-0.046	0.056
6	Global health status	0.638**	0.108	0.064	0.451**
7	Quality of Life	0.269**	-0.002	-0.044	0.128
8	Dyspnea	0.027	-0.033	-0.063	-0.03
9	Insomnia	-0.02	-0.137	-0.124	-0.148
10	Appetite	0.03	0.077	0.151	0.147
11	Nausea & vomiting	0.121	-0.108	-0.015	0.016
12	Constipation	-0.036	0.066	-0.028	-0.017
13	Diarrhea	-0.154	-0.149	-0.009	-0.156
14	Fatigue	0.013	0.051	-0.026	0.018
15	Pain	-0.014	-0.088	-0.034	-0.072
16	Symptoms	-0.009	-0.062	-0.039	-0.057

r vales (0.1-0.39) weak (0.4-0.69) moderate (0.7-1) strong

*=p < 0.05, **=p < 0.01

The results of our study revealed, as can be seen from , that there is a moderate positive correlation between the global health status sub- dimension of the quality of life scale and Significant Other sub- dimension of the perceived social support scale ($r = 0.638$, $p < 0.05$). In addition to a moderate positive correlation between the global health status sub- dimension of the quality of life scale and perceived social support scale ($r=0.451$, $p<0.05$), as well as a weak positive correlation between the overall quality of life scale and Significant Other sub- dimension of the perceived social support scale ($r=0.269$, $p<0.05$) (Table 4.4).

5 DISCUSSION

In our study, it was found that most of the subjects have a moderate level of quality of life. Other studies (Costa et al., 2017; Ganesh, et al. 2016; Finck, et al. 2018; Mokhatri-Hesari & Montazeri, 2020; Paraskevi, 2012) found similar results which they indicated that patients with breast cancer have moderate QOL. Chopra and Kamal (2012) stated that there is significant impact of breast cancer on QOL. Our results are not exeptions from other results in different studies as breast cancer is a diseases that can negetiavly affect the quality of life among patients. However, this effect varies as different studies used different scales to assess QOL. The cultural diversities of participants can play a role, too. .

Regarding the dimentions of QOL, the results in this study decleared that "symptoms" had the higher mean among other dimentions. This results is consistent with studies in Brazil and Malaysia (Costa et al., 2017; Ganesh, et al., 2016). Also, Costa et al. (2017) stated that global health score was one of the high scored dimentions of QOL among breast cancer patients. On the other hand, Finck et al. (2018) stated that all dimentions of QOL (except physical function) scored high among patients with breast cancer. Also, Getu et al. (2022) reported that physical function had the lowest QOL mean score. Indeed, cultural diversity, and the difference in severity of breast cancer among patinets can be the reasons that the dimentions are vary in ranking in different studies.

In our study, it was found that overall perceived social support was medium. Similar results to our study were found in the study conducted by Yan, et al., 2016 which was done in China on breast cancer women. Salonen et al., (2013) stated that the emotional support is mainly provided by patient's spouse, partner, children, siblings or friends. Indeed, the findings of our study reflect the secure attachment pattern inherited trans-generations in the Iraqi community. One of the principles in health psychology is the hypothesis that social support provided by trustworthy people has a significant importance in confronting the challenges relating to a disease (e.g., sharing bad news) (Al-Azri et al., 2014). This type of support can reduce the negative impacts on health (Alizadeh, et al., 2018)). In the same line, support from one′s surroundings has a

positive effect on physical function, psychological well-being and the ability to adjust to living with cancer (Yoo et al., 2014).

Paraskevi (2012), maintains that a person who has strong social support, viewed in terms of the number and strength of his relationships, is more likely to be optimistic and less likely to be depressed than those with fewer or weaker social relationships. In addition, social support increases the patients' feeling of reassurance and provides them with strength (Drageset et al., 2012). The family provides mental support and functions as a resource: children as a source of joy represent the main motivation to fight the disease and keep going (Inhestern & Bergelt, 2018). A study that was conducted in Norway in 2011 utilizing interviews with 21 patients with breast cancer who age 41-73-years who had already received diagnosis and were waiting for surgery, indicated that the period between diagnosis and surgery was characterized by a lot of fatigue and psychological stress. The results also revealed that the degree of support these patients were provided with, as well as the information and consultation they received from people who were close to them or from professionals and health care providers, reassured them.

In our study, it was found that as a weak positive correlation between the overall quality of life and significant others' social support ($p<0.05$) . Similar results to our study were found in the studies conducted in Saudi Arabia, Colombia, and Malaysia by (Alsubaie, et al., 2019; Finck, et al., 2018; Yan, et al., 2016).

More specifically, a Finnish longitudinal study displayed that patients with breast cancer who experience good social support decrease the risk of negative changes in quality of life at the start of their treatment trajectory (Salonen et al., 2013) Social support, especially that received through close spousal and family relationships, is a helpful tool for the psychosocial adjustment of patients with breast cancer (Alsubaie, et al., 2019; Arora et al., 2007). This finding is consistent with that obtained by Alsubaie, et al. (2019) and Zhou et al. (2022) who concluded that the perceived social support significantly influenced QOL. Nurses also can play significant role with regard to care based on social support aspects. In a randomized trial study that was done by Paraskevi (2012), the quality of life of women with breast cancer was improved after communicating with a community-based nurses. Indeed, these findings imply that the better the overall quality of life, the greater the social support those patients can

receive. This can be explained as patients who enjoy better overall quality of life are anticipated to function independently and can rely on themselves in caring for themselves rather depending on others. According to Social Suppot Theory, social support mainly emphasizes the promoting effect of external support on individuals, and it refers to relationships that can be categorized into four different groups: emotional support, which means the availability of someone to rely on and trust in when needed; instrumental support, indicating real financial assistance from others; informational support, defined as obtaining essential information through social interactions with others; and appraisal support, which means feedback provided by others on how to act (Smith et al., 2021).

In our study, there is a moderate positive correlation between the global health status and significant others' social support ($p<0.05$) . Similar results to our study were found in studies in Malaysia and China conducted by (Ganesh, et al., 2016; Yan, et al., 2016). This finding implies the better the global health status, the greater the social support that patient can get. This finding can be explained as patients have better global health status, they are anticipated to have less complicated health status which in turn implies less caregiving and social burden. Patients with breast cancer can experience major concerns including fear of death, cancer recurrence, community rejection, abandonment, isolation, defamation, and disability (Jolly et al., 2021).

A significant reduction in the severity of the disease symptoms is correlated with a sense of purpose in life and strong social support (Nejat et al., 2021). Uncertainty and social support have been recognized as factors affecting the QOL of breast cancer survivors (Sammarco, 2001, 2003). Social support, particularly perceived from close relationships with spouse and family, is a beneficial resource for the psychosocial adjustment of women with breast cancer (Arora et al., 2007). Psychological support can lead to significant improvements in distress caused by a cancer diagnosis (Harorani et al., 2020). Experiencing breast cancer can unsettle women's emotional well-being, family life, and careers. Research has indicated that perceived social support can be instrumental in limiting the disruption of breast cancer (Ashing & George, 2020).

6 CONCLUSIONS AND RECOMENDATION

5.1. Conclusion

1. Most breast cancer patients in Iraq have a moderate QOL.
2. The study subjects scored on higher on "symptoms" among other dimentions of QOL.
3. The most social support source from the family
4. Found a moderate positive correlation between the global health status sub-dimension of the quality of life scale and the Significant Other sub-dimensions of the perceived social support scale ($r = 0.638$, $p < 0.05$).
5. Found a moderate positive correlation between the global health status sub-dimension of the quality of life scale and the perceived social support scale ($r=0.451$, $p<0.05$).
6. Found a weak positive correlation between the overall quality of life scale and Significant Other sub-dimensions of the perceived social support scale ($r=0.269$, $p<0.05$).

6.2. Recommendations

1. Hence this study proved that social support is correlated with QOL, it is recommended that patients with breast cancer get supports from their family, friends, and healthcare providers. This support can be through many ways such as encouraging, increasing attention, providing love, and maintaining appropriate care.
2. Nurses also play important role to include social support in their care plan for patients with breast cancer.
3. It is recommended that Ministery of Health use media (Social network, TV, newspapers, flyers, posters, etc.) to support patients with breast cancer to help them improve their QOL. Globally, October is a month that these activities are raised. However, this period needs to be continued during the twelve months to give enough support.
4. Future studies can be conducted by including more factors (depression, anxiety, stress, or pain) to assess contributing factors with social support among patients with breast cancer.

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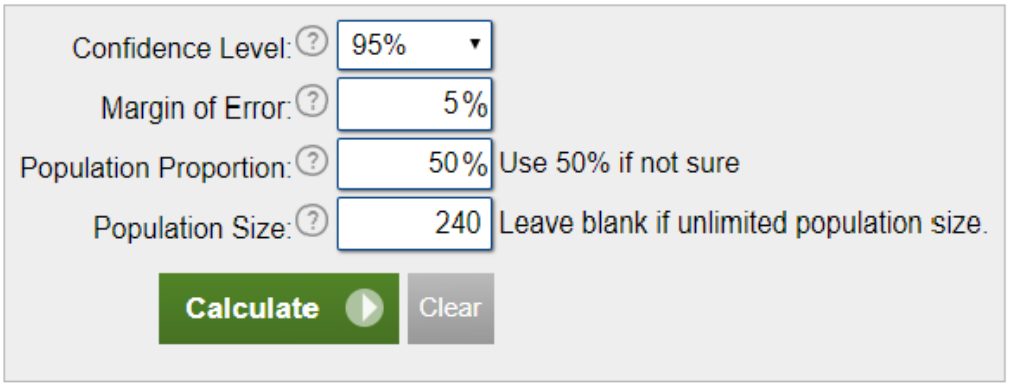
APPENDICES

APPENDIX 1: Sample size

Sample size: **148**

This means 148 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within ±5% of the measured/surveyed value.



APPENDIX 2: Study Tool

Sociodemographic Characteristics and Clinical Characteristics Form

1- Gender

□ Male

□ Female

2- Age……..

3- Marital Status

□ Single

□ Married

4- Educational Status

□ illiterate or literate

□ Primary school

□ Secondary school

□ High school

□ Bachelor's degree

5- Working Status

□ Housewife

□ Officer

□ Worker

□ Retired

□ Self-employed

6- How would you evaluate your family's monthly income according to your expenses?

□ Income less than expenses

□ Income equals expense

□ Income more than expenses

7- Do you have children?

□ No

□ Yes

8- Where did you live the longest?

□ Village/town

□ District

□ City/Metropolitan

9- Does anyone in your family have breast cancer?

□ No

□ Yes, first degree relative (mother, father, sibling)

□ Yes, second degree relative (uncle, aunt, etc.)

10- Stage of the Disease

□ Stage I

□ Stage II

□Stage III

□Stage IV

11- How long ago was the diagnosis of breast cancer

……..

12- Treatment methods received so far

Surgical treatment □ No □ Yes

Chemotherapy □ No □ Yes

Radiotherapy □ No □ Yes

	Not at All	A Little	Quite a Bit	Very Much
1. Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2. Do you have any trouble taking a long walk?	1	2	3	4
3. Do you have any trouble taking a short walk outside of the house?	1	2	3	4
4. Do you need to stay in bed or a chair during the day?	1	2	3	4
5. Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

During the past week:

	Not at All	A Little	Quite a Bit	Very Much
6. Were you limited in doing either your work or other daily activities?	1	2	3	4
7. Were you limited in pursuing your hobbies or other leisure time activities?	1	2	3	4
8. Were you short of breath?	1	2	3	4
9. Have you had pain?	1	2	3	4
10. Did you need to rest?	1	2	3	4
11. Have you had trouble sleeping?	1	2	3	4
12. Have you felt weak?	1	2	3	4
13. Have you lacked appetite?	1	2	3	4

14. Have you felt nauseated?	1	2	3	4
15. Have you vomited?	1	2	3	4
16. Have you been constipated?	1	2	3	4

Hormonotherapy □ No □ Yes

13- Type of surgery performed Breast conserving surgery □ Mastectomy □

EORTC QLQ-C30 (version 3)

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will remain strictly confidential.

Please fill in your initials: □□□□

Your birthdate (Day, Month, Year): □□□□□□□□

Today's date (Day, Month, Year): 31 □□□□□□□□

During the past week:	**Not at All**	**A Little**	**Quite a Bit**	**Very Much**
17. Have you had diarrhea?	1	2	3	4
18. Were you tired?	1	2	3	4
19. Did pain interfere with your daily activities?	1	2	3	4
20. Have you had difficulty in concentrating on things, like reading a newspaper or watching television?	1	2	3	4
21. Did you feel tense?	1	2	3	4
22. Did you worry?	1	2	3	4
23. Did you feel irritable?	1	2	3	4
24. Did you feel depressed?	1	2	3	4
25. Have you had difficulty remembering things?	1	2	3	4
26. Has your physical condition or medical treatment interfered with your family life?	1	2	3	4
27. Has your physical condition or medical treatment interfered with your social activities?	1	2	3	4
28. Has your physical condition or medical treatment caused you financial difficulties?	1	2	3	4

For the following questions please circle the number between 1 and 7 thatbest applies to you

29. How would you rate your overall health during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

30. How would you rate your overall quality of life during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statementcarefully. Indicate how you feel about each statement.

Circle the “1” if you **Very Strongly Disagree**Circle the “2” if you **Strongly Disagree** Circle the “3” if you **Mildly Disagree**
Circle the “4” if you are **Neutral**
Circle the “5” if you **Mildly Agree**
Circle the “6” if you **Strongly Agree**
Circle the “7” if you **Very Strongly Agree**

		Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Agree
1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2.	There is a special person with whom I can share joys and sorrows.	1	2	3	4	5	6	7
3.	My family really tries to help me.	1	2	3	4	5	6	7
4.	I get the emotional help & support I need from my family.	1	2	3	4	5	6	7
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6.	My friends really try to help me.	1	2	3	4	5	6	7
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7

APPENDIX 3: Ethical Approval

APPENDIX 6: Consent Form

“Examining The Relationship between Quality of Life and Perceived Social Support in Breast Cancer Patients in Iraq”.

We invite you to the research that titled as “Examining the relationship between quality of life and perceived social support in breast cancer patients in Iraq.’’ conducted by Layla Qais Shalal ABO SOOT and Assoc. Prof. Figen Erol Ursavaş . Before you decide to participate in this research, you need to know why and how the research will be done. For this reason, it is very important to read and understand this form. If you don’t understand, or if there is any unclear information, or if you want more information, you can ask us. Participating in this survey is completely voluntary. You have the right not to participate in the survey or to leave the study after participating. Your answer to the questionnaire will be interpreted as your consent to participate in the research. Do not be under pressure or suggestion from anyone while answering the questions in the forms given to you. Personal information obtained from these forms will be kept completely confidential and will be used for research purposes only .

CURRICULUM VITAE

Personal Information

Name and Surname : Layla Qais Shalal Abo SOOT