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QUALITY OF LIFE AMONG BREAST CANCER PATIENTS IN GAZA GOVERNORATES DURING 2007

Mohammed KH. Nofal

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Quality of Life among Breast Cancer Patients in Gaza Governorates during 2007

Prepared By : Mohammed Kh. Nofal

BSN degree – Islamic University - Gaza

Supervised By: Dr. Ashraf Eljedi

Assistant Professor in International Public Health

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DEDICATION

I dedicate this study

to

my father's soul

my mother

my wife

my brothers

my sisters

& my sons ;

Who gave me inspiration, motivation and continued sustain my commitment.

Declaration

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

Signed:…………………………….

Mohammed KH. Nofal

Date :

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Abstract

Breast cancer is a common and frequently fatal disease, and the second ranking cause of cancer death in the Eastern Mediterranean Region. Worldwide, breast cancer represents 10% of all cancers diagnosed annually and constituted 22% of all new cancer cases in women in 2006, making it by far the most common type of cancer in women. Quality Of Life (QOL) is a temporal concept that reflects the moment at which it is evaluated; thus, respondents are more likely to respond consistently to measures of tangible capital.

A descriptive analytical cross sectional study was conducted in Gaza governorates, the general purpose of the study was to assess the quality of life among breast cancer patients, and to estimate the incidence rate for breast cancer in 2007. Data was collected through interviewed questionnaire which were administered to 102 subjects, the response rate was 94%, and six subjects were died. Breast cancer is uncommon in male they represented 3.1% of the population study, the mean of age of the subjects was 52.4 years old, 79.2% of the subjects had secondary certificate and less, 70% of them were married, and 66.7% of subjects were not employed, with monthly income less than 1000 NIS(250 USD). And most of them received three modalities of treatment . The majority of the subjects (80%) accepted their general quality of life, they rate their QOL from moderate to very good, and more than 60% of them were satisfied about their health. The highest score in QOL domains was social domain in presence of family support and friends. Employment, level of education, and monthly income played a significant role in increasing the quality of life. There were highly statistically significant relation between these variables and the high score of the domains of QOL.

In the contrast, age, marital status, residential area, and treatment regimen had no statistical significant with the domain of QOL. In this study incidence rate was calculated, 7.2 per 100,000 population in Gaza governorates in 2007, and 14.6 per 100,000 female population.

The findings constitute an evidence-base for the country's cancer care program, to boost national health education about prognosis of cancer. Families living with breast women cancer are vulnerable and need support if the patient is recently diagnosed, less educated, single, not employed. It emphasizes the importance of physician-patient communication. It gives the opportunity to use an international scale in Palestine.

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Operational definition

Quality of life: World Health Organization (WHO) defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.

Health-related quality of life (HRQOL): the impact of an individual’s health status on his ability to function in the important domains of his life (Staquet et al., 1998). HRQOL has been defined as a multidimensional construct (Bowling, 2000). It includes the patient’s sense of his well-being within the multiple domains of psychological, social, and physical functioning, as well as the disease-specific domain, which reflects one’s sense of how a specific disease is uniquely impacting function in those three domains (Paula et al., 2002).

Incidence rate: The number of new cases of a given disease during a given period in a specified population. It also is used for the rate at which new events occur in a defined population.

Age group: the age of subjects determined by years, the age was classified into three groups (less than 45 years, from 46 to 60 years, and more than 60years).

Residential area: the address of the subjects were classified according to the governorates of Gaza strip, according to classification of PCBS.

Employment: the subjects were classified into two categories working and non working (house wives)

Level of education: all the participants were categories into seven classes which were illiteracy, primary classes, preparatory classes, secondary classes, diploma degree, university degree, and high education.

Monthly income: that’s referred to the participants work salary per month. The salary was divided into three categories the first 1000 New Isaeli Shekl (NIS)and that’s equivalent 250United States Dollars (USD), the second category was from 1001 NIS to 2000 NIS, and the third was more than 2000 NIS (500 USD).

Treatment regimen: the physician's choices to treat the breast cancer patients and that’s confined between for choices, surgical intervention, chemotherapy, radiation ,and lastly hormonal. And according to the patient's condition the physician can make other choices such as mixing between the choices.

List of abbreviations

CES-D	Center for Epidemiological Studies Depression Scale
PANAS	Positive and Negative Affect Schedule
BCS	Breast Cancer Subscale
CARES- SF	Cancer Rehabilitation Evaluation System
CDC	Centers for Disease Control
CDCP	Centers for Disease Control and Prevention
DFP	Disease Free Period
EBV	The Epstein-Barr virus **(**EBV**),** also called human herpes virus
EMRO	Eastern Mediterranean Regional office
EORTC QLQ-BR23	European Organization for Research and Treatment of Quality of Life Questionnaire Breast Cancer Module
EORTC QLQ-C30	European Organization for Research and Treatment of Cancer Quality of Life Questionnaire
FACT-B	Functional Assessment of Cancer Therapy-Breast
FACT-G	Functional Assessment of Cancer Therapy
GNP	Gross National Production
Her2/neu	Human Epidermal growth factor Receptor 2
HIV	Human immunodeficiency virus
HRQOL	Health- Related Quality of Life
HTLV-I	Human T-cell lymphotropic virus type 1
IARC	The International Agency for Research on Cancer
ICD	International Classification of Diseases
IQOLA	The International Quality of Life Assessment Project
IT	Information Technology
MET	Metabolic Equivalent Task
MOH	Ministry of Health
NCCS	National Coalition for Cancer Survivorship
NCI/NIH	National Cancer Institute /National Institutes of Health
NGOs	Non Governmental Organizations
NHP	Nottingham Health Profile
OS	Overall Survival

PCBS	Palestinian Central Bureau of Statistics
PCR	Palestinian cancer registry
PFS	Progression Free Survival
PHIC	Palestinian Health Information Center
QOL	Quality of Life
QOL-CS	Quality of Life — Cancer Survivors Tool
RDAS	Revised Dyadic Adjustment Scale

Chapter (1)

Introduction

Quality of life is an increasingly common theme in the health status and health promotion literature. Improvement of quality of life is seen as a desired outcome of service provision. Quality of life assessment can also identify individuals in need of support or interventions, even in the absence of diagnosable illness or other problems. From a broader health promotion or illness prevention perspectives. Quality of life may be seen as an indicators of health risk, either physical or mental, the absence of treatment or services need (Raphael et al,1996).

The dramatic rise in average age at death in developed countries has brought the realization that longevity should be accompanied with improvements in health- related quality of life (HRQOL). Some researchers have raised the possibility that increasing life expectancy will result in an increase in the proportion of the population living in poor health, with consequence increased burden on society and health care service (Manuel and Schultz, 2004).

Cancer is an important disease in the global burden of diseases. The estimated number of new cases each year is expected to rise from 10 million in 2002 to 15 million by 2025, with 60% of those cases occurring in developing countries. Breast cancer is the most common cancer in women in the Eastern Mediterranean Region and the leading cause of cancer mortality worldwide. There are geographic variations, with the standardized age incidence rate being lower in developing than industrialized countries. Although the etiology of breast cancer is unknown, numerous risk factors may influence the development of this disease including genetic, hormonal, environmental, sociobiological and physiological factors. Over the past few decades, while the risk of developing breast cancer has increased in both industrialized and developing countries by 1%–2% annually, the death rate from breast cancer has fallen slightly (MOH, cancer report1995-200).

Researchers believe that lifestyle changes and advances in technology, especially in detection and therapeutic measures, are in part responsible for this decrease. Breast cancer does not strike an individual alone but the whole family unit. Despite considerable social changes, women continue to be the focus of family life. The impact of breast cancer is therefore profound on both the woman diagnosed with the disease and her family. Their fear and anxiety over the eventual outcome of the illness may manifest itself through behavioral changes.

1.1 Problem statement

Breast cancer patients in Gaza governorates suffering so much from two aspects; one is the nature of the disease it self and the other aspect is that deals with the quality of their life with these constrains (shortage of drug, restricted choices of treatment ,siege ,no traveling abroad, and so on..), the researcher will study the quality of life for these patients for the first time in Palestine, breast cancer is considered the first leading cause for death among cancer patients in Palestine, also no formal and accurate data about the incidence and prevalence of breast cancer in Gaza governorates for the last three years at least.

1.2 Justification of the study

As this study is the first one to assess and evaluate the quality of life among breast cancer patients in Gaza governorates. As a result of Israeli siege and closure of Gaza Governorates borders, some studies expected bad quality of life if people are not able to receive medical care and can not find necessary things(Thabet et al, 2008).

As the breast cancer patients suffer from the disease it self and its complication, they suffered from the shortage of the drugs and limited choices of treatment that provided by their physicians as results of the closure. Also there is no accurate data available about the incidence and prevalence of cancer since the last report issued by MOH from 1995-2000 about the situation of cancer in Gaza governorates. The closure of border in Gaza governorates increase the mortality rate among cancer patients, in this study will try to find out the effect of closure on quality of life for those patients.

1.3 General objective of the study

The general objective of this study is to assess and evaluate the quality of life among breast cancer in Gaza governorates, and to calculate the incidence rate of breast cancer in Gaza Governorates.

1.4 Specific objectives

1. To assess and evaluate the general quality of life among breast cancer patients.
2. To assess the impact of the breast cancer on the quality of life domains of breast cancer patients.
3. To find out the relationship between demographic variables(age, level of education, residential area, type of treatment) and quality of life.
4. To estimate the incidence rate of breast cancer in Gaza governorates in 2007

1.5 Research Questions

1. Does the breast cancer patients in Gaza Governorates enjoying quality of life?
2. What is the impact of breast cancer on quality of life domains?
3. What are the demographic characteristics associated with quality of life among breast cancer patients?
4. What is the incidence rate of breast cancer in Gaza Governorates?

1.6 Geographical and demographical background

This study aims to assess the quality of life among breast cancer patients and to find out the incidence rate of breast cancer in Gaza governorates (Gaza strip),so the researcher found that presenting general information about the geographical and demographical situation of Palestine would be an asset

1.6.1 Geographical back ground of Gaza Governorates

Gaza Strip is a narrow piece of land lying on the coast of the Mediterranean sea. Its position on the crossroads from Africa to Asia made it a target for occupiers and conquerors over the centuries. The last of these was Israel who occupied the Gaza strip from Egyptian administration in 1967.

Gaza Strip is very crowded place with area 365 sq. Km and constitute 6.1% of total area of Palestinian territory land. In mid year of 2005 the population number is to be 1,389,789 mainly concentrated in the cities, small village, and eight refugee camps that contain two thirds of the population of Gaza Strip. In Gaza Strip, the population density is 3,808 inhabitants/km2 (PCBS, 2006).

1.6.2 Demographical back ground

Population under 15 and above 65 years. In 2005, the percentage of population under 15 years old is 46.3% of the total population in Palestine (44.2% in West Bank and 49.1% in Gaza Strip). The percentage of Palestinians who are 65 years and more in Palestine is 2.8% (3.1% in West Bank and 2.5% in Gaza Strip).

Other demographic data in Palestine in 2005

1. Llife expectancy 71.7 years for males and 73years for females.
2. Population natural increase rate is 3.3% .
3. Crude birth rate 27.5/1000 capita.
4. Crude death rate 4/1000 capita (PCBS, 2006).

1.7 Economic situation

The world bank stated that the Gross National Production (GNP) in Palestine has been subjected to high fluctuations during the last five years, Gross National Production was 5,454 million USD in 1999 and decrease to 4,169 million USD in 2005. Gross National Production per capita (GNP/capita) was 1,806 USD in 1999and decrease to 1,039 USD in

2005. Gross Domestic Production per capita was 1,496 USD in 1999and decreased to 955 USD in 2005.

The number of workers in Israel decreased from 135,000 in 1999 to 36,000 in 2005. The world bank reported that the unemployment rate was 32% (30.3% in Gaza governorates, and 20.3% in the west bank). This revealed sharply increasing of unemployment rate fro 11.8% in 1999 to 32% and the poverty rate in Palestine was 44% in 2005. This situation is a result of Israeli enforced restriction on Palestinian movements, military operation, land confiscation and construction of racial barrier in addition to other escalating activities imposed on the Palestinian people(MOH, 2006).

According to WHO report 2007, the poverty in Gaza strip had deepened to an unprecedented level, affecting 80% of households compared with 63% in 2005 with about two third experiencing deep poverty. Poverty levels are about 30% lower in the west bank. Unemployment in Gaza strip rose from 30% in 2005, to almost 35% in 2006 and 38% in the third quarter in 2007.(WHO, 2008)

1.8 National Health Expenditures

In a study by the World Bank (1997), they estimated the per capital health expenditures in West Bank and Gaza Strip at 122 USD in 1996, which means 8.6% of the GDP. In 1997, the national health expenditure of GDP ranged between 6.6 % and 8.2%. MOH expenditure of GDP was 3.2% and 3.02% in 2002 and 2003 respectively.

In 2003, about 18% of all MOH-health care expenditures in Palestine were on medications and medical disposables. About 55% of the MOH budget and nearly half of all expenditures in UNRWA and the non- governmental sector consist of wages and salaries and other forms of employee remuneration. Finally, about 13% and 14% of total MOH health expenditures were on treatment abroad and other operating cost respectively. As the actual MOH health care expenditure in Palestine was 98,421,543 USD in 2003, therefore the annual budget of MOH per capita was 26.3 USD at average exchange rate.

1.9 Health Care System in Palestine

The Palestinian health care services provided mainly by four sectors of health providers, governmental health services Ministry Of Health (MOH), Non Governmental Organizations(NGOs),UNRWA and private sector (MOH,2004). In Palestine, there are 78 hospitals of total 4,679 beds, in GS 24 hospitals making 30.77% of total 1,917 beds and 54 hospitals in WB and Jerusalem making 69.23%, of total 2,762 beds. Also MOH plays the main role of providing secondary health services, MOH had (12) hospitals in GS with 1,462 beds (55.9) of total MOH beds, and there are (11) hospitals in WB with 1,152 beds (44.1%) of total MOH beds. MOH is the health authority responsible for supervising, regulation, licensure, and control for whole health services (MOH, 2004).

Most of cancer services are provided in three main hospitals. El-shifa complex through oncology department for admission cases and oncology out-patient clinic for daily care for cancer patients. Al-Shifa hospital is one of the main and most important hospitals in Gaza Strip.

It contains different departments and sections. Besides, it is the first hospital to receive patients and critical cases, especially, during Israeli aggressions.

About Al-Shifa Hospital

- Al-Shifa medical center is the biggest in Palestine.
- It's located in the west part of Gaza.
- It was established on 1946, developed over years until it has reached to a higher international level.
- It is over 45,000 sq.m.
- Total number of beds: 590.

European Gaza hospital has also oncology department and out-patients clinic for daily care. The European Gaza Hospital is located in the southern Governorate of Khanyounis. It was built in 1993 and considered as one of the biggest investments in the area; with total cost around $60 Millions. The Hospital was conceived by UNRWA and funded by the EC to be a center of excellence, providing much needed secondary care services and aids to the southern area in particular and the Strip in general.

The Hospital Services started on 15th July 2000 according to a scheduled program; it offers services to population of 500,000. EGH played a very important role in health services development process through introducing new systems such as: Appointments System and Computerized Networking System.

The staffs working in the EGH come from different parts of the world The services of the 240 bed Center are at a high level of professional standards. The administration states that the quality of services and the general operating standards of the center meet the standards of the European hospitals. Besides, there are continuing education programs and specific training programs for the medical staffs.

El-Nasser Al-Takhasosy hospital has hematology department as pediatric hospital dealing with cancer pediatric cases.

2.9.1 Palestinian Health Information Center (PHIC):

MOH efforts to unify the Information Technology (IT) processes of the Ministry across the entire country are so very important. PHIC is a natural extension of Health Management Information System. It has been formulated since the establishment of Palestinian National Authority. As a 27 result of natural development, the decision had been taken to establish PHIC. PHIC includes information technology department and information department.

The strategy for (PHIC) is:

- Designing a national health database.
- Improving the using of a health data dictionary and update it regularly.
- Improving the implementation of clinical health information system in hospitals and PHC centers.
- Developing advanced medical informatics applications, including electronic medical records and telemedicine.
- Developing an integrated telecommunications infrastructure (MOH, 2000-2003).

1.9.2 Cancer registry

It is defined as organized systems for collection, storage, analysis, and interpretation of data on persons with cancer, usually covering a hospital or group of hospitals. A population – based cancer registry collects the data from many hospitals and non – hospital sources in defined geographical area and can serve to show incidence trends for cancer of different sites over time or between population subdivision. With this information, incidence rates can be calculated. If the cases are regularly followed, information on remission, exacerbation, prevalence, and survival can be obtained.

1.9.3 Palestinian cancer registry (PCR)

Palestinian cancer registry (PCR) is a population – based registry established in 1996 under the umbrella of ministry of health. It is being monitored and partially funded by NCI/NIH of USA. But this program unfortunately was stopped since 2004 because of lake of funding. The main center for PCR in Al-shifa complex which responsible to cover north of Gaza, Gaza town and the middle area, the second branch of PCR in European Gaza Hospital and serve Rafah and Khanyounes governorates. (MOH, cancer report 1995-2000)

The main purposes of the PCR

Is to define the size of the cancer problem and pattern of cancer occurrence in Palestine and also to provide data on cancer, which is an important source for epidemiological and clinical studies. To make cancer incidence and prevalence data available for use by health planners and professionals in order to plan for cancer prevention, control, and management in cost – effective manner.(MOH, cancer report 1995-2000)

Chapter (2)

Literature Review

2.1 Theoretical Framework

For the purpose of this study, the researcher has used two theoretical models, which play a complementary role in establishing the theoretical framework for this study. These two models were: Ferrans's Model, 1990 and Zhan's Model, 1992. The conceptual model presented by Ferrans (1990) described four major domains of Quality of Life (QOL): health and functioning, socioeconomic, psychological/spiritual, and family. The conceptual model illustrates the hierarchical relationships between the global construct of QOL, the four major domains, and the specific aspects of the domain (Figure 2.1). Zhan's model described QOL as a multidimensional concept that cannot be completely measured by either a subjective or an objective approach. Zahn identified dimensions of QOL as life - satisfaction, self-concept, health and functioning, and socioeconomic factors. According to this model, QOL is also influenced by one's personal background, health, social situation, culture, environment, and age. The perceived meaning of QOL comes from the interaction between the person and his or her environment (King & Hinds, 1996).

It is clear from the two models that QOL is a holistic and multidimensional concept, which describes several dimensions like: physical, socioeconomic, psychological, and spiritual. Both models had connected the definition of QOL with the concept of the satisfaction. Moreover, the two models stress the importance of the interaction of the individual with his environment as a source of better QOL (satisfaction) or worse QOL (dissatisfaction). Based on these two models and the WHO's definition of QOL, the researcher had chosen the (WHOQOL-BREF) instrument to assess and evaluate the QOL among the Palestinian patients. WHO defined QOL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". This definition is completely consistent with the definitions of QOL in the Ferrans's and Zhan's Models, because it incorporates in a complex way the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of the environment.

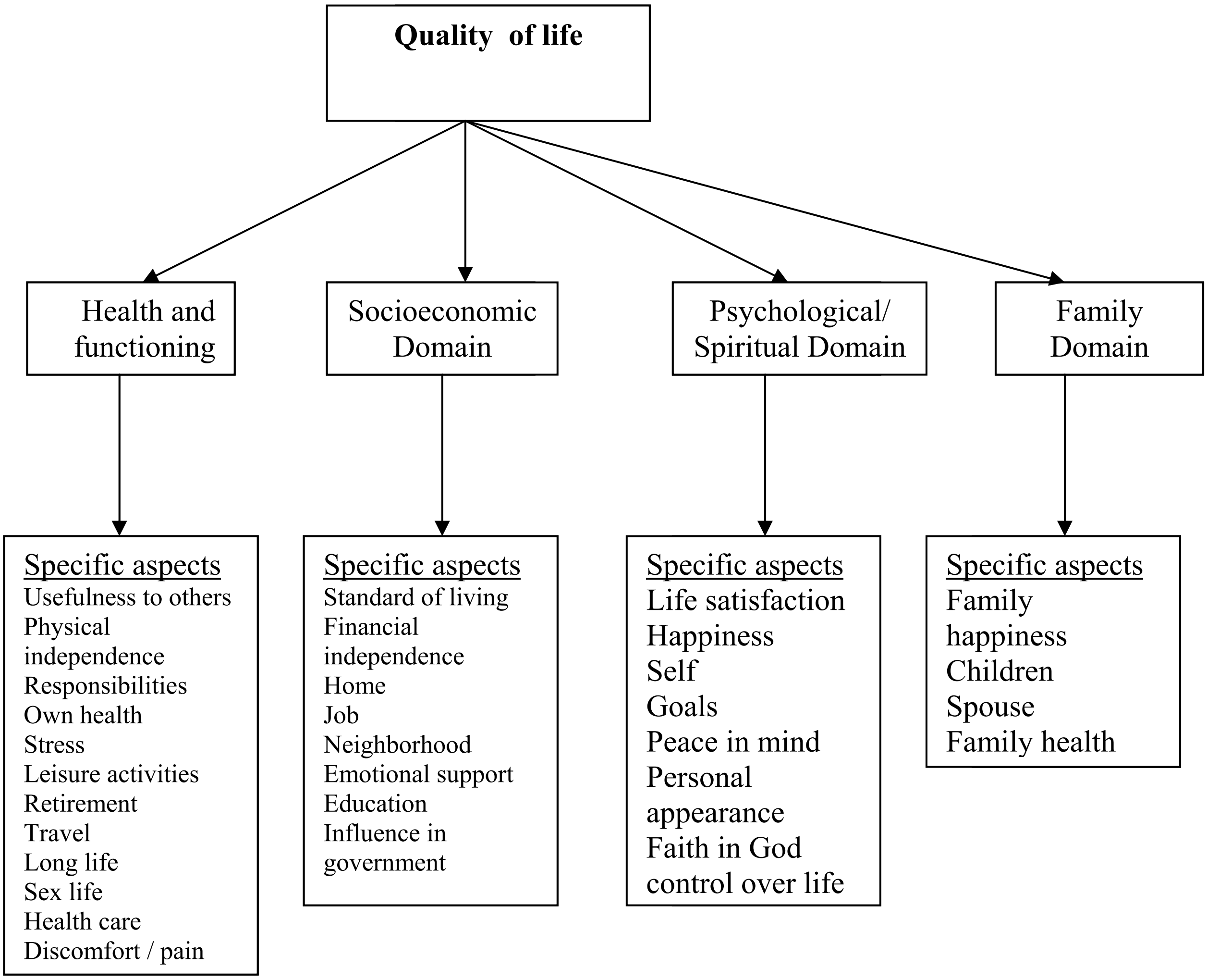

Figure (2.1): Ferran's Quality of Life Model in Diabetes Mellitus among refugees in Gaza strip, toward a better life, Eljedi, A (2005)

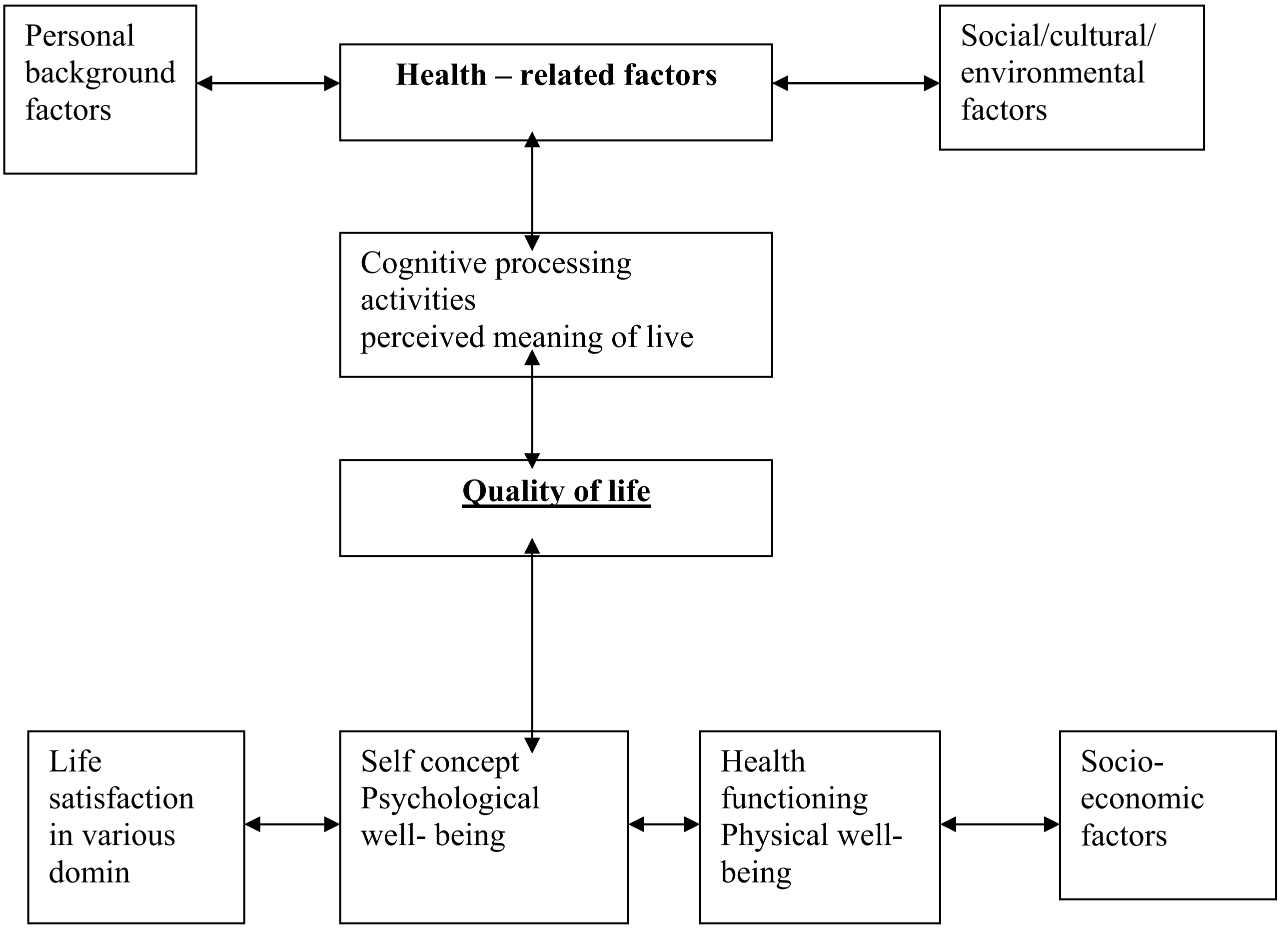

Figure (2.2): Zahn's Conceptual model of Quality of life. in Diabetes mellitus among refugees in Gaza strip, toward a better life, Eljedi, A (2005)

2.2 Global burden of cancer

Cancer is a generic term that refers to a group of chronic diseases characterized by the uncontrolled growth of abnormal cells within the body. There are more than 100 types of cancers. They are classified according to the types of cells in which they develop. Most cancers, but not all, affect solid tissue and organs in the body. In these cases, cancer cells damage normal tissue by clumping together to form tumors. Other cancers involve the widespread distribution of cancer cells throughout the circulatory or lymphatic system or in the bone marrow, such as leukemia, lymphomas and multiple myeloma, respectively. At least in the first instance, these cancers may not be tumor forming. Tumors may or may not metastasize. Benign tumors do not metastasize, are not life threatening and are not classified as cancer. Malignant tumors are cancers (Economist Intelligence Unit report, 2009).

Cancer was estimated to account for about 7 million deaths (12% of all deaths) worldwide in 2000, only preceded by cardiovascular diseases (30 % of all deaths), and by infectious and parasitic diseases (19%). Cancer was also estimated to account for almost 6% of the entire global burden of disease in that same year. More than 70% of all cancer deaths occurred in low and middle-income countries and, although the risk of developing/dying from it is still higher in the developed regions of the world, the control of communicable diseases as well as the ageing of the population in developing countries, point to an increasing burden of cancer worldwide (WHO,2001).

In fact, Pisani et al, (1999), have been projected a 30% increase in the number of cancer deaths in developed countries, and more than twice this amount (71%), in developing countries, between 1990 and 2010, due to demographic changes alone. Rising incidence will only add to this burden.

Cancer is the second leading cause of death and disability worldwide. The disease accounted for 7.9 million deaths (or around 13% of all deaths worldwide) in 2007. The main types of cancer leading to overall cancer mortality each year are: Lung (1.4 million deaths/year), stomach (866,000 deaths), liver (653,000 deaths), colon (677,000 deaths), and breast (548,000 deaths).

About 72% of all cancer deaths in 2007 occurred in low- and middle-income countries. Deaths from cancer worldwide are projected to continue rising, with an estimated 12 million deaths in 2030.

The most frequent types of cancer worldwide (in order of the number of global deaths) are:

- Among men - lung, stomach, liver, colorectal, esophagus and prostate
- Among women - breast, lung, stomach, colorectal and cervical (WHO, 2007).

2.3 Cancer in Palestine

In Gaza Strip 3,646 cases of cancer were registered in 1995-2000:
Male: 1,750 (48%) Female: 1,896 cases (52%).The incidence rate per 100,000 population was 59.9 (57 in male and 62.9 in female). Incidence rate of cancer per 100,000 population among persons aged 50 years and above was 40.5 (male: 50.6 and female: 32.5). About 81% of cancer was solid cancer and the rest (19%) were hematological malignancies. The most common cancer morbidity in the general population was breast (15.7%), lymphomas (9.1%), bone marrow (9.1%), bronchus and lung (8.7%), colorectal (7.4%), brain and other nervous system (4.8%), urinary bladder (4.7%), stomach (3.5%), liver (3.3%), and prostate (2.9%). In male, bronchus and lung cancer is the first leading cause of cancer morbidity (14.7%). In female, breast cancer (30%) is the first one (MOH, 2002).

Regarding mortality, in Palestine, 863 cancer deaths were reported in 2000 with mortality rate per 100,000 at 27.4 (29.8 in male and 25 in female). In the West Bank, 531 cases of cancer were reported in 2000 with mortality rate per 100,000 at 27.3 (29.8 in male and 24.9 in female). In Gaza Strip 1,972 deaths of cancer were reported between1995-2000 (1,035 in male; 52.5% and 937 in female; 47.5%). Mortality rate per 100,000 population was 32.4 in general population, 33.7 in male and 31.1 in female. Mortality rate per 100,000 persons aged 50 year and above was 247.2 in general population, 327 in male and 184 in female, 82.3% of cancer mortality was solid cancer and the rest (17.7%) were hematological malignancies (MOH, 2002).

2.4 Prevention of cancer

Prevention means eliminating or minimizing exposure to the causes of cancer, and includes reducing individual susceptibility to the effects such as causes. It is approach that offers the greatest public health potential and the most cost-effective long term cancer control. The present and potential burden of tobacco – induced cancer is such that every country should give highest priority to tobacco control in its fight against cancer. Tobacco use in all forms is rising steadily in developing countries, particularly in women. The best approach to preventing tobacco – related cancer is preventing the uptake of tobacco. Tobacco dependence is listed in the WHO ICD 10 as chronic condition. Tobacco is responsible for 80- 90%of all lung cancer deaths, and probably some of deaths from cancer of the oral cavity, larynx , esophageal and stomach. In some Asian countries, oral cancer is common tumor, and is associated with tobacco chewing habits(WHO, 2002).

A comprehensive strategy involving legislative action to raise the tax on tobacco products and limit access and promotion, education of youth and adults to promote healthy life styles, and cessation programs has a demonstrated ability to reduce tobacco consumption in many countries. In recently years substantial evidence has pointed to the link between overweight and obesity to many types of cancer such as esophagus, colorectum, breast, and kidney. It is therefore strongly recommended to control weight and avoid weight gain in adulthood by reducing calories intake and by performing physical activity. The latter has also been seen to have a protective effect in reducing the risk of colorectal cancer. The composition of the diet is also important sense fruit and vegetable might have a protective effect my decreasing the risk for reserved meat or red meat might be associated with increasing risk of colorectal cancer. Another aspect of diet clearly related to cancer risk is the high consumption of alcoholic beverage, which convincingly an increases risk of cancer of the oral cavity, pharynx, larynx, esophagus, liver and breast.

Thus, conducting a cancer prevention program within the context of an integrated non-communicable diseases prevention program, is an effective national strategy(WHO, 2002).

Tobacco use, alcohol, nutrition, physical inactivity, and obesity are risk factors common to other noncommunicable disease, such as cardiovascular disease, diabetes, and respiratory disease. Chronic disease prevention programs can efficiently use the occupational and environmental exposure to a number of chemicals can cause cancer of variety of sites examples include lung cancer (asbestos), bladder cancer (aniline dyes), and leukemia (benzene). A number of infection or infestation cause certain types of cancer: viral hepatitis B and C cause cancer of the liver , human papilloma virus infection causes, cervical cancer, the bacterium helicobacter pylori increases the risk of stomach cancer, while in some countries the parasitic infection schistosomiasis increases the risk of bladder cancer, and in other countries liver fluke infection increases the risk of choliangiocarcinoma of the bile ducts.

Exposure to ionizing radiation is also known to give rise to certain cancers, and excessive solar ultraviolet radiation increases the risk of all types of cancer of the skin. National policies and programs can be enacted to reduced exposure to these risks and implement preventive intervention. Care needs to be taken to ensure that the public has clear understanding of these major risks and is not overwhelmed by the minor risks that are described in their local media on virtually daily basis(WHO, 2002).

In the early 1980's, Doll & Peto, (1998): were already calling attention to the evidence about the avoidability of cancer. According to these authors, approximately 75% of the cases of cancer in most parts of the US, in 1970, could have been avoided. More recently, Parkin et al, (1999) have estimated that there would have been 22.5% fewer cases of cancers in the developing world in 1990, if infections with hepatitis B virus, hepatitis C virus, human Papilloma viruses, EBV, HTLV-I, HIV, helicobacter pylori, schistossoma, and liver flukes had been prevented. Another estimate suggests that 230,000 deaths (4.4% of all cancer deaths) from liver cancer could have been avoided with only immunization against hepatitis B.

According to Murray & Lopez, (1996): cancer of the trachea, bronchus and lung was the 10th leading cause of death in the world in 1990, being the third in the developed regions. Smoking was estimated to be responsible for another 20% of all cancer deaths, all of which are preventable. While the need for reliable estimates of cancer burden is clear.

2.5 Burden of breast cancer

2.5.1 Globally : incidence and mortality

Breast cancer is costly, both in human and economic terms. In 2006, breast cancer was the third leading cause of death in American women after heart disease and lung cancer, accounting for more than 41,000 deaths (CDCP, 2006).

Breast cancer also accounted for 31% of all cancers in females and 15% of all cancer-related deaths for women in the U.S. in 2006 (American cancer society, 2006). Even though heart disease is the leading cause of death in females, breast cancer is the disease many women fear the most (Tracy, 2006). It is estimated that one in eight American women will be diagnosed with breast cancer at some point in their lives (Kraocho, 2006).

The number of women with breast cancer is increasing annually. Each year, over 1.1 million females worldwide are diagnosed with breast cancer and 410,000 women die from the disease (Pfizer oncology, 2006). According to the American Cancer Society, breast cancer was the number one newly diagnosed disease for women in 2005 and accounted for 31% of all newly diagnosed cases in 2004. More than 9.5 million women were learning to cope with a progressive disease, going through curative treatment, or living cancer-free after treatment in 2004 (Lipscomp et al, 2004).

Breast cancer is an economic burden, with its cost of illness being comprised of direct cost, morbidity cost, and mortality cost. Over extended periods, cancer expenditures are increasing at a similar rate to overall health costs (Brown, 2001). According to the National Institutes of Health, breast cancer was estimated to cost $209.9 billion a year in 2005, of which $118.4 billion was due to mortality cost (lost productivity by the death of patients), $74.0 billion was due to direct medical costs (money spent for healthcare), and $17.5 billion was due to morbidity cost - the cost of lost productivity due to illness(American cancer society, 2006).

Longitudinal data on cancer costs exist on the SEER-Medicare linked database, a resource for policy makers and analysts, which helps to represent the costs of cancer based on its prevalence and incidence(Brown, 2001).
Breast cancer is by far the most common cancer of women, comprising 23% of all female cancers, and there were an estimated 1.15 million new cases in 2002 (Parkin et al, 2002). It ranks second overall when both sexes are considered. More than half of all cases occur in industrialized countries— about 361,000 in Europe (27.3% of cancers in women) and 230,000 in North America (31.3%). Incidence rates are high in most of the developed areas of the world (except for Japan, where breast cancer is third after colorectal cancer and stomach cancer), with the highest age-standardized incidence in North America (99.4 per 100,000) (fig. 2.5.1) Within the United States, certain populations, such as white women in California and Hawaiian women, have age adjusted rates of 100 per 100,000 or higher (Parkin et al, 2005).

In part, the high incidence in the more affluent world areas is likely due to the presence of screening programs that detect early invasive cancers, some of which would otherwise have been diagnosed later or not at all (IARC Press, 2002).

The incidence is more modest in eastern Europe, South America, southern Africa, and western Asia, but breast cancer is still the most common cancer of women in these regions. In contrast, low rates (less than 30 per100,000) are found in most African and Asian populations, although they are increasing; in some Asian populations, they are already the same as in southern Europe, and in others (e.g., the Philippines), they are even higher. The incidence in the Jewish population of Israel is especially high (87.1 per 100,000). The lowest incidence internationally is in central Africa, where the age-standardized rate is 16.5 per 100,000. The prognosis of breast cancer is generally rather good, so that this cancer ranks as the fifth cause of death from cancer overall, although it is still the leading cause of cancer mortality in women (the 411,000 annual deaths worldwide represent 14% of female cancer deaths). The very favorable survival of breast cancer cases in western countries—for example, 89% at 5 years in cases registered by the U.S. SEER program in 1995–2000 (Ries et al, 2005) is also in part a consequence of the presence of screening programs.

Because of the very favorable survival of breast cancer in the more affluent developed countries and the poor survival in some of the least affluent developing countries, differences in mortality rates worldwide are much less marked than differences in incidence rates . The estimated mortality rates in Africa and the Pacific (Micronesia and Polynesia), for example, are not greatly inferior to those in Europe. The combination of its high incidence and relatively good prognosis make breast cancer the most prevalent cancer in the world today; there are an estimated 4.4 million women alive in whom breast cancer was diagnosed within the last 5 years (compared with just 1.4 million survivors— male and female—from lung cancer). It has been estimated that 1.5% of the U.S. female population are survivors of breast cancer (Maxwell et al, 2006)

2.5.2 Burden of breast cancer in the Arab World

Literature on genetic predisposition of breast cancer is limited in Arab women. Generally, it is believed that the incidence of breast cancer in Arab women is low compared with other populations (Denic and Al-Gazali, 2003). Very few studies on risk factors for breast cancer in Arab women have been reported.

2.5.2.1 In Bahrain

In a study to identify the various types of breast diseases in Bahrain, Darwish et al. (1994) studies 215 breast specimens from 207 patients with breast disease. Breast carcinoma was found to be the third most common disease in this sample, and was represented in 14% of the specimens. Invasive ductal carcinoma, not otherwise classified, was the most common form of malignancies detected (61%), followed by lobular carcinoma and medullary carcinoma (10% each), and mucinous carcimoa (3.5%). Two rare malignancies were also observed in this study. The first was a case of malignant phylloides tumor, in a 41-year old patient. The tumor recurred after six surgical attempts, and required left mastectomy. The second rare observation was a case of metaplastic carcinoma in a 55-year old patient with a painless lump. Mammogram results showed cystically dilated spaces, and evidenced a phylloides tumor. However, examination of the lump after excision showed both carcinomatous and anaplastic sarcomatous components. The cystically dilated ducts thought to be seen in the mammogram were actually found to be blood spaces.

Fakhro et al. (1999) undertook a study to identify patient characteristics, and to compute the survival rates among 93 Bahraini breast cancer patients discharged from the hospital. Majority of the patients were between 40 and 49 years of age (33.3%), and 48.4% of the women were below 50 years of age. This is in contrast to the findings from industrialized countries, where increased risk of breast cancer is associated with increase in age. The higher incidence of patients in stage II and III shows that most cancer patients in Bahrain visit the physician late in the progression of the disease. Fakhro et al. (1999) also conducted survival analyses on these patients in relation to tumor size, lymph node involvement, clinical stage, line of management, and age group. The cumulative survival rates for the Bahraini patients after 5, 7, and 10 years were 64.31%, 54.67%, and 36.44% respectively. Survivability increased with early diagnosis and aggressiveness of clinical management. Fakhro et al. (1999) stressed the urgent need for improved screening techniques for early detection and to improve women's awareness of breast cancer in Bahrain.

Al-Saweer et al. (2003) performed a prospective study on the prevalence of common risk factors associated with breast cancer in patients with the disease in Bahrain. Review of medical records of female patients showed that majority of them were between 41 and 60 years of age, were either of low or middle education, and had their menarche below the age of 13-years. Most of the patients were diagnosed with the tumor at stage two and the average size of the tumor at first presentation was around 5.5 cm. Incidentally, the size of the tumor at first presentation was found to be inversely related to the level of education of the patients. A large majority of the patients had infiltrative ductal carcinoma. The upper outer quadrant of the breast was found to be the one most affected. Additionally, most of the patients did not show any family history for the disease. Most of the patients reported breast-feeding their children, questioning the significance of lactation as a protector of breast cancer. Interestingly, almost all the cases were discovered by the patients themselves, purely by accident. Only a single case was discovered via screening, indicating that more efforts are needed in Bahrain to develop a screening program for earlier detection of breast cancer.

2.5.2.2 In Jordan

The Ministry of Health started the first cancer registry in 1996. During January to December 2003, 1,598 cases were diagnosed. Breast cancer was the leading cancer, and represents 28% of all female cancers. The latest Jordanian record of cancer registry was in 2000 and breast cancer is still the leading type of cancer and represents 16.5% of all cancers (Jordanian Ministry of Health, 2000).

2.5.2.3 In Oman

Devi et al. (2000) evaluated histopathological reports on breast cancer to check for their completeness in recording the pathological prognostic factors. All patients diagnosed with primary breast carcinoma in an Omani Hospital during the period of four years (1994 to 1997) were analyzed, and cases of excision biopsies (lumpectomy) and mastectomy were selected for further analysis. The pathology reports of these patients were analyzed for the tumor size, histological type and grade, presence or absence of tumor emboli in the vascular channels, and the proximity of the tumor to the surgical resection margin. Reports on axillary lymph nodes were reviewed for the recording of the number of the lymph nodes sampled and the number of those involved, and the reason behind not mentioning it. It was found that a total of 102 cases were analyzed during the four year period, 95% of which had their tumor size mentioned in the reports and one case from each year of 1994, 1995, and 1996, and two cases from 1997 had no information about their tumor sizes.

The histological types were mentioned in 97%, which were 100% in 1995 and 1997, but in 1994, in one case it was difficult to give a histological type and in one of three cases in the year 1996, it was labeled as invasive carcinoma of uncertain type, and the pathologist had difficulty deciding between atypical medullary carcinoma and infiltrating duct carcinoma NOS (not otherwise specified) in the other two. Grading of the tumor was carried out in 82 reports (80%) and it was found that grading was not done in eight cases which included in situ carcinomas and carcinomas of special types, while 12 cases were overlooked by the pathologist. In only 50% of the cases, was the tumor emboli mentioned, with no emboli seen in six cases. Of the remaining 45 cases, it was reported that 20 cases had vascular and 18 cases had lymphatic emboli. The reporting of tumor proximity to the resection margin was low in 1994 (90%), increasing to 95% in 1995 and 100% in 1996, but decreasing to 96% in 1997. In 1994, only half the cases (50%) had axillary clearance with either lumpectomy or mastectomy, which improved to 83% and 88% in the year 1995 and 1996, respectively, and had a decline to 78% in 1997. The total number of lymph nodes was recorded in 64 out of 77 (83%) specimens with axillary clearance. Metastasis was recorded in 71%, 19% had no evidence of metastasis, in 7% the number was not recorded due to matting, and in another 7%, it was not recorded for no obvious reasons.

Devi and colleagues (2000): reported that this study had shown that there was an improvement after introducing the new concept of prognostic factors in histopathology reporting in 1994, with further improvement in 1995, but slight deterioration was noticed in 1996 which explained as due to the possibility that the increased work load on the pathologist resulted in them overlooking the factors, or that new appointees were not made aware of the guidelines. Devi et al. (2000) concluded that the high standard of reporting could be maintained by providing written protocols and repeating such audit processes.

Faris et al. (2002) conducted a study to estimate the incidence of Her2/neu expression in 15 cases (mean age of 47.5 SD 13.9 years) of breast cancer in Oman and to evaluate its effect on prognosis. Hercep test was used for detection of the Her2/neu oncogene receptors via immunohistochemical staining, and then prognostic factors (staging, oestrogen and progesterone receptors, tumor grade and vascular invasion), disease free period (DFP- date of surgery to date of relapse), and overall survival (OS- date of presentation to date of death) were compared between those with positive expression and those with negative receptors. Out of the 15 patients with breast cancer (2 males and 13 females, 46% were in pre-menopausal status), eight had Her2/neu over-expression while seven did not express this oncogene. There was no significant difference between the two groups as regarding the prognostic factors, but patients with positive receptors had shortened DFP and OS (42 and 69 months, respectively), when compared to those with negative Her2/neu receptors (10 months and 15 months, respectively).

Al-Moundhri et al. (2004) conducted a retrospective study to determine the outcome of breast cancer treatment in Oman through analyzing the clinical and pathological features as well as the treatment modalities used, prognostic factors and survival, and comparing these with other developing and developed countries. Data (medical and pathological) were collected from the hospital records of patients diagnosed with invasive breast cancer from two main teaching hospitals in Oman, during the period of seven years (1996-2002). A total of 152 patients (150 females, 2 males) were included in the study. The variables studied included the age and date of presentation, sex, menstrual status, right or left breast involvement, histopathological type, clinical and pathological size and stage at presentation, involvement of the skin, nipple, axillary lymph nodes, presence of estrogen and progesterone receptors, and the use of surgery, chemotherapy, and radiotherapy. The overall survival (OS) was calculated from the date of diagnosis till death, and the relapse free survival (RFS) was measured from diagnosis to relapse. Statistical methods used were the Kaplan-Meier test for presenting the survival and relapse estimates, the log rank test for comparison, Cox univariate analysis for estimating the relative risk of the above mentioned variables, and Cox multivariate analysis for measuring the significance. Of the female patients, 48% were premenstrual. The mean age of the patients was found to be 48.5 years, which was consistent with that in other developing countries but less than that of developed countries (60 -65 years). About 20% of the patients were aged 40- years or younger, and the patients showed almost equal involvement of the right and left breast (50% and 48.7%, respectively).

Al-Moundhri et al. (2004); informed as regarding the treatment modalities, 65.8% had modified radical mastectomy, only 13.2% (constituted 37.7% of the 53 patients with locally advanced disease- stage III) received neoadjuvant chemotherapy (anthracycline regimens) and 60.2% of the non metastatic group received chemotherapy. These reflected the underutilization of chemotherapy. Adjuvant external beam radiotherapy to the breast area was given to 63.1% of the patients, and as such a facility was not present on Oman, it was received it in other countries, while hormonal therapy (Tamoxifen and Goserelin) was given to 75.7% of the patients. The average tumor size clinically and pathologically was found to be 5.4cm and 4.6 cm, respectively. In clinical staging, T3 and T4 lesions were found in 25% and 17% of the patients, respectively and T1 in only 14.5%. Advanced breast cancer predominated with stages

III and IV was found in 34.9% and 15.8%, respectively, while stage III predominated in pathological staging being present in 41.7% of the patients who underwent surgery.

Axillary lymph node dissection in 120 patients revealed that 33.3% had 1-3 positive nodes, 24.2% had 4-9 positive nodes, and 11.7% had 10 or more positive nodes. Five histopathological subtypes of the tumor (which was poorly, moderately and highly differentiated in 48.1%, 16.4% and in 35.5%, respectively), were identified; ductal (88%), lobular (6.5%), medullary (five), mucinious (two patients). and the tubular subtype (one patient). In 107 patients whom the receptor status was available, 68% had estrogen and 58% had progesterone receptors. In the 128 patients with the non metastatic disease, there were 23 deaths (13 deaths were in the metastatic group), 42 had relapsed, 13 were alive with persistant disease, and 86 were alive and free of disease. The overall five year RFS rate and OS rate were 62% and 64% (consistent with that of developing countries but lower than that reported from the west), respectively. The predictors of RFS according to the Cox univariate regression analysis were found to be tumor size of more than five cm, axillary lymph node status and poor differentiation, while only the tumor size and differentiation grade were predictors of OS. According to the Cox's multivariate analysis, tumor differentiation was predictor of disease free survival and involvement of 4-9 lymph nodes was predictor of OS. In view of these results.

Al-Moundhri et al. (2004) advised increasing the breast cancer awareness, providing breast cancer screening programs and easy accessibility for patients to tertiary hospitals for proper management, and they concluded that more research is required to explore the genetic, environmental and cultural influences on the breast cancer to provide more explanation of its clinical and pathological features.

Al Bahrani et al. (2004) conducted a study to evaluate the pattern of relapse and the management experience of metastatic and relapsed breast cancer in Oman. All patients who initially presented with metastatic disease or developed metastatic disease between 1999 and 2001 were enrolled in the study, and data analyzed included demographic information, tumor characteristics, previous treatment, period of follow up, and pattern of relapse and hence the disease free period (DFP- day of surgery to confirmation of metastasis) and progression free survival (PFS- from first chemotherapy to disease progression) were calculated. Out of 49 studied patients (48 females and one male with mean age of 52.7 years), 31 had relapsed/progressive disease with a mean DFP of 32.2 months while that of the treated relapsed patients was 10.4 months. Out of the 31 patients, 19 received chemotherapy which was anthracycline-based chemotherapy if they had received the standard CMF as first line adjuvant chemotherapy (12 patients) and seven received second line Taxanes based chemotherapy as their first line was anthracycline-based chemotherapy.

In the second group the PFS was significantly longer (11.2 months) than of those treated with anthracyclines (PFS of 8.3 months). Complete response was detected in two patients and one patient who received anthracyclines and Taxanes, respectively, while partial response was seen in four patients and one patient, respectively, while disease progressed in six patients and in one patient, who received anthracyclines and Taxanes, respectively. Out of the 18 patients (mean PFS of 14.4 months) who initially presented with metastatic disease, 72% had one site involved, with a mean PFS of 15.5 months, while the rest (28%) had more than two sites and their mean PFS was 11.5 months. Anthracycline-based chemotherapy was given to 11 patients with metastatic disease (mean PFS was 16 months) and of them two had complete response, three had partial response, in three the disease was stable, and the disease progressed in another three. One patient from the metastatic group received with a mean PFS of 10 months, and the rest received hormonal therapy. During the study period, there were no treatment mortalities nor was there discontinuation of treatment for toxicity, which was tolerable and managed successfully.

Al Bahrani et al. (2004) highlighted that the majority of their patients presented in advanced disease and therefore advised on increasing the awareness of both the patients and health providers by health education so as to diagnose the disease at an early stage.

2.5.2.4 In Qatar

Using the national cancer registry, Bujassoum and Gehani (2004) undertook a retrospective study of breast cancer in Qatar during the period between 1999 and 2002. Breast cancer was found to be the most common malignancy in the country, with a total of 214 patients diagnosed with this condition during this period (incidence: 5 in every 10,000 each year). Of the female patients, 23% were Qatari. Males constituted 3.2% of the total group. The condition was also found to be most common in patients between 45 and 55 years of age (64%), followed by in those below 45 years (22.5%). Most cases were diagnosed at stage II (50%), and were of the invasive ductal carcinoma type. Only 27% cases were detected in stage I, probably due to lack of screening programs. Interestingly, there was a significant decrease in cases of stage III and IV over the last couple of years of the study. In addition, compared to the previous data taken between the period 1990 and 1998, in this study period, there was an earlier detection of breast cancer. Mortality was recorded in 4.3% of the cases, and the rate of mortality was found to decrease over the study period. The study showed a clear trend towards improved survival, which Bujassoum and Gehani (2004) attributed to early diagnosis.

Bener et al. (2008) retrospectively studied the Qatar National Cancer Registry to assess the trend in various cancer incidences in Qatar. Breast cancer was diagnosed in 68 Qatari patients between 1991 and 1996, 91 Qataris between 1997 and 2001, and in 126 Qataris between 2002 and 2006.

2.5.2.5 In Syria

Raj et al. (1991) described a 16-year-old Syrian woman with lactating adenoma. A 10 cm mobile lump was detected in her right breast on the third postnatal day, however, she had noticed the lump two years earlier and it enlarged during pregnancy. Lumpectomy was performed and a large lobulated mass was found during surgery. On histopathological examinations, the lump was found to be a solid tumor mass surrounded by thick rim of fibro-fatty tissue. On section, it was a well demarcated, multinodular, pseudoencapsulated homogenous white tumor, yellow in hue with wide focal microcytic areas. Microscopic examination of the specimen showed closely packed alveoli of varying sizes. The lumens were filled with foamy eosinophilic secretory material and foamy vacuolated macrophages. Periductal stoma showed significant collections of chronic inflammatory cells with disruption of glandular walls.

2.5.2.6 In Tunisia

Mestiri et al. (2001) investigated the significance of polymorphisms of TNF-alpha and hsp70-2 genes in the risk and outcome of breast cancer. Samples were collected from 243 Tunisian patients with primary breast carcinoma and unilateral breast tumors and 174 control subjects and polymerase chain reaction and restriction enzyme digestion were used for analysis. The age mean of the patients was of 48 ± 11 years. Polymorphisms in the promoter region of the TNF-alpha gene and in the hsp70-2 gene were found to be related to an increased risk for breast cancer. The prognosis of breast cancer is influenced differently by these two agents, for the TNF-alpha polymorphism is linked to a reduced disease-free and/or overall survival whereas hsp70-2 polymorphism are responsible for an increased overall survival.

Snoussi et al. (2005) established an association, by means of polymerase chain reaction and restriction enzyme digestion, between risk and prognosis for breast cancer and the cytokines Interleukin-1beta, interleukin-1alpha and interleukin-6 in 305 unrelated Tunisian patients with a control group of 200 subjects. All patients, 301 females and 4 males, presented primary breast carcinoma with unilateral breast tumors and were between 26 and 74 years old and 27.7% died of breast carcinoma. The (+3954) T allele of the IL-1 beta gene is linked to an aggressive phenotype of breast cancer with a higher histological grade, axillary lymph node metastasis and a larger tumor size whereas the IL-1 beta (+3954) TT genotype is associated with a reduced disease-free survival. The same conclusion was made for the IL-1 alpha (-889) TT homozygous genotype adding to it a reduced overall survival hence a poor prognosis in breast cancer. In the case of the IL-6, Snoussi et al. (2005) identified the possibility of polymorphisms in the promoter region representing markers for an increased risk of breast cancer. One year later.

Snoussi et al. (2006) examined the implications of polymorphisms of the LEP and LEPR genes in the prognosis and susceptibility of breast cancer in 308 breast carcinoma patients and 222 control subjects, both groups being Tunisian and included unrelated individuals. All patients had primary breast carcinoma with unilateral breast tumors and no family history for the disease. In 39% of the cases, the patients were primarily treated with chemotherapy. The study showed that LEP gene and LEPR gene polymorphism were associated with an increased risk of breast carcinoma. Furthermore, the LEP (-2548) A allele is linked to the decrease of disease-free survival and the LEPR 223R allele is connected to the decrease of overall survival.

2.5.2.7 United Arab Emirates

As in many other Arab countries, breast cancer is the most common cancer in females in the United Arab Emirates, The true incidence is difficult to report as the majority of the population is migratory. However, it is well known that Arab nationals including those from the United Arab Emirates tend to develop breast cancer at least a decade earlier than their counterparts in Western countries. Due to social customs, many Arab women do not present themselves for regular medical examination and this usually results in late presentations, scanty epidemiological data, and insufficient clinico-pathological studies (Anim, 1990). Pain has been reported by some workers to be a significant presenting feature of the disease among Arab women.

In year 2005, a retrospective study comprising 153 breast cancer patients treated in various hospitals in the United Arab Emirates from year 2003 to 2005 indicated that the majority of the patients were non-UAE Arab nationals as this group constituted the largest group of female expatriates in the country at the time (Gautam and Siddiqui, 2005). Among the 153 patients, there was only one male with breast cancer. Eighty six per cent of parous patients breast-fed their babies and only 4% of the patients gave positive family history of breast cancer. All patients had delayed presentation for treatment, the majority presenting beyond six months of noticing the lump. Probably, this indicates a lack of personal perceptions of susceptibility to breast cancer, since a correct perception usually has a positive impact on the women's screening behaviors (Bener et al., 2002). However, this situation seems to have changed. At the beginning of 1998, a breast cancer screening program was introduced in the city of Al-Ain. The age-standardized incidence of breast cancer for 1998 for the population was 15.5 per 1000 (Denic and Bener, 2001). This is far lower than the incidence rates in neighboring countries such as Kuwait and Saudi Arabia. Many features of women perceptions, knowledge, and attitudes toward breast cancer are encouraging (Bener et al., 2002).

2.6 Breast cancer (risk factors , signs and symptom , classification)

The etiology of breast cancer is not fully understood. A variety of interrelated factors can influence its development. These include:

2.6.1 Risk Factors

- **Genetic predisposition**. A positive family history increases the risk of breast cancer in firstline relatives (mother, sister, or daughter). The risk is dependant upon whether the cancer is bilateral and whether it has occurred in the pre- or postmenopausal period.
- **Hormonal factors**. Hormone regulation is important in the development of breast cancer. Early pregnancy and early oophorectomy lower the incidence of breast neoplasm. In contrast, late menopause is associated with an increase in the incidence of breast cancer.
- **Oral contraceptives**. A small increase in the risk of breast cancer has been noted in users of oral contraceptives. This risk, however, drops following the cessation of contraceptive use so that, at ten years post-use, there is no significant increase in the risk of developing breast cancer. Use of oral contraceptives at an older age has also been linked to an increase in the number of breast cancer cases diagnosed (EMRO publications series No.30, 2006).

- **Hormone therapy for menopause**. Current and recent users of hormone replacement therapy are at a higher risk of developing breast cancer than women who have never used hormone therapy. The risk increases with duration of hormone use, while it decreases significantly following cessation of the therapy.
- **Environmental factors**. The primary environmental factor that has been shown to have a direct link with breast cancer is ionizing radiation.
- **Sociobiological factors**. Age and gender, diet and weight are risk factors for developing breast cancer. Worldwide, 75% of new cases and 84% of breast cancer deaths occur in women aged 50 and older. Consumption of fruits and vegetables may reduce the risk of developing breast cancer, while dietary intake of fat seems to increase the risk. In

postmenopausal women, obesity increases the risk of breast cancer. This association is not observed in premenopausal women (EMRO publications series No.30, 2006)..

- **Physiological factors**. Physical activity levels can have an impact on the risk of breast cancer. Although data in this area is not entirely consistent, moderate physical activity is associated with a lower risk of breast cancer. Studies have shown a 30% reduction in risk level associated with a few hours per week of vigorous activity compared to no exercise at all.
- **Other risk factors**. These include proliferative breast disorders, which are also associated with breast cancer development, especially if the biopsy shows a typical hyperplasia. However, in 70% of breast cancer patients no risk factors can be identified

Clinically, among 100 female patients aged 40–65 years presenting with breast complaints:

- 30% have no breast lesion
- 40% have fibrocystic changes
- 7% have a benign tumour diagnosis
- 10% have carcinoma.

Breast cancer can be divided into two main groups: non-invasive or carcinoma in situ, and invasive carcinoma. The following table presents the incidence of various breast pathology (WHO, EMRO publications, 2006).

2.6.2 Classification of breast cancer

2.6.2.1 Breast malignant tumours

In situ carcinoma 15%–30%
Ductal carcinoma in situ 80%
Lobular carcinoma in situ 20%
Invasive carcinoma 70%–85%
Ductal carcinoma (no special type) 79%
Lobular carcinoma 10%
Tubular/cribiform carcinoma 6%
Mucinous carcinoma 2%
Medullary carcinoma 2%
Papillary carcinoma 1% (Tabar, et al, 1996)

Breast cancer can be grouped into different subtypes, as shown below, to characterize and compare therapeutic mortalities.

2.6.2.2 Breast cancer stages

0 Ductal carcinoma in situ or lobular carcinoma in situ 92%

I Invasive carcinoma 2 cm in size (including carcinoma in situ with micro invasion) without nodal involvement and no distance metastasis 87%

II Invasive carcinoma < 5 cm in size without nodal involvement but with movable axillary nodes and no distance metastasis 75%

III Invasive carcinoma < 5 cm in size with nodal involvement and fixed axillary nodes 46%

IV Any form of breast cancer with distance metastasis 13% Characteristics that have important prognostic significance which need to be considered when designing an optimum treatment strategy for the patient include, but are not limited to, the following:

- Age of the patient (less than or equal to, or more than, 35 years).
- Tumour size (less than or equal to, or more than, 2 cm).
- Axillary lymph node status. This is the most important predictor of disease recurrence and survival. Nearly 70%–80% of patients with negative node status survive 10 years; prognosis worsens as the number of positive nodes increase.
- Histological grade and nuclear grade
- Estrogen and progesterone receptor status. Patients with receptor-positive primary tumours have a lower rate of recurrence and longer survival, and a higher response to hormonal manipulation.
- Other biological markers including HER2/neu (Sobin et al, 1988).

2.7 Quality of life

" There is no profit in curing the body if in the process we destroy the soul." ---SAMUEL GOLTER, CITY OF HOPE MEDICAL CENTER, DAURTE, CA.

"Adding years to life" is an empty victory without "adding life to years." ----- (WHO, 1998).

Quality of life is an increasingly common theme in the health status and health promotion literature. That is improved quality of life is seen as a desired outcome of service provision. Quality of life assessments can also identify individuals in need of support or interventions, even of in the absence of diagnosable illness or other problems. From a broader health promotion or illness prevention perspective, quality of life may be seen as an indicator of health risk, either physical or mental, in the absence of present treatment or service need (Raphael et al., 1996).

The dramatic rise in average age of death in developed countries has brought the realization that longevity should be accompanied with improvements in health-related quality of life (HRQOL). Some researchers have raised the possibility that increasing life expectancy will result in an increase in the proportion of the population living in poor health, with the consequent increased burden on society and health care services (Manuel and Schultz, 2004). The World Health Organization (WHO) succinctly summarizes these concerns by stating that "adding years to life" is an empty victory without "adding life to years" (WHO, 1998). The Quality of Life Research Unit in the Department of Public Health Sciences, University of Toronto stated that: “The ultimate goal of quality of life study and its subsequent application to people's lives is to enable people to live quality lives -- lives that are both meaningful and enjoyed” (Renwick, 2002).

2.7.1 Historical perspectives: Although the use of the term quality of life has primarily been limited to outcomes associated with clinical research, the term has been around for a long time (King & Hinds, 1996). Historically, quality of life first appeared as a concept in Greek philosophy. Aristotle suggested that happiness was derived from virtuous activity of the soul and led to a good life (McKeon, 1947 In King, 1996). In contemporary times, members of the WHO (1947) implicitly introduced the concept of quality of life into health care when they defined health as "a state of physical, mental, and social well-being and not merely the absence of disease or infirmity". It was not until 1978, however, that the WHO explicitly stated that all individuals have a right to psychosocial care and an adequate quality of life in addition to physiologic care (King & Hinds, 1996). In 1975, QOL term was introduced as a key term in medical indexes, and its systematic study started in the early '80s mainly within oncology, since physicians were confronted with the problem that the cure could be too high a price to pay for the resulting increase in life expectation. More recently, QOL has emerged as an important attribute of clinical investigation and patient care, being devised to take into account anything beyond mortality and symptom levels. Its use reflects a growing appreciation of the importance of how patients feel and how satisfied they are with treatment, besides the traditional focus on disease outcomes (Berlim and Fleck, 2003).

2.7.2 Defining QOL: Quality of life assessment is complicated by the fact that there is no universally accepted definition for QOL. In the past, many researchers measured only one dimension, such as physical function, or economic concern, or sexual function. More recently, researchers have attempted to further define QOL (King & Hinds, 1996; Naess, (1987) In Raphael et al., 1996). For the purpose of this thesis the researcher has adopted the WHO's definition of QOL which identifies it as a multidimensional concept and defines it as "individuals' perceptions of their position in life in the context of the culture and value system in which they live and in relation to their goals, standards, and concerns" (WHO, 1993). The definition includes six broad domains: physical health, psychological state, level of independence, social relationships, environmental features, and spiritual concerns. McDowell & Newell (1987) suggest that quality of life "relates both to the adequacy of material circumstances and to people's feelings about these circumstances". Coulter (1990) defines quality of life as "a sense of personal satisfaction with life that is more than just pleasure or happiness and yet something less than meaning or fulfillment". Raphael et al., (1996) defined quality of life as: the degree to which a person enjoys the important possibilities of his/her life

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2.7.2.1 Approach Focus Definition

Medical Persons with diseases QOL represents the functional effect of an illness and its consequent therapy upon a patient, as perceived by the patient, (Schipper et al., 1990). Health-Related Persons with illness or disabilities QOL is recognized as a concept representing individual responses to the physical, mental, and social effects of illness on daily living which influence the extent to which personal satisfaction with life circumstances can be achieved. (Bowling, 1991) Social diagnosis Persons in communities the adjustment and life satisfaction of community members. (Green & Kreuter, 1991) Centre for health promotion All persons The degree to which a person enjoys the important possibilities of his/her life (Rootmann et al., 1992).

2.7.2.2 Various Definitions of QOL

Though these definitions provide different views of quality of life, each emphasizes different aspects and approaches, for example: Schipper's (1990) approach to quality of life illustrates the medical view; it is closely linked to the effects of illness upon individuals. Bowling's (1991) approach illustrates a more health-related, rather than illness-related view of QOL. His attempt is made to focus upon health rather than illness and positive rather than negative aspects of behavioral functioning. This review is consistent with the WHO's definition of health as involving physical, mental, and social well being and not merely the absence of disease or infirmity. Another approach that assesses quality of life from the social view is Green and Kreuter's (1991) model. This model focuses upon behavioral change issues, which fall within the purview of traditional health workers: illness prevention, health status, life-style behaviors, and health education. Green and Kreuter's (1991) contribution to the quality of life discussion is to highlight the need to bring the consumer into the development, implementation, and evaluation of health services and promotion programs (Raphael et al., 1996)

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2.7.3 Measuring QOL*:*

Because the use of scientific methods to assess QOL is in its infancy and a gold standard for QOL assessment does not exist, caution in applying QOL measures to allocate health care resources is imperative (King & Hinds, 1996). QOL research has demonstrated differences between QOL assessments made by health care providers and patients. When discussing QOL, it is important to distinguish it from related, but different, concepts, including well-being, health status, life satisfaction, and hope. It is important also to evaluate the relationship of culture and QOL because QOL perceptions of an individual are culture bound, varying from society to society. Little work has been done to address cultural issues in QOL research and the impact of culture on perceptions of QOL (Fowlie et al., 1989; King et al., 1995; Slevin et al., 1988. In (C. King, & P. Hinds, 1996).

According to Raphael et al. (1996), there are some issues in measuring quality of life: these are whether focus should be on objective (e.g., medical status, mobility, quality of housing, etc.). Another issue whether data should describe and be collected from individuals (micro-level data) or describe the functioning of the systems (e.g., income distribution, availability of health services, etc.). Another question is whether measures should be explicitly value-laden (e.g., personal control and independence are fundamental quality of life indicators) or value-neutral (e.g., personal control and independence may be desirable for only some individuals).

2.7.3.1 Benefits of QOL measurements*:*

When adequately measured, QOL has been used to distinguish different patients or groups of patients, to predict individual outcomes, and to evaluate the effectiveness of therapeutic interventions. In addition, QOL evaluation has a number of potential uses in aiding routine clinical practice: it can help physicians to prioritize problems, to communicate better with patients, to screen for potential adversities, and to identify patients' preferences (Berlim and Fleck, 2003).

There is another specific area of QOL that is health-related quality of life (HRQOL). This area of assessment seeks to evaluate the individual’s health-related quality of life, i.e., the impact of an individual’s health status on his ability to function in the important domains of his life. Overall, HRQOL includes the patient’s sense of his well-being within the multiple domains of psychological, social, and physical functioning, as well as the disease-specific domain, which reflects one’s sense of how a specific disease is uniquely impacting function in those three domains (Trief et al., 2002). For individuals with diabetes, Polonsky (2000) eloquently describes HRQOL as "a formalized way of talking about the personal side of diabetes, the felt burden of living with the illness, how diabetes can get in the way of living a rich, full life." From the perspective of patients, Smith (1999) has differentiated QOL from perceived health status. He found that QOL and health status are distinct constructs. When rating QOL, patients give greater emphasis to mental health than to physical functioning. This pattern is reversed for appraisals of health status, for which physical functioning is more important than mental health. As a conclusion, quality of life and health status are distinct constructs, and that the two terms should not be used interchangeably.

Instruments of measuring QOL: Global, generic, and specific instruments represent three different types of measures for the assessment of quality of life (Wiklund et al., 2000):

Global measures are those designed to measure quality of life in the most comprehensive or overall manner. This may be a single question that asks the person to rate his/her overall quality of life or an instrument such as the Flanagan Quality of Life Scale that asks people to rate their satisfaction on 15 domains of life.

Generic measures have much in common with global measures and were designed primarily for descriptive purposes. In health care they delineate as comprehensively as possible the full impact of a disease or its symptoms on the patient's life. Generic measures are applicable to a wide range of populations (e.g., WHOQOL-BREF instrument). The main advantage is their broad coverage and the fact that they allow comparisons of different patient populations or across studies. A disadvantage is that they may not address topics of particular relevance for a given disease.

Disease Specific measures were developed to monitor the response to treatment in a particular condition. These measures are confined to addressing the problems of selected patient groups. They tend to have high sensitivity to change but often lack a conceptual link to quality of life definitions

Dimension Specific measures focus on a particular problem within a patient group such as pain, fatigue, physical functioning. These measures are useful for monitoring specific problems that are to be addressed by an intervention. Instruments may also vary in the method of administration. Standardized questionnaires allow uniform administration and unbiased quantification of data, as the response options are predetermined and thus equal for all respondents. Increasingly, the emphasis has been on self administered questionnaires. However, these may exclude certain groups of patients, for example, those who cannot read or write, the elderly, and those with severe somatic conditions. Another problem is that the use of self-administered questionnaires can mean the possible loss of data if patients do not fill out every question. Quality control can minimize this problem. Interviews have the advantages that most patients can be assessed and the completeness of the data is ensured. These advantages tend to be outweighed by the disadvantages of time and expense (Wiklund et al., 2000).

2.8 Quality of life and Cancer

Advances in the early diagnosis and treatment of breast cancer had led to increasing numbers of individuals who are either cured for their cancer or experience it as a chronic disease. The number of survivors is also increasing as a result of the ageing of the population. As the number of breast cancer survivors has been rapidly growing, more information on the physical, social, and psychological long-term effects of cancer and its treatment is becoming available. Studying the long-term side effects of different treatments is important to obtain insight into medical and psychosocial needs of patients and possibly to adjust current therapies to minimize late complications.

Dow et al, (1996); stated that the purpose of this paper is to report the results of a descriptive study that evaluated the quality of life of 294 breast cancer survivors, and to review the continuum of positive and negative QOL outcomes in this population. Members of the National Coalition for Cancer Survivorship (NCCS) were surveyed and received two QOL instruments: the Quality of Life — Cancer Survivors Tool (QOL-CS) and the Functional Assessment of Cancer Therapy (FACT-G), and a demographic data tool. The main research variables were the subscales (Physical, Psychological, Social, and Spiritual Well-being) and individual items of the QOL-CS and the FACT-G. Results indicated that: a) fatigue, aches and pains, and sleep problems were persistent after treatment ended; b) psychological distress from cancer diagnosis and treatment, and fear of recurrent, met static, and recurrent disease were problematic over time; c) family distress, sexuality, and family burden issues were of greatest social concern; and d) uncertainty over the future plagued breast cancer survivors long-term. Breast cancer survivors also reported good outcomes in hopefulness, having a life purpose, and having a positive change after the treatment. Conclusions: breast cancer survivors experienced long-term changes after completion of treatment which affected overall quality of life. However, many positive benefits were also gained which helped to balance the worse outcomes.

Durna et al, (2002),conducted non-randomized qualitative study were to compare the quality of life (QOL) of breast cancer survivors who received hormone replacement therapy (HRT) and those who did not, and to describe the impact of breast cancer on their social, physical, psychological and spiritual domains. A QOL self-evaluation questionnaire was used to determine the most important concerns and changes described by women that affected, or were likely to affect, their QOL as a result of breast cancer. 220 patients who had finished treatment for breast cancer were contacted; 190 agreed to participate, of whom 123 (64.8%) completed and returned their questionnaires, which comprised demographic data, Quality of Life Breast Cancer Version Questionnaire and Quality of Life Self Evaluation Questionnaire.

The results for women taking HRT were compared with results for those who were not, were no significant differences in time between surgery for breast cancer and the survey, age at last birthday, number of pregnancies and live births, employment, breast cancer surgery and adjuvant therapy between HRT and non-HRT groups. No differences were found in the social, physical, psychological and spiritual domains between the two groups; however, significant differences were found between survival time and quality of life in some domains. During the study, none of the 123 women developed a recurrence of their breast cancer. As conclusion, there were no significant differences in any demographic variables between the users of HRT and the non-users. The same level of QOL was observed between HRT and non-HRT groups in the four domains of well-being. The majority of women with breast cancer recovered to a near normal level of QOL after a 4-year adjustment period, and lead fulfilling lives. This adjustment period cannot be quantified, as individual factors such as emotional, social and financial concerns will differ for each individual.

Leedham B, et al, (2002), conducted a study to assess the long-term quality-of-life (QOL) outcomes in disease-free breast cancer survivors by examining changes over time, the impact of systemic adjuvant therapies, and predictors of QOL. He use Follow-up survey of an observational cohort of women disease-free at least 5 years after breast cancer diagnosis. The participants were recruited previously for an earlier study of breast cancer survivors in Los Angeles and Washington, DC, over the period of September 1994 through June 1997. Initial enrollment included women who were diagnosed with stage I or II breast cancer between 1 to 5 years earlier, who were on no concurrent therapy besides tamoxifen, and who were disease-free. The present study resurveyed those women who were now 5 to 10 years past their initial diagnosis and who remained disease-free. Letters of invitation were mailed to 1336 breast cancer survivors. Study questionnaires (42-page booklets) were then mailed to interested respondents (*n* = 914) with requests for submission within 2 weeks. Main outcome measures. Health-related QOL was measured with the RAND SF-36 and the Ladder of Life Scale. Social support was measured by the Medical Outcomes Study (MOS) Social Support Measure short form. Depression was measured with the Center for Epidemiological Studies Depression Scale (CES-D) and the Positive and Negative Affect Schedule (PANAS). Partnered relationship quality was measured using the Revised Dyadic Adjustment Scale (RDAS), and sexual functioning was assessed with the Sexual Activity Questionnaire (SAQ) and Cancer Rehabilitation Evaluation System (CARES). Additional data were collected on symptoms, use of alternative therapies, perceived impact of cancer on life plans and activities, and relevant medical and demographic information. Previously collected data for this cohort were used in this analysis. All *P* values were 2-sided. Main results. 817 (89%) of interested participants (61% of survivors initially contacted) completed questionnaires. 54/817 were excluded for recurrence of breast or other cancer. Compared with non responders, participants were better educated, more likely to be white, and had better baseline depression and selected QOL scores.

Leedham, et al, (2002), informed that disease-free survivors had been diagnosed an average of 6.3 years earlier. Physical and emotional well-being were excellent. QOL changes from baseline to follow-up assessment were representative of agerelated changes. Social functioning and energy level were high and remained unchanged over time. Menopausal symptoms were less frequent, though vaginal dryness, cognitive complaints, and urinary incontinence were increased. Sexual activity declined significantly from baseline (65% to 55%; $P = 0.001$). Women who had received systemic adjuvant therapy (chemotherapy, tamoxifen, or both; $n = 571$) had worse global QOL scores than women who had not in terms of physical functioning ($P = 0.003$), physical role function ($P = 0.02$), bodily pain ($P = 0.01$), social functioning ($P = 0.02$), and general health ($P = 0.03$). On multivariate analysis, prior chemotherapy predicted a poorer QOL ($P = 0.003$) and sexual discomfort ($P < 0.001$). Older women (≥ 60 years old at diagnosis) reported cancer had less of an impact on life plans and activities than did younger survivors. However, for all survivors, cancer had positive impacts on diet, exercise, and religion. The greatest negative impacts were in love life for all women and in work life for younger women. Many women reported use of some form of complementary and alternative therapies such as vitamins (86.6%), herbal preparations (49.3%), or diets/dietary supplements (60.7%). Less than 13% were using psychosocial or counseling therapies, though more had used these in the past. Finally, social support and mental health were the most consistent predictors of QOL.

Ganz et al, (2003), examined the health-related quality of life (QOL) of a cohort of older women with breast cancer after 15 months of their diagnosis. Six hundred ninety-one women aged 65 years and older were interviewed approximately 3 months after breast cancer surgery and two additional times in the following year using standardized QOL measures. Demographic factors, breast cancer treatments, and comorbid conditions were used to model ratings of health related QOL over time. Self-perceived health and psychosocial adjustment at 15 months after surgery were modeled. They found that Physical and mental health scores declined significantly in the follow-up year, independent of age. However, a cancer-specific psychosocial instrument showed significant improvement in scores. Better 3-month physical and mental health scores, as well as better emotional social support, predicted more favorable self-perceived health 15 months after surgery. Psychosocial adjustment at 15 months was significantly predicted by better mental health, emotional social support, and better self-rated interaction with health care providers assessed at 3 months. Contrary to reports from younger women with breast cancer, we observed significant declines in the physical and mental health of older women in the 15 months after breast cancer surgery, whereas scores on a cancer-specific psychosocial QOL measure improved over time, consistent with patterns in younger women. Predictive models indicate that older women with impaired physical functioning, mental health, and emotional social support after surgery have poorer self-perceived health and psychosocial adjustment 1 year later. Interventions to address the physical and emotional needs of older women with breast cancer should be developed and evaluated to determine their impact on subsequent health-related QOL (breast cancer in older women 15 months).

Montazeri et al. (2003); stated that as part of a prospective study on quality of life in newly diagnosed lung cancer patients an investigation was carried out to examine whether there were differences among patients' quality of life scores and their socioeconomic status. Quality of life was measured at two points in time (baseline and three months after initial treatment) using three standard instruments; the Nottingham Health Profile (NHP), the European Organization for Research and Cancer Treatment Quality of Life

Questionnaire (EORTC QLQ-C30) and its lung cancer supplement (QLQ-LC13). Socioeconomic status for each individual patient was derived using Carstairs and Morris Deprivation Category ranging from 1 (least deprived) to 7 (most deprived) on the basis of the postcode sector of their address.

In all, 129 lung cancer patients entered into the study. Of these data for 82 patients were complete (at baseline and follow-up). 57% of patients were of lower socioeconomic status and they had more health problems, less functioning, and more symptoms as compared to affluent patients. Of these, physical mobility (P = 0.05), energy (P = 0.01), role functioning (P = 0.04), physical functioning (P = 0.03), and breathlessness (P = 0.02) were significant at baseline. However, at follow-up assessment there was no significant difference between patient groups nor did any consistent pattern emerge. At baseline assessment patients of lower socioeconomic status showed lower health related quality of life. Since there was no clear trend at follow-up assessment this suggests that patients from different socioeconomic status responded to treatment similarly. In general, the findings suggest that quality of life is not only the outcome of the disease and its treatment, but is also highly dependent on each patients' socioeconomic characteristics (Montazeri et al, 2003).

Sammarco, (2003): conducted a study that investigated the relation among perceived social support, uncertainty, and quality of life in older survivors with breast cancer. Proposed hypotheses predicted a significant positive correlation between perceived social support and quality of life, and a significant negative correlation between uncertainty and quality of life. It also was hypothesized that perceived social support and uncertainty, considered together, could explain more quality-of-life variance than either variable considered independently. A sample of 103 breast cancer survivors older than 50 years completed the Social Support Questionnaire, the Mishel Uncertainty in Illness Scale – Community Form, and the Ferrans and Powers Quality-of-Life Index – Cancer Version. Data were analyzed using Pearson product-moment correlation, *t* tests, analysis of variance, and stepwise multiple regression. All the hypotheses were supported. Additional findings showed significant positive correlations between age and uncertainty, and between support network size and social support. Significant negative correlations were found between age and perceived social support, and between age and size of support network. Uncertainty increased in the presence of other diseases, which were associated with poorer quality of life. The study results underscore the importance of social support in reducing illness uncertainty and improving the quality of life for older survivors of breast cancer. It is well established that breast cancer brings a myriad of challenges, concerns, and anxieties to women of all ages. Some issues and experiences, such as changes in physical appearance and fear of disease progression, are universal to all women with breast cancer. Each woman with breast cancer perceives the experience within the context of personal history, life cycle concerns, and psychosocial life stage.

Sammarco, (2003): reported that along with the commonalities shared universally by survivors of breast cancer, each age cohort exhibits the emergence of problems distinctive to their psychosocial life stages. Because quality of life is influenced greatly by an individual's psychosocial stage and place in life, the consequences of breast cancer and the impact they have on quality of life vary depending on the stage of life in which they occur. Various quality-of-life issues emerge that are unique to older women, who often experience a decline in physical functioning and the development of chronic illnesses. Older women frequently lack financial resources and often have lost their spouse or partner through death or divorce. Furthermore, many older women become the unpaid caregivers of ailing spouses/partners or elderly parents. The resulting effect is that many older women have had to relinquish outside employment along with the benefits of health insurance and pension coverage. The demands of breast cancer added to these issues can place older women at risk for poor quality of life.

The incidence and mortality of breast cancer increase with age. Statistics from the American Cancer Society, indicate that approximately 77% of newly diagnosed breast cancer and 84% of breast cancer deaths occur among women older than 50 years. Furthermore, research that specifically addresses the quality of life among older survivors of breast cancer is scarce. Nevertheless, the high incidence of breast cancer among older women and its known ability to evoke greater distress than any other disease, regardless of prognosis, emphasizes the need to examine the impact of breast cancer on the quality of life experienced by older women.

Breast cancer is characterized by uncertainty because of its unpredictable disease prognosis, unclear etiology, and threat of disease recurrence. The long-term effects of current treatment regimens are difficult to predict. Awareness of disease progression, suffering, and death is ever present (Sammarco, 2003).

The purpose of this study was to investigate the relation among perceived social support, uncertainty, and quality of life in older women with breast cancer. The significance of this study is accented by the impact that breast cancer and its ensuing uncertainty have on the unique quality-of-life needs among older women and the likelihood that older survivors of breast cancer face obstacles that may prevent them from obtaining effective social support. Although the variables of this study have been well described in the literature, no evidence of their relation exists specifically for older survivors of breast cancer. This study may clarify the relations among these variables as influenced by the unique psychosocial stage and quality-of-life issues experienced by older survivors of breast cancer. The need for this study is endorsed by the significance of advancing quality-of-life research, which has shown the influence that psychosocial stage and place in life have on quality of life. The findings of this study may contribute to the planning and implementation of care that can enhance quality of life significantly for older survivors of breast cancer (Sammarco, 2003).

Casso et al, (2004), conduced a study to examine the correlates of quality of life (QOL) of a well-defined group of long-term breast cancer survivors diagnosed between the ages of 40 and 49. Women were eligible if they were diagnosed with invasive breast cancer or ductal carcinoma *in situ* 5 to 10 years before June 30, 1998 and were enrolled at Group Health Cooperative, a health maintenance organization in western Washington State. A questionnaire was mailed to 290 women; 216 were included in this analysis. The questionnaire included standardized measures of QOL [e.g., the Cancer Rehabilitation Evaluation System (CARES-SF) and SF-36] as well as general demographic and medical information. ANOVA and logistic regression were used to estimate correlates of self-reported QOL.

The mean age at diagnosis was 44.4 years, and the average time since diagnosis was 7.3 years. Women reported high levels of functioning across several standardized QOL scales; mild impairment was found on the CARES-SF Sexual Scale. The presence of breast-related symptoms at survey, use of adjuvant therapy, having lower income, and type of breast surgery were significantly associated with lower QOL 5 to 10 years post-diagnosis on one or more of the scales.

The researcher results emphasize that younger long-term survivors of breast cancer have a high QOL across several standardized measures. However, the long-term consequences of adjuvant therapy and the management of long-term breast-related symptoms are two areas that may be important for clinicians and women with breast cancer in understanding and optimizing long-term QOL.

Women with breast cancer commonly encounter an increased need for social support. Older women often experience less participatory decision making, fewer supportive interactions, and less time spent with physicians, which may place them at higher risk for adverse psychosocial outcomes. They also may experience difficulty communicating their needs to family and health professionals because they perceive a lack of support and feel insecure about their own abilities to communicate effectively. They may encounter multiple losses of loved ones, friends, and pets, which create a shrinking network of support. These factors can be obstacles in the way of obtaining helpful social support. With the occurrence of breast cancer, the demands of illness and a threat to life and functional status are imposed on the unique role demands of older women. Critical breast cancer issues may be encountered that extend well beyond the completion of treatment and into survivorship, such as fear and uncertainty about treatment outcomes, reduced functional status, disease recurrence, future well-being and independence, and reduced social resources.

Kanyarat et al,(2005),conducted study to assess QOL of patients with breast cancer at various stages of treatment. Using a cross- sectional design, breast cancer patients receiving care at Khon Kaen Hospital were recruited into three groups: (1) newly diagnosed patients without treatment, (2) patients undergoing chemotherapy treatment, and (3) patients who had completed a chemotherapy course. QOL was assessed using Thai Functional Assessment of Cancer Therapy-Breast (FACT-B) version 4, consisting of five domains: Physical (PWB), Social (SWB), Emotional (EWB) and Functional (FWB) well-beings plus a breast cancer subscale (BCS). Of 153 patients recruited, 43 were in group I, 80 group II and 30 group HI. Patient mean age was 51 years (SD = 9.7, range 31-82), mostly married (79.1%) and highest education of elementary school (87.6%). The majority

(77%) was in early stage of cancer and the treatment received was mostly surgery plus chemotherapy. There were no differences in patient characteristics among the three groups, except younger patients were found in group II.

The FACT-B had good reliability, with Cronbach's above 0.7 in most domains (range 0.48-0.84). Known group validity using performance status was supported. Linear regression analysis was used to compare QOL scores among the three groups, adjusting for age, disease stage, concomitant disease and symptoms of hot flush. Patients undergoing chemotherapy (group II) had lower QOL scores than those prior to treatment (group I) in most domains, particularly in SWB (= -2.4; 95% CI = -4.5 to -0.2, p = 0.03), FW (= -2.4; 95% CI = -4.4 to -0.3, p = 0.02) and BCS (= -2.1; 95% CI = -3.8 to -0.3, p = 0.02). By contrast, patients who had completed a chemotherapy course (group III) showed better QOL than those in group I and II. QOL was greater than before treatment, being statistically significant in PWB with an average 2.1 points (95% CI 0.1-4.0, p = 0.03) and EWB with an average 2.8 points (95% CI 0.3-5.3, p = 0.03). The findings suggest that cancer treatments improve a patient's physical and emotional wellbeing, with a temporary reduction of QOL scores in the breast cancer subscale, and the social and functional well-being domains while receiving chemotherapy.

Ahn, et al, (2006) administered the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 and Quality of Life Questionnaire Breast Cancer Module, McGill Quality of Life Questionnaire, Beck Depression Inventory, and Brief Fatigue Inventory to 1933 disease-free survivors for over 1 year after being diagnosed with stage 0 to III breast cancer. They performed multivariate-adjusted analyses in all HRQoL comparisons. They found that the scores for some HRQoL scales were comparable for both disease-free breast cancer survivors and the general female population; however, there was clinically significant difference in cognitive and social functioning, fatigue, insomnia, and financial difficulties between the two groups. Radiotherapy and systemic adjuvant therapy variables did not limit the HRQoL. Demographic characteristics such as age, time since surgery, and comorbidity were associated with some HRQoL scales and fatigue and depression were associated with almost all HRQoL scales. As a conclusion a disease-free survivors of breast cancer had good HRQoL, which was less affected by the type of treatment than it was by demographic characteristics, time since surgery, comorbidity, fatigue, and depression.

Vingerhoets et al, (2006), investigated self-reported health care utilisation of women who survived breast cancer for 10 years and identified predictors of health care utilization. The population-based Eindhoven Cancer Registry was used to select all women who were diagnosed with breast cancer in 1993, in six hospitals in the Netherlands, and were disease-free at the time of data collection. Health status, psychological well-being, satisfaction with life and health care use were compared with same age controls. Logistic regression was used to identify predictors of health care utilization. They found that of the 254 women who were sent a questionnaire, 183 (72%) responded. Breast cancer survivors had a similar health status and psychological wellbeing and a better satisfaction with life compared to same age controls. The proportion of breast cancer survivors (79%)who visited a specialist in the past 12 months was significantly higher compared to controls (53%). Young breast cancer survivors (45–54 at time of completing questionnaire) more often visited a physical therapist (56%) or complementary caregiver (26%) than controls (29 and 13%, respectively). Spon taneously reported problems (fatigue, arm problems) as a consequence of cancer and co-morbidity showed the strongest associations with health care utilization. As conclusion although self-reported health, satisfaction with life and psychological well-being were similar or even better in long-term breast cancer survivors compared to those in population controls, survivors more often attended a specialist, physical therapist and complementary caregiver in the past 12 months. Survivors of young age appear to have the highest use of health care services compared to age-matched controls, especially related to fatigue and arm problems.

Another study was conducted to assess the subjective QOL of stable Sudanese women cancer outpatients and their family caregivers, using the WHO 26-item QOL Instrument; compare with matched general population groups, as well as diabetic and psychiatric patient groups; examine patient-caregiver concordance in ratings; and assess the variables associated with their QOL, with a view to identifying factors that can enhance quality of care. Methods Responses of oncology outpatients with breast cancer (117), cervical cancer

(46) and ovarian cancer (18) (aged 44.6, SD 11.5) were compared with those of their family caregivers and matched general population groups. Data were analyzed by univariate and multivariate statistics. Results The cancer groups had similar QOL domain scores, which were significantly lower than those of their caregivers, but higher than the control group as well as those of psychiatric and diabetic patients studied previously. Patients who were married, with higher education, better employment, and with longer duration of illness had higher QOL.

Patients on radiotherapy and their caregivers had higher QOL scores. Correlations between patient's ratings and caregiver impression of patient's QOL were high. Caregiver impression was a significant predictor of patient's and caregiver's QOL. Other predictors for the patient were: currently feeling sick and duration of illness; for the caregiver: feeling sick, relationship to patient, and age. Conclusion Cancer patients in stable condition and with psychosocial support can hope to enjoy good QOL with treatment. The findings constitute an evidence base for the country's cancer care program, to boost national health education about prognosis in cancer. Families living with women cancer patients are vulnerable and need support if the patient is recently diagnosed, less educated, single, not formally employed; and the caregiver is female, parent, younger, less educated, unemployed and feels sick. Clinicians need to invest in the education and support of family caregivers. The patient-caregiver dyad should be regarded as a unit for treatment in cancer care.(Jacob, et al, 2007)

Franceschini et al, (2008): assessed the quality of life of patients with lung cancer and to compare it with that of individuals without cancer. The researcher studied the status of 57 patients diagnosed with lung cancer, treated at the Lung Cancer Outpatient Clinic of the Hospital São Paulo, and to a control group of 57 individuals recruited from the Extra Penha workout group. The Mann-Whitney test was used to compare the groups, domain by domain .The researcher found that The patients with lung cancer had a poorer quality of life, especially regarding physical aspects, than did the control subjects.

Montazeri et al, (2008); stated that measuring quality of life in breast cancer patients is of importance in assessing treatment outcomes. This study examined the impact of breast cancer diagnosis and its treatment on quality of life of women with breast cancer. This was a prospective study of quality of life in breast cancer patients. Quality of life was measured using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), 167 patients diagnosed with breast cancer. The mean age of breast cancer patients was 47.2 At eighteen months follow-up data for 99 patients were available for analysis. The results showed there were significant differences in patients' functioning and global quality of life at three points in time ($P < 0.001$). Although there were deteriorations in patients' scores for body image and sexual functioning, there were significant improvements for breast symptoms, systematic therapy side effects and patients' future perspective ($P < 0.05$). The findings suggest that overall breast cancer patients perceived benefit from their cancer treatment in long-term. However, patients reported problems with global quality of life, pain, arm symptoms and body image even after 18 months following their treatments. In addition, most of the functional scores did not improve.

Salonen, et al. (2009), conducted quasi-experimental study to examine the effectiveness of a telephone support intervention 1 week after surgery on the quality of life (QOL) of patients with breast cancer. The sample consisted of 228 patients with breast cancer allocated to an intervention group (n = 120) and control group (n = 108). The data were collected using Ferrans and Powers Quality of Life Index-Cancer Version (QLI-CV) and European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Breast Cancer Module (EORTC QLQ-BR23). The self-reported QOL of patients with breast cancer was considered moderately high. Statistically significant associations were found between QOL and the demographic characteristics of age, education, and employment status and of having underage children. Statistically significant associations were found between QOL and clinical characteristics such as type of surgery and axilla treatment. The strongest predictors of poor QOL were age, control group, and type of surgery. Age was the strongest predictor of poor QOL in global QOL and in the health and functioning, socioeconomic, and family subscales. The patients' experiences show that the telephone intervention was helpful and the timing was appropriate. The QOL in patients with breast cancer was better in subscales of body image, future perspective, and postoperative side effects. The intervention group showed significantly better body image; they worried less about the future and had less postoperative side effects than the control group did. These results may help in discussing QOL issues and should be considered when planning and implementing interventions for patients with breast cancer.

Shu et al, (2009), evaluated the effect of regular exercise during the first 36 months after cancer diagnosis on quality of life (QOL) in a population-based cohort study of 1,829 Chinese women diagnosed with breast cancer. The women were identified between 2002 and 2004 and were invited to participate in the study about 6 months after cancer diagnosis. Exercise was assessed approximately 6, 18, and 36 months after diagnosis, and a metabolic equivalent task (MET) score in hours per week was derived. A cumulative, weighted exercise-MET score was created for regular exercise during the 36-month postdiagnosis period. QOL was evaluated at 6 and 36 months postdiagnosis. Multiple linear regression and mixed models were conducted to evaluate the association between regular exercise and QOL, with adjustment for clinical prognostic factors and other potential confounders. Both exercise-MET scores measured during the first 6 or 36 months postdiagnosis and the weighted exercise-MET score over the 36-month postdiagnosis period were positively associated with total QOL score and physical, psychological, and social well-being scores assessed at 36 months postdiagnosis (all P for trend < 0.05). Compared with nonregular exercisers, women with higher exercise-MET scores ($\geq$8.3 MET-hours/week) were more likely to have higher scores for total QOL and specific QOL domains (all $P < 0.05$). The exercise-QOL association remained stable over time after cancer diagnosis. This study suggests that regular exercise after breast cancer diagnosis improves QOL.

Summary

At begging of this chapter, the theoretical framework was presented by two models(Ferrans & Zhan), which play complementary role in establishing the theoretical framework for this study. The two models describe QOL as holistic multidimensional concept, which describe several dimensions : physical, socioeconomic, psychological, and spiritual.

WHO define QOL as "an individual's perception of their position in life in the context of the culture and value system in which they live and relation to their goals , expectation, standards, and concerns". Based on the those two models and the WHO's definition of QOL, the researcher had chosen the (WHOQOL-BREF) as instrument to assess and evaluate the QOL among breast cancer in Gaza governorates.

Then , the researcher clarified the importance of the global burden of cancer which was estimated that 7 million deaths worldwide in 2000 from cancer only preceded by cardiovascular and infectious diseases. More than 70% of all cancer deaths occurred in low and meddle- income countries, it is projected that a 30% increase in the number of cancer deaths in developed countries , and more than twice this amount(71%) in developing countries between 1990 and 2010. Cancer is the second leading cause of death and disability worldwide. The disease accounted for 7.9 million deaths (or around 13% of all deaths worldwide) in 2007. subsequently the researcher depicted the cancer situation in Palestine, the mortality rate per 100,000 was in 2000 27.4 as declared in MOH annual report in 2002.

After that, prevention of cancer was reviewed as strategy based on reducing the risk factors that increasing the chance to had cancer such as tobacco use, alcohol consumption, nutrition, physical inactivity, and control of chronic diseases, by conducting a cancer prevention program within the context of an integrated communicable diseases prevention program is an effective national strategy as reported by WHO in 2002.

Moreover, breast cancer was reviewed globally and regionally, The number of women with breast cancer is increasing annually. Each year, over 1.1 million females worldwide are diagnosed with breast cancer and 410,000 women die from the disease. Breast cancer is by far the most common cancer of women, comprising 23% of all female cancers, and there were an estimated 1.15 million new cases in 2002. The prognosis of breast cancer is generally rather good, so that this cancer ranks as the fifth cause of death from cancer overall, although it is still the leading cause of cancer mortality in women (the 411,000 annual deaths worldwide represent 14% of female cancer deaths). Regionally the burden of breast cancer was reviewed in the Arab world such as in Bahrain, Jordan, Oman, Qatar, Syria, Tunisia, and lastly in United Arab Emirates. Most of these studies that occurred in the previous mentioned countries studied the most frequent risk factors, the incidence rate in comparison to the global incidence and prevalence rate, treatment modalities, effectiveness of screening program, and women perceptions, knowledge, and attitudes toward breast cancer. Then, the researcher clarified the classification of breast cancer by malignant tumors and breast cancer stages.

After that Quality Of Life was illustrated and clarified as the importance of QOL in presence of high technology, progress in medical development which reflect the longevity of the human age, also the dramatic rise in average age of death in developed countries has brought the realization that longevity should be accompanied with improvements in health-related quality of life (HRQOL), "Adding years to life" is an empty victory without "adding life to years." That was the logo of WHO in 1998.
From many definitions was found in the literature, the researcher adopted the WHO definition which identified QOL as multidimensional concept and defined it as individual's perceptions of their position in life in the context of the culture and value systems in which they live in relation to their goals, standards, and concerns. The definition consist of six broad domains: physical health, psychological state, level of independence, social relation, environmental features, and lastly spiritual concerns.

Then, the researcher reviewed the literature which discuss the QOL and breast cancer. Some of the literature found that after a significant period of diagnosis (15 mon., 18 mon., five years and ten years) that QOL scores seems better than early months of diagnosis and even sometimes equal or better than the control of the study (studies of Dow's, Vingerhoet's, and Ahn).

Other study with small sample size(57 lung cancer patients) reported that patients with lung cancer had poorer QOL especially regarding physical aspects, than did the control subjects.

Another studies found that improvement with all aspects of QOL, physical, psychosocial, and environment continue over the time of the treatment, the improvement of QOL getting better with consistence with long term of treatment in this study on 914 participants who diagnosed 1-5 years earlier.

Some other studies examined QOL with age group from 40-49 years, the study population was 216 responders with average time since diagnosis 7.3 years. Women reported high levels of functions across several standardized QOL scales and women with lower income reported lower QOL 5 – 10 years post diagnosis. Other study highlighted the importance of social support in reducing illness uncertainty and improve the QOL for older survival of breast cancer.

Two studies found that regular exercise and telephone social support intervention had strong effective improvement on QOL. And finally Durna conclude in his study that the majority of women (123 responders) recovered to a near normal level of QOL after 4 years adjustment period.

Chapter (3)

Methodology

This chapter discuss the methodology which is used in this study, it starts by the design selected to conducted this study. Then it present the setting of the study which done in the two main hospital in Gaza Governorates, target population , sample of the study, data collection, eligibility criteria, instrument which was used in the study, after that statistical analysis and ethical consideration and lastly the limitation of the study.

3.1 Study design

The design of this study is descriptive, analytical, cross sectional design to measure the quality of life among breast cancer patients. This design is chosen because it is the best design to describe the QOL for breast cancer patients who received the ministry of health services. It is less expensive and enable the researcher to meet the study objective in a short time. It also studies the cause and effect at the same point of time and thus provides some possible indication about causation relationships.

The aim of this study was to determine the impact of the breast cancer on the QOL of the Palestinian breast cancer patients.

3.2 Setting of the study

This study focus on the breast cancer patients who received the ministerial health services, and such services are provided in two main hospitals in Gaza governorates, one in Gaza town namely Al- Shifa complex and the other is European Gaza Hospital (EGH) in Khanyounes.

3.3 Target population

All Gaza strip breast cancer patients who received the ministry of health services in 2007. According to MOH estimates about 454 patients suffer from different types of cancer(MOH annual report, 2005).

3.4 Sample of the study

All breast cancer patients who diagnosed in 2007 (histopathological report confirmation) will be included in the study, and it was estimated the number will be around (85 - 110) cases according to the head of cancer registry, but in field when the researcher started this phase of the study, he didn't find the updated information in the cancer registry programs, so he classified all the records of oncology departments in both hospitals. After that he found that all breast cancer patients are 107 patients.

3.5 Data collection

Data was collected though administered questionnaire (interviewed questionnaire), and also from the patients files and records. Before starting, all questionnaire forms were prepared ,organized and classified with serial numbers to ensure the availability of the needed information. Trained persons such as staff nurses in the concerned hospitals shared in data collection, after complete explanation by the researcher about every questionnaire items, and how to carryout the interview. The researcher used structured face to face questionnaire. Great care was taken to ensure privacy and confidentiality, the researcher gave the participant enough time to answer the questions and encourage them to be open and virtuous in answering while assuring them that information given in the interview will remain confidentiality and just will be used for the purpose of the study. The researcher was explain the purpose of the questionnaire to the patients before obtaining consent, during the interview any vague information was simplified by the researcher to ensure exact and real answer by the responder. The patients were co-operative, **the response rate was 94%**, about six cases were died, and the other five were traveling aboard.

3.6 Eligibility criteria

3.6.1 Inclusion criteria

Any patient with confirmed pathological breast cancer report from 1-1-2007 to 31-12-2007, living in Gaza strip, having follow up records in the main hospitals Al shifa hospital (out patients oncology department), and European Gaza hospital (out patients oncology department).

3.6.2 Exclusion criteria

Any patient with confirmed pathological breast cancer report before or after 1-1-2007 to 31-12-2007, not receiving the ministry of health services, or comatosed breast cancer patients.

3.7 Instrument

A questionnaire was administered for all the sample subjects, it saved time and analysis of data was easier. Questionnaire was administered by the interviewer, to ensure the professionality, accuracy, and seriousness of the data collection process. Data will be collected from files and records. Triangulation will involve checking data from the three resources to ensure consistency and accuracy.

WHOQOL-BREF questionnaire will be cited from WHO website for measurement of quality of life which is designed for this purpose, questions are arranged in a logical sequence to facilitate the interview . the interview time was averaged about 15-20 minute, the questions answers are ranked from 1-5 scores, training for how to fill this form was provided .

Quality of Life Questionnaire - short version (WHOQOL-BREF) (Annex 2). The WHOQOL-BREF is an abbreviated version of the WHOQOL-100 quality of life assessment. It produces scores for four domains (physical health, psychological, social relationships and environment) related to quality of life (see table 1). It also contains two other questions are examined separately: question 1 asks about an individual's overall perception of quality of life and question 2 asks about an individual's overall perception of their health. The four domain scores denote an individual's perception of quality of life in each particular domain. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4 in order to make domain scores comparable with the scores used in the WHOQOL-100 (WHO, 1996).

Table (3.7) Domains of quality of life

Domain	**Facets incorporated within domains**
1. Physical health	Activities of daily living Dependence on medicinal substances and medical aids Energy and fatigue Mobility Pain and discomfort Sleep and rest Work Capacity
2. Psychological	Bodily image and appearance Negative feelings Positive feelings Self-esteem Spirituality / Religion / Personal beliefs Thinking, learning, memory and concentration
3. Social relationships	Personal relationships Social support Sexual activity
4. Environment	Financial resources Freedom, physical safety and security Health and social care: accessibility and quality Home environment Opportunities for acquiring new information and skills Participation in and opportunities for recreation / leisure activities Physical environment (pollution / noise / traffic / climate) Transport

3.7.1 Strengths of the WHOQOL instruments

1) The WHOQOL instruments were developed internationally and cross-culturally: The WHOQOL was developed simultaneously in 15 field centers around the world. The important aspects of quality of life and ways of asking about quality of life were drafted on the basis of 90 statements made by patients with a range of diseases, by well people and by health professionals in a variety of cultures. The instrument was rigorously tested to assess its validity and reliability in each of the field centers and is currently being tested to assess responsiveness to change. The WHOQOL-BREF, an abbreviated 26-item version of the WHOQOL-100, was developed using data from the field-trial version of the WHOQOL-100. The WHOQOL instrument can be used in different cultural settings, at the same time results are comparable across cultures. **2)** The WHOQOL instruments place primary importance on the perception of the individual: Most assessments in medicine are obtained by examinations by health workers and laboratory tests. The WHOQOL instruments, by focusing on individuals' own views of their well being, provide a new perspective on disease. For example, that diabetes involves poor body regulation of blood glucose is well understood, but the effect of the illness on the perception that individuals have of their social relationships, working capacity, and financial status has received little systematic attention. The WHOQOL instruments are tools that will enable this type of research to be carried out. They not only inquire about the functioning of people with diabetes across a range of areas but also how satisfied the patients are with their functioning and with effects of treatment (WHO, 1996).

3.7.2 Translation of the WHOQOL-BREF questionnaire into Arabic

The International Quality of Life Assessment Project (IQOLA) most recently has established a set of procedures for the translation and psychometric testing of the QOL tools. This process includes two forward translations of the original instrument into the new language, where the two independent translators meet to agree on a common version, which then is translated back into English by two other translators who also meet to agree on their version. Finally, these agreed upon versions are compared with the original and quality rated by two or more experts to assure “conceptual equivalence”, “colloquial language use” and “clarity” of the translations, so that the quality of the translation is explicitly assessed. A second step involves a piloting phase by applying the translated instrument to a convenient sample of people from the target nations who are then interviewed about the comprehensibility, feasibility and acceptance of the instrument (Shumaker & Berzon, 1995).

Translating and subsequent reliability testing of the questionnaire was conducted by Aljedi and Al jeash (2005). The instrument was translated into Arabic to be used with people speaking Arabic in general, and with a sample of Palestinian refugees with diabetes in particular. For the purpose of this study, the investigator used the techniques suggested by

(IQOLA) for translation. There are: back translation, and bilingual technique. The WHOQOL-BREF questionnaire was translated into Arabic by two independent translators. The investigator explained to each translator the importance of the independent translation in order to judge reliability. Each translation was compared and double checked for accuracy and the communication of Arabic meaning for the words. As the questionnaire translation was reviewed, the meaning, clarity and the appropriateness to the cultural values of the intended subjects were assured. After a careful investigation of the translations, they were synthesized into one form. The final Arabic version was then translated back into English by two Arabic physicians who were fluent in both the English and Arabic languages. Finally, when the two English versions were compared to validate the Arabic version, there was a high degree of equivalence and was subsequently used in this study (Eljedi, 2005).

3.8 Statistical analysis

The collected data was analyzed by using the statistical package of social science (SPSS, version 13). The collected data was entered to the program, then data analysis was carried out as follow:

- Data cleaning
- Coding of data
- Frequency table for study variables
- Cross tabulation of the results
- Statistical test of significant , t-test and ANOVA, and another statistical tests will be used.

3.9 Ethical Considerations

- An official letter of approval to conduct the research to be obtained from the Helsinki committee-Gaza Strip (Ethical committee) annex 8.
- Every patient in the study will receive a complete explanation about the research purpose and confidentiality.
- Every patient in the study population will know that participation in the research is optional .

- Written consent form to be obtained from each patient in the study. Annex 4
- All ethical concepts will be considered : respect to the people and respect to the truth.
- Anonymity and confidentiality will be maintained.

3.10 Limitation of the study

1. lack of resources and materials and absence of fund .
2. political situation which represented by Israeli aggression on Gaza strip
3. lack of logistics (cutting of electrical current, printer spare parts…..

Chapter (4)

4. Results and Discussion

The purpose of this descriptive analytical study is to assess the quality of life among breast cancer patients, and to calculate the incidence rate of breast cancer cases in Gaza governorates in 2007. All breast cancer patients in all Gaza governorates were included, about 107 patients were recorded in oncology clinic in both Al-shifa hospital and European Gaza hospital, the only two main hospitals that providing cancer services in Gaza governorates. Eleven of these patients were not accessible, because six of them were died and the other five were out of the county, so the study population consists of 96 patients who were diagnosed with breast cancer confirmed by positive histopathological report in 2007.

In this chapter the results and discussion will be into two parts, the first part is to discuss the characteristics of study pop. and the other part is discussing the associations of study pop. characteristics and QOL domains

Characteristics of study population

4.1 Demographic characteristics

This part presented several characteristics of the participants such as, age, level of education, marital status, residency, employment status , monthly income, and the number of persons financially dependent on the participant. These characteristics are very crucial to understand the breast cancer patients perceptions about their quality of life and management of their illness.

4.1.1Distribution of subjects according to age

In this study age was classified into three groups, the largest group represented 53% of the study pop. with mean age 51.6 years, second group represented 27% of the study pop. with mean age 38.2 years meanwhile the third group represented by 20% of the study pop with mean age 68.7 years old. The mean age of all subjects was 52.4years.
According to chronic of diseases control (CDC) research center, the risk of getting breast cancer will be doubled after 40 years old every 10 years advanced, so if the researcher make another classification according to the risky group. The most of the study sample 87.5% their age more than 40 years old.

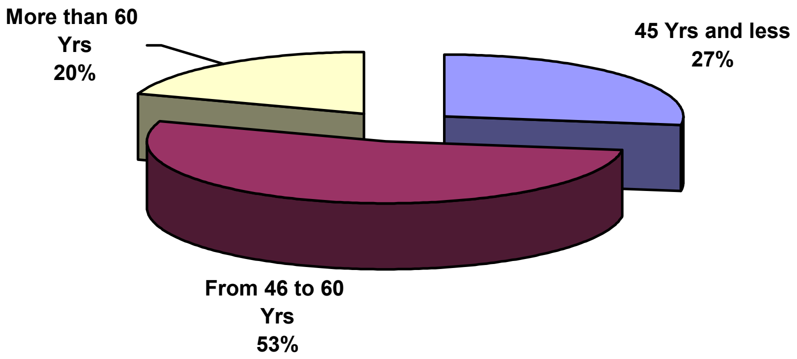


Figure 4.1.1 Distribution of subjects according to age

4.1.2 Level of Education

As it is clear form figure (4.1.3) that 79.2% of the study population had secondary certificates and less, that can be explained because of early marriage of Palestinian females, and 20.8% of the subjects had more than secondary certificates(diploma, university degree, and high education), from that we might conclude that more advanced education level may lower chance of breast cancer, because of good understanding how to deal with disease process, treatment regimen. a new American cancer society studies finds having at least some education beyond high school is associated with decreased risk of cancer death.(ACA, 2008)

Saatci, E., Akin, s., and Akpinar, E., (2007): found 60% of their study population(100 participants) had only 8 years of education.

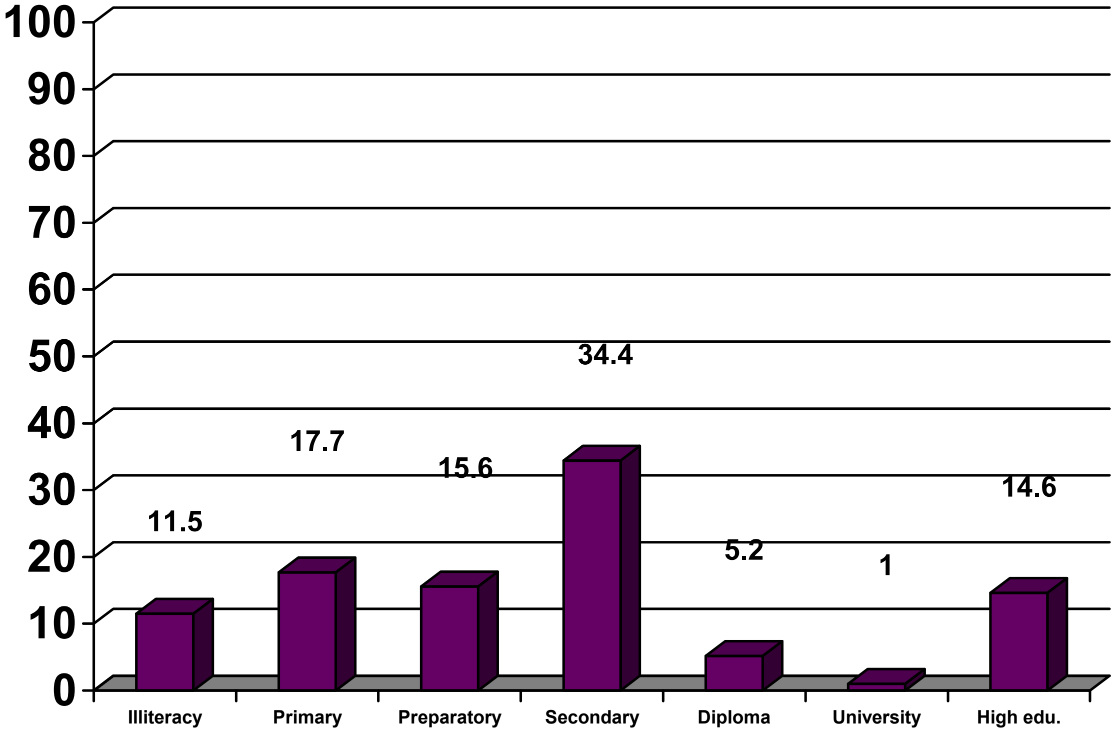


Figure 4.1.2: Education

4.1.3 Marital status

The results of this study revealed that 70% of the study population were married, and 18.8 % of the subjects were widowed , and lastly 9.4 % of the study population were single. Because of early marriage in the Palestinian society is common. Most of women get married at the beginning of twenth years of their age,

Avis et al, (2005): found on their study (Quality of life among younger women with breast cancer) that high percentage 81% were currently married or partnered. Also Redhwan et al, (2008): found in their study(QOL of breast cancer survivors)that the majority 72.8% of his sample (232 participants) was married.

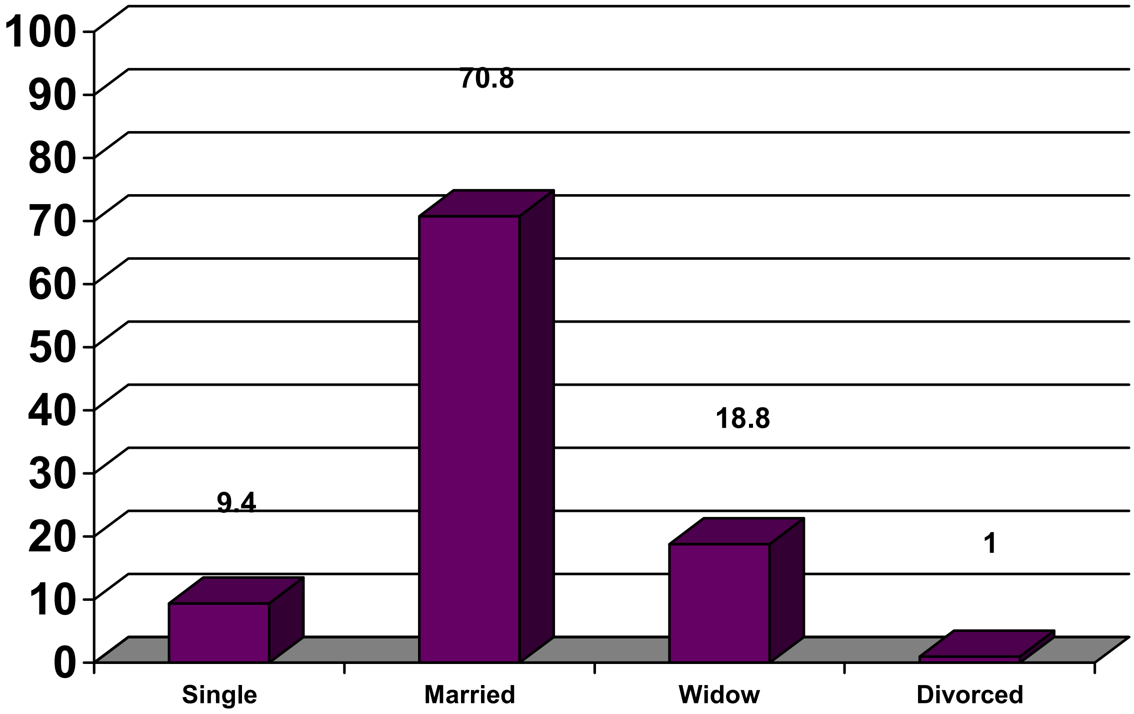


Figure 4.1.3: Marital status

4.1.4 Residency

The study was conducted in the five geographical district of Gaza governorates, and the subjects were distributed as the following on Gaza districts, 51% of the subjects from Gaza, the meddle zone represented by 16.7% of all breast cancer patients, while Khanyounes and Rafah represented by 13.5 % and 10.4% respectively of all the subjects, and North of Gaza represented by 8.3 % of all subjects, Gaza district considered the biggest districts from the population side, it represents 35 % of total population of Gaza governorates.

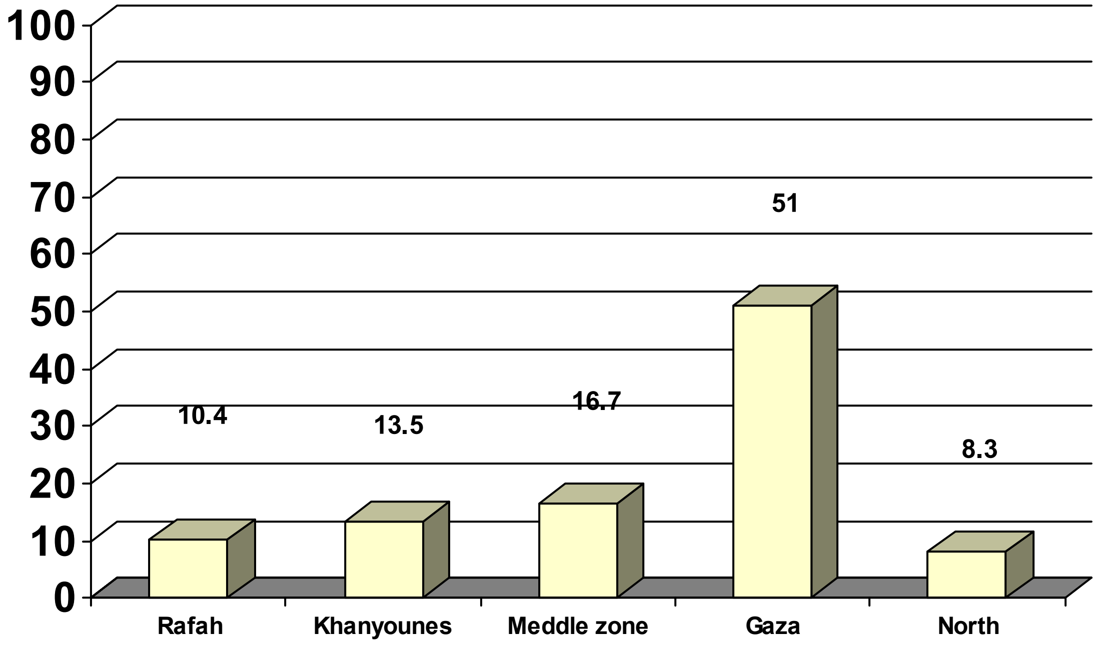


Figure 4.1.4: Residency

4.2 Socio - economic situation

In the past years Gaza governorates suffered from political conflict between the Palestinian political parties, in addition to Israeli siege and war, more than 75% of Gaza population living below the line of poverty according to UNRWA.

4.2.1 Employment status

The results of this study revealed that 86.5 % of the study population were not employed, and that may associated with early marriage and not continuing education beyond secondary certificate, and 13.5 % of the subjects were working, and that is may affected by 20.8 % of the study population had more than secondary certificate (diploma, university degree, high education). Saatci, E., Akin, S., and Akpinar, E., (2007) found 70% of their study population were not employed (housewives). Also, Redhwan et al, (2008) found the majority of his sample not employed 57,6%.

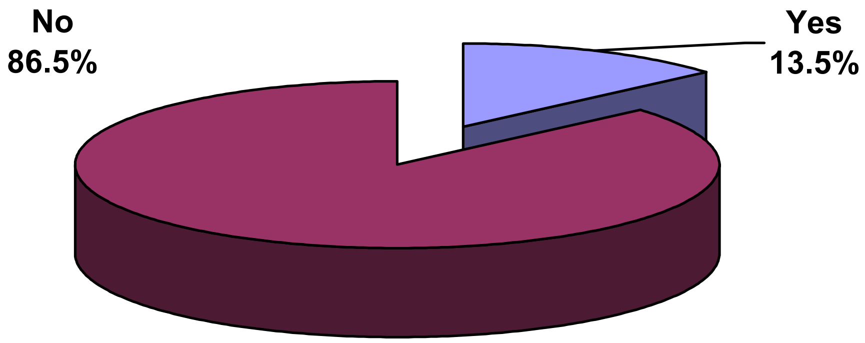


Figure 4.2.1: Employment status

4.2.2 Monthly income

Because of the Israeli siege, more than 75 % of population of Gaza governorates living below the poverty line, the results of this study revealed that 66.7% of the study population had monthly income less than 1000 NIS(=250 USD), and 15.6% of the subjects monthly income more than 2000 NIS(= 450 USD). Low monthly income may associated with lower quality of life, some literature confirm this results such as Redhwan et al, (2008)in his study which was conducted in 2007 in Malaysia found that low educational level , underweight and low monthly household income were significantly associated with lower total quality of life.

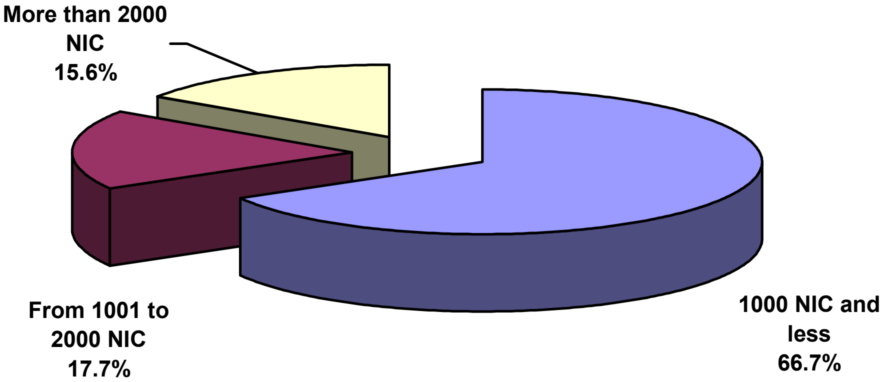


Figure 4.2.2: Monthly income

4.2.3 Dependency

From figure (4.2.3), 43.8% of the study population had family members from 3 to 6 persons , while 25% of study population had more than 6 persons, and that was expected as mentioned in the PCBS, 2007, which reported that the mean household for Palestinian family in Gaza governorates is 6.5 persons.

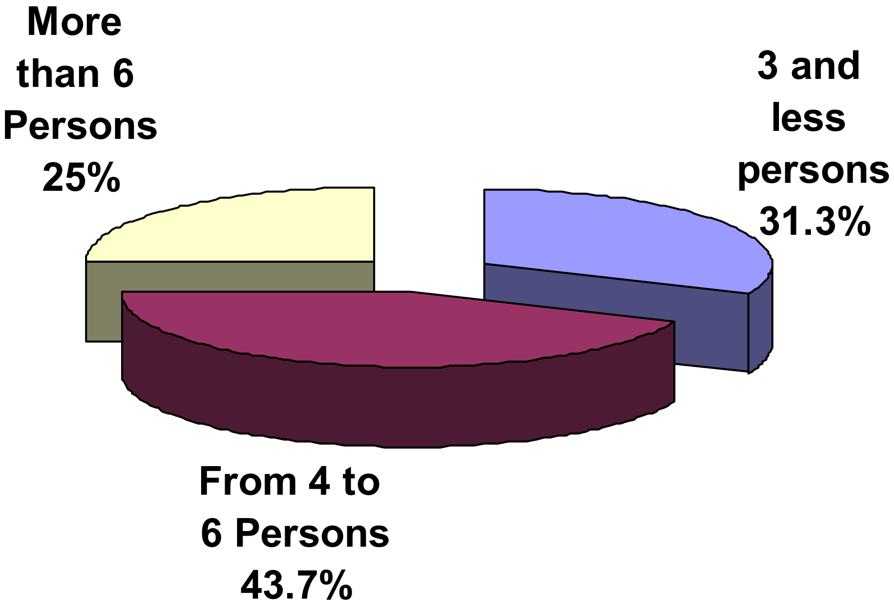


Figure 4.2.3 : Dependency

4.2.4 Treatment regimen

From the exploration of the treatment regimen, it can be divided into five categories as following in figure 4.2.4

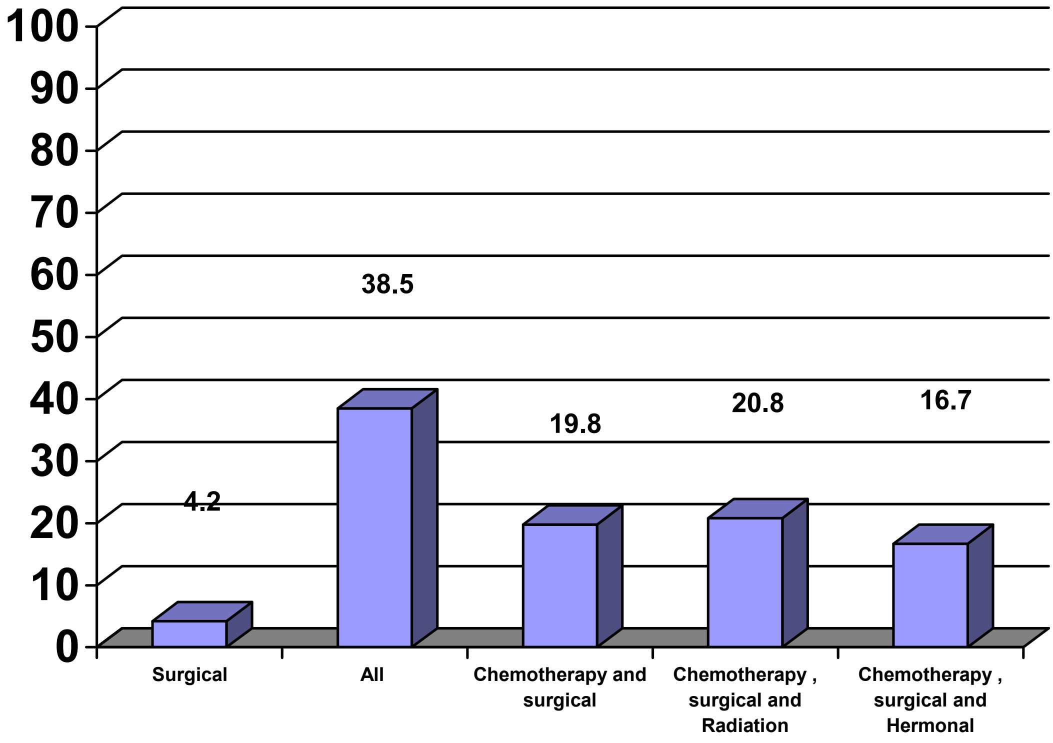


Figure 4.2.4 Treatment regimen

4.2.4.1 Surgical intervention

Just only 4.2% of all breast cancer patients in 2007 had surgical intervention only. That's means that their tumors may be benign, so the expected quality of life is good because of removing of tumor and no need for follow up.

4.2.4.2 All treatment modalities

38.5% of all study population exposed to all treatment modalities which include surgical intervention, chemotherapy, radiation and hormonal. Redhwan rt al, (2008), found the most of the study sample 75.2% had received all treatment modalities.

4.2.4.3 Chemotherapy

19.8% of subjects were treated in different stages of treatment process by surgical intervention followed by chemotherapy.

4.2.4.4 Radiation

20.8% of subjects were treated in different stages of treatment process by surgical, chemotherapy and radiation.

4.2.4.5 Hormonal

16.7% of subjects declare that they received in the treatment therapy hormonal treatment in addition to surgical and chemotherapy.

In general, these results are in consistent with previous study El-Sharkawi (1997),that reported more than half of the subjects were treated with triple modality. Another study conducted by Kwan et al, (2002): revealed that approximately half of all screened patients were symptomatic (chemotherapy, radiation and hormonal) and 12.5% of all assessed patients had lymph edema axillary dissection(surgical intervention).

4.3 WHOQOL analysis

The results of analysis of WHOQOL questionnaire was divided into six items, general quality of life scores, satisfaction with heath, physical domain, psychological domain, social domain, and environmental domain.

4.3.1 General quality of life scores

When the researcher asked the subjects to rate their quality of life 42.7% of the study population said good and very good, and 41.7 % rate their quality of life moderate, that's means more than 80% of the study population accepting their quality of life in presence of breast cancer, they considered this disease from God, and they believe that this exam from the God. For that they believe that they must be patient because this was their fate. Hebert et al, 2009 said that negative religious coping methods predicts worse mental health and life satisfaction in women with breast cancer. That's confirmed the previous idea which support the person who believe in God, he must accept his fate from God. Montazeri et al (2003): stated that significant differences in patients global quality of life, that's means most of the subjects accepts their quality of life after 18 months of diagnosis.

Avis et al, (2005), found in his study that all over QOL rating on ladder of life was 7.2, with half of the sample study rating their QOL 8 and high and 6.6 of women rating their QOL 4 and lower on a 10 point scale.

Table (4.3.1) General QOL and Satisfaction with life.

No.	**Item**	**Very Bad**	**Bad**	**Moderate**	**Good**	**Very Good**	**Total**
1.	How would you rate your quality of life?	7.3	8.3	41.7	32.3	10.4	100.0
2.	How satisfied are you with your health?	4.2	18.8	16.7	47.9	12.5	100.0

4.3.2 Satisfaction with health

As it is clear in table (4.3.1), when the researcher asked the subjects to rate their satisfaction with health on the scale from very dissatisfied to very satisfied, according to the table above, 60.4% were satisfied and very satisfied.

The researcher's explanation for this result was related to religion factor and warmth that received from the family and friends.

Vingerhoeds et al, (2006), found that breast cancer survivor had similar health status and psychological wellbeing and a better satisfaction with life compared of the same age of controls. Also it is mentioned above that after 18 months of diagnosis patients accepted their QOL , and our study pop. Accepted their QOL after more than 18 months.

4.4 The effects of breast cancer on the quality of life's domain

Quality of life consist of four main domains (physical, psychological, social, and environment), it is clear from figure (4.4) that all domains relatively had the same mean scores ranging from 61.3 to 66.9. From the researcher view these scores were expected, because the majority of subjects when they asked to rate their general quality of life, more than 80% of them rate from moderate to very good.

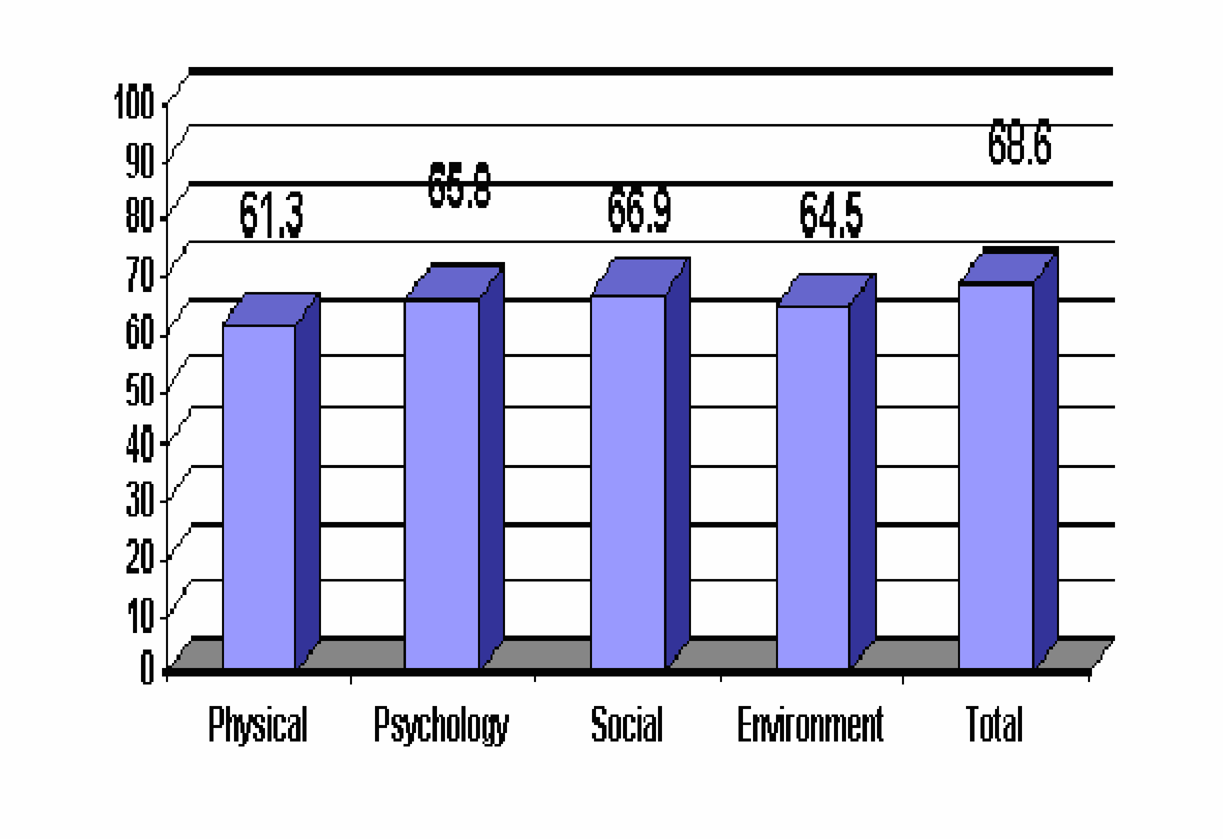


Figure 4.4: Quality of life's domains

4.4.1 Physical domain

The mean score of physical domain was 61.3, when the subjects asked about daily living activities 40.2% of them said that they can performed their daily activity with good and very good way.

4.4.2 Psychological domain

The mean scores of psychological domain was 65.8, when the researcher asked if the subjects experiencing negative feeling such as blue mood, despair, and anxiety, 64.6% of them answered moderate to few times, and that’s accepted in presence of family and friends support.

4.4.3 Social domain

The mean score of the social domain 66.9 the highest mean score between all domain, this mean can be explained by the answer of question asked to the subjects how satisfied they were with the support of friends, they answered 67.7% by satisfied and very satisfied.

4.4.4 Environmental domain

The mean score of this domain was 64.6, when the researcher asked the participants about how healthy was your physical environment, 83.4 of them answered by moderate to very good.

4.5 Analysis of difference of QOL domains among breast cancer patients by using T test.

The T test assesses whether the means of two group are statistically different from each other, this analysis is appropriate whenever the need to compare between the means of two group.

4.5.1 The effect of employment status on QOL domains

From table (4.5.1) shows strong and highly significant differences between the employment status regarding the four domains, the most significant difference was found in physical domain (t 3.642, P value =0.000), then the environmental domain also highly significant (t 3.074, P value = 0.009), while social domain had the least significant domain relatively (t 2.035, P value = 0.053). the all over differences in the global value between group was highly significant as indicated by t value 3.074 with statistical significant level P value = 0.003.

It clear that the one who is working had better QOL, because s/he will be employed that's means they have working friends ,educated well, dealing with his disease more efficiently than not working patient.

Safaee et al,(2008), found that employment status was significantly associated with QOL, working women with breast cancer had higher scores than household wives. Also Jacob, A., (2007), stated that patients who had higher education with better employment had higher QOL and that's supported our results.

Table 4.5.1 The effect of employment status on QOL domains

Sn.	Domains	Employment	No.	Mean	Std	t	Sig.
1.	Physical	Yes	13	77.8	10.5	3.642	0.000
		No	83	58.8	18.3		
2.	Psychology	Yes	13	70.3	7.4	2.144	0.043
		No	83	65.1	11.8		
3.	Social	Yes	13	73.3	10.9	2.035	0.053
		No	83	65.9	18.4		
4.	Environment	Yes	13	73.7	14.0	2.680	0.009
		No	83	63.2	12.9		
5.	Total	Yes	13	77.2	8.4	3.074	0.003
		No	83	67.2	11.1		

4.6 Analysis of differences of QOL domains among breast cancer patients by using one way ANOVA test.

One way ANOVA test is used to test for differences among at least three group.

4.6.1 The effect of age group on QOL domains

As in table (4.6.1),There were no statistical significant between all age group and quality of life domains, because the range of the population age is so closed, the mean age is 52.4 years, so age as a factor not represent difference statistically significant(f = 0.720 with p value = 0.489)

Casso et all, (2004), said that younger long term survivor of breast cancer had high QOL across several standardized measures. Meanwhile Avis, et al (2005) reported that younger breast cancer survivors at risk for impaired QOL to several years after diagnosis, younger women especially those at high risk for lower QOL.

Safaee et al, (2008),reported that concerning demographic factors (age, education, marital status), the subgroups didn't differs from one to another, some research articles but not all, indicates that younger women may suffer poorer QOL. Unfortunately, age definition vary across studies. This association wasn't seen in our study.

4.6.1 The effect of age group on QOL domains

Sn.	Domains	Age	No.	Mean	Std	F	Sig.
1.	Physical	45 Yrs and less	26	63.52	19.26	0.710	0.494
		From 46 to 60 Yrs	51	61.85	18.28		
		More than 60 Yrs	19	56.99	18.99		
		Total	**96**	**61.34**	**18.63**		
2.	Psychology	45 Yrs and less	26	66.54	13.87	0.095	0.909
		From 46 to 60 Yrs	51	65.62	11.15		
		More than 60 Yrs	19	65.09	8.63		
		Total	**96**	**65.76**	**11.42**		
3.	Social	45 Yrs and less	26	68.46	15.15	2.507	0.087
		From 46 to 60 Yrs	51	69.15	19.04		
		More than 60 Yrs	19	58.95	15.60		
		Total	**96**	**66.94**	**17.70**		
4.	Environment	45 Yrs and less	26	65.19	17.51	0.038	0.962
		From 46 to 60 Yrs	51	64.56	12.00		
		More than 60 Yrs	19	64.08	11.43		
		Total	**96**	**64.64**	**13.47**		
5.	Total	45 Yrs and less	26	69.62	13.42	0.720	0.489
		From 46 to 60 Yrs	51	69.10	10.76		

		More than 60 Yrs	19	65.83	9.59		
		Total	**96**	**68.59**	**11.30**		

4.6.2 The effect of educational levels on QOL domains

As shown in table (4.6.2) there was statistical difference between educational level and physical domain, this difference reach statistically significant (P = 0.022), also there was statistically significant difference in social domain in relation to educational level, and that difference reach statistically significance (P = 0.015). in the contrast there were no statistical significant in relation between both psychological ,environmental domain with educational level, but in general the total QOL domains had statistically significant differences with educational level. (P = 0.033)

Table 4.6.2 The effect of educational levels on QOL domains

Sn.	**Domains**	**Education**	**No.**	**Mean**	**Std**	**F**	**Sig.**
1.	Physical	Illiteracy	11	47.53	12.14	2.614	0.022
		Primary	17	58.82	15.42		
		Preparatory	15	61.14	17.37		
		Secondary	33	60.78	18.37		
		Diploma	5	64.57	26.85		
		University	1	77.14	--		
		High edu.	14	74.49	19.30		
		Total	96	61.34	18.63		
2.	Psychology	Illiteracy	11	63.94	5.74	1.800	0.108
		Primary	17	63.14	9.31		
		Preparatory	15	66.22	13.38		
		Secondary	33	64.95	12.70		
		Diploma	5	80.67	6.41		
		University	1	60.00	--		
		High edu.	14	66.90	10.74		

		Total	96	65.76	11.42		
3.	Social	Illiteracy	11	54.55	15.72	2.807	0.015
		Primary	17	61.57	15.19		
		Preparatory	15	69.78	14.66		
		Secondary	33	67.07	19.29		
		Diploma	5	86.67	10.54		
		University	1	66.67	--		
		High edu.	14	72.86	16.43		
		Total	96	66.94	17.70		
4.	Environment	Illiteracy	11	63.86	10.74	1.516	0.182
		Primary	17	63.68	9.48		
		Preparatory	15	63.17	16.70		
		Secondary	33	61.74	14.40		
		Diploma	5	76.50	12.07		
		University	1	80.00	--		
		High edu.	14	69.46	12.14		
		Total	96	64.64	13.47		
5.	Total	Illiteracy	11	63.26	7.29	2.412	0.033
		Primary	17	66.08	7.97		
		Preparatory	15	68.72	13.39		
		Secondary	33	67.12	11.82		
		Diploma	5	80.00	8.99		
		University	1	75.00	--		
		High edu.	14	74.64	11.04		
		Total	96	68.59	11.30		

The above results in table (4.6.2) agreed with Jacob, A.,(2007), results which informed that patients who were married with higher education and better employment had higher QOL.

Salonen et al, (2009) found significant association between QOL and some demographic charactraricts such as educational and employment status. The possible explanation for high QOL among more educated patients, because of educated patients had greater satisfaction with medical interactions and had better QOL than uneducated patients.

4.6.3 The effect of marital status on QOL domains by one way ANOVA

It is clear that there were no statistical significant differences between QOL domains and marital status.

El- Sharkawi, F., (2007), revealed in her study that comparing the mean QOL scores of marital status by t- test indicated no significant differences in all domains and support our results.

Table 4.6.3 The effect of marital status on QOL domains

Sn.	Domains	Marital status	No.	Mean	Std	F	Sig.
1.	Physical	Single	9	65.71	20.10	0.836	0.478
		Married	68	61.97	18.85		
		Widow	18	56.03	17.23		
		Divorced	1	74.29	.		
		Total	96	61.34	18.63		
2.	Psychology	Single	9	69.63	12.30	1.062	0.369
		Married	68	65.88	11.63		
		Widow	18	62.78	9.98		
		Divorced	1	76.67	.		
		Total	96	65.76	11.42		
3.	Social	Single	9	65.19	14.44	0.608	0.611
		Married	68	68.33	18.51		
		Widow	18	63.33	16.37		
		Divorced	1	53.33	.		
		Total	96	66.94	17.70		
4.	Environment	Single	9	65.00	18.87	0.274	0.844
		Married	68	65.15	13.37		
		Widow	18	62.22	11.50		
		Divorced	1	70.00	.		
		Total	96	64.64	13.47		

5.	Total	Single	9	70.74	13.19	0.851	0.470
		Married	68	69.12	11.55		
		Widow	18	65.14	9.32		
		Divorced	1	75.83	.		
		Total	96	68.59	11.30		

4.6.4 The effect of residency on QOL domains

As it is shown in table 4.6.4 below, there were no statistical significant differences between QOL domains and residential area, and seems naturally because all Gaza governorates living under the same conditions, Israeli siege since 5 years, the same level of health services were provided in any governorates.

Table 4.6.4 The effect of residency on QOL domains

Sn.	Domains	Marital status	No.	Mean	Std	F	Sig.
1.	Physical	Rafah	10	56.86	17.06	1.886	0.120
		Khanyounes	13	49.89	13.93		
		Middle zone	16	66.25	19.24		
		Gaza	49	63.32	18.87		
		North	8	63.57	20.13		
		Total	**96**	**61.34**	**18.63**		
2.	Psychology	Rafah	10	61.00	14.41	0.961	0.433
		Khanyounes	13	63.33	12.17		
		Middle zone	16	68.33	11.09		
		Gaza	49	66.87	11.04		
		North	8	63.75	8.81		
		Total	**96**	**65.76**	**11.42**		
3.	Social	Rafah	10	58.67	21.27	2.243	0.070
		Khanyounes	13	56.92	20.11		
		Middle zone	16	70.83	15.75		

		Gaza	49	69.25	16.21		
		North	8	71.67	16.23		
		Total	96	66.94	17.70		
4.	Environment	Rafah	10	62.75	12.61	0.513	0.726
		Khanyounes	13	60.58	12.21		
		Middle zone	16	63.91	13.72		
		Gaza	49	66.12	14.03		
		North	8	65.94	13.88		
		Total	**96**	**64.64**	**13.47**		
5.	Total	Rafah	10	64.17	12.87	1.906	0.116
		Khanyounes	13	62.31	9.17		
		Middle zone	16	70.94	10.69		
		Gaza	49	70.24	11.41		
		North	8	69.58	10.25		
		Total	**96**	**68.59**	**11.30**		

4.6.5 The effect of monthly income on the QOL domains

From table 4.6.5 it is clear that there were high statistical significant of difference between all QOL domains and monthly income, and that is accepted and logic because of low socioeconomic status and poverty were considered as risk factors of cancer, so the researcher results support that.

Redhwan et al, (2008), reported that significant association between monthly household income and QOL domains, this findings is consistent with previous study which reported that income was significant predictor of QOL.

Merkin et al, (2006), revealed in a study of New York city women that low income led to limited availability of primary prevention measures and detecting breast cancer in an early stage in disease. Similar findings noticed with another study, whereas Pinar et al, (2005), informed that no effects of financial status was found in QOL.

Table 4.6.5 The effect of monthly income on the QOL domains

Sn.	Domains	Monthly Income	No.	Mean	Std	F	Sig.
1.	Physical	1000 NIS and less	64	55.67	17.16	11.641	0.000
		From 1001 to 2000 NIS	17	69.24	15.50		
		More than 2000 NIS	15	76.57	16.84		
		Total	96	61.34	18.63		
2.	Psychology	1000 NS and less	64	63.96	11.25	3.782	0.026
		From 1001 to 2000 NIS	17	66.47	11.27		
		More than 2000NIS	15	72.67	10.17		
		Total	96	65.76	11.42		
3.	Social	1000 NIS and less	64	61.46	16.99	11.238	0.000
		From 1001 to 2000 NIS	17	77.25	13.76		
		More than 2000NIS	15	78.67	14.07		
		Total	96	66.94	17.70		
4.	Environment	1000 NIS and less	64	60.47	11.36	12.963	0.000
		From 1001 to 2000 NIS	17	69.56	12.69		
		More than 2000NIS	15	76.83	14.06		
		Total	96	64.64	13.47		
5.	Total	1000 NIS and less	64	64.91	9.68	14.331	0.000
		From 1001 to 2000 NIS	17	73.33	10.13		

		More than 2000 NIS	15	78.94	11.12		
		Total	96	68.59	11.30		

4.6.6 The effect of treatment regimen on the QOL domains

From table 4.6.6, there were no statistical significant of differences between physical, psychological, and environmental domains in relation to treatment regimen, but the relation between the social domain and treatment regimen reach statistically significant P = 0.024. But in total QOL domains there was no statistical significant. As far as cancer-related characteristics, the QOL did not show any association with chemotherapy, radiotherapy, surgery, tumor size and histological grade (Redhwan et al, 2008).

Table 4.6.6 The effect of treatment regimen on the QOL domains

Sn.	Domains	Treatment	No.	Mean	Std	F	Sig.
1.	Physical	All	39	64.62	19.05	2.321	0.063
		S+C	18	63.81	17.31		
		S+C+R	21	60.14	18.31		
		S	2	77.14	0.00		
		S+C+H	16	50.18	16.98		
		Total	96	61.34	18.63		
2.	Psychology	All	39	67.69	10.90	0.939	0.445
		S+C	18	64.81	12.74		
		S+C+R	21	63.81	12.03		
		S	2	75.00	2.36		
		S+C+H	16	63.54	10.71		
		Total	96	65.76	11.42		
3.	Social	All	39	68.55	17.10	2.953	0.024
		S+C	18	64.44	19.54		
		S+C+R	21	74.60	13.60		
		S	2	66.67	9.43		

		S+C+H	16	55.83	18.20		
		Total	96	66.94	17.70		
4.	Environment	All	39	64.94	13.36	0.398	0.810
		S+C	18	63.19	11.91		
		S+C+R	21	65.36	15.95		
		S	2	75.00	7.07		
		S+C+H	16	63.28	13.16		
		Total	96	64.64	13.47		
5.	Total	All	39	70.36	11.16	1.516	0.204
		S+C	18	67.50	11.26		
		S+C+R	21	69.21	11.52		
		S	2	78.33	3.54		
		S+C+H	16	63.49	11.02		
		Total	96	68.59	11.30		

4.7 Incidence rate of breast cancer in 2007

The incidence rate is the rate at which new events occur in a population, the numerator is the number of new events occurring in a defined period; the denominator is the population at risk of experiencing the events during this period.
In this study all oncology files were checked for breast cancer files with confirmation of histopathological report in 2007 in governmental health facilities that provide health services to the breast cancer patients. And this services were provided only in the ministry of health facilities in two places the first is Al- shifa complex and the second is European Gaza hospital.

107 breast cancer files were found, these files were not complete with the necessary information such as full address, telephone number, past history…ect. In the field, the researcher and the co – researcher work hardly to find the full address and telephone number of the patients who didn’t came to the oncology department. 96 patients were filled the interviewed questionnaire most of them at their home, and the other in the

oncologoy departments, six of these patients were died and the other 5 cases were out of the country(traveling abroad).

The number of population in Gaza governorates in 2007 according to BCPS were 1416543 person, the number of female were 697832 female. Incidence rate per 100,000 population will be clear in following table (4.7), in addition to incidence rate per female population.

Table 4.7 Incidence rate of breast cancer in 2007

No	Governorates	No of cases			Pop. In 2007			Incidence rate per 100,000 in 2007	Incidence rate in 100.000 female pop.
		Live	Died	Total	Male	Female	Total		
1-	Rafah	10	2	12	87465	85907	173372	6.92	13.96
2-	Khanyounes	13	2	15	137577	133402	270979	5.53	11.24
3-	Middle zone	16	-	16	103608	101927	205535	7.78	15.96
4-	Gaza	49	2	51	252465	243946	496411	10.27	20.90
5-	North	8	-	8	137596	132650	270246	2.96	6.03
Total		96	4	102	718711	697832	1416543	7.20	14.61

The incidence rate was missed since the last annual report issued by MOH in 2005, as end product of this thesis, the researcher calculates the incidence rate Gaza Governorates.

The incidence rate of breast cancer in Gaza governorates in 2007 is 7.2 per 100.000 population, in comparison to the incidence rate in 2005 the rate was 7.5 per 100.000 population. The incidence rate of breast cancer in female in 2007 is 14.6 per 100,000 female population, in comparison to the incidence rate in 2005 was 15.1 per 100,000 female population.

Chapter (5)

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Our study is descriptive analytical cross sectional study, used to assess the quality of life among breast cancer patients in Gaza governorates in 2007 and to calculate the incidence rate of this disease. The characteristics of the study population were studied. The relationship between socio – demographic and economic status of the subjects investigated in correlation with the domains of quality of life.

Our results indicated that breast cancer is uncommon in male patients, and breast cancer more prevalent among female patients their age more than 40 years, the mean age of our subjects 52.4 years old. The majority of the study population had secondary certificate and less, and more than half of the subjects were living in Gaza, about half of them were household mothers caring of 3 – 6 person at home, while most of them lived below the poverty line, most of breast cancer subjects were treated by more than three modalities of treatment (surgical , chemotherapy, and radiation).

The findings of this study revealed that more than 80% of subjects accepting their quality of life and satisfied about their health. It is noticed that social domain had high score and that as a result of the nature of the Palestinian community, whereas the caring for ill terminated patient is high priority in the family in addition to religious factor

There was highly significant association between employment status and quality of life domains, and that was clear in physical domain

There was no statistical significant association between quality of life domains from one side and age, marital status, residential area, and treatment regimen from other side.

In the contrast there were highly significant association between all domains of quality of life with monthly income. And significant association between physical and social domain in one side and level of education on the other side.

In spite of bad circumstances in Gaza governorates (unstable political situation, Israeli siege, and poverty) this study approved that breast cancer patients accepting their quality of life in a moderate degree.

The incidence rate of breast cancer in 2007 was 7.2 per 100,000 population, while the incidence rate among female population was 14.6 female population.
It was almost the same results 0f the incidence rate in 2005, which was 7.5 per 100,000 population and 15.1 per female population.

The findings constitute an evidence base for the country's cancer care program, to boost national health education about prognosis in cancer. Families living with women cancer patients are vulnerable and need support if the patient is recently diagnosed, less educated, single, not formally employed; and the caregiver is female, parent, younger, less educated, unemployed and feels sick. Clinicians need to invest in the education and support of family caregivers. The patient-caregiver dyad should be regarded as a unit for treatment in cancer care. The study adds knowledge to the quality of life of breast cancer patients in Gaza governorates. It emphasizes the importance of physician-patient communication. It gives the opportunity to use an international scale in Palestine. QOL is a temporal concept that reflects the moment at which it is evaluated; thus, respondents are more likely to respond consistently to measures of tangible capital.

5.2 Recommendation

Findings of this study help the researcher to understand the quality of life among breast cancer patients in Gaza governorates.

5.2.1 General recommendation

1. Increasing the health awareness of the public about breast cancer
2. development and supporting the treatment plane and protocols which followed in PMOH, oncologoy departments.
3. Enhancing health information system spatially cancer registry
4. strengthening and enhancing all factors that promote and increase quality of life

5. screening program(mammography) to the risky group according to PMOH guideline protocol.

5.2.2 Research recommendation

1. prospective studies for newly diagnosed patients with breast cancer and QOL
2. further studies are recommended in the same title with larger sample to verified my results, or case – control study with the same title.
3. assessing the incidence rate and prevalence rate of breast cancer for 2006, 2008,and 2009.

References

Ahn, S., Park, B., Noh, D., Nam, S., Lee, E., Kim, S., Lee, M., Park, B., Yun, Y., (2006): Health related quality of life in disease free survivors of breast cancer with the general population. European Society for Medical Oncology Journal, Vol.18(5),pp. 173- 182.

Al Bahrani, B., Khalifa, A., Faris, M., Khan, Q., (2004): Pattern of relapse and experience with first line treatment of metastatic and relapsed breast cancer in Oman. Oman Med. Journal, Vol. 19(1), pp.7-12.

Aljedi, A., (2005): Diabetes mellitus among the Palestinian refugee in Gaza strip. Toward better quality of life. PHD thesis. Bielefeld University, Germany.

Al-Moundhri, M, Al-Bahrani, B, Pervez, I, Ganguly, S, Nirmala, V, Al-Madhani, A, Al-Mawaly, K, Grant, C., (2004): The outcome of treatment of breast cancer in a developing country-Oman. Breast, Vol. 13 (2), pp.139-45

Al-Saweer, A., Yacoub F., Mohammed, N., (2003): The prevalence of risk factors among women diagnosed with breast cancer. Bahrain Med Bull, Vol. 25(4),pp.156-8.

Anim, J., (1990): Breast cancer in Arab women: A review. Emirates Med J., Vol. 8,pp. 189-95

American Cancer Association, (2008): Cancer Facts & Figures. Accessed on 21/8/2009 www.cancer.org

Avis, N., Crawford, S., and Manuel, J. (2005): Quality of Life Among Younger Women With Breast Cancer. Journal of Clinical Oncology, Vol. 23(15),pp. 332-330.

Bener, A., Ayub, H., Kakil, R., Ibrahim, W., (2008): Patterns of cancer incidence among the population of Qatar: a worldwide comparative study. Asian Pac J Cancer Prev.Vol. 9(1), pp.19-24

Bener, A., Honein, G., Carter, A., Da'ar, Z., Miller, C., Dunn, E., (2002):The determinants of breast cancer screening behavior: a focus group study of women in the United Arab Emirates. Oncology Nursing Forum. Vol. 29(9), pp. 8-91

Berlim, M., and Fleck, M. (2003). “Quality of life”: a brand new concept for research and practice in psychiatry. *Revista Brasileira de Psiquiatria.* Vol. 8(2),pp. 18-33.

Bowling, A. (1997). *Measuring Health: A Review of Quality of Life Measurement Scales.*

Bujassoum, S., Gehani A., (2004): Epidemiology of breast cancer in Qatar 1999-2002. Qatar Med J. Vol. 13(1),pp. 43-5.

Casso, D., Buist, D., and Taplin, S., (2004): Quality of life of 5 – 10 year breast cancer survivors diagnosed between age 40 – 49. WWW.hqol.com/content/2/1/25.
accessed on 21/8/2009.

Coulter, D., (1990): Home is the place: Quality of life for young children with developmental disabilities. In D. Raphael, I. Brown, R. Renwick, & I. Rootman, (1996). *Quality of life Indicators and Health: Current Status and Emerging Conceptions.* Center for Health Promotion, University of Toronto, Toronto, Canada

Darwish A, Al-Khalifa K., Hameed T., Satir A.,(1994): Breast disease in Bahrain defense force hospital: A study of 194 cases. Vol. 6(1), pp. 27-31.

Denic, S., Al-Gazali L., (2003): BRCA1 and BRCA2 mutations in breast cancer patients from Saudi Arabia. Saudi Med J. Vol. 24(6), pp. 696-7.

Denic, S., Bener, A., (2001): Consanguinity decreases risk of breast cancer--cervical cancer unaffected. Br J Cancer. Vol. 85(11), pp.1675-9.

Devi, K., Kuruvila S., Mqusa M., (2000): Pathological prognostic factors in breast carcinoma. Saudi Med J. Vol. 21(4), pp. 372-5.

Dinshaw, K., (1999), CANCER CONTROL PROGRAMME IN INDIA:CHALLENGES FOR THE NEW MILLENNIUM. INDIA:Health Administrator.

Doll, D., Peto R.,(1998): The causes of cancer. Quantitative estimates of avoidable risks of cancer in the United States today. Oxford: Oxford

Dow, K., Ferrell, B., Leigh, S., Gulasekaram, P., (1996), Research article "An evaluation of the quality of life among long-term survivors of breast cancer" accessed on 13/1/2009 *http://www.springerlink.com/content/j22h4854313966m7/*

Durna, M., Crowe, M., Leader ,R., Eden, A.,(2002): Quality of life of breast cancer survivors: the impact of hormonal replacement therapy. Research Article

Economist Intelligence Unit report, (2009): The global burden of cancer-challenges and opportunities.

El-Sharkawi, F., Sakr, M., Atta, H., Ghanem, H., (1997): Effect of different modalities of treatment on the quality of life of breast cancer patients in Egypt. Eastern Mediterranean Health Journal. Vol. 3(1),pp. 68-81.

EMRO Technical Publications Series No. 30, (2006); Guidelines for the early detection and screening of breast cancer, Cairo, World Health Organization Regional Office for the Eastern Mediterranean.

Fakhro, A., Fateha, B., al-Asheeri, N., al-Ekri, S., (1999): Breast cancer: patient characteristics and survival analysis at Salmaniya medical complex, Bahrain. East Mediterr Health J. Vol. 5(3), pp. 430-9.

Faris, M., Samarasinghe, D., Al Lawaty, F., Thomas, S., (2002): Pattern of Her-2 over expression in breast cancer in Oman and its prognostic significance. Oman Med J. Vol.19(1), pp. 4-7

Ferlay, J., Bray, F., Pisani, P., Parkin, D., (Globocan 2000): Cancer Incidence, Mortality and Prevalence Worldwide, Version 1. IARC Cancer Base No. 5. 2001. Lyon, IARC Press.

Ferrans, C. (1990). Quality of life: Conceptual issues. Seminars in Oncology Nursing, Vol. 6(4), pp. 248-254.

Fowlie, M., Berkeley, J., and Dingwall-Fordyce, I. (1989). Quality of life in advanced cancer: The benefits of asking the patients. Palliative Medicine. Vol. 3(1), pp. 55-59.

Franceschini ,j.(2008): Jornal Brasileiro de Pneumologia pneumol. Vol. 34(6), pp. 81-9

Gans, P., Guadagnoli, E., Landrum, M., Lash, T., Rakawski, W., and Silliman, R.,(2003): Breast Cancer in Older Women: Quality of Life and Psychosocial Adjustment in the 15 Months After Diagnosis. Journal of Clinical Oncology, Vol. 21(21), pp. 43-54

Gautam SC, Siddiqui MZ., (2005): Clinical presentation of breast cancer in the UAE. Emirates Med J. Vol. 6(2), pp. 23-28

Green, L., and Kreuter, M. (1991).*Health promotion planning.* Toronto: Mayfield.

Hebert, R., Zdaniuk, B., Schulz, R., Scheier, M.,(2009):" Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer", JOURNAL OF PALLIATIVE MEDICINE. Vol. 12(6), pp. 537-545

IARC press, (2002): Working group on the evaluation of cancer prevention strategies. Handbooks of cancer prevention, vol.7, breast cancer screening. Lyon, France: IARC press.

Jacob, A., (2007): Factors associated with quality of life of outpatients with breast cancer and gynecologic cancers and their family caregivers: a controlled study. BMC Cancer Vol.13(4), pp.21-25

Jamal, A., (2001): Pattern of breast diseases in a teaching hospital in Jeddah, Saudi Medical Oncology, Vol., 22(4), pp. 25-29

Kanyarat, N., and Wachiraporn, A., (2005): Quality of life outcome of breas cancer treatment. Journal of Clinical Oncology. Vol. 20(20), pp. 45-56

King, C., & Hinds, P. (1996). *Quality of life: From Nursing and Patients Perspectives.* Jones and Bartlett Publishers, Canada.

Kwan, K., Jackson, J., Weir, L., Dingee, C., McGregor, G.,. Olivotto, V., (2002): Chronic Arm Morbidity After Curative Breast Cancer Treatment: Prevalence and Impact on Quality of Life. Journal of Clinical Oncology. Vol. 20(20), pp. 45-56

Leedham, B., Ganz, P., Desmond, K., Rowland, J., Meyerowitz, B., Belin, T.,(2002): Quality of Life in Long-Term, Disease-Free Survivors of Breast Cancer: a Follow-up Study. Journal of the National Cancer Institute, Vol. 94(1), pp. 56-60

Lopez A, Ahmad O, Guillot M.,(2002): *World Mortality in 2000: Life Tables for 191 Countries*. Geneva: World Health Organization.

Manual, D., & Schultz, S.,(2004). Health – related quality of life and health – adjusted life expectancy of people with diabetes in Ontario, Canada,1996-1997.diabetes care. Vol 27(13), pp. 407- 414.

Maxwell, P., Fernandez, L., (2006): Use of statistics to assess the global burden of breast cancer. The breast cancer journal. Vol. 12(6), pp. S70-S80

McDowell, I., and Newell, C. (1987). Measuring health. New York: Oxford University, p. 205, In D. Raphael, I. Brown , R. Renwick , I. Rootman, (1996). *Quality of life Indicators and Health: Current Status and Emerging Conceptions.* Center for Health Promotion, University of Toronto, Toronto, Canada.

Mestiri S, Bouaouina N, Ahmed SB, Khedhaier A, Jrad BB, Remadi S, Chouchane L.,(2001): Genetic variation in the tumor necrosis factor-alpha promoter region and in the stress protein hsp70-2: susceptibility and prognostic implications in breast carcinoma. Cancer.

Ministry of health (2002), annual report. Palestine: MOH.

Ministry of health (2002), cancer in Palestine 1995 – 2000. Palestine: MOH.

Ministry of health (2002), health information news "volume 1, No.15, 15 NOV 2002" HIN.

Ministry of health (2004), annual report. Palestine: MOH.

Ministry of health (2005), annual report. Palestine: MOH.

Ministry of health (2006), special report. Palestine: MOH.

Ministry of Health (Jordan, 2000): Cancer incidence in Jordan. National Cancer Registry Report.

Montazeri, A. Hole, D. Milroy, R McEwen, J. and Charles, R. (2003), Resaerch article. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=165601 assessed on 2/3/2009 .

Montazeri, A. Vahdaninia, M. Harirchi, I. Ebrahimi, M. Khaleghi, F. and Jarvandi, S. (2008), Research article, http://www.biomedcentral.com/1471-2407/8/330 assessed on 2/3/2009

Murray CJL, Lopez AD, Mathers CD, Stein C., (2001): *The Global Burden of Disease 2000 project: aims, methods and data sources*. GPE Discussion Paper No. 36. Geneva, WHO.

Murray CJL, Lopez AD.,(1996): The Global Burden of Disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. 1 ed. Cambridge: Harvard University Press.

National Center for Health Statistics, Division of Vital Statistics, Centers for Disease Control. Available at: http://www.cdc.gov/nchs/nvss.htm. Accessed on21/5/ 2009

Palestinian central bureau of statistics, PCBS. (2006). Palestinian consensus.

Parkin, M., Pisani P., Munoz N., Ferlay J., (1999): The global health burden of infection associated cancers. Cancer Surveys. Philadelphia, Open University Press.

Parkin, M., Whelan, S., Ferlay J., Storm, H., (2005): cancer incidence in five contents . accessed on 4/2009 http:/www-dep.iarc.fr.

Pisani P, Parkin DM, Bray F, Ferlay J., (1999): Estimates of the worldwide mortality from 25 cancers in 1990. International Journal of Cancer. Vol. 23(3), pp. 545-550.

Polonsky, W., (2000). Understanding and assessing diabetes-specific quality of life. *Diabetes Spectrum*.

Raj S., Sabri S., Patton R., (1991): Lactating adenoma. Bahrain Med Society. Vol.3(1),pp. 40-42

Raphael, D., Brown, I., Renwick ,R., & rootman , I., (1996): Quality of life indicators and health: current status and emerging conceptions. Center for health promotion, university of Toronto, Toronto, Canada.

Redhwan, A., Idris, M., Zaleha, M., Robert, C.,Fuad3, I., Sami, R.,. (2008):quality of life among women with breast cancer from universiti Kebangsaan Malaysia medical center. Research Article.

Renweck, R.(2002). Quality of life. Quality of life research unit, university of Toronto, Toronto, Canada. Web site: http://www.utoronto.ca/qol Accessed on 24/8/2009.

Ries, L., Eisner, M., Kosary.C., (2005): SEER cancer statistics review. Available at http:/seer.cancer.gov/csr/1975_2001.accessed on 14/ 7/2009.

Saatci, E., Akin, S., and Akpinar, E., (2007): Do the Unmet Needs Affect the Quality of Life in Breast Cancer Patients. Department of Family Medicine, Cukurova University Faculty of Medicine, Balcali, 01330 Adana, Turkey.

Safaee, A., Dehkordi, B., Zeighami, B., Tabatabaee, H., Pourhoseinghohi, M., (2008): Predictors of quality of life in breast cancer patients under chemotherapy. Research Article.

Salonen, P; Tarkka, Kellokumpu, M., Liisa, P., Kurki, A., Tiina, L., and Marja, K.,(2009):" Telephone Intervention and Quality of Life in Patients With Breast Cancer"

Sammarco, A. (2003):" Quality of Life Among Older Survivors of Breast Cancer", Cancer Nursing Magazine, vol. 26(6), pp. 431-438

Schipper, H., Clinch, J., & Powell, V. (1990). Definitions and conceptual issues. In B. Spilker, *Quality of life in clinical trials*. New York: Raven.

Shu, X., Chen**,** X**.,** Zheng**,** W**.,** Gu, K., Chan, Z., Lu, W.,(2009) :"The Effect of Regular Exercise on Quality of Life Among Breast Cancer Survivors"

Smith, K., Avis, N., and Assmann, S. (1999). Distinguishing between quality of life Website: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S151644462003000400013&lng=en&nrm=iso. accessed on 22-6-2009

Snoussi K, Strosberg AD, Bouaouina N, Ben Ahmed S, Chouchane L., (2005): Genetic variation in pro-inflammatory cytokines (interleukin-1beta, interleukin-1alpha and interleukin-6) associated with the aggressive forms, survival, and relapse prediction of breast carcinoma. Eur Cytokine Newt. Vol. 16(4),pp. 253-60

Snoussi K, Strosberg AD, Bouaouina N, Ben Ahmed S, Helal AN, Chouchane L.,(2006): Leptin and leptin receptor polymorphisms are associated with increased risk and poor prognosis of breast carcinoma. BMC Cancer. Vol.6(2),pp. 38-40

Sobin, L., Wittekind, c., (1988): TNM classification of malignant tumours, 4th ed., paris, springer verlag.

Tabar, L., (2006): Tumour development, histology and grade of breast cancers prognosis and progression. International Journal of Cancer. Vol. 66(4), pp. 413-419

Thabet, A., Abu Tawahena, A., Sarraj, E.,Vostanis, P., (2008): Siege and Quality Of Life of Palestinian in Gaza Strip. Arabpsynet E. Jiournal. Vol 20, pp.157-164.

Trief, P., Himes, C., Orendorff, R., and Weinstock, R. (2002). The Marital Relationship and Psychosocial Adaptation and Glycemic Control of Individuals with Diabetes. *Diabetes Care.* Vanderbilt Epidemiology Center, 2525 West End Avenue, Suite 600, Nashville
Web site: http://www.uib.no/isf/people/doc/qol/comp0002.htm accessed on 13-7-2009

Vingerhoets, A., Mols, F., Voogd, A., Poll-Franse, L., Roumen, R., Coebergh, J., (2006): Increased health care utilization among 10-year breast cancer survivors. Support Care Cancer Vol.14(1), pp. 436–443

Wiklund, I., Sorkness, C., & Burckhardt. (2000). *Measuring quality of life.* Center for Quality ofLife Research in Nursing Science, Section for Nursing Science, Department of Public Health and Primary Health Care, University of Bergen.

World health organization, WHO(1998). World health report 1998:life in the 21st century: A vision for all. Geneva: WHO.

World Health Organization. World Health Report 2001. Mental Health: New Understanding, New Hope. Geneva: WHO.

World Health Organization, (2002): cancer control, knowledge into action, WHO Guide for Effective Programs.

World Health Organization. World Health Report 2007.

Annex (1)

Demographic information sheet

A: Demographic data

1. Serial No.: ……………………………..

2. What is your gender: ☐ Male ☐ Female

3. What is you date of birth? ________ / ________ / ______
Day / Month / Year

4. What is the highest education you received? ☐ **None at all** ☐ **Primary school** ☐ **Secondary school** ☐ **Tertiary school** ☐ **Higher education**

5. What is your marital status? ☐ Single ☐ Married ☐ Divorced ☐ Widowed

5. Where do you life : ☐ Rafah ☐ khan younes ☐ meddle zone ☐ Gaza ☐North Gaza

B: Socio-economic status

1. **Occupation** ☐ employed ☐ unemployed

2. Income status: ☐ ____________________

3. How many persons are financially dependent on you? ☐____________

C. Health Profile

You are treated in the treatment process by:

You can choose more than one choice . ☐sugical ☐chemotherpy ☐radiation ☐hormanoal ☐all

Annex (2)

THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL) -BREF

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

		Very poor	Poor	Neither poor nor good	Good	Very poor
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	A extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	A extreme amount
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your life day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	poor	Neither poor nor good	Good	Very poor
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capicity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5
20.	How satisfied are you with your personal relationship?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5

23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

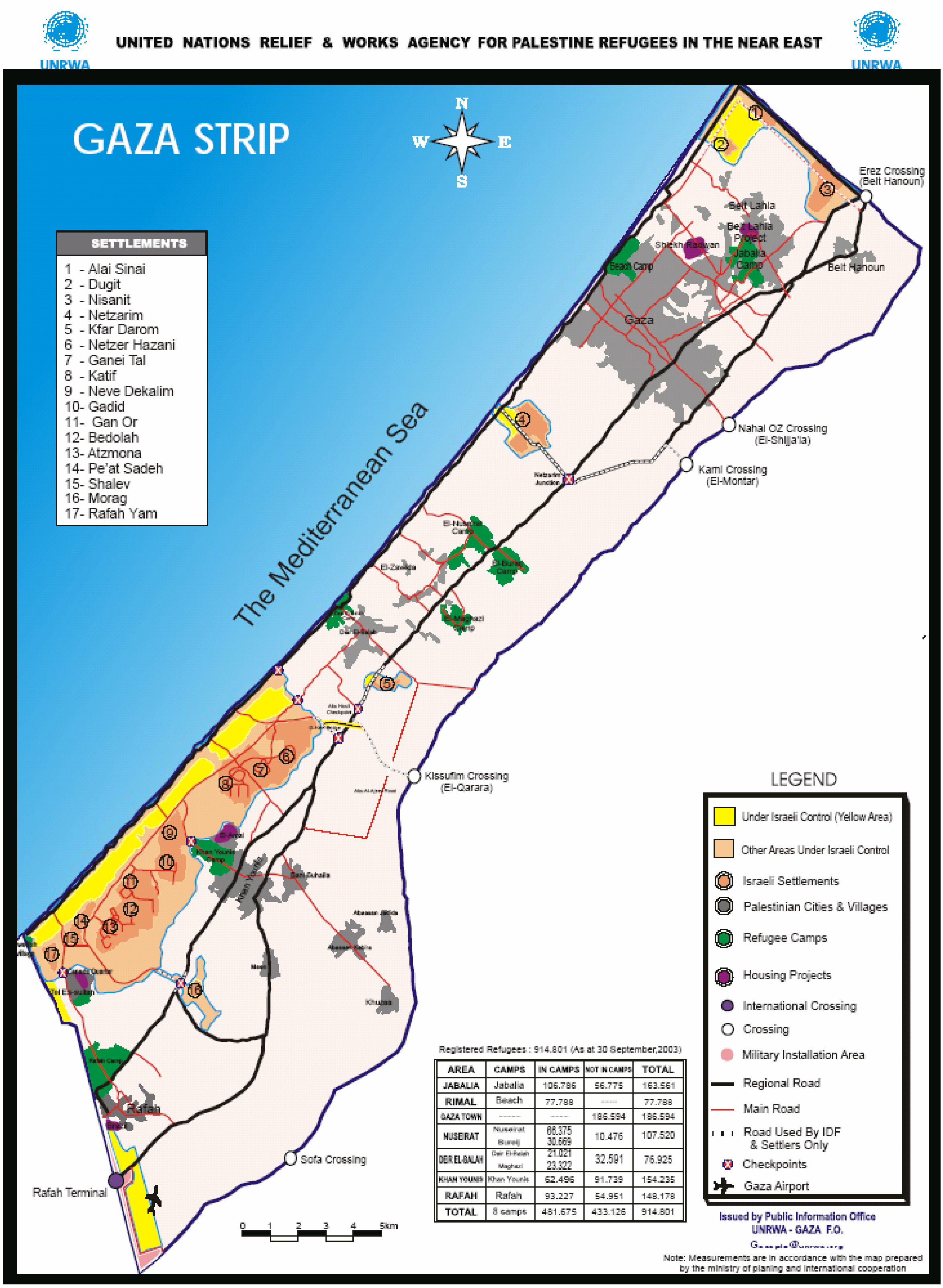
		Never	Seldom	Quite often	Every often	Always
26.	How often do you have negative feeling such as blue mood , despair , anxiety ,depression?	5	4	3	2	1

Do you have any comments about the assessment?

(The following table should be completed after the interview is finished)

		Equation for computing domain scores	Raw score	Transformed scores	
				4 - 20	0 - 100
27.	Domian1	(6-Q3) + (6-Q4) + Q10 + Q15+ Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ +☐	a:	b:	C:
28.	Domian2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐+ ☐ + ☐ + ☐ + ☐ + ☐	a:	b:	C:
29.	Domian3	Q20 + Q21 + Q22 ☐ + ☐ +☐	a:	b:	C:
30.	Domian4	Q8 + Q9 + Q12 + Q13 + Q14 +Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a:	b:	c:

Annex (3)



Registered Refugees : 914.801 (As at 30 September,2003)

AREA	CAMPS	IN CAMPS	NOT IN CAMPS	TOTAL
JABALIA	Jabalia	106.786	56.775	163.561
RIMAL	Beach	77.788	----	77.788
GAZA TOWN	------	-----	186.594	186.594
NUSEIRAT	Nuseirat Bureij	66.375 30.669	10.476	107.520
DEIR EL-BALAH	Deir El-Balah Maghazi	21.021 23.322	32.591	76.925
KHAN YOUNIS	Khan Younis	62.496	91.739	154.235
RAFAH	Rafah	93.227	54.951	148.178
TOTAL	8 camps	481.675	433.126	914.801

Issued by Public Information Office
UNRWA - GAZA F.O.

Note: Measurements are in accordance with the map prepared by the ministry of planing and international cooperation

Annex (4)

الاستبيان : جودة الحياة لدى مرضى سرطان الثدي في محافظات غزة 2007

عزيزي المشارك / ة

تحية طيبة وبعد ....

هذا الاستبيان هو جزء من دراستي في برنامج الماجستير في الصحة العامة بجامعة القدس أبو ديس – فلسطين كمتطلب للحصول على درجة الماجستير

يتضمن الاستبيان مجموعة من الأسئلة ، تهدف إلى جمع المعلومات لدراسة الوضع الحالي لجودة الحياة لدى مرضى سرطان الثدي في محافظات غزة بهدف تقييمها ومن ثم المساهمة في رفع التوصيات لتحسين جودة الحياة لدى هذه الفئة من المرضى من خلال الخدمات المقدمة في وزارة الصحة. لذا أرجو من حضرتكم تعبئة هذا الاستبيان بحسب ما تشعر به أنت .

عزيزي المشارك /ة ....

لك كامل الحرية في الموافقة في المشاركة أو عدمها أو الانسحاب من المشاركة متى شئتم

جميع المعلومات المتضمنة في هذه الدراسة تستخدم للدراسة البحثية فقط

لا توجد إجابة صحيحة أو خاطئة . أجب كما تشعر به أنت .

تعبئة الاستبيان يتطلب مدة لا تزيد عن 10- 15 دقيقة من وقتك الثمين

أتطلع إلى مشاركتك القيمة في إتمام هذه الدراسة الممولة ذاتيا

على استعداد لاطلاعكم بنتائج الدراسة بعد انتهائها

مع جزيل الشكر والعرفان لحسن تعاونكم

الطالب : محمد نوفل

Annex (5)

استبيان مختصر لجودة الحياة النوعية
النسخة العربية – مايو 1997 م

برنامج عن الصحة النفسية
منظمة الصحة العالمية
جنيف

FOR OFFICE USE ONLY

	Equations for computing domain scores	Raw	Transformed scores	
		Score	4 - 20	0 - 100
Domain 1	(6- Q3) + (6-Q4) +Q 10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		
Domain 2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		
Domain 3	Q20 + Q21 + Q22 ☐ + ☐ + ☐	=		
Domain 4	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24+ Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		

أحوالك الشخصـيـة

الرقم المتسلسل: ....

قبل أن نبدأ نود منك الاجابة على بعض الاسئلة العامة عن نفسك ، و ذلك بوضع دائرة حول الإجابة الصحيحة أو بملأ الفراغات الموجزة

I- المعلومات الشخصية

1- ما هو جنسك ☐ ذكر ☐ أنثى

2- ما هو تاريخ ميلادك اليوم_____ الشهر_____ السنة______

3- ما هو أعلى درجة تعليم حصلت عليها
- ☐ لا شئ
- ☐ المرحلة الإبتدائية
- ☐ المرحلة الإعدادية
- ☐ المرحلة الثانوية
- ☐ الدراسات العليا

4- ما هي حالتك الإجتماعية ؟

☐ أعزب ☐ متزوج ☐ أرمل ☐ مطلق

5- هل تسكن في ؟

☐ رفح ☐ خان يونس ☐ الوسطى ☐غزة ☐شمال غزة

II- الوضع الاجتماعي و الاقتصادي

1- المهنة ☐ يعمل ☐ عاطـل عن العمل

2- الدخل الشهري حوالي: ....

3- كم شخص تعيل : ....

III– الوضع الصحي

1- متى كان التشخيص الأولى بسرطان الثدي ؟ قبل ....

2- متى تم التأكيد بأنك مصابة بسرطان الثدي ؟ قبل ....

3- تتعالجين من سرطان الثدي بواسطة علاج ؟(ممكن اختيار أكثر من إجابة)

☐ اشعاعى ☐ كيماوي ☐ جراحة ☐ هرموني ☐ أخرى(أذكر) ....

التعليمات

هذا الإستبيان يستفسر عما تشعر به فيما يتعلق بنوعية حياتك و صحتك و نواحي أخرى من حياتك ، نرجو الإجابة على جميع الأسئلة . إذا لم تكن متأكد من الإجابة على سؤال معين ، نرجو اختيار الجواب الأنسب . و هذا قد يكون ردك الأول في أحيان كثيرة . نرجو أن تضع في اعتبارك قيمك و آمالك و ما يمنعك و يشغلك . نطلب أن تفكر في نمط حياتك خلال الشهرين الماضيين مثلا . قد يكون السؤال :

	لا يوجد	قليلا	نوعا ما	كثيرا	دائما
هل تحصل على أي دعم أو مساعدة من الأخرين ؟	1	2	3	4	5

عليك وضع دائرة حول االرقم الذي يصف مقدار الدعم أو المساعدة من الآخرين خلال الشهرين الماضيين . و هكذا فإنك ستضع الدائرة حول الرقم (4) إذا كنت قد حصلت على دعم كبير من الآخرين كالآتي

	لا يوجد	قليلا	نوعا ما	كثيرا	دائما
هل تحصل على أي دعم أو مساعدة من الأخرين ؟	1	2	3	[✓ 4]	5

قد تضع الدائرة حول الرقم (1) إذا لم تحصل على أي دعم أو مساعدة تتمناها من الآخرين خلال الشهرين الماضيين .

*** يرجى قراءة كل سؤال و تقيم مشاعرك ووضع الدائرة حول الرقم الذي يعطي أفضل إجابة بالنسبة لك.**

	كيف تقيم جودة حياتك؟	سيئة للغاية	سيئة	لا بأس	جيدة	جيدة جداً
(G1)1		1	2	3	4	5

		غير راض مطلقا	غير راض	لا راض و لا غير راض	راض	راض تماما
(G4)2	كيف أنت راض عن صحتك ؟	1	2	3	4	5

*** الأسئلة التالية تستفسر عن مدى تعرضك لأشياء معينة خلال الشهرين الماضيين**

		لا يوجد	قليلا	بدرجة متوسطة	كثير جدا	بدرجة بالغة
3 (F1.4)	إلى أي حد تشعر بأن الوجع يمنعك من القيام بالأعمال التي تريدها ؟	1	2	3	4	5
(F11.3)4	كم تحتاج من العلاج الطبي لتتمكن من القيام بأعمالك اليومية ؟	1	2	3	4	5
(F4.1)5	إلي أي مدى تستمتع بالحياة ؟	1	2	3	4	5
(F24.2)6	إلي أي مدى تشعر بأن حياتك ذات معنى ؟	1	2	3	4	5
(F5.3)7	كم أنت قادر على التركيز ؟	1	2	3	4	5
(F16.1)8	كم تشعر بالأمان في حياتك اليومية ؟	1	2	3	4	5
(F22.1)9	إلى أي حد تعتبر البيئة المحيطة بك صحية ؟	1	2	3	4	5

*** الأسئلة التالية تستفسر عن مدى قدرتك على إتمام أمور معينة خلال الأسبوعين الماضيين**

		لا يوجد	قليلا	بدرجة متوسطة	كثير جدا	بدرجة بالغة
(F2.1)10	هل لديك طاقة كافيه لمزاولة الحياة اليومية ؟	1	2	3	4	5
(F7.1)11	هل أنت قادر على قبول مظهرك الخارجي ؟	1	2	3	4	5
(F18.1)12	هل لديك من المال ما يكفي لتلبية إحتياجاتك ؟	1	2	3	4	5
(F20.1)13	كم تتوفر لك المعلومات التي تحتاجها في حياتك اليومية ؟	1	2	3	4	5
(F21.1)14	إلي أي مدى لديك الفرصة للأنشطة الترفيهية ؟	1	2	3	4	5

		سيئة للغاية	سيئة	لا بأس	جيدة	جيده جدا
(F9.1)15	كم أنت قادر على التجول بسهولة	1	2	3	4	5

*** الأسئلة التالية تطلب منك أن تعبر عن مدى رضاك نحو جوانب مختلفة من حياتك خلال الشهرين الماضيين**

		غير راض مطلقا	غير راض	لا راض و لا غير راض	راض	راض تماما
16(F3.3)	كم أنت راض عن نومك ؟	1	2	3	4	5
17(F10.3)	إلي أي مدى أنت راض عن قدرتك على القيام بنشاطاتك اليومية ؟	1	2	3	4	5
18(F12.4)	كم أنت راض عن قدراتك على العمل ؟	1	2	3	4	5
19(F6.3)	كم أنت راض عن نفسك ؟	1	2	3	4	5
20(F13.3)	كم أنت راض عن علاقاتك الشخصية ؟	1	2	3	4	5
21(F15.3)	كم أنت راض عن حياتك الجنسية ؟	1	2	3	4	5
22(F14.4)	كم أنت راض عن الدعم أو المساعدة من الأصدقاء ؟	1	2	3	4	5
23(F14.4)	كم أنت راض عن أحوالك السكنية ؟	1	2	3	4	5
24(F19.3)	كم أنت راض عن الخدمات الصحية المتوفرة لك ؟	1	2	3	4	5
25(F23.3)	كم أنت راض عن وسائل مواصلاتك.؟	1	2	3	4	5

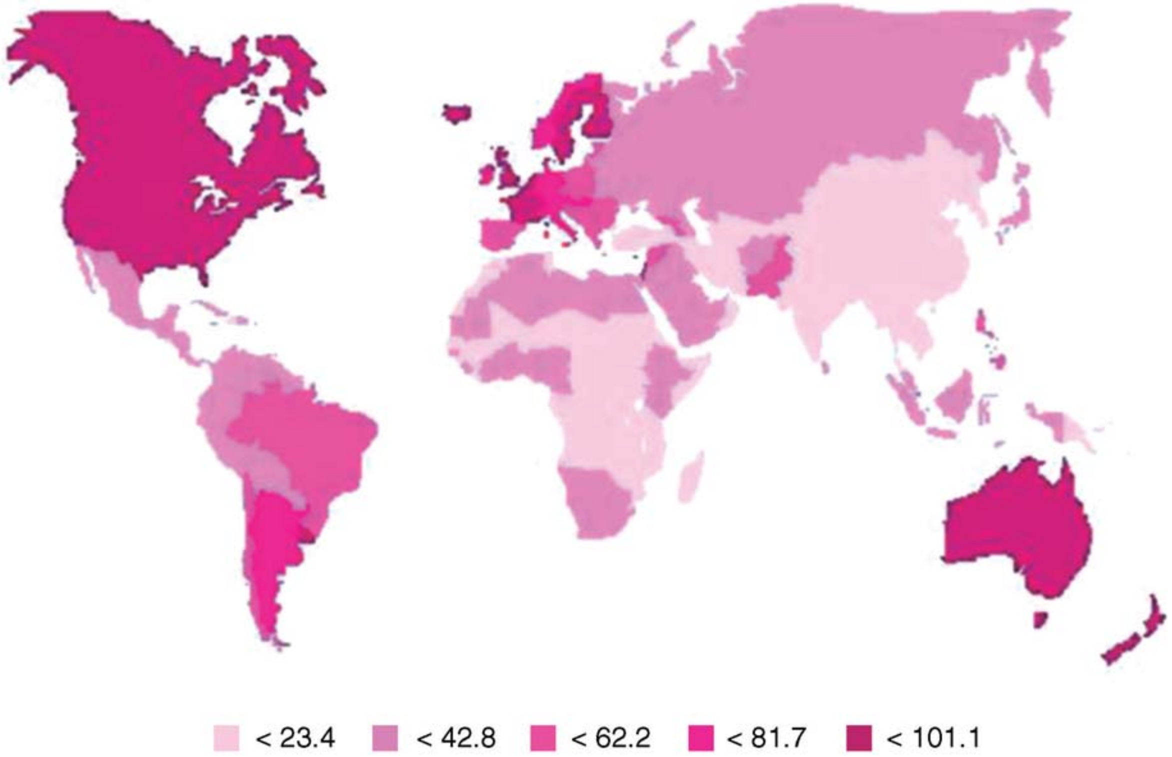
*** الأسئلة التالية تشير إلى كم من المرات شعرت أو تعرضت فيها لأشياء معينة خلال الشهرين الماضيين**

		أبدا	نادرا	غالبا	غالبا جدا	دائما
26(F8.1)	كم من المرات كانت عندك مشاعر سلبية مثل الحزن أو اليأس أو القلق أو الاكتئاب ؟	1	2	3	4	5

شكرا لمساعدتك

الباحث : محمد خليل نوفل

Annex (6)



Breast cancer incidence rates worldwide according to GLOBOCAN 2002 (18). Rates are age-standardized (world standard) rates (per 100,000).

Annex(7)

ملخص الدراسة

هدف الدراسة:

الهدف من هذه الدراسة هو قياس جودة الحياة عند مرضى سرطان الثدي في محافظات غزة خلال العام 2007 وكذلك التعرف على مدى انتشار سرطان الثدي لدى محافظات غزة بالإضافة لانتشار المرض بين النساء

منهجية الدراسة :

هذه الدراسة وصفية تحليلية استعادية تم إجراؤها في محافظات غزة

عينة الدراسة:

تم اختيار جميع المرضى الذين تم تشخيصهم عام 2007 والذين يتلقون خدمات صحية داخل وزارة الصحة الفلسطينية والموجدين داخل قطاع غزة أثناء الدراسة ويستطيعون ان يعبروا عن أنفسهم بطلاقة، فكان العدد الذي ينطبق عليه الشروط 96 حالة سرطان ثدي مثبت لديهم من خلال تقرير الأنسجة للأورام

جمع المعلومات :

جمعت المعلومات بواسطة استبانه مخصصة لقياس جودة الحياة عالميا حيث انه هذه الاستبانة معدة خصيصا لهذا الغرض في منظمة الصحة العالمية ،كذلك جمعنا المعلومات من خلال الملفات الطبية للمرض وتقارير الأنسجة للأورام

النتائج:

تم دراسة المتغيرات (الجنس،الفئات العمرية،الخصائص الاجتماعية والسكانية ،الحالة المادية وطرق العلاج) حيث أن نسبة الذكور 3.1% من مجتمع الدراسة وهو أمر غير شائع ،حيث أن نسبة الذكور إلى الإناث 100:1 ولكن بعض الدراسات في الدول العربية كالسعودية لديها نسب مقاربة ،كما كان متوسط أعمار العينة 52.4 سنة وان 79.2% من مجتمع الدراسة كانوا قد حصلوا على الشهادة الثانوية العانة فأقل ،وان 70% منهن متزوجين و66.7% من العينة غير موظفين ولديهم دخل شهري اقل من 1000 شيكل ما يقارب 250 دولار أمريكي ومعظم مجتمع الدراسة تلقوا ثلاث أصناف من العلاج

وبتحليل النتائج وربطها بمستوى جودة الحياة وتأثير المتغيرات عليها تبين أن 80% من مجتمع الدراسة يقبلون جودة حياتهم بشكل عام وان 60% منهم راضون عن صحتهم

سجل البعد الاجتماعي من أبعاد جودة الحياة أعلى النسب بين مجتمع الدراسة وذلك لان مريض سرطان الثدي يجد دعما اجتماعيا عاليا من الأهل والأصدقاء وهذا ما يميز البيئة الاجتماعية في محافظات غزة ، كما وجد أن هناك دور واضح وتأثير مهم لمستوى التعليم ،التوظيف ،الدخل الشهري كمتغيرات لدرجة أنهم وصلوا إلى دالة إحصائية عالية (القيمة

المعيارية0.000) و بالمقابل لم يكن هناك فروقات واضحة تصل إلى الدالة الإحصائية في المتغيرات التالية :العمر والحالة الزواجية والسكن وطرق العلاج.

تم حساب مدى انتشار مرض سرطان الثدي عند سكان محافظات غزة وجد انه يمثل 7.2 لكل 100.000 شخص كما أن مدى انتشار مرض سرطان الثدي عند الإناث في سكان محافظات غزة يمثل 14.6 لكل 100.000 أنثى في محافظات غزة .

التوصيات :

- زيادة وعى الجمهور حول أسباب وأعراض و عواقب مرض سرطان الثدي.
- عمل مسح لسرطان الثدي للفئات الأكثر عرضة ممكنة للإصابة (40 سنة فما فوق)
- تقوية وتعزيز نظم المعلومات بوزارة الصحة وخصوصا مركز رصد السرطانات
- تقوية ونشر الثقافة الصحية وطنيا حول مرضى سرطان الثدي
- زيادة وتقوية الروابط بين مقدمي الخدمة الصحية والمرضى .