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Assessment of the prevalence of depression and death anxiety among adolescents and husbands of women with cancer in Palestine

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Prevalence of Depression and Death Anxiety among Adolescents and Husbands of Women with Cancer in Palestine

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Dedication

This thesis is dedicated to my husband and children, without their patience and support nothing would be done.

Amal Dweib

Declaration:

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

Signed ..أمل دويب........

Amal Isa Ali Dweib

Date: May 11th 2019

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Abstract

Background: Diagnosis of cancer carries a large burden not only on the patients, but on their families as well. This is most influential when considering the critical stage of adolescent children, as well as the partners of the cancer patients while supporting their children through this experience. This study was conducted to assess the prevalence of death anxiety and depression among adolescent children and husbands of women with cancer who were treated in two main cancer centers in Palestine.

Methodology: A cross-sectional study included 285 participants (response rate =89%), using a self-reported questionnaire to assess death anxiety, by Templer Death Anxiety Scale (DAS), and depression, by Beck Depression Inventory (BDI). Target population included adolescents (n=101 boys and 99 girls), aged 12 to 20 years old, and husbands (n=85) of women with cancer who were treated at Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria private Hospital in Jerusalem.

Results: The analyzed families were mainly living in cities (63.6%), with income under 2000 NIS (45.4%), and of women with breast cancer (72.7%) on chemotherapy treatment (47.7%). Majority of the adolescents were 18 to 20 years old (45.8%), with secondary education (40.7%), and not working (86.9%). On the other hand, 45.5% of husbands were less than 50 years old, were less than 12 years of education (55.6 %), and were working (87.5%).

The overall mean score of depression among all participants was 8.7 scale points, with significantly higher (p= 0.03) scores of depression in adolescents than husbands (mean= 9.5 and 6.8; respectively). The worst depression mean scores were in daughters. Also, the mean score of death anxiety in all participants were 5.4 points, with significant difference between adolescents and husbands, and having the highest anxiety mean scores in daughters.

Also, depression severity levels revealed that 75.7% of all participants had no or minimal depression, and 13.7% had mild depression symptoms, while 10.6% had moderate to severe depression. Moreover, up to 20% of the whole sample had scores indicating severe depression.

The anxiety three categories analysis showed that 39.9% of all participants had concerns or high concern of death, and 48.4% of daughters had concern or high concern of death, while sons and husbands had lower percentages (32.3% and 32.2%; respectively). For the five major themes of death anxiety results revealed that the highest mean scores were for the fear of patience and pain in general.

For depression: high scores were seen in sons of age group (>15-18) years, monthly income group of (>4000) NIS), and not working son and mother. The daughters had higher depression mean scores in age groups >15 years, monthly income groups of 2000-4000 NIS, working, as well as, those living in village, less educated mother, widow mother, and not working mother. On the other hand, husbands had no statistically significant relationships between BDI scores and the demographic variables. Further, higher depression scores were seen in sons of mothers with late stage cancer. Also, higher depression scores were seen in daughters of mothers with palliative and other treatments, and had been treated from 3-6 months. As well, higher depression scores were seen in husbands whose wives had radiotherapy treatment.

For death anxiety: high mean scores were seen in sons who were living in village, of income group >4000 NIS, not working, and less educated mothers. While higher death anxiety mean scores were seen in daughters of age group 12-15 years and in income group 2000-3000 NIS. Further, the result in the current study showed that higher death anxiety was seen in husbands who were living in village, income groups >4000 NIS, not working, and having a working wife. Moreover, higher significant death anxiety scores were seen in sons of mothers who are treated by radiotherapy and were on treatment for 3-6 months. As well, higher death anxiety scores were seen in daughters of mothers who are in early stage of cancer. However, there were no statistically significant relationships between DAS scores and all other health variables in husbands.

The multivariate analysis shows that coping and work were significantly predicting depression among sons of women with cancer, while coping, mothers’ education, residence and monthly income of the family significantly predicated sons’ death anxiety. However, age, coping, type and duration of treatment and care provider were significantly predict depression among daughters of those women, while age, care provider, monthly income and mothers stage of her cancer significantly predicted daughters’ death anxiety. Nevertheless, coping was a significant predicator for depression and death anxiety in husbands in addition to work.

Conclusion: This study revealed a considerable level of depression and death anxiety among family members of women with cancer, with special attention needed for adolescent daughters. This emphasizes the need for national policy initiation and counseling programs implementation for families with cancer patients, at both the community and hospital levels. Moreover, assessment of mental disorders, such as depression and death anxiety among family members with cancer, is needed.

دراسة انتشار الاكتئاب وقلق الموت لدى الابناء المراهقين والازواج للنساء مريضات السرطان في فلسطين

اعداد : امل عيسى علي ذويب

اشراف : د. منى حميد

ملخص

خلفية: التشخيص بمرض السرطان يشكل عبئا كبيرا على كل من المرضى وعائلاتهم على حد سواء، وهذا العبئ يكون الاكثر شدة في فترة المراهقة للابناء وبالنسبة لشريك الحياة ضمن تجربة النساء اللواتي يعانين من الاصابة بالسرطان. وعليه فان هذه الدراسة قامت بفحص حدوث انتشار قلق الموت والاكتئاب لدى الابناء المراهقين والازواج للنساء اللواتي يعانين من السرطان ويخضعن للعلاج في المستشفيين الرئيسيين لعلاج السرطان في فلسطين.

المنهاج: قامت هذه الدراسة المقطعية باستخدام عينة بحث ملائمة من 285 مشارك في الدراسة (بمعدل نسبة استجابة 89%) بواسطة استبيانات ذاتية التعبئة، حيث تم قياس درجات قلق الموت (حسب مقياس تمبلر لقياس قلق الموت DAS) وقياس درجات الاكتئاب (حسب مقياس بك للاكتئاب BDI). استهدف جمهور الدراسة الابناء المراهقين (101 اولاد و99 بنات) بين عمر 12 و 20 عام والازواج (85 شخص) للنساء اللواتي يعانين من السرطان ويتلقين العلاج في مستشفيات بيت جالا الحكومي في بيت لحم والمطلع الخاص في القدس.

النتائج: كانت معظم العائلات المشتركة في الدراسة تسكن في المدن (63.6%) وذات دخل اقل من 2000 شيقل (45.4%) ولنساء مشخصات بسرطان الثدي (72.7%) ويتلقين العلاج الكيماوي (47.7%). وكان معظم الابناء بين 18 و20 عام من العمر (45.8%) وذووا تعليم ثانوي (40.7%) ولا يعملون (86.9%). أما الازواج فكان 45.5% منهم اصغر من 50 عام ولم يتجاوزوا 12 عام من التعليم (55.6%) ومن الذين لديهم عمل (87.5%).

جاء المعدل العام لمقياس درجات الاكتئاب بين جميع المشتركين يساوي 8.7 نقطة، حيث لوحظ وجود درجات اكتئاب اعلى لدى الابناء (mean= 9.5) من الازواج (mean= 6.8) وذات دلالة احصائية (p= 0.03)، وعند مقارنة الفئات الفرعية الثلاث جاءت اسوأ درجات قياس الاكتئاب عند البنات (mean= 11.4; p= 0.01). كذلك جاء المعدل العام لمقياس درجات قلق الموت بين جميع المشتركين يساوي 5.4 نقطة، حيث لوحظ وجود درجات قلق اعلى لدى الابناء من الازواج وذات دلالة احصائية، ووجود الدرجات الاسوأ للقلق عند البنات.

وعند قياس مستويات شدة الاكتئاب تبين ان 75.7% من المشاركين لديهم اكتئاب طفيف و13.7% لديهم اكتئاب قليل و 10.6% لديهم اكتئاب متوسط الى عالي. بالاضافة الى ذلك، فان 20% من العينة كان لديها اكتئاب سرسري.

وعند تحليل فئات قلق الموت الثلاث تبين ان 39.9% من المشاركين لديهم توتر او توتر عالي من الموت، حيث اظهرت النتائج ان وجود التوتر و التوتر العالي من الموت لدى البنات (48.4%) كان اعلى منه لدى الابناء (32.3%) او الازواج (32.2%). وعند تحليل القطاعات الخمسة لمقياس قلق الموت تبين ان الدرجات الاعلى جاءت بالمعدل لقطاعات "الخوف من المراضة" و "الالم" بشكل عام.

بالنسبة للاكتئاب: جاءت القياسات المرتفعة في الابناء من الفئة العمرية (>15-18) سنة، فئة الدخل الشهري العليا (>4000 شيقل)، والذين لا يعملون هم وامهاتم. بينما جاءت قياسات الاكتئاب في البنات مرتفعة في الفئة العمرية (>15) سنة، فئة الدخل الشهري العليا (2000-4000 شيقل)، والذين يعملن، وساكنات القرى، وامهاتهن اقل تعليما وارامل ولا يعملن. من جهة اخرى فان الاكتئاب عند الازواج لم تكن له علاقات ذات دلالة احصائية مع اي من العوامل الديموغرافية لهم. اضافة فان قياسات الاكتئاب جاءت مرتفعة في ابناء مريضات السرطان في المرحلة المتأخرة. ايضا فان قياسات الاكتئاب جاءت مرتفعة في بنات مريضات السرطان اللواتي تحت العلاج التلطيفي وغيره، واللواتي فترة علاجهن ما بين 3 و 6 شهور. كما كان الاكتئاب عند الازواج مرتفعا لؤلائك الذين تتلقى زوجاتهم العلاج الاشعاع.

بالنسبة لقلق الموت: جاءت القياسات المرتفعة في الابناء الذين يسكنون في الارياف، فئة الدخل الشهري العليا (>4000 شيقل)، والذين لا يعملون، وامهاتهم اقل تعليما. بينما جاءت قياسات القلق في البنات مرتفعة في الفئة العمرية (12-15) سنة، وفئة الدخل الشهري المتوسطة (2000-3000 شيقل). من جهة اخرى فان قلق الموت عند الازواج من فئة الدخل الشهري العليا (>4000 شيقل)، لا يعملون، وزوجاتهم من العاملات. اضافة الى ذلك فان قياسات القلق جاءت مرتفعة في ابناء مريضات السرطان اللواتي فترة علاجهن ما بين 3 و 6 شهور، ويتلقين العلاج الاشعاعي. ايضا فان قياسات القلق جاءت مرتفعة في بنات مريضات السرطان اللواتي في مراحل اولية للسرطان. كما كان الاكتئاب عند الازواج مرتفعا لؤلائك الذين تتلقى زوجاتهم العلاج الاشعاع. من جهة اخرى فان قلق الموت عند الازواج لم تكن له علاقات ذات دلالة احصائية مع اي من العوامل المرتبطة بصحة الزوجة.

أظهر التحليل متعدد العوامل ان عوامل التأقلم والعمل كانت هي المتنبئات ذات الدلالة الاحصائية للاكتئاب بين الابناء، بينما كان تعليم الام ووالسكن والدخل الشهري للعائلة كانت العومل المحددة للقلق عندهم. من جهة اخرى كانت عوامل العمر والتأقلم ومدة العلاج ومقدم الرعاية هي العوامل المحددة لالاكتئاب في البنات، بينما حدد القلق عندهن عوامل العمر ومقدم الرعاية والدخل الشهري للعائلة ومرحلة السرطان عند الام. اما في الازواج فكان عامل التأقلم هو المحدد للاكتئاب والقلق بالاضافة لعامل العمل.

الخلاصة: كشفت هذه الدراسة وجود مستوى لا بأس به من الاكتئاب وقلق الموت بين افراد العائلة للنساء المصابات بالسرطان وبشكل لافت للانتباه عند بناتهن المراهقات. خلصت هذه الدراسة الى ضرورة التأكيد على الحاجة الى انشاء سياسات وتطبيق برامج ارشاد وطنية لعائلات مرضى السرطان على مستوى كل من المستشفى والمجتمع.

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Introduction

1.1 Background

Cancer is the second leading cause of death in the Palestine and the reported cancer mortality in Palestinians in the 2016 was 13.8% from the total deaths in 2015. The cancer new reported cases were 2,400 in West Bank, the incidence rate was 83.8 per 100,000 of population, and 1,260 cases were females (52.5%) and 1,140 were males (47.5%). Among the cancer new reported cases, 801 cases were for 65 years old and over which formed 33.4% out of total cases, 1,435 cases (59.8%) were between 15 – 64 years of age and 164 cases (6.8%) were less than of 15 years of age (MOH, 2016).

The diagnosis of cancer carries a large burden not only on the patient but on their families as well. Many adults diagnosed with cancer have the double burden of coping with the diagnosis and treatment as well as supporting their adolescents through this experience. (Izumi et al, 2015). Also, cancer experience (with the diagnosis, threat of recurrence, and recurrence) is a stressful process that influences a woman's closest relationships, especially with those who most depend on her (Faten, Al.2014).

The diagnosis of cancer in a woman triggers psychological and social pressure in adolescents and spouses. Adolescent and spouses are severely impacted by a woman's cancer diagnosis in all domains of functioning, in particular emotional wellbeing (Visser, 2004).

1.2 Problem Statement

Family caregivers, including husbands and adolescents of women with cancer, are vulnerable to many psychological and social stressors, which may cause or trigger death anxiety and depressive symptoms. Adolescents are more cognitively and emotionally mature with a deeper understanding of death than younger children, and with an increased ability to empathize (Dakin, 2016). During adolescence, there is a developmental push to become more independent, autonomous, and form significant relationships outside of the family (Visser, 2007).

Developmental pressures during this time act to alter the adolescent’s relationship with their parents. The drive to distance oneself from family is antagonized by the restrictions the illness imposes on the adolescent (Visser, 2007). This conflict may make adolescents more vulnerable to impaired psychosocial adjustment, and may have a negative impact on their sense of individuality and identity (Visser, 2007). One qualitative study- semi-structured elicitation interviews with adolescents whose parents were diagnosed with advanced stage cancer which consisted of seven adolescents from six families, five females and two males ranging in age from 11 to 15 years showed that weaving a normal life with cancer involved five major domains: feeling the weight of the world on their shoulders; cancer changes everything; confronting or getting away from the cancer; talking about it; and cancer was a positive for them (Phillips,2015).

Osborn indicated an increase in self-reported and parent-reported internalizing problems such as death anxiety and depression in adolescents of parents with cancer (Osborn, 2007). This is supported by many researchers who indicated that adolescents; aged 12–18, suffer from more emotional problems, are most susceptible to negative psychosocial outcomes when faced with a parent’s illness, and have greater anxiety, depression, and emotional distress than school-age children and general population (Rainville et al, 2012; Huizinga, 2011; Grabiak, 2007; Visser, 2007). Moreover, spread or incurable disease was related to the most distressing, upsetting, and heartbreaking situation, and were associated with feelings of intense sadness and guilt accompanied by concerns about impending parental death (Kennedy, 2009; Beale, 2004).

Also, Kornreich et al (2008) described that adolescents (12-18 years) have a different experience to younger children as they have greater cognitive ability, and can engage in abstract and symbolic thought. This makes them more aware of the potential loss of their parent as well as the pain they may be going through. However, late adolescents (15 to 18 years) continued to show significant differences in their levels of distress, anxiety, and irritability compared with their peers (Rainville et al, 2012). This result was restated in another study that found older age of adolescent was associated with lower health-related quality of life (HRQol) (Kuhne, 2012).

Moreover, adolescence creates fundamental changes in the family structure as youth strive for increased autonomy. Having a parent with cancer may require typical developmental tasks to be placed on hold, thus posing a significant threat to the adolescents’ normal growth and development (Ohannessian, 2007). Adolescents' increased cognitive abilities and aptitude for abstract thought make them susceptible to distress because they are more knowledgeable about the potential future consequences of cancer than younger children (Spira M, 2000). Previous research has suggested that youth general introduction facing parental cancer has difficulties adjusting and can experience anxiety such as death anxiety or depressed mood (Brown et al, 2007). Weinstein and Mermelstein (2007) suggested that adolescence is a time of high risk for the emergence of mood disorders, mostly in girls. Brown et al (2007) found that daughters of mothers with breast cancer showed more symptoms of depression than sons.

Husbands of women with cancer, as well, have their psychosocial burden and are prone to death anxiety and depression. Reduced satisfaction found in husbands of cancer women who have higher depression and anxiety (Alacacioglu et al, 2014). Another study showed that husbands were occupied with existential thoughts and death anxiety. The problems were easily overlooked as the death anxiety was not always expressed directly and needs intervention (Adelbratt & Strang, 2000).

Approximately 60% of diagnosed cancer patients in Palestine were aged between 15 – 64 years (MOH, 2018). As these are the key years for women's childbearing and rearing, a significant number of cancer victims are in the productive age having children and husbands. Despite this, current treatment plans in Palestine often fail to recognize the impact of cancer on the psychosocial wellbeing of the adolescents and spouse involved particularly death anxiety and depression (Dakin, 2016).

There is a lack of studies about the effect of cancer on the psychosocial wellbeing of the adolescents and husbands of women with cancer in Palestine. This study assessed the prevalence of death anxiety and depression among adolescents (daughters and sons) and husbands living with women who were diagnosed with cancer, and treated in the Beit Jala Governmental hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem.

1.3 Justification

The study is selected because there is a lack of studies that are conducted to assess the prevalence of death anxiety and depression among adolescents (daughters and sons), aged between 12-20 years old, and husbands of women who were diagnosed with cancer in Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem.

Also, the study may help policy makers and managers in the Palestinian Ministry of Health and counselling centers in planning the proper service and the interventions for families of cancer patient.

1.4 Aim:

The aim of this study is to assess the prevalence of death anxiety and depression among adolescents (daughters and sons), aged between 12-120 years old, and husbands of women who were diagnosed with cancer in Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem.

1.5 Study Objectives:

1. To assess the relationship between the socio-demographic factors of women with cancer (age, education, place of residence, monthly income of the family, marital status, family size, and work status), with the prevalence of depression and death anxiety among their adolescents (daughters and sons) and husbands.
2. To assess the relationship between the socio-demographic factors of adolescents of women with cancer (age, education, place of residence, monthly income of the family, work, source of support, care provider, and coping mechanisms), and their prevalence of depression and death anxiety.
3. To assess the relationship between the socio-demographic factors of husbands of women with cancer (age, education, place of residence, monthly income of the family, work, source of support, care provider, and coping mechanisms), and their prevalence of depression and death anxiety.
4. To assess the relationship between women cancer related health variables (cancer type, stage of cancer, period of treatment, department of care, and duration of diagnosis), and the prevalence of depression and death anxiety among their adolescents (daughters and sons) and husbands.
5. To assess the correlation between depression and death anxiety scores among adolescents (daughters and sons) and husbands of women who had cancer and were treated at Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem.

1.6 Study Questions

1. What is the prevalence of death anxiety and depression among adolescents (daughters and sons), aged between 12-20 years old, and husbands of women who had cancer and were treated at Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem?
2. Is there a relationship between the socio-demographic factors of adolescents of women with cancer (age, education, place of residence, monthly income of the family, work, source of support, care provider, and coping mechanisms), and their prevalence of depression and death anxiety?
3. Is there a relationship between the socio-demographic factors of husbands of women with cancer (age, education, place of residence, monthly income of the family, work, source of support, care provider, and coping mechanisms), and their prevalence of depression and death anxiety?
4. Is there a relationship between women cancer related health variables (cancer type, stage of cancer, period of treatment, department of care, and duration of diagnosis), and the prevalence of depression and death anxiety among their adolescents (daughters and sons) and husbands?
5. Is there a correlation between depression and death anxiety scores among adolescents (daughters and sons) and husbands of women who had cancer and were treated at Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem?

1.7 Summary

- This chapter presented the background of the research and discussed its problem statement and justification in the view of the scientific literature available.

- It stated the aim, objectives and the research questions of this study.

- It put the bases for the conduct of the study and guidelines for the researcher throughout the whole research.

- Next, a comprehensive review of related literature will be deliberated.

Chapter Two: Literature Review

Chapter Two:

Literature Review

This chapter discussed some related literature to family and its theories, cancer disease and its prevalence and incidence, especially among women, treatment modalities of cancer, the effects of mother cancer on their adolescents mental health, the effects of women cancer on mental health of their spouses, depression and its diagnostic criteria, death anxiety and its types and causes, and the coexistence of these both psychological conditions in such target population.

2.1 Section one: The family and its theories

The family is the group of individuals living under one roof and in the sense of household usually under one head; it represents the smallest social unit of society and set the basic unit of society that has developed with changes in the needs and demands of the individuals and society. The two parent nuclear family is the first social unit of community (Shaffer, 2002). Families provide many different kinds of functions for the benefit of their members and the good of society such as, family formation and children survival, membership, nurturance and socialization, economic support health and mental health, protection of vulnerable members and education (Kozlowska &Hanney, 2002).

There are many theories that have been applied to families to understand family structure, function and relationships including the following:

- **Family Systems Theory**

Psychiatrist Murray Bowen (1995) believed that the family must be viewed as a whole and coping mechanisms developed to deal with emotional family issues in the specific system. Depending on this system each members behaviors impact the other members in predictable way. If something changes in one part of the family, other parts will need to adjust as well. For example, when family members get anxious, the anxiety will spread infectiously among family members and one or more members feel overwhelmed and over control. In addition, the family is the part of other systems in the community, so changes in one family will create imbalance and lead to changes in other systems that surrounding the family, therefore setting boundaries and expectations help family to maintain equilibrium and homeostasis in community (Allen.2012)

Bowen opined that humans are regulated by the emotional system to a far greater extent than they realize. The feeling system appears to be the link between the emotional system and the intellectual system. The feeling system is the cognitive or conscious expression of emotion, which is generally not felt, and occurs when the threat is real and is short lived. The intellectual system includes the ability to understand complicated ideas. Both the emotional and the intellectual systems are useful when family face threatening situation. Moreover, Bowen stated that there are two kinds of anxiety, acute anxiety and chronic anxiety. Acute anxiety occurs when the threat is real, and is short-lived. Acute anxiety is about one’s reactions to stress. However, chronic anxiety is the fear of what might happen and it can be long lasting and transmitted from earlier generations (Farmer and Geller, 2005; Brown, 1999).

- **Human ecology theory**

Urie Bronfenbrenner (1979) created this theory and it is the study of the interactions of humans with their environments and its focus on humans as both biological organisms and social beings in interaction with environment. Moran (1979) views the individual developmental and interactions as part of nested system of environments ranging from microsystem which is the child and the parents to the exosystem which are the culture and natural environment. The developmental changing must address many levels and that change will be dependent on resources available in the community, societal expectations, media influences and individual skills and desires.

Moran (1979) pointed five different environmental models or systems for human ecology theory that pertains to the relationship between an organism and all aspects of its environment as the following:

The Micro System

The microsystem is a child's immediate surroundings include child family, friends, teachers, neighbors and other people who have a direct contact to child. Child developmental studies require to examining the context of the child's environmental influences.

The Mesosystem

It involves the relationships between the different microsystems in child's life. For example, if a child is neglected by his parents, he or she may have a low chance to develop a positive attitude towards his teachers at school. Also, this child may feel awkward in the presence of peers and may resort to withdrawal from a group of classmates.

The Exosystem

It involves the environmental settings that indirectly affect the child. Neighbors, social services and medical providers are examples of environmental things that do not directly interact with the child, but none the less have an important influence on the child's development. If the father goes abroad to work for several months, this event may result to a tighter bond between the mother and the child due to child's social relationship.

The Macrosystem

Macrosystem is the larger culture that the child lives in, and includes socioeconomic status poverty, customs, beliefs and ethnicity. For example, if the child family is poor, poverty makes parents work hardly every day to fulfill family needs

The Chronosystem

The chronosystem includes the transitions and shifts that occur throughout a child’s life. One classic example is divorces as a major life transition that affects not only the couple's relationship but also their children's behavior; children may negatively effect on the first year after the divorce.

According to family theory, serious illness, particularly cancer, affects family relationships and function. The impact of cancer on family depends on which family member is ill and the age of the children. For the purpose of this thesis, the next section discussed the effects of cancer on adolescents and husbands of women with cancer.

2.2 Section two: the effects of cancer on adolescents and husbands of women with cancer

Introduction

Cancer is defined by the WHO as “a generic term for a large group of diseases characterized by the growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/or spread to other organs. Other common terms used are malignant tumors and neoplasms. Cancer can affect almost any part of the body and has many anatomic and molecular subtypes that each requiring specific management strategies” (WHO> Cancer, 2019). Global cancer incidence in women data revealed that the top three – breast, colorectal and lung cancers – contributed 43.9% of all cancers. Cancer is one of the leading causes of death both worldwide (WHO> Cancer, 2019), and in Palestine (MoH, 2018). It caused 9.6 million deaths in 2018, 30–50% of which were preventable. The global cancer burden is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018. One in 5 men and one in 6 women worldwide develop cancer during their lifetime, and one in 8 men and one in 11 women die from the disease. Worldwide, the total number of people who are alive within 5 years of a cancer diagnosis, called the 5-year prevalence, is estimated to be 43.8 million (WHO, 2018).

Breast cancer is the most commonly diagnosed cancer in women (24%), and this cancer is the most common in 154 of the 185 countries in 2018. Breast cancer is also the leading cause of cancer death in women (15.0%), followed by lung cancer (13.8%) and colorectal cancer (9.5%), which are also the third and second most common types of cancer, respectively; and cervical cancer ranks fourth for both incidence (6.6%) and mortality (7.5%) (WHO, 2018).

Also, female breast cancer ranks as the fifth leading cause of death (627 000 deaths, 6.6%) because the prognosis is relatively favorable, at least in more developed countries (WHO, 2018). Breast cancer is the second most common cancer in the world and, by far, the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed worldwide in 2016 (Stewart & Wild, 2017). However, lung cancer remained the leading cause of cancer related death in the world (Andreoli et al., 2009). In 2012, an estimated 1.8 million new cases occurred worldwide, 58% of which occurred in the less developed regions (WHO, 2019). Lung cancer is also responsible for the largest number of deaths (1.8 million deaths, 18.4% of the total), because of the poor prognosis for this cancer worldwide, followed by colorectal cancer (881 000 deaths, 9.2%), stomach cancer (783 000 deaths, 8.2%), and liver cancer (782 000 deaths, 8.2%). Colorectal cancer (1.8 million cases, 10.2% of the total) is the third most commonly diagnosed cancer, prostate cancer is the fourth (1.3 million cases, 7.1%), and stomach cancer is the fifth (1.0 million cases, 5.7%) (WHO, 2018). Colon cancer is cancer of the large intestine including the rectum (Blackbourne et al., 2006). Stomach cancer is the fifth most common cancer worldwide, with estimated 7% of total cancer incidence and 9% of total cancer mortalities in 2015 (Stewart, 2016). Endometrial cancer is the sixth most common cancer among women (5%), with estimated 320,000 new cases and 76 000 deaths (WHO, 2019). New cases of leukemia globally in 2013 were almost 352 000, and encountered about 265 000 deaths (Stewart & Wild, 2014).

Cancer is rising in developing countries, accounting for 55 percent of new cases world-wide, (Frenk, 2009). It was estimated that the majority (53%) of cases of female cancer were occurring in less developed countries (Ferlay et al., 2013). It was found that approximately a quarter (24%) of all female breast cancers world-wide were diagnosed within the Asia-Pacific region (Youlden et al., 2014). On the other hand, the cancer incidence in Middle Eastern countries is predicted to increase by 70% in the next 20 years – greater than any other region of the world (Stewart & Wild, 2014). Cancer treatment requires a careful selection of one or more interventions such as surgery, radiotherapy, and chemotherapy. The goal is to cure the disease or considerably prolong life, while improving the patient's quality of life. Cancer diagnosis and treatment is complemented by psychological support (WHO> Cancer, 2018).

The estimated total annual economic cost of cancer in 2010 was US$1.16 trillion according to world health organization website (WHO> Cancer, 2019). Globally, it is responsible for an estimated 9.6 million deaths in 2018 and about 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries. Around one third of deaths from cancer are due to the 5 leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use. Late-stage presentation and inaccessible diagnosis and treatment are common. In 2017, only 26% of low-income countries reported having pathology services generally available in the public sector. More than 90% of high-income countries reported treatment services are available compared to less than 30% of low-income countries (Ferlay et al, 2013).

In Palestine, cancer is the second leading cause of death, accounting for 14.7% (1,702 deaths) of all deaths. In 2017, there were 2,923 new cases reported in the West Bank of Palestine, with an incidence rate of 113.7 per 100,000 and increase of 15% from previous year. Of those, 52.5%

were cancers in females (1,536 cases) (MoH, 2018). Most cases are diagnosed at the end stage of the disease (Husseini et al., 2009; Khleif & Imam, 2013); this late diagnosis makes it difficult to treat cancer and results in high stressful life for cancer patients. In 2016, the cancer deaths were 14.7% of the total reported deaths with 53.2% of cancer deaths among males, and 46.8% among female. The first cause of cancer deaths in 2017 was lung cancer with 17.3% of all cancer deaths, followed by colon cancer by 11.8%, then breast cancer by 10.0%, and leukemia by 8.4% then brain cancer by 8.2% (MOH, 2017).

According to the Palestinian ministry of health report in 2018, breast cancer ranked the first type of cancer in the West Bank among all type of cancer, with 503 cases. This is 17.2% of total reported cancer cases with incidence rate of 19.6 per 100,000 populations. In addition, breast cancer was the first type of cancer reported among females and accounted for 32.4% (498 cases) of the total reported cancer cases among Palestinian female, with incidence rate of 39.5 per 100,000 populations. Thereafter, colon cancer ranked the second with 111 cases, which accounts to 7.2% of all reported cancer cases. In addition, thyroid ranked the third among reported cancer cases, with 110 new cases, which is 7.2% of the total reported cancer cases, and forth was leukemia (6.7%) with 103 cases (MOH, 2018).

There are many types of cancer treatment, it depend on the type of cancer and how it is advanced (Andreoli et al., 2009). The basic treatments in Palestine include:

Chemotherapy

It is the cytotoxic agents for the systemic treatment of cancer. Patients need more than a few chemotherapy treatment visits according to their treatment schedule (NCI, 2015). Chemotherapy often have specific side effects, including: fatigue, headaches, muscle pain, stomach pain, shooting pains, mouth and throat sores, diarrhea or constipation, nausea and vomiting, appetite loss, hair loss and low immunity (ASCO, 2015).

Radiation

Regional treatment with radiation can preserve organ structure and function, resulting in enhanced quality of life for patients (Andreoli et al., 2009). Doses of radiation are used to destroy cancer cells. Side effects include diarrhea or constipation, bone abnormalities and chest or eye infections (Andreoli et al., 2009).

Surgery

Surgery is the primary method of treatment of most isolated solid cancers and important part of making the definitive diagnosis and staging the tumor (NCI, 2015). Side effects may include pain, fatigue, appetite loss ,swelling around the site of surgery, drainage, bruising around the site of surgery, organ dysfunction, and, lymphedema (Walker et al., 2010).

Palliative care

Palliative care is defined by the World Health Organization as an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual (WHO, 2019). Effective approaches to palliative care are available to improve the quality of life for patients with cancer. Cancer diagnosis, cancer treatment with different types of modalities and cancer prognosis may adversely affect the quality of life of patients with cancer and their abilities to cope with this stressful condition. Palliative care has not integrated within the healthcare system yet, however it is provided by a not for profit organization in Bethlehem called AL-Sadeel society for palliative care for cancer and chronic diseases.

2.3 The effect of mothers cancer on their adolescents' mental health

Adolescence is defined as a formative, transitional period from childhood to adulthood involving biological, cognitive and psychological changes that contribute to young people reappraising themselves and their relationships to their social worlds (Lalor and Devlin, 2007). Adolescence may be a time of vulnerability to social and emotional problems, but most adolescents manage to adjust successfully. It is also a time of identity formation, individuation and adjustment within themselves and the expectations society has placed on them. Adolescence is a time of energy, dynamism and potential, but also a time of uncertainty, awkwardness and searching for a place in society, as the fundamental transition from childhood to adulthood takes place (Lalor et al, 2007). Adolescence as a transitional stage where young people experience physical, cognitive, psychosocial and normative (age-specific) changes that can be significant sources of stress. Most adolescents, however, have the resources to cope successfully with these demands. It is a period of successful coping and productive adaptation (Cicognani, 2011).

Also, adolescence is a complex developmental stage. It is a transitional period between childhood and adulthood that requires specific tasks to be achieved including identity formation, individuation, adjustment, and to acquire socially responsible behaviors and also values and ethical beliefs. Further, it is a stage of dualities where adolescents can experience energy and dynamism versus uncertainty, awkwardness, and loneliness. The concepts of adjustment and adaptation were mentioned by several studies as part of the challenges of adolescence (Lalor et al, 2007; Cicognani, 2011).

Parental cancer during the adolescent and young adult (AYA) years can be particularly challenging due to the dynamic nature of this life stage, characterized by significant cognitive, social and emotional development (Palmer et al, 2014). A young person's efforts to establish individual identity, pursue education and employment, form intimate relationships, and gain financial independence may be hampered (Zebrack, 2011) and additional responsibilities at home may draw them further into their family at a time when they are seeking greater autonomy (Grabiak et al, 2007).

Also, parental cancer had a largely negative emotional and behavioral impact on AYA offspring, with internalizing problems being common and externalizing problems associated with poor family functioning and communication (Grabiak et al, 2007). Disease and treatment factors appeared related to offspring psychosocial difficulties, family communication, parental mood and adjustment, and gender played an important role. Adolescent daughters impacted by parental cancer were found to be more negatively impacted in psychosocial domains, and difficulties self-reported by offspring exceeded those reported by parents (Osborn, 2007), AYAs affected by parental cancer are particularly vulnerable to negative psychosocial outcomes as they may be more aware of the seriousness and implications of a cancer diagnosis, but may not yet have developed the ability to cope with the situation (Karlsson et al, 2013). However, disease factors may also predict psychosocial outcomes. Offspring of parents whose disease has recurred may be significantly more negatively impacted (Huizinga et al., 2011; Visser et al., 2007a), and older adolescents living with a parent with advanced cancer may experience higher distress and depression than AYAs in the general population (Rainville et al., 2012).

Moreover, cancer diagnosis of parents may have significant and unique implications for their ability to respond and cope with their parent's illness. Younger children may be shielded by a lack of understanding whereas older children possess advanced cognitive and empathetic capacities that increase their awareness of potential loss and their parent's physical and emotional pain (Christ, et al, 1994). Also, young adulthood represents a period of instability as one establishes independence and structure (Arnett, 2000). Experiencing a parent's cancer diagnosis during adolescence or young adulthood could potentially impact these normative milestones and lead to developmental ramifications, they saw themselves and their family members as vulnerable (Finch & Gibson, 2009) and perceived the uncertainties associated with the disease as life threatening (Finch & Gibson, 2009).

In addition, adolescents have a different experience to younger children as they have greater cognitive ability and can engage in abstract and symbolic thought. This makes them more aware of the potential loss of their parent as well as the pain they may be going through, (Kornreich et al, 2008). They are more able to comprehend the situation on an abstract level, so they are able to understand the implications of cancer fully (Lewandowski, 1996). On the other hand, the adolescents and young adults are at a higher risk for experiencing anxiety and depression (McDonald et al, 2016). Moreover, older children understand more about the consequences of their parent’s disease. A number of psychosocial problems like anxiety/depression, confusion, sadness, anger, feelings of uncertainty, and loneliness are reported (Jeppesen et al, 2016)

Further, in view of Erickson’s stages, the impact of illness on an adolescent’s development can be profound. For example, in this stage of “Identity versus role confusion” adolescents are at the beginning to form their own identity and developing independence. An unexpected illness in the family can create an extreme sense of loss of normalcy, shame about ill parent (due to need for peer acceptance) and ambivalence about their desire for autonomy. As a result, rather than completing this stage by the adolescent establishing a strong independent identity, they may instead be left with a sense of guilt for wanting to separate from the ill parent leading to negligence or compromise of their own growth and autonomy. In addition, a parent with cancer may have symptoms such as fatigue, mood swings, and lack of energy that lead to increased care giving responsibilities for the adolescent that interfere with peer activities and school work. Some adolescents identify so closely with the ill parent that they begin to have concerns for their own health and body. Many of the women diagnosed with cancer are mothers. Parental cancer is a stressful situation as there may be changes in the parent- child interaction as well as the threat of possible parental death due to the disease (Su& Ryan-Wenger, 2007).

Further, recovery from surgery and treatments may limit or prevent the ill family member from resuming the previous role they had in the family, as they may be fatigued and experience a decrease in their usual activity level. Gazendam- Donofrio et al (2011) carried out a study to examine the emotional reaction of adolescents to parental cancer and according to this study, the treatment type was an important variable to evaluate because, for example, surgery could mean that treatment would be completed more quickly and cause less distress in the family. Single modal and non-surgical (chemotherapy, radiotherapy) as well as multimodal treatment (surgery, chemotherapy, radiotherapy, others) may be long term treatments and cause more distress. Adolescents of parents who underwent surgical treatment showed more positive emotions than when parents had long term treatments, as they might have witnessed fewer outward signs of illness. Type of treatment is also related to communication. Daughters of parents with non-intensive treatments perceived communication as more open. Some sons also reported fewer communication problems.

Adolescence and young adult (AYA) with a parent with cancer is reported to have needs that include honest communication, receiving information about the cancer, help in coping with emotions, the need for their friends to understand them, support from other young people who have had similar experiences, and the need to be able to continue with their regular interests and activities (Jeppesen et al, 2017), Furthermore, older offspring tend to experience greater household and caregiving responsibilities as a result of their parent's illness, and report more activity restrictions, isolation, daily hassles and stress than offspring of healthy parents (Houck et al, 2007; Sieh et al, 2013).

Further, stress response symptoms were associated with emotional and behavioral problems, and future emotional and cognitive problems (Huizinga et al., 2010). In the first year following diagnosis, the relationship between stress response and somatic complaints increased (Huizinga et al., 2010). Ill parents and partners observed more emotional and behavioral problems in offspring with higher stress response symptoms, but these were to a lesser degree than offspring reported for themselves (Huizinga et al., 2010). Offspring age, parent gender, and treatment intensity and length were unrelated to offspring stress response symptoms (Huizinga et al., 2010). It was found that more daughters reported clinically elevated stress response symptoms at 4 months following diagnosis, and daughters also reported higher rates of intrusion than sons at 6 months following diagnosis (Huizinga et al., 2010). Compared to sons whose parent had been diagnosed 1–5 years earlier, sons whose parent had been diagnosed 12 months earlier had less intrusion, avoidance and total distress (Huizinga et al., 2010). Also, daughters reported significantly less intrusion and less total distress at 12 months (Huizinga et al, 2010).

Offspring turned inward and relied on themselves for problem solving, decision making, and to escape (Clemmens, 2009), thus being their own source of support. For other offspring, one study found that religious faith and church affiliations were helpful (Clemmens, 2009). In regard to healthcare support, offspring felt they had no role within the hospital environment and believed it offered no emotional or psychosocial component of care (Finch & Gibson, 2009). Offspring preferred to speak to friends or family about the cancer than seek support from medical staff (Finch & Gibson, 2009).

Further retrospective and prospective studies including a total of 221 adolescents (105 sons) of 138 patients (retrospective) and 70 adolescents (31 sons) of 70 patients (prospective) participated were done. Adolescents reported on cancer-specific uncertainty, loneliness, helplessness and positive emotions (Situation-Specific Emotional Reactions Questionnaire), and filled in the Youth Self-Report once retrospectively during the period of 1–5 year(s) after diagnosis and three times prospectively during the first year (4 6 and 12 months post-diagnosis). Results showed that emotional reactions were similar between pro- and retrospective studies. Prospectively, uncertainty and helplessness decreased over time. Uncertainty and loneliness related significantly to adolescents’ dysfunction (prospective and retrospective). Relationships between emotions and functioning were stronger and more often significant for daughters. Prospectively, adolescents’ post-diagnosis emotional reactions were largely unrelated to later functioning. The conclusions of the study revealed that uncertainty and loneliness related to adolescents’ emotional and behavioral problems. Daughters’ emotions seem more strongly related to functioning than sons (Gazendam-Donofrio, 2010).

Also, adolescents are more cognitively and emotionally mature with a deeper understanding of death, and an increased ability to empathize (Dakin, 2016). During adolescence, there is a developmental push to become more independent, autonomous, and form significant relationships outside of the family (Visser, 2007). Developmental pressures during this time act to alter the adolescent's relationship with their parents. The drive to distance oneself from family is antagonized by the restrictions the illness imposes on the adolescent (Visser, 2007). This conflict may make adolescents more vulnerable to impaired psychosocial adjustment, and may have a negative impact on their sense of individuality and identity (Visser, 2007).

Osborn indicated an increase in self-reported and parent-reported internalizing problems such as anxiety such as death anxiety and depression in adolescents of parents with cancer (Osban, 2007). This is supported by many researchers who indicated that adolescents; aged 12–18, suffer from more emotional problems, are most susceptible to negative psychosocial outcomes when faced with a parent's illness, and have greater anxiety, depression, and emotional distress than school-age children and general population (Rainville et al, 2012; Huizinga, 2011; Grabiak, 2007; Visser, 2007). Moreover, spread or incurable disease was related to the most distressing, upsetting, and heartbreaking situation, and were associated feelings of intense sadness and guilt accompanied by concerns about impending parental death (Kennedy, 2009; Beale, 2004).

Kornreich et al (2008) described that adolescents (12-18 years) have a different experience to younger children as they have greater cognitive ability, and can engage in abstract and symbolic thought. This makes them more aware of the potential loss of their parent as well as the pain they may be going through. However, late adolescents (15 to 18 years), living with the parent with advanced cancer, continued to show significant differences in their levels of distress, anxiety, and irritability compared with their peers (Rainvilleet al, 2012). This result was restated in another study that found older age of adolescent was associated with lower health-related quality of life (Kuhne, 2012). In one study, 30 adolescents were examined by DASS-21 questionnaire. The findings of this study showed that the samples were at the age (11-20) year-old, 13 (43.3%) of them were boys and 17 (56.7%) of them were girls. Most of them were school students (19 sample accounting for 63.3%) and the birth rate of them were from 1 to 6. In the pretest phase 4 (13.3%) of adolescents in depression, 13 (43.3%) in stress and 3 (10%) in anxiety were in the normal range and 11 (36.5%) in depression, 4 (13.3%) in stress and 18 (60%) in anxiety were in the extremely severe range (Mehrdad, 2016).

Also, adolescence creates fundamental changes in the family structure as youth strive for increased autonomy. Having a parent with cancer may require typical developmental tasks to be placed on hold, thus posing a significant threat to the adolescents' normal growth and development (Ohannessian, 2007). Adolescents' increased cognitive abilities and aptitude for abstract thought make them susceptible to distress because they are more knowledgeable about the potential future consequences of cancer than younger children (Spira M, 2000). Youth general introduction facing parental cancer has difficulties adjusting and can experience anxiety or depressed mood (Brown et al, 2007). Weinstein and Mermelstein (2007) suggest adolescence is a time of high risk for the emergence of mood disorders, mostly in girls. Brown et al (2007) found that daughters of mothers with breast cancer showed more symptoms of depression than sons.

Kornreich et al (2008) showed that children experienced the most stress in response to the physical signs and side effects of parental illness (vomiting or hair loss) and the disruption of their normal routines due to treatment and disease complications. For example, a parent with cancer may have symptoms such as fatigue, mood swings, and lack of energy that lead to increased care giving responsibilities for the adolescent that interfere with peer activities and schoolwork. Some adolescents identify so closely with the ill parent that they begin to have concerns for their own health and body. Many of the women diagnosed with cancer are mothers. Parental cancer is a stressful situation as there may be changes in the parent- child interaction as well as the threat of possible parental death due to the disease (Su& Ryan-Wenger, 2007).

Adolescents have the ability to empathize with their parent's suffering; this empathy is reflected in feeling sorry for the ill parent and wanting to care for and try to console them. They also feel anger about the injustice of fate, and try to find meaning in their parent's disease. Despite this, adolescents are still able to be concerned about the healthy parent and the family situation as a whole (Thaustum et al, 2008), and adolescents whose mothers had been diagnosed with cancer expressed a feeling of conflict, and a desire to be relieved from this feeling. In a way, they were afraid of losing their mother, and wanted to spend as much time with her as possible; but at the same time, they had a need for an adolescent's natural process of liberation (Huizinga et al, 2003). As adolescence is characterized by increasing liberation from parents as the young person evolves into an independent individual, experiencing the serious illness and death of a parent during this phase implies great stress. Serious illness involves uncertainty, worry, and hope at the same time that it is necessary for everyday life to function. One study carried out using a qualitative method, and the data were collected by interviews with five adolescents who were 14-17 years of age when one of their parents died. Results showed that the parent's illness was a strong threat, as the adolescents understood that their own and the family's lives would be greatly changed by the illness/death. The incomprehensibility of the parent's serious illness and death was a threatening condition on its own. The adolescents strived to make the inconceivable more conceivable to understand what was happening. They also described the necessity of finding different ways of relating to and managing the threat, such as restoring order, seeking closeness, adapting, and gaining control, avoiding talking about the illness, not accepting and counting the parent out. The adolescents described feelings of being alone and alienated, even though they were close to family and friends and they did not actively seek support. The lives of the adolescents were changed by their experiences, beyond their bereavement over the parent. They felt that they had become more mature than their friends and that there had been a change in their thinking about life, changes in values, and changes in their views of relationships with other people (Dehlin, 2009).

2.4 The effects of women cancer on the mental health of their spouses

Cancer is a chronic disease that affects both patients and their caregivers. Spouses, in particular, will generally assume the role of primary caregiver and experience significant physical, social, economic and emotional stress. In the face of cancer, being the spouse of a patient is synonymous with unmet psychosocial needs and a new role assignment, that of a primary caregiver. In addition, cancer confronts spouses with fear of partner loss. This leads to a set of adverse consequences such as depression, anxiety, uncertainty, stress, etc. For example, breast cancer reduces the quality of life of patients' spouses and increases their emotional distress, their psychosocial needs, and their responsibilities within the family. Spouses may live a complex powerful emotional experience, which is equal to or greater than that experienced by patients during the diagnosis and treatment process. These multiple solicitations contribute to the heavy symptom burden. Therefore, in the context of breast cancer, identifying vulnerable spouses and providing them with appropriate support would help ensure better adherence to the care of their wives at different stages of the disease (Fekih-Romdhanef et al, 2018).

In addition, spouse experience personal stress and anxiety related to the illness and disruption of their normal roles, as well as the functioning of the entire family. Patients with cancer and their spouses are faced not only with the real-life problem of managing a household during their illness but also with the issue of how to tell their children about the cancer and address the psychological impact of their cancer on their children (Barnes et al, 2000; Semple & McCance, 2010). An assessment of 189 women with recurrent breast cancer confirmed the adverse impact of symptom distress on psychological adjustment of the patient, this in turn impacting on family adjustment (Northouse et al, 2002).

Individual levels of distress were determined more by gender than by the role of being the person with cancer versus that person's partner. That is, women reported consistently more distress than men regardless of their role. The association between patient and partner distress within couples was only moderate but is sufficient to warrant further consideration of the notion that these couples react as an emotional system rather than as individuals. It is noteworthy that this association is not moderated by gender. With a general lack of comparison groups, the question of how much distress can be ascribed to the cancer experience cannot be answered decisively; elevations in distress are probably modest. Attention needs to be directed toward factors other than cancer as direct influences of distress in these couples and to mediators and moderators of the cancer experience (Hagedoorn et al, 2008). Another study focused on the impact of cancer in a partner on a healthy spouse, which addressed three main questions: do spouses indeed constitute a support system or are they in fact a "distress" system, are there gender differences in how people cope with cancer disease, and does family support influence coping with cancer disease. The study found significant association between women cancer and the mental health of their spouses (Baider et al, 1996). Furthermore,

Spouses reported more psychological distress than patients in another study. Both patients and spouses report a similar level of spousal support, and spouses reported a lower level of support provided from family and friends. Perceived support in this study contributed significantly to the explanations of global psychological distress, depression and anxiety both for patients and their spouses. However, the specific agents of support that were significant in explaining these outcomes varied between patients and their spouses. For patients, family support received by both patient and partner was the most important source of support, protecting from psychological distress, while for the male partners, support from friends was most important. Religious-based support was found to contribute negatively to the psychological distress of the patient and spouse. This study emphasizes the role of breast cancer spouses as care receivers in parallel to their role as caregivers, which is especially important in light of the high psychological distress reported by the spouses. The findings support the buffering effect, which different agents of support have against psychological distress while facing cancer for both patients and spouses. Patients and spouses differ with regard to the agents of support possessing this buffering effect (Hasson-Ohayon et al, 2010).

For the purpose of this study, depression (definition, diagnosis, risk factor, and treatment) and death anxiety (definition, theories and causes), which are common mental disorders among adolescents and husbands of women with cancer, will be discussed in more details in this chapter.

2.5 Depression

Major depressive disorder represents the classic condition in this group of disorders. It is characterized by discrete episodes of at least 2 weeks' duration (although most episodes last considerably longer) involving clear-cut changes in affect, cognition, and neuronegetative functions and inter-episode remissions. Major depression, major depressive disorder or clinical depression is a common and serious mood disorder. Those who suffer from depression experience persistent feelings of sadness and hopelessness and lose interest in activities they once enjoyed. Aside from the emotional problems caused by depression, individuals can also present with a physical symptom such as chronic pain or digestive issues. To be diagnosed with major depression, symptoms must be present for at least two weeks (DSM-5, 2013).

The DSM-5 outlines the following diagnostic criteria of depressive episode; the individual must be experiencing five or more symptoms during the same 2-week period and at least one of the symptoms should be either (1) depressed mood or (2) loss of interest or pleasure:

1. Depressed mood most of the day, nearly every day.
2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day.

3. Significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day.
4. A slowing down of thought and a reduction of physical movement (observable by others, not merely subjective feelings of restlessness or being slowed down).
5. Fatigue or loss of energy nearly every day.
6. Feelings of worthlessness or excessive or inappropriate guilt nearly every day.
7. Diminished ability to think or concentrate, or indecisiveness, nearly every day.
8. Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide (DSM-5, 2013).

To receive a diagnosis of depression, these symptoms must cause the individual clinically significant distress or impairment in social, occupational, or other important areas of functioning.

In summary, depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration (WHO, 2017). Depression can be long-lasting or recurrent, substantially impairing an individual’s ability to function at work or school or cope with daily life. At its most severe, depression can lead to suicide. When mild, people can be treated without medicines but when depression is moderate or severe, they may need medication and professional talking treatments (WHO, 2017). It is a common illness worldwide, with more than 300 million people affected. In 2014, around 15.7 million adults age 18 or older in the U.S. had experienced at least one major depressive episode in the last year, which represented 6.7% of all-American adults. At any point in time, 3 to 5% of adults suffer from major depression; the lifetime risk is about 17%. As many as 2 out of 100 young children and 8 out of 100 teens may have serious depression (ADAA, 2017). Anxiety disorders are the most prevalent mental disorder among children and adolescents involving 10-20% of this group (Haller H, 2014).

Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when long-lasting and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family. At its worst, depression can lead to suicide. Close to 800 000 people die due to suicide every year. Suicide is the second leading cause of death in 15-29-year-olds (WHO, 2017). Although there are known, effective treatments for depression, fewer than half of those affected in the world (in many countries, fewer than 10%) receive such treatments. Barriers to effective care include a lack of resources, lack of trained health-care providers, and social stigma associated with mental disorders. Another barrier to effective care is inaccurate assessment. In countries of all income levels, people who are depressed are often not correctly diagnosed, and others who do not have the disorder are too often misdiagnosed and prescribed antidepressants (WHO, 2017). Depression is one of the most common mental disorders in the United States.

Recurrent depressive disorder involves repeated depressive episodes. During these episodes, the person experiences depressed mood, loss of interest and enjoyment, and reduced energy leading to diminished activity for at least two weeks. Many people with depression also suffer from anxiety symptoms, disturbed sleep and appetite and may have feelings of guilt or low self-worth, poor concentration and even medically unexplained symptoms (WHO, 2017). Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate, or severe. An individual with a mild depressive episode will have some difficulty in continuing with ordinary work and social activities, but will probably not cease to function completely. During a severe depressive episode, it is very unlikely that the sufferer will be able to continue with social, work, or domestic activities, except to a very limited extent (WHO, 2017).

Depression results from a complex interaction of social, psychological and biological factors. People who have gone through adverse life events (unemployment, bereavement, psychological trauma) are more likely to develop depression. It can, in turn, lead to more stress and dysfunction and worsen the affected person’s life situation and depression itself (WHO, 2017).

There are effective treatments for moderate and severe depression. Health-care providers may offer psychological treatments (such as behavioral activation, cognitive behavioral therapy (CBT), and interpersonal psychotherapy (IPT) or antidepressant medication (WHO, 2017).

For the medical treatment of depression, many types of antidepressants are available; including elective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), atypical antidepressants, tricyclic antidepressants, monoamine oxidase inhibitors (MAOIs), and other medications may be added to an antidepressant to enhance antidepressant effects. On the other hand, psychotherapy, which is a general term for treating depression by talking about the condition and the related issues with a mental health professional, can be effective for depression, such as cognitive behavioral therapy or interpersonal therapy, and electroconvulsive therapy (ECT). ECT is usually used for people who don't get better with medications, can't take antidepressants for health reasons or are at high risk of suicide (Mayo-clinic, 2019).

The burden of depression and other mental health conditions is on the rise globally. Youth facing parental cancer has difficulties adjusting and can experience anxiety or depressed mood (Brown et al, 2007). Weinstein and Mermelstein (2007) suggest adolescence is a time of high risk for the emergence of mood disorders, mostly in girls. Brown et al (2007) found that daughters of mothers with breast cancer showed more symptoms of depression than sons (WHO, 2017).

One study found that adolescents in the fifth, seventh, ninth, and eleventh grades reported the frequency, intensity, and duration of their experiences of 12 emotions and the situations during which they occurred. The first three scales of emotion combined to produce the emotion saliency score. Girls reported higher saliences of surprise, sad, self-hostility, shame, shy, and guilt. Boys reported higher saliency of contempt. Factor analysis of the salient emotions retained the same three factors for both genders: positive emotion, inner-passive, and outer-hostile negative emotions. The loadings for surprise, sad, and anger on each factor suggested within factor gender differences. Most salient emotions were experienced with peers; however, boys experienced both surprise and sadness more often when alone than did girls. There were gender differences in most emotion categories on the events associated with salient emotions. Boys found activities and achievement, and girls found affiliation, to be emotionally salient. These data suggest that gender differences in emotion are pervasive rather than confined to depressive emotion and include differences in the organizational properties of emotion (Stapley & Haviland, 1989).

2.6 Death anxiety

Anxiety can be defined as an unpleasant subjective experience associated with the perception of real or imaginal threat; therefore, it is a common symptom in connection with cancer (DSM-IV, 2013). It can be described as an emotional state characterized by feelings of unpleasant expectation and a sense of imminent danger (Aass et al, 1997). Kazdin (2002) defined anxiety as an emotion that characterized by feelings of tension, worry, and stress as well as physiological changes such as increased blood pressure (Baqutayan, 2012).

According to Stark, et al, anxiety has both physiological and psychological components. Autonomic hyper-arousal with acceleration of heart rate and respiration, tremor, sweating, muscle tension, and gastrointestinal changes are common physiological experiences. Apprehension, feeling powerless, and fearing loss of control are psychological aspects (Baqutayan, 2012). Death anxiety/fear is a common and unpleasant human experience. During the last half of the 20th century, death is a considered powerful human concern that has been conceptualized as a powerful motivating force behind much creative expression and philosophic inquiry throughout the ages (Paul, 2007). Also, "Death anxiety" is a term used to conceptualize the apprehension generated by death awareness (Abdel-Khalek, 2005). Humans are unique in that they must learn to live and adapt to the consciousness of their own finiteness (Becker, 1973). Thus, a major task for cultural systems is to provide a symbolic structure that addresses that address this anxiety (Abdel-Khalek, 2005).

Furthermore, death anxiety refers to the fear and apprehension of one's own death. It is the neurotic fear of the self which in intense state parallels feelings of helplessness and depression. Man's awareness of his own death produces anxiety that can only be dealt with by recognizing one's individuality. According to form and the existential analysts, man's awareness of death gives him the responsibility for finding meaning in life. Further, death is a biological, personal, and socio-cultural and process of aging and the ending called death (Sharma, 2014). Kubler-Ross et al (1969) had found that in the majority of persons, almost regardless of age, the personal reactions to imminent death pass through five phases: denial, bargaining, depression and acceptance (although not every individual achieves the final phase). Dying and death laid other major aspects of human life are also very important cultural and social phenomena (Kubler-Ross et al, 1969).

Carpenito-Moyet (2008) defined death anxiety as "the state in which an individual experiences apprehension, worry, or fear related to death and dying" (p. 39). Also, death anxiety is defined as "vague uneasy feeling of discomfort or dread generated by perceptions of a real or imagined threat to one's existence" (Moorhead et al., 2008, p. 761). In addition, "death anxiety" is a term used to conceptualize the apprehension generated by death awareness (Abdel-Khalek, 2005). It refers not to the anxiety which is felt in the case of an urgent threat towards a person's life; but it refers to the anxiety experienced in "daily life". Yalom (2000) stated that, "The fear of death exists always and everywhere and it is so great that, most of the life energy is spent in the moment of death (Yalom, 2000).

While the terms are mostly used synonymously, the concepts “death anxiety” and “fear of death” have also been distinguished. Further, death anxiety refers to a dread of complete annihilation, whereas fear of death is a more concrete belief that death is frightening (Momeyer, 1988). Cicirelli (2006) identified that dread of annihilation is related more broadly to a mental or spiritual awareness of the loss of existence, whereas fear of death is related to the physical awareness of loss of existence. Biological approach has shown that anxiety and fear are separate constructs that arise from separate but proximal and related anatomical structures. Anxiety has been more closely associated with septo-hippocampal system activation with pathways that extend to higher cortical regions (Gray, 1985). Also, fear relates more specifically to the activation of the amygdaloidal complex, a system characterized by a survival-oriented, automatic rapid reaction (Larson et al., 2006). There are anatomical distinctions in origin between fear and anxiety systems, how these phenomena are experienced in the human, particularly in the management of major ongoing survival-oriented threats. The two systems may be activated simultaneously, but the fast survival-oriented threat system is instantly achieved at the preconscious level (LeDoux, 2008).

There are different types of death anxiety as the following:

1. Predatory death anxiety

Predatory death anxiety arises from the fear of being harmed. It is the most basic and oldest form of death anxiety. In humans, this form of death anxiety is evoked by a variety of danger situations that put the recipient at risk or threatens his or her survival. These traumas may be psychological and/or physical. Predatory death anxieties mobilize an individual’s adaptive resources and lead to fight or flight, active efforts to combat the danger or attempts to escape the threatening situation (Castano, 2011).

2. Predation or predator death anxiety

Predation or predator death anxiety is a form of death anxiety that arises from an individual physically and/or mentally harming another. This form of death anxiety is often accompanied by unconscious guilt. This guilt, in turn, motivates and encourages a variety of self-made decisions and actions by the perpetrator of harm to others (McDonald, 1996).

3. Existential death anxiety

Existential death anxiety is the basic knowledge and awareness that natural life must end. It is said that existential death anxiety directly correlates to language; that is, language has created the basis for this type of death anxiety through communicative and behavioral changes. Existential death anxiety is known to be the most powerful form (Sterling, 1985). There is an awareness of the distinction between self and others, a full sense of personal identity, and the ability to anticipate the future. Humans defend against this type of death anxiety through denial, which is affected through a wide range of mental mechanisms and physical actions many of which also go unrecognized. While limited use of denial tends to be adaptive, its use is usually excessive and proves to be costly emotionally.

Awareness of human mortality arose through some 150,000 years ago. In that extremely short span of evolutionary time, humans have fashioned but a single basic mechanism with which they deal with the existential death anxieties this awareness has evoked—denial in its many forms. Thus, denial is basic to such diverse actions as breaking rules and violating frames and boundaries, manic celebrations, violence directed against others, attempts to gain extraordinary wealth and/or power—and more. These pursuits often are activated by a death-related trauma and while they may lead to constructive actions, more often than not, they lead to actions that are, in the short and long run, damaging to self and others (Simon et al, 1998).

- **Causes of death anxiety:**

There are several factors that drive anxiety about death such as the fear of physical suffering and pain when dying, the fear of humiliation as a result of physical pain, the fear of stopping the pursuit of goals because life is measured by human achievements, the fear of the death impact on the family especially young children and the fear of divine punishment (Charles, 1992). Also, Surman (1986) relates the cause of death anxiety to many conditions, including disease, accidents, natural disasters and separation. Other causes of death anxiety are: the fear of the end of life, the fear of the fate of the body after death, the fear of moving to another life, the fear of death after a long illness, fear of the timing of death at any moment, the fear that grieves neighborhoods to die, the fear of punishment on the mundane workers, the fear of the paradox of parents and loved ones, not knowing the fate after death, the fear of the darkness of the grave and the torment and the fear of what accompanies the spirit out of the body from severe pain (Qualgia, 2013).

Also, Feifel (1977) indicated different reasons why death is feared, such as concerns about the loss of self and the unknown beyond death, fear of pain and suffering, realization of lost opportunity for atonement and salvation, and concerns about the surviving family members. Furthermore, in growing up human being have been imbued with the importance of achievement and self-worth; but in growing old, human being realize our own impotence in the face of death which threatens to terminate all that we hold dear in life (Wass & Neimeyer, 1988). Another source of death fear is not so much the awareness of our finitude as our failure to lead a meaningful life (Erikson, 1963; Butler, 1975).

Death anxiety symptoms may include physical symptoms such as excessive stress, bad dreams, rapid pulse at rest, lost control of the self, sweating, nausea or stomach pain, numb hands or feet, rapid heart and dizziness. Psychological symptoms may include panic attack, depression, excessive emotion, inability to distinguish between things, mixing thinking, aggression, easy to anticipate the negative life things, irritability, anger, nervousness, isolation, and withdrawal and waiting for the moment of death .Also, they may have respiratory symptoms such as shortness of breath, rupture of the membrane oral slave, swallowing problems, digestive problems, constipation and vomiting, and general symptoms such as general fatigue, dehydration and loss of appetite (Qualgia, 2013).

Death anxiety is one of the common anxiety disorders which mean feeling fear, horror, and worry toward death or anything leading to death. In other words, death anxiety is a set of negative emotional reactions with different frequencies caused by the thoughts of body damage in this point of view, there is emphasis on both emotions and cognitive approach (Urine and Kilbourne, 2008). Death anxiety is a complicated factor that is experienced with variable severity during one's life, and is also influenced by a variety of factors such as environmental events, age, and sex (Pollak, 1980) According to Yalom (2008), human beings are, "forever shadowed by the knowledge that we will grow, blossom, and inevitably, diminish and die. Themes of death and the wound of mortality have featured heavily in both ancient and modern art, literature, theater, philosophy, and psychology (Yalom, 2008). It has the power to evoke fears of powerlessness, separation, loss of control, and meaninglessness (Yalom, 2008). Although human beings are thought to develop adaptive methods for coping with death anxiety, periods of heightened stress or threats to the health of self or loved ones can result in inefficient and pathological modes of coping for some individuals (Yalom, 2008).

Coping in psychology means to devote own conscious effort, to solve personal and interpersonal problems, in order to try to master, lessen or tolerate stress and conflict (Weiten & Lloyd, 2008). Coping is defined as a process of managing external or internal stresses, which are evaluated as greater than the resources of a person. It is a process including at least two phases; primary and secondary appraisal, which consider the concepts is there something to bother about and what can be done about it, respectively (Andersson & Willebrand, 2003).

The psychological coping mechanisms are commonly termed coping strategies, which generally refer to adaptive coping strategies, which reduce stress. In contrast, other coping strategies may be seen as maladaptive when they increase stress, which is described as non-coping. Additionally, the term refers to reactive coping, which is the coping response which follows the stressful event. This differs from proactive coping, in which a coping response aims to neutralize future stressors. Subconscious or non-conscious strategies, such as the defense mechanisms, are commonly excluded from coping. The effectiveness of the coping effort depends on the type of stress, the individual, and the conditions. Coping responses are partially controlled by personality, but also by the social environment, particularly the nature of the stressful environment (Wikipedia, 2019).

Of the classifications of coping strategies is that of Weiten (2012), which includes the appraisal-focused, the problem-focused, and the emotion-focused. The appraisal-focused strategies are the coping mechanisms that involve the change of mindset, such as denial. Problem-focused strategies are the ones which modify the behavior of the person, such as learning how to cook a dinner while knowing that beloved important ones will attend it. Emotion-focused strategies take account of the variation of emotions to tolerate or eradicate stress, such as meditation, distraction, or relaxation techniques and using prayers (Sincero, 2012).

General classifications of coping mechanisms include defense, which is the unconscious ways of coping stress such as reaction formation and regression, adaptive, which tolerates the stress such as altruism and symbolization, avoidance, which keeps self away from the stress such as denial and dissociation, attack, which diverts consciousness to a person other than the stressor such as displacement and projection, behavioral, which modifies the way we act in order to lessen or eliminate the stress such as compensation and undoing, cognitive, which changes the way we think so that stress is reduced such as compartmentalization, repression and suppression, self-harm, which intends to harm self in response to stress such as introjection and self-harming, and finally conversion, which changes the thought, behavior or emotion into another such as somatization (Sincero, 2012).

From the perspective of Terror Management Theory, meaning is often acquired through cultural worldviews, attachments, and self-esteem, thereby creating a buffer against existential anxiety. However, several factors may disable the capacity to apply these buffers against anxiety and distress, including genetic predispositions, adverse events in early childhood, temperament, insecure attachment, lack of meaning, trauma, stress, and other life difficulties (Maxfield et al., 2014). The inability to effectively develop and use these essential components of the anxiety-buffering system to protect against anxiety and distress is likely to result in psychological vulnerability (Maxfield et al., 2014). Moreover, threats to meaning, self-esteem, and relatedness also have the capacity to increase susceptibility to anxiety, distress, and emotional difficulties. Hence, psychopathology is thought to reflect maladaptive efforts to cope with awareness of inevitable death or mismanagement of existential terror. Templer speculated that larger differences between women and men’s death anxiety scores in Arab countries compared to the United States might be due to the influence of varying cultural beliefs (Templer, 1991). Lupfer, &Fiedler, 1994) find the relationship between death anxiety and age: high in young adults, highest in middle adulthood, and lowest in the elderly. Elderly individuals appear to have the lowest death anxiety in comparison to teens, young adults, and middle-aged individuals.

One study provided an in-depth examination of the relationship between religion and death attitudes. It investigated whether the results found in previous research on adults could be generalized to adolescents, by assessing death attitudes and religious attitudes of 213 adolescents in a secularized country. Results from hierarchical regression analyses were confirming that the link between religious attitudes and death attitudes is important during diverse stages of the life span. Furthermore, a meaningful 3-cluster solution (i.e., Natural Process, Acceptance, and Anxiety) was retained and each cluster was characterized by its own unique scores on religious attitudes (Dezutter et al, 2009). Another study compared death anxiety among volunteer undergraduates from Spain and five Arab countries, i.e., Egypt, Kuwait, Qatar, Lebanon, and Syria. The Templer Death Anxiety Scale was used in its Spanish and Arabic forms, respectively. The Mean for the Spanish sample was lower than that of their Arabic counterparts in the five countries, whether the subjects were men or women (Abdel-Khalek, 2003). In another study, he found in An Arabic version of the Templer Death Anxiety Scale, which was administered to 673 Lebanese volunteer subjects (164 boys, 165 girls in secondary school, 170 men, 174 women undergraduates), that Females attained higher mean death anxiety scores than males. The Lebanese samples had either the same or a lower mean score on death anxiety than their Arab peers, that is, Egyptians and Kuwaitians and also US samples. Split-half reliabilities ranged from 0.57 to 0.68 (Abdel-Khalek, 1991).

2.7 Depression and death anxiety

Terror Management Theory focuses on fear of death and assumed that that an individual death anxiety is the underlying motivation for his or her behavior (Sowards, Moniz, & Harris, 1991 and individuals are aware about their own mortality and at the same time they has the will to survive. So their inability to self-preservation can lead to death anxiety or a deep sense. Also, this theory highlights how individuals try managing the terror that evolves from their life and death fear by mortality salience. Increasing their psychological structure such as self-esteem or faith when facing death) death or by using the Anxiety Buffer (when the individual strengthens the psychological structure to reduce anxiety (Harmon-Jones et al., 1997).

Depressive disorders and death anxiety according to Terror Management Theory are caused by fragile faith in cultural worldviews and an inefficient capacity to buffer anxiety and to cultivate meaning, self-esteem, and fulfilling relationships. This lack of protection against anxiety may lead an individual to experience life without meaning, value, or connectedness with others (Maxfield et al, 2014). Depressed individuals may require additional protection against mortality-related concerns and anxiety (Simon et al, 1998).

The Templer Death Depression Scale-Revised was developed to evaluate the depressive components of death anxiety, including death sadness, anergia, existential vacuum, and anhedonia (Templer et al.,2001), with scores found to be moderately correlated with Templer's Death Anxiety Scale (Nassar, 2010). Research evidence has also confirmed the presence of death anxiety in depressive disorders (Ongider & Eyuboglu, 2013; Saggino & Ronco, 1997; Simon et al, 1996). For instance, increased death anxiety has been associated with increased depression among patients with depressive disorder (Ongider & Eyuboglu, 2013), and similar findings have been reported among people with HIV/AIDS (Miller, Lee, & Henderson, 2013). Thorson and Powell (2000) have argued that age also plays a role in the relationship between death anxiety and depression. In their study of death anxiety and depression, older adults (65–92 years, n = 253) were found to report lower death anxiety, lower depression, and higher religiosity, than younger adults (16–35 years, n = 578). For both age groups combined, however, higher death anxiety was associated with higher depression, and higher religiosity was associated with lower death anxiety. Further evidence suggests that depressed individuals may respond to reminders of death with more worldview defense than non-depressed individuals, confirming that depression may be associated with less buffering against mortality concerns (Simon et al, 1996). In light of evidence supporting a relationship between depressive disorders and death anxiety, a considerable body of evidence supports the use of existential therapies to address the existential fears that often underlie depressive disorders (Ghaemi, 2007; Stalsett et al, 2012).

2.8 Studies that assessed depression and anxiety among adolescents and husbands of women with cancer

The diagnosis of cancer carries a large burden not only on the patient but on their family as well. Many adults diagnosed with cancer have the double burden of coping with the diagnosis and treatment as well as supporting their children through this experience. (Izumi et al, 2015). The cancer experience (with the diagnosis, threat of recurrence, and recurrence) is a stressful process that influences a woman's closest relationships, especially with those who most depend on her (Faten, Al.2014). A parent with cancer may have symptoms such as fatigue, mood swings, and lack of energy that lead to increased care giving responsibilities for the adolescent that interfere with peer activities and school work. Some adolescents identify so closely with the ill parent that they begin to have concerns for their own health and body (Su& Ryan-Wenger, 2007) .

Few studies were conducted to assess depression and death anxiety among adolescents and husbands of women with cancer. For example, a study was conducted by Rainville (2012) in Canada, which reviewed the psychological distress among adolescents living with a parent with advanced cancer. It included mixed advanced cancer patients. The sample size of the study composed of 19 families with 28 adolescents (10 sons, 18 daughters aged between 12-18 years). The study was a cross sectional to determine to what extent adolescents who have a parent with advanced cancer experience more psychological distress than adolescents in the general population. It used the tool IDPSQ-14 (Indice de detresse psychologique de Sante Quebec) - (psych. distress) and recent stressing events questionnaire. The results showed that adolescents with an ill parent had significantly higher levels of distress and depressive state compared to adolescents with a healthy parent. Late adolescents (15-18) had significantly higher distress, anxiety, and irritability compared to norms of the same age. And late adolescents experienced significantly higher distress, and anxiety than early adolescents (12-14) with an ill parent (Rainville et al, 2012).

Furthermore, a study was conducted by Huizinga (2003), in Netherlands, reviewed the psychosocial outcomes for children of cancer patients. The sample of the study was 14 parents with cancer, 12 partners, 15 children (7–18 years). The study tools were mixed-method, semi structured interviews, CBCL (Child Behavior Checklist), YSR (Youth Self Report), and FDS (Family Dimension Scale). The results showed no difference in emotional problems for parental cancer children. Parents reported behavioral problems in one third of children, and seven children reported behavior problems. In addition, the parents reported more problems in children than children’s self-report, Children exhibited temporary behavior problems in acute stage of cancer; anxiety, disordered sleeping, and compulsivity persisted and families with poor family functioning were more vulnerable, particularly with extreme high adaptation (chaotic functioning) and low family cohesion (Huizinga et al, 2003).

Another quantitative study was conducted by Visser, in Netherlands, and reviewed diagnosis emotional and behavioral problems in children of parents with cancer. The sample of the study included 180 parents, 145 partners, and 114 children (4–11 years), and 222 adolescents (12–18 years). The study tools were CBCL, and YSR. The main results showed ill parents reported more emotional problems in latency aged sons and adolescent daughters and perceived latency aged sons as having more emotional and behavioral problems than adolescent sons, and treatment intensity impacted adolescent daughters, and relapse impacted sons. Spouses reported better functioning in adolescent children compared to norm. Adolescents and mothers reported comparable problems, fathers' perceived problems in children as less prevalent and higher prevalence of problems when father was ill (Visser et al, 2005).

Another quantitative study was conducted by Edward (2008) to review the adolescent stress responses and psychosocial functioning from the adolescent, family and parent perspective. The sample size of the study consisted of 67 mothers with cancer and 56 children (11–17 years). Data collection tools were BDI (Beck Depression Inventory), SF-8 (Short Form Health Survey), and CHQ-MH (Child Health Questionnaire - Mental Health subscale C-IES (Child Impact of Events), YSR, FES cohesion subscale The main results showed high rates of stress in 33 % males and 45 % females, and 30 % adolescents reported psychological problems (28 % males and 32 % females). Poor family functioning linked to internalizing and externalizing problems. Poor family cohesion linked to higher externalizing and total psychological problems, and maternal depression linked with adolescent's internalizing problems. (Edwards et al, 2008)

Another Quantitative study was conducted by Huizinga in Netherlands, reviewed the Psychological functioning in children whose mother has cancer. The sample size of the study was composed of 128 mothers with cancer, 96 partners. Data collection tools were IES, YSR, STAI (State Trait Anxiety Inventory – children's version), MMQ (Maudsley Marital Questionnaire-Satisfaction), PACS. Results showed internalizing problems and stress response symptoms (SRS) were greater in daughters than in sons, Impaired functioning linked to female gender; older age; higher levels of parent anxiety and SRS, marital dissatisfaction, and poor communication, internalizing problems and SRS were associated with disease recurrence and externalizing problems were associated with treatment intensity (Huizinga et al2011).

Also, a quantitative study was conducted by Küçükoğlu and Çelebioğlu in Turkey, to assess the level of psychosocial symptoms in adolescents of cancer sufferers. The sample of the study included 90 children (13–18 years). Data tools were BSI (Brief Symptom Inventory) and SSS (Scale of Social Support). Adolescents showed high rates of psychosocial symptoms, particularly anxiety, depression, negative identity, somatization, hostility, and total symptoms were significantly higher in boys. Effects were mediated by gender, disease duration, and seriousness of cancer in both boys and girls (Küçükoğlu and Çelebioğlu .2013)

Further, a cross-sectional study was conducted over a period of 8 months from January to July 2017 at Mayo Hospital, Lahore, Pakistan. A non-probability sampling method was used to select the children of 90 patients receiving treatment for cancers from both inpatient and outpatient clinical settings of the department of oncology at the Mayo Hospital. The study sample consisted of males (41.9%) and females (58.1%), caregiving children living with their mothers (39%), fathers (32%), siblings (1.4%), and grandparents (2.7%) who were under inpatient and outpatient cancer treatment. The vast majority, 87.8%, of caregivers were of age 11–16 years, indicated their household income levels as low (73%), middle (22.9%), and high (4.1%). Most caregivers had other relatives to support their caregiving task (2 caregivers = 73% and 3 caregivers = 16.2%). A total of 63.5% of caregivers indicated a total inpatient stay of up to 4 weeks. About 95% of the young caregivers had symptoms of anxiety while 9.4% showed depression symptoms, Female caregivers had a higher frequency of anxiety (54%) and depression (6.7%) than the male caregivers ($p > 0.05$).

Also, it was observed that 84% of young care givers of 11–16 years of age had anxiety symptoms while only 7% had depressive symptoms. Those between 17–18 years of age reported lesser symptoms of anxiety; however, this was not significant ($p > 0.05$). Anxiety and depressive symptoms were reported less frequently among caregivers as the number of caregivers for a patient increased; 2 caregivers (67.5%); 3 caregivers (16.2%); and 4 caregivers (5.4%). Depressive symptoms were less reported, 8.1% when 2 care givers were involved ($p > 0.5$). However, these results did not exhibit statistical significance. The study indicated that a high percentage of adolescents and young adults who provide care to relatives with cancer report anxiety spectrum disorders. Symptoms of social phobia and generalized anxiety disorders were the most common psycho-pathologies identified in these subjects. Moreover, a high percentage of participants were screened as having significant depressive symptoms. Adolescent females, from a lower socio-economic status, with poor social support and a relatively longer hospital stay reported a higher frequency of psychiatric morbidity (Majeed et al, 2018).

Also, spouses' reported cancer-related demands attributed to their wife's breast cancer were obtained from 151 spouses in a descriptive study. Five categories of spouses' cancer-related demands were identified, such as concerns about: spouses' own functioning; wife's well-being and response to treatment; couples' sexual activities; the family's and children's well-being; and the spouses' role in supporting their wives. Greater numbers of illness demands occurred when spouses were more depressed and had less confidence in their ability to manage the impact of the cancer. The study concluded that spouses' illness pressures have deleterious consequences for the quality of marital communication and spouses' self-confidence (Fletcher et al, 2010).

Further a study of Rainville et al (2012), which was conducted in Canada, reviewed the psychological distress among adolescents living with a parent with advanced cancer. It included mixed advanced cancer patients. The sample size of the study composed of 19 families with 28 adolescents (10 sons, 18 daughters aged between 12-18 years). The study was a cross sectional one to determine to what extent adolescents who have a parent with advanced cancer experience more psychological distress than adolescents in the general population. It used the tool IDPSQ-14 (Indice de detresse psychologique de Sante Quebec) - (psych. distress) and recent stressing events questionnaire. The main results showed that adolescents with an ill parent had significantly higher levels of distress and depressive state compared to adolescents with a healthy parent, late adolescents (15-18) had significantly higher distress, anxiety, and irritability compared to norms of the same age, late adolescents experienced significantly higher distress, and anxiety than early adolescents (12-14) with an ill parent.

Moreover, Edwards et al (2008) study they reviewed the adolescent stress responses and psychosocial functioning from the adolescent, family and parent perspective. The sample size of the study composed of 67 mothers with cancer and 56 PC children (11–17 years), It used the tools Quantitative design, BDI(Beck Depression Inventory), SF-8(Short Form Health Survey), CHQ-MH(Child Health Questionnaire - Mental Health subscale C-IES (Child Impact of Events), YSR and FES cohesion subscale . The main results showed high rates of stress were found in 33 % males and 45 % females, and 30 % adolescents reported psychological problems (28 % males and 32 % females), poor family functioning linked to internalizing and externalizing problems, poor family cohesion linked to higher externalizing and total psychological problems, and maternal depression linked with adolescent’s internalizing problems.

In addition, Huizinga et al (2011) study, which was conducted in Netherlands, reviewed the psychological functioning in children whose mother has cancer. The sample size of the study composed of 128 mothers with cancer, and 96 partners. Quantitative study used tools were IES, YSR, STAI (State Trait Anxiety Inventory – children's version), MMQ (Maudsley Marital Questionnaire-Satisfaction), and PACS. Results showed that internalizing problems and stress response symptoms (SRS) were greater in daughters than in sons, impaired functioning linked to female gender; older age; higher levels of parent anxiety and SRS, marital dissatisfaction, and poor communication, and internalizing problems and SRS were associated with disease recurrence and externalizing problems were associated with treatment intensity.

Moreover, Küçükoğlu and Çelebioğlu (2013) study, which was conducted in Turkey, reviewed the level of psychosocial symptoms in adolescents of cancer sufferers. The sample of the study included 90 PC children (13–18 years) Quantitative study and the used tools BSI (Brief Symptom Inventory), SSS (Scale of Social Support). Results showed that adolescents showed high rates of psychosocial symptoms, particularly depression, anxiety, depression, negative identity, somatization, hostility, and total symptoms were significantly higher in boys, and that effects were mediated by gender, disease duration, and seriousness of cancer in both boys and girls.

Huizinga et al (2011) study revised the psychological functioning in spouses whose wives have cancer. The sample size of the study composed of 96 partners. Quantitative study results showed that stress response symptoms and anxiety were linked to older age; higher levels of spouse anxiety, spouse marital dissatisfaction, and poor communication. These were associated with disease recurrence and treatment intensity.

Within this context, a study found that spouses are preoccupied with existential thoughts and death anxiety, which clinched that professionals need to be more aware of these situations to provide existential support to patients and spouses. As well, spouses' reported cancer-related anxiety was attributed to their wife's cancer. Greater numbers of disease anxieties occurred when spouses were more depressed and had less confidence in their capability to conquer the impact of the cancer. The study concluded that spouses' illness anxiety has harmful concerns for the quality of marital communication and spouses' self-confidence (Fletcher et al, 2010).

Another study, which aimed to examine relationships between sociodemographic and patient-related factors, social support, and religiosity with death anxiety and quality of life in Iranian cancer family caregivers, found that caregivers reported moderate levels of death anxiety and decrements in quality of life, which was inversely associated with death anxiety. Daughter caregivers had higher death anxiety. It concluded that death anxiety is associated with lowered quality of life in Iranian family caregivers. Multiple factors may impact death anxiety and quality of life relevant to the socio-religious background (Soleimani et al, 2017).

Further, in a survey to explore the relationship between the religiosity, death acceptance, and death anxiety, among four different types of religiosity, according to the Rohrbaugh and Jessor scale, theological religiosity was the only one to have a significant effect on death acceptance and death anxiety. Belief in God’s existence and belief in the afterlife were both negatively correlated with death anxiety, and positively correlated with death acceptance. Being a woman was the only demographic variable that was significantly correlated with greater anxiety about death (Harding et al, 2005).

Finally, a local study found that the mean scores of death anxiety among breast cancer patients on the TDAS was 7.0 ± 1.6 indicating that the concern of death among the study participants was on the average. The analysis revealed that 40.6% of the participants had an average level of death anxiety (mean scores: 7-8), and 40.2% had an absence level (0-6). High concern of death anxiety (9-15) was only found in 19.2% of the patients. In summary, findings showed that 59.5% of the participants in the current study had death anxiety (Shehadeh & Ahmead, 2017). Another local study in Gaza found that mean Brief Symptom Inventory was 64.97, anxiety mean was 9.79, somatization mean was 7.34, depression mean was 8.45, hostility mean was 3.91, obsession mean was 8.37, sensitivity mean was 5.88, paranoid mean was 5.31, phobia mean was 5.76 and psychoticism mean was 4.16. The results showed that Palestinian families coped with stressful situations by: 75% said that is God wish, 39.7% said they will ask for advice from relatives and grandparents and 35.3% attending religious meetings. The results showed that mean total coping of family was 109.17, acquiring social support mean was 16.37, reframing mean was 30.64, seeking spiritual support mean was 16.37, positive appraisal mean was 13.83 and mobilizing family to acquire and accept help mean was 14.83. The study showed that total FCOPE was positively correlated with phobia, acquiring social support was positively correlated with phobia, reframing was correlated negatively with obsession, positive appraisal was positively correlated with hostility, obsession, paranoid, phobic anxiety and psychoticism, mobilizing family to acquire and accept help was positively correlated with somatization, phobic anxiety and psychoticism (Thabet et al, 2017).

2.9 Summary

- This chapter explored a variety of literature articles and researches that discussed cancer related depression and death anxiety among adolescents and spouses of women with cancer.
- It started by reviewing the family and its theories, then the effects of cancer on adolescents and husbands of women with cancer.
- Later, the effect of mother cancer on the mental health of their beloved ones was discussed.
- Furthermore, depression and death anxiety and the related studies were reviewed in relation to the target population of this study.
- Literature review was used to enrich the researcher knowledge and to formulate better conceptual framework for the study, as it will be discussed in the next chapter.

Chapter Three: Conceptual Framework

Chapter Three

Conceptual Framework

3.1 Introduction

Conceptual framework is a tool formulated from a set of different and broad ideas, theories, assumptions, concepts, expectations, and beliefs taken from relevant field of enquiry that can support the researchers to properly identify the problem that they are looking for, direct their investigation, form their questions, and search for suitable literature. Most of academic researchers use the conceptual framework at the beginning of their work because it provides a focus and a rationale design for integration and interpretation of information; thus, it can help the researcher to clarify the research question and aims (Smyth, 2004).

Furthermore, conceptual framework has different purposes. It can help the researcher to notice the study variables clearly, and it provides a general structure for data analysis. It can summarize the major dependent and independent variables of the research so as to give direction to the study (Smyth, 2004).

The major concepts of the current framework as seen in diagram (2.1) focus on death anxiety and depression as dependent variables, and sociodemographic and health related data of the participant groups as independent variables.

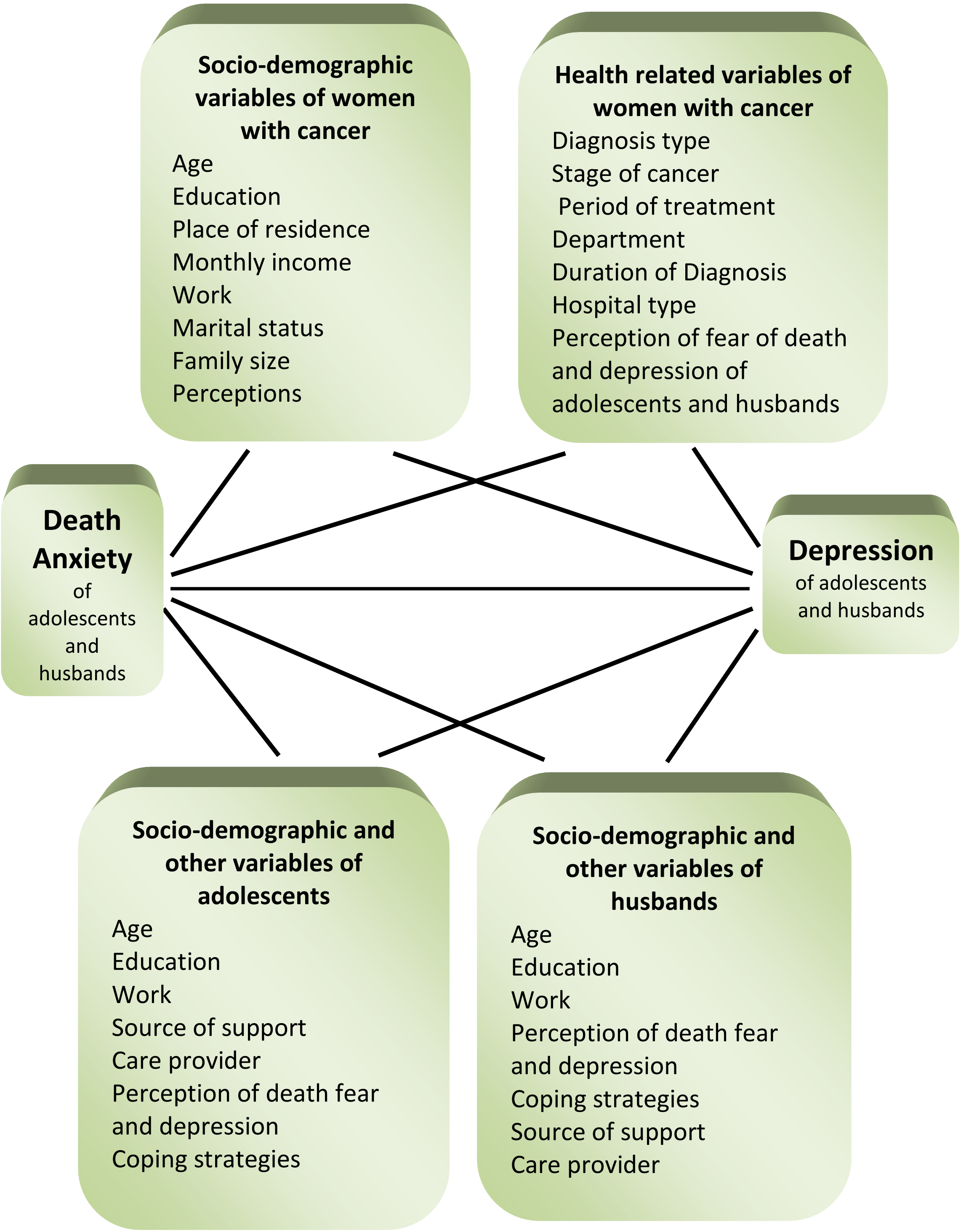

Figure (3.1): Conceptual framework of the study including dependent and independent variables.

3.3 Dependent variables

Death anxiety

As mentioned in previous chapter, Carpenito-Moyet (2008) defines death anxiety as the state in which an individual experiences apprehension, worry, or fear related to death and dying. Death anxiety is also defined as vague uneasy feeling of discomfort or dread generated by perceptions of a real or imagined threat to one's existence (Moorhead et al, 2008). Death anxiety in the current study was assessed by Templer's Scale (1970) which is 15-item Death Anxiety Scale (DAS) and have been used most frequently to measure death anxiety (Abdel-Khalek, 2005; Templer, 1993; Abdel-Khalek& Omar, 1988; Donovan, 1993).

The answers of this scale are based on Yes-No options while each question has a score of one or zero as seen in table (3.1). Thus, the total score is between maximum 15 and minimum zero. Some of the questions are prepared in a way that directly measure death anxiety and its related issues; the other questions measure events such as sudden diseases, world war, speed of time passing, shortness of life, and fear of a painful death (Lehto & Stein, 2009). Also, the DAS is shown to be based on a two-factor model of death anxiety that includes psychological (internal) and life experience (external) factors related to death (Tomer, 1992).

Table (3.1) Templar's DAS scoring according to each question

Question that answered Yes	1	4	8	9	10	11	12	13	14
Question that answered No	2	3	5	6	7	15			

Further, this scale assessed death anxiety major themes as the following: Question 1, q 5 and q 7 assessed the absolute death anxiety, question 4; q 6, q 9, and q11 assessed the fear of patience and pain, and question 3, q 10, q 14 assessed the death related thoughts. Question 2, q8 and q12 assessed the time passing and short life, and finally, the question 13 and q 15 assessed the fear of future (See table, 3.2).

Table (3.2): Death anxiety themes and its related questions

No	**Death anxiety themes**
1 - **Absolute death anxiety (1,5,7)**	
	I am very much afraid to die
	I am not at all afraid to die
	The thought of death never bothers me
2 - **Fear of patience and pain (4,6,9,11)**	
	I dread to think about having to have an operation.
	I am not particularly afraid of getting cancer.
	I fear dying a painful death.
	I am really scared of having a heart attack
3 - Death related thoughts (3,10,14)	
	It doesn’t make me nervous when people talk about death.
	The subject of life after death troubles me greatly
	The sight of a dead body is horrifying to me
4 -Time passing and sort life (2,8,12)	
	The thought of death seldom enters my mind
	I am often distressed by the way time flies so very rapidly.
	I often think about how short life really is
5 - Fear of future (13,15)	
	I shudder when I hear people talking about a world war III or any other war
	I feel that the future holds noting for

The presence of death anxiety class interval is ranging as follows: from (0-6) refers to the absence of death anxiety, from (7-8) indicates that there are concerns the death of the average and from (9-15) indicates the presence of high concern to death (Noureddine, 2008).

Depression

Depression, is known as major depressive disorder or clinical depression, is a common and serious mood disorder. Those who suffer from depression experience persistent feelings of sadness and hopelessness and lose interest in activities they once enjoyed. Aside from the emotional problems caused by depression, individuals can also present with a physical symptom such as chronic pain or digestive issues. To be diagnosed with depression, symptoms must be present for at least two weeks (DSM-5, 2013).

In the current study, Beck Depression Inventory (BDI) was utilized to assess depression and it included 21 questions (See Annex 5). BDI assesses the depression symptoms as the following: Question 1, the severity of sadness; question 2, pessimism; question 3, past failure; question 4, loss of pleasure; question 5, feeling of guilt; question 6, feeling of punishment; question 7, self-dislike; question 8, self-criticalness; question 9, suicidal thoughts or wishes; question 10, crying; question 11, agitation; question 12, loss of interest; question 13, indecisiveness; question 14, worthlessness; question 15, loss of energy; question 16, change in sleep pattern; question 17, tiredness or fatigue; question 18, change in appetite; question 19, weight loss; question 20, health worried; and question 21, loss of interest in sex (Beck, 1961).

Also, Beck depression scores were classified into four categories to assess depression level as the following:

Minimal	0 -13
Mild	14 -19
Moderate	20 – 28
Severe	29 - 63

3.4 Independent Variables

Independent variables included depression and sociodemographic data of women with cancer, their husbands and adolescent children, health related variables for women with cancer and perception of death fear and depression for all the participants.

For the purpose of this study, 3 Socio-demographic sheets were developed. The first one for the women with cancer, the second one was for their adolescent children and the third one was for their husband. These sheets included general information such as age, level of education, work, marital status, and place of residence. Additional questions were added to women's sheet such as health related variables and their perceptions of their family members of death fear and depression. Also, additional question was added to the adolescent and husband sociodemographic sheets about their perception of fear of death, depression, care providers, source of support, and coping mechanism. Each variable discussed as the following:

Sociodemographic variables: these variables were presented in section one of the questionnaires (question 1-6) and were studied by Al Soweilem & Elzubier (1998), Munger (2007), and Kressin (2007) including the following:

1) Age: Which is defined as the completed age in years of the enumerated person, which is the difference between the date of birth and the date of interview. The exact age is the time elapsed between the day of birth and a given day, including parts of a year (Palestinian Central Bureau of Statistics, 2004). Respondents (women, husbands, adolescents) in the current study were asked in question number (q1) in the questionnaire about their age: what is your age? The women age categories were ≤45 years and >45 years, the adolescents age categories were 12-15 years, >15-18 years and >18-20 years, and the husbands age categories were ≤50 years and >50 years.
2) Place of residency: It refers to the name of the locality in which the person spends most of his time during the year (lived there six months and above), irrespective of whether it is the person's same place of existence during the census, or the place in which he works and performs related activates or the place is his original place (Palestinian Central Bureau of Statistics, 2012). In the current study, women were asked in a question (q3) about the place of residency as the following:
   Where do you live?
   1- Village
   2- Camp
   3- City
3) Marital status: It is defined as the status of those 12 years old and over in terms of marriage traditions and laws in the country (Palestinian Central Bureau of Statistics, 2012).

Marital status of women with cancer was assessed by: question number (4) which was:
What is your marital status?

1- Married
2- Widow
3- Divorced
4- Separated.

4) Educational level: It referred to the highest successfully completed educational attainment level, the educational level for persons aged 10 years and over (Palestinian Central Bureau of Statistics. 2012). In this study question number (2) assessed educational level for all the participant as the following:

   What is your educational level?

   Answers for husbands and women were:

   1. ≤12 years of education
   2. > 12 years of education

   Answers for adolescents were:

   1. Primary education
   2. Secondary education
   3. University education

5) Economic status: It defined as cash or in-kind revenues for individual or household within a period of time; could be a week or a month or a year (Palestinian Central Bureau of Statistics, 2012). In the current study, it had 5 categories of the monthly income for a family, and women were asked this question (q13) as the following:

   What is the income of the family?

   1- < 1000 NIS
   2- 1000 – 2000 NIS
   3- >2000 – 3000 NIS
   4- >3000 – 4000 NIS
   5- > 4000 NIS

Health related variables for women with cancer:

It was assessed by questions (q 7 – q 12) as the following:

1) Duration of cancer diagnosis is defined as how long the patient has been living with the disease (Wridat, 2011) and it was assessed by many previous studies such as Al-Soweilem & Elzubier (1998), Nuesch et al (2001), Bovet et al (2002), Ayumu & Fujita (2003), Cramer (2008), and Jin (2008). In the current study, question (7) assessed the duration of cancer as the following:

   What is the duration of your cancer diagnosis?

   1- ≤ 1 year
   2- > 1 year

2) Stages of cancer: Cancer can spread from its original site by local spread, lymphatic spread to regional lymph nodes or by hematogenous spread via the blood to distant sites, known as metastasis. When cancer spreads by a hematogenous route, it usually spreads all over the body. However, cancer 'seeds' grow in certain selected site only ('soil') as hypothesized in the soil and seed hypothesis of cancer metastasis. The symptoms of metastatic cancers depend on the tumor location and can include enlarged lymph nodes(which can be felt or sometimes seen under the skin and are typically hard), enlarged liver or enlarged spleen, which can be felt in the abdomen, pain or fracture of affected bones and neurological symptoms. In the current study, stage of cancer was assessed by question (q10) as the following:

   What is the stage of your cancer?

   1- Early stage (1&2) – localized and early locally advanced
   2- Late stage (3&4) – late locally advanced and metastatic

3) Treatment : as discussed in chapter two, there are many types of cancer treatment, and the type of treatment depend on the type of cancer and how advanced it is (Andreoli et al., 2009). The current study assessed treatments that the participant women had undergo from the diagnosis to the time of the study through 5 categories where the participant can choose different options at the same time in question (12). The categories included:

   What is the type of treatment of cancer?

   1- Chemotherapy.
   2- Radiotherapy.
   3- Surgery.
   4- Palliative
   5- Others

Perception questions about depression and death fear for husbands, adolescents and women with cancer, source of support, care provider, and coping mechanism

All the participants were asked about their perception of depression and death fear:

1) Women were asked the following questions (q14 - q18):

- Did you notice signs of death fear or fear of death on any of your adolescents?
- Did you notice signs of sadness or depression on any of your adolescents?
- Did you notice signs of fear of death on your husband?
- Did you notice signs of sadness or depression on your husband?
- Do you feel afraid of death?

2) Husbands were asked about their perception of sadness and fear of death in relation to the women cancer and therapy seeking?

    1- (q8 - q12)
        - Are you sad due to your mother/wife cancer?
        - Are you afraid due to your mother/wife cancer?
        - Are you afraid of getting cancer due to your mother/wife cancer?
        - Are you afraid of death due to your mother/wife cancer?
        - Did you seek psycho-therapy after your mother/wife cancer?

    2- Who is the care provider for you? (q6)
        - I am caring of my self
        - I am cared for by others

    3- Who is the support provider for you? (q7)
        - I support my self
        - I am supported by others

    4- Furthermore they were asked about the barriers to seek psychotherapies: (q14) Why don’t you seek psychotherapy?
        - Unaware of treatment centers
        - I don't need psychotherapy
        - Due to bad family economic situation
        - Psychotherapy isn't effective in solving my problem
        - Other causes, specify …

    5- Finally, they were asked about their coping mechanisms when they felt fear of death (q15 and q16):
    What do you do if you feel afraid of death?
        - Practice religious activities (such as praying or reading The Holy Quran)

  - Do other activities (such as playing sport, smoking, listening to music, or staying alone)

  When do you feel afraid and anxious of death?

  - All the time
  - In the evening
  - Sometime
  - Not at all
  - Other, specify …

3) Adolescents were asked about their perception of sadness and fear of death in relation to the women cancer and therapy seeking?

   1- (q8 - q12)

   - Are you sad due to your mother/wife cancer?
   - Are you afraid due to your mother/wife cancer?
   - Are you afraid of getting cancer due to your mother/wife cancer?
   - Are you afraid of death due to your mother/wife cancer?
   - Did you seek psycho-therapy after your mother/wife cancer?

   2- Who is the care provider for you? (q6)

   - I am caring of my self
   - I am cared for by others

   3- Who is the support provider for you? (q7)

   - I support my self
   - I am supported by others

   4- Furthermore they were asked about the barriers to seek psychotherapies: (q14)

   Why don’t you seek psychotherapy?

   - Unaware of treatment centers
   - I don't need psychotherapy
   - Due to bad family economic situation
   - Psychotherapy isn't effective in solving my problem
   - Other causes, specify …

5- Finally, they were asked about their coping mechanisms when they felt fear of death (q15 and q16):

- What do you do if you feel afraid of death?
  - Practice religious activities (such as praying or reading The Holy Quran)
  - Do other activities (such as playing sport, smoking, listening to music, or staying alone)
- When do you feel afraid and anxious of death?
  - All the time
  - In the evening
  - Sometime
  - Not at all
  - Other, specify …

3.5 Summary

- The chapter represented the conceptual framework, which was developed based on the literature review.
- It considered two major concepts:
  - Dependent variables including death anxiety and depression.
  - Independent variables including socio-demographic variables, health related variables, fear of death perception, source of support, care provider, and coping mechanism.

Chapter Four: Methodology

Chapter Four

Methodology

4.1 Introduction

This section discussed the design of the study setting, the study population, the sample and the inclusion and exclusion criteria, the study instruments used to collect data, data analysis, the validity and reliability of the instrument and the ethical consideration. To achieve the purpose of the study, a cross sectional design was utilized.

4.2 Study design

Quantitative research is a formal, objective, rigorous, and systematic scientific process for gathering information or for investigating quantifiable properties, phenomena and relationships. It involves a collection of numerical data where often there is considerable control and analysis of data by using statistical procedures (Burns et al, 1999; Polit et al, 2004). The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses, and it is used widely in social science such as psychology, social work, sociology, nursing and political science (Polit & Beck, 2004).

In the current study, a cross-sectional design was utilized using self-reported questionnaires because it is highly useful for descriptive purposes, and it shows both the determining factors and the outcome at the same time. Moreover, it is less expensive and it saves time and effort (Polgarr & Thomas, 1997).

On the other hand, the cross-sectional design has many limitations: it does not lend to generalization of the result, it may not enable researchers to make causal inferences, and it is not appropriate for incident estimation especially in the case of long-lasting outcomes (Dimer, 1997). In summary the advantages of Cross-sectional study is: (Hensly, 2006)

- Best way to determinate prevalence
- Cheaper /easier than longitudinal study: no follow –up required

- Often can be accomplished as secondary data analysis that is data collected by someone else possibly for another purpose

The disadvantages of cross-sectional study are: (Hensly, 2006)

- Difficult to make causal inference.
- The situation may provide differing results if another time frame had been chosen.
- Prevalence –incidence bias (also called Neyman bias) especially in the case –lasting diseases, any risk factor that results in death will be under represented among those with the disease.
- Generalize ability limited by sampled population.

4.3 Study setting:

This study was conducted in two settings which are Beit-Jala Governmental Hospital and Augusta Victoria hospital. Beit-Jala Governmental Hospital in Bethlehem has 65 doctors and 135 nurses who served 75 thousand case in 2014 (MOH, 2016). Beit-Jala Governmental Hospital is one of the main governmental centers for cancer treatment in Palestine. It is the only governmental hospital in south Palestine was all patients with cancer are referred for chemotherapy treatment. The hospital provides also diagnostic procedures such as biopsies and pathological classifications of cancer types and other treatment of cancer including surgery but not radiotherapy (MOH, 2016).

It has 130 beds, distributed into five specialties (medical, surgical, oncology, pediatric and gynecology). The oncology department provide treatment for patients with cancer including inpatient care with the capacity of (20) beds for adults and a special department (Huda Al-Masri department) for pediatric cancer with (18) beds capacity. Huda Al-Masri department for childhood cancer was established in 2013. It served about 70 childhood cancer cases in 2014 where 80% of cases took the whole course of treatment in the same department. It has also a day care for chemotherapy treatment for patients with cancer with four beds capacity where the patients have regular visits for chemotherapy treatment scheduled sessions. The hospital has an out- patient oncology clinics five days per week with different specialists (MOH, 2016).

The second setting is Augusta Victoria Hospital (AVH) which is a program of the Lutheran World Federated Department for World Service in Jerusalem. It started in partnership with the United Nations Relief and Works Agency (UNRWA) as a major medical facility in Jerusalem after the 1948 war to care for Palestinian refugees. Today, most of the patients served by AVH continue to be in social need and seeking life-saving specialized care.

After serving for many years as a secondary care hospital, AVH is now moving towards becoming a specialized center of medical excellence. In addition, AVH is building complementary community programs that support these specialties by promoting screening, early detection, and health education.

Specialty departments that account for the majority of work at the hospital are: The Cancer Care Center, the Hematology and Bone Marrow Transplantation Care Center, the Artificial Kidney Unit (dialysis), the Surgical Care and Ear, Nose, Throat Center, the Diabetes Care Center, the Specialized Center for Child Care, and the Skilled Nursing and Long-Term (Sub-Acute) Care Facility. These care centers provide specialized treatments that are not available in the majority of hospitals in Palestine.

AVH is the first and only hospital to provide radiation therapy for cancer patients in the Palestinian territories and is the only medical facility in the West Bank offering pediatric kidney dialysis. On a daily basis, these and other specialty services touch countless lives, both young and old, from communities across the Palestinian territories.

Finally, Augusta Victoria hospital (AVH) is the only non-governmental center to treat cancer patients. It depends on referrals of patients from the government. It has been located in Jerusalem since 1950, and work on a mix of charitable and private bases. Its capacity is 164 beds and has nine major departments; including the cancer center that has medical, surgical and radiation units. It treats all types of cancers and patients, including children (AVH, 2018).

4.4 Target Population

The population of this study was the husbands and adolescents of women with cancer, who were treated in Beit Jala Governmental Hospital in Bethlehem and Augusta Victoria Hospital in Jerusalem; which are the main cancer centers in Palestine.

Inclusion criteria:

1- Adolescents whose mother were treated for cancer in Beit Jala Governmental Hospital and AVH as in-patient or out patient
2- Husbands of women who were treated for cancer.
3- Both males and females ‘adolescents aged between 12-20 years old.
4- Adolescents and husband who lived in the same house with women with cancer.
5- The participants should be aware of the women diagnosis with cancer.

Exclusion treatment:

1- Adolescents or husbands who had severe mental disorders such as schizophrenia and severe depression.
2- Adolescents or husbands who did not live with women with cancer in the same house.

4.5 Sample size and sampling approach

Upon contacting the Palestinian Ministry of Health (MOH), the Palestinian Health Information Center, and the Palestinian Central Bureau of Statistics, there was scarcity of data or statistics available about the actual number of females with cancer either in the hospitals or in the MOH reports. So sample size was calculated depending on the Palestinian MOH annual reports for three years (2015, 2016, and 2017) as seen in the table (4.1). By subtracting all reported female cancer deaths from the total female cancers in these three years, an estimation of the total population was 3,394 patients.

Table (4.1): Numbers and percentages of total cancer cases and female cancer cases in the last three years in Palestine

Year	2015	2016	2017	Total
Total cancer cases	2400	2536	2923	7859
Total female cancer	1260	1330	1536	4126
Total death	208-	260-	264-	732-
Total population size	1052	1070	1272	3394

By using an online sample size calculator (Raosoft.com), and using the parameters of 0.05 significance level, 95% confidence level, and 50% response distribution, the sample size was 320 cases. Also, the participants were recruited over eight months (October 2017 to June 2018) from at Beit Jala Governmental Hospital and AVH.

Sampling approach

In the current study, convenience sampling was utilized. Convenience sampling is a non-probability sampling technique where the subjects were selected because of their convenient accessibility and proximity to the researcher (McClave & Sincich, 2006). Furthermore, using convenience sampling in the current study is not just only because it is easy to use, but because there was no formal statistics about the total population of the cancer that were treated in Beit-Jala Governmental Hospital and Augusta Victoria hospital.

The most obvious criticism about convenience sampling is sampling bias, and that the sample is not representative of the entire population so there are limitations for generalization of the findings (Hensly, 2006).

4.6 Study Instrument

The study tool consisted of three questionnaires, as shown in table (4.2) below. The first one was sociodemographic sheet to be filled in by the women with cancer, adolescents, and husbands. The second questionnaire was Beck Scale for Depression, and the third one was Templer Death Anxiety Scale (DAS) which was used to assess death anxiety. Both scales were translated into Arabic and English, and back translation was done.

Beck depression inventory BDI-II

It is an adequate screening tool for a depressive disorder. The BDI-II is a relevant psychometric instrument, showing high reliability, capacity to discriminate between depressed and non-depressed subjects, and improved concurrent, content, and structural validity. Based on available psychometric evidence, the BDI-II can be viewed as a cost-effective questionnaire for measuring the severity of depression, with broad applicability for research and clinical practice worldwide (Psiquiatr, 2013).

Beck Depression Inventory (BDI) was developed by Aaron T. Beck in the year 1996. BDI includes 21 items which were modified later and developed to measure the intensity and severity of depression symptoms (Beck, 1961). BDI-II was developed in 1996 to match the instrument with changes in diagnostic criteria for major depression disorder as DSM-IV was introduced.

The items assess sadness, pessimism, past failure, loss of pleasure, feeling of guilt, feeling of punishment, self-dislike, self-criticalness, suicidal thoughts or wishes, crying, agitation, loss of interest, indecisiveness, worthlessness, loss of energy, change in sleep pattern, tiredness or fatigue, change in appetite, weight loss, health worried, and loss of interest in sex. Items 1 to 13 assess psychological symptoms while items 14 to 21 assess physical symptoms. The participants were asked to consider each statement as it relates to the way they have felt for the past two weeks. There is a four-point scale for each item ranging from 0 to 3. The total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and 29-63 is severe (Beck et al, 1961).

Templer Death Anxiety Scale (DAS)

Templer Death Anxiety scale (Templer DAS) was developed by Templar in the year 1970 and it includes15 items. The items assess the following: absolute death anxiety, fear of patience and pain, death related thoughts; time passing and short life, and the fear of future. Answers are based on Yes-No options while each question has a score of one or zero. Thus, total score is between maximum 15 and minimum zero (Noureddine, 2008).

Templer's (1970) 15-item Death Anxiety Scale (DAS) has been used most frequently to measure death anxiety (Abdel-Khalek, 1991, 2005; Abdel-Khalek, Beshai, & Templer, 1993; Abdel Khalek & Omar, 1988; Donovan, 1993) The DAS is shown to be based on a two-factor model of death anxiety that includes psychological (internal) and life experience (external) factors related to death (Tomer, 1992).

Table (4.2) Instruments of the current study and the total count of their questions

No.	Instruments	Number of questions in each Instruments
1.	Three socio-demographic history sheets: For women For adolescents For husbands	 17 questions 12 questions 12 questions
2.	Templers death anxiety scale	15 questions
3.	Beck depression inventory BDI-II	21 questions

4.7 Reliability and Validity

Reliability

Reliability refers to the stability or consistency of information that is obtained when a measurement is performed more than once. It also can be defined as the degree to which an instrument yields the same data each time it used under the same conditions and with the same subjects (Polgar, 1997)To estimate the reliability of a measure there are two ways:

1. Test –retest reliability: the reliability coefficient obtained with repetition of the same measure on second occasion (Serkan, 2000).
2. Internal consistency of measures: it is an indicative of the homogeneity of the items in the measure that tap the construct. This can be seen by examining whether the items and the subset of items in the measuring instruments are highly correlated. The most popular test is Cronbach coefficient alpha. Where the higher the coefficient the better the measuring instrument (Sekaran, 2000).

Cronbach alpha was developed by lee Cronbach in 1951 to provide a measure of internal consistency of a test or scale; it is expressed as number between 0 and 1 Internal consistencies describe the extent to which all the items in attest measure the same concept or construct and hence it is connected to interrelatedness of the items with the test (Tavakol & dennick, 2011).

An alpha of 0.7 or above is normally considered to indicate a reliable set of items (Greasley, 2008; Awad et al, 2008). In this study, the overall Cronbach's Alpha reliability test was 0.79 and 0.89 for the Templer Death Anxiety Scale (DAS) and the Beck Depression Inventory (BDI), respectively. This gave the research tools a good degree of reliability, as seen in table (4.2) for detailed results.

Table (4.3): Internal reliability (Cronbach's Alpha test) of Templer Death Anxiety Scale (DAS) and Beck Depression Inventory (BDI)

Scale	No. of items	Cronbach's Alpha
DAS	15	0.79
BDI	21	0.89

Validity

Validity refers to the extent to which a questionnaire /or test measures what it purports to measure (Muller, 2012). Validity refers to the adequacy with which the method of measurement is able to measure the issues or phenomena under study (Abramson, 1999). Cook and Campbell (1979) defined validity as the best available approximation to the truth or falsity of given inference, proposition or conclusion.

Validity has many different types such as:

1- Criterion validity: a correlation coefficient between scores on a test and scores a criterion measure or standard, it involves determining the correlation between scores (Barker et al, 2002).
2- Construct validity: this tests link between the measure and the underlying theory. If a test constructs validity, you would expect to see a reasonable correlation with test measuring related areas (Shields, 2004).
3- Content validity: refers to how accurately an assessment or measurement tool taps into the various aspects of the specific construct in question. In other words, do the questions really assess the construct in question, or are the responses by the person answering the questions influenced by other factors (Study.com, 2019).

Content validity of the questionnaires in the current study was examined by a committee of 4 experts. Two of them hold doctoral degree (PhDs) in mental health, and both of them were from Al Quds University. Also, one psychiatrist from the Governmental Mental Hospital in Bethlehem, and another doctor from the oncology department of AVH were asked to review the study instruments. No changes were required by them regarding the language or the content for the scales.

4.8 Data collection process

After sending a formal letter to the Palestinian Ministry of Health, Beit-Jala Governmental Hospital administration explaining the purpose of the study, permission was granted on October 2017and also the same letter was sent to AVH.

Data collection process started from October 2017 to June 2018. The researcher trained two palliative care specialists from Al Sadeel Society to present during data collection to give support to the patients in the daycare unit and outpatients department if needed during explaining the study purpose to women with cancer.

The purpose of the study, the items of the questionnaire, the inclusion and exclusion criteria of the study and ethical considerations were discussed with women with cancer and these women who accepted to participate in the study passed the questionnaire to their adolescents and husbands. The adolescents and husband were given the option to fill in the questionnaire in Al Sadeel Society for Palliative Care in Bethlehem or in their home, and all the participants preferred to fill in the questionnaire in their homes. 320 questionnaires were distributed in day care unit and outpatient clinics during the treatment days. And (285) questionnaires were returned (201 adolescents and 84 husband) with a response rate of 89%. The process of data collection was not without difficulties. It took a long period of time over around 8 months. These difficulties were related to the fact that the target population was not easy to reach, as questionnaires were sent with mothers to adolescents and husbands at homes of women with cancer. Also, low levels of cooperation by adolescents and husbands were noticed, as the topic of depression and death anxiety are not easy topics to take and deal with by family members of women with cancer.

4.9 Data analysis

The data was analyzed by using the statistical package for Social Sciences (SPSS) version 18.0. The data were checked for entry errors (data clearance). The relationship between socio demographic data, Beck Depression Inventory Scale (BDI), and DAS scale were analyzed by the using parametric test such as frequency, T-test, ANOVAs test and Pearson test. The BDI questionnaire scoring consists of 21 questions, which are scored from 0 to 3 for each question totaling from 0 to 63 points as follows:

Minimal	0 -13
Mild	14 -19
Moderate	20 – 28
Severe	29 - 63

On the other hand, DAS questionnaire scoring consists of 15 questions, which are scored by 1 for true and 0 for false answers, leading to a scale from 0 to 15 points.

To determine the predictors of both continuous scale scores of death anxiety and depression, we developed a multiple linear regression models including all those variables that were found to be significant in the bivariate analysis and other potential suspected confounds. Separate model was developed for sons, daughters and husbands of the participated mothers.

4.10 Ethical consideration

Ethical approval was obtained from Al-Quds University. Before starting the survey, the proposal was also submitted to the Public Health Faculty at Al-Quds University and approval to conduct this study according to the thesis preparation guide of the Faculty of Graduate Studies was obtained.

The Palestinian Ministry of Health was formally approached via an introductory letter which presented information about the proposed study and its purpose, and their committee discussed the study proposed its instrument and then approval was given. Also, permission from the director of Beit-Jala Governmental Hospital and AVH was taken to conduct the study in the day care unit, outpatients' clinic and in patient ward.

First, the women with cancer were provided with the information sheet about the study including the aim of the study; objectives, procedures, and they were informed that they had the rights to refuse to participate in the study. Confidentiality and privacy were assured for all participants and they were informed that all information would be kept strictly confidential. In addition, data was protected and appropriately stored; all files were stored on computer and were protected by a password and nobody was allowed to access it except the researcher and the supervisor. No names or codes or any other mechanisms were used to trace responses back to an individual participant.

Finally, the women with cancer were approached individually and were asked for their permission to let their husbands and adolescents to participate in the study. They were asked to read the information sheet about the study, and to pass it their adolescents and husband. If they agreed to participate in the study, adolescents asked to come to Al Sadeel Palliative Care Institution to fill in the questionnaire unless they ask to fill it in their homes. Any adolescent or husbands who were found to have high levels of death anxiety (high concern to death) or depression (clinical depression) were informed and referred for treatment. A total of 57 participants (20%) were found to have high concerns of death and 57 participants (20%) were found to have clinical depression; all of them were given a referral paper to follow up with a psychologist or psychotherapist in their living area, for example those living in Hebron were referred to the Society of Aman Center for Counseling, Development and Community Health, Development and Health, and those living in Bethlehem were referred to The Guidance and Training Center for the Child and Family. All the participants filled in the questionnaire in their homes except the women filled it in the hospital.

4.11 Feasibility of the study

1- The researcher is an oncology nurse so she is familiar with dealing with cancer patient.
2- The researcher was very interested to conduct this study to help the families of patients with cancer.

4.12 Summary

- This chapter discussed the methodological framework of the study.
- It explored the study design and conduct in the study setting, as well as the targeted population to draw the needed samples from, including sample size calculation and the sampling approach.
- Further, it went over the study tools and instruments with a discussion of their validity and reliability.
- Later, data collection processes and data analysis techniques were presented. Finally, the ethical considerations and the feasibility of the study were discussed.

Chapter Five: Results

Chapter Five

Results

5.1 Introduction

As mentioned in previous chapter, a cross sectional method was utilized in this study. The total population consisted of 285 adolescents and husbands of 135 women with cancer at Beit Jala and Augusta Victoria Hospitals in Palestine. Data was collected by using the Death Anxiety Scale (DAS) and Beck Depression Inventory (BDI), in addition to the self-reported sociodemographic sheet.

This chapter presented the findings of the current study as the following:

1) The characteristics of the participants

2) The results of Death Anxiety Scale (DAS) and Beck Depression Inventory (BDI).

3) The relationship between the dependent and independent variables of the study.

Section One: The characteristics of the participants

The baseline data analysis showed that 285 respondents returned the questionnaires, with a response rate of 89%. Figure (5.1) below showed that 70.5 % (n=201) of the sample were adolescents, and 29.5% (n=84) were husbands.

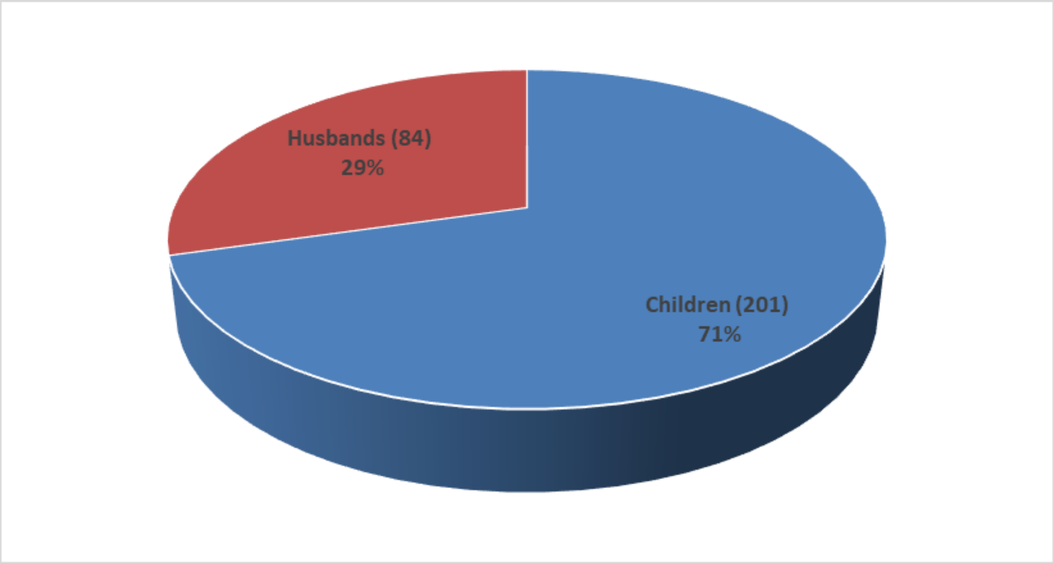

Figure (5.1): sample size details

5.2 Characteristics of women with cancer

The characteristics of women with cancer were assessed by two major variables. First, socio-demographic variable included age, educational level, place of residence, economic status, work, mother educational level, marital status, family size, and second, health related variables included cancer diagnosis type, stage of cancer, cancer treatment type, duration of cancer, duration of treatment, and hospital of care.

Table (5.1) below showed that the majority of the participants were from city; as 63.6 %(n=84) were from the city, and 36.4 %(n=48) were from the village. With regards to the marital status, the results revealed that the majority (95.5%, n=126) of the women were married, and 4.5% (n=6) were widows. The educational level of women was mainly less than 12 years (52.3% (n=69), while 47.7% (n=63) had completed more than 12 years.

Also, for economic status, it ranged from minimal income to more than 4000 NIS as shown in table (5.1). For example, 45.4% (n=60) of them had ≤1000 NIS to 2000 NIS, 25% (n=33) of them had >2000 – 3000 NIS, 20.5 %(n=27) had more than >3000 – 4000 NIS, and 9.1% (n=12) had more than 4000 NIS. For the family, the size distribution was medium between 5 and 8 (61.4%, n=81), and 20.4% (n=27) had small size between 1-4 and 18.2% (n=24) had large size more (than 8 members). The majority of women were not working (79.5%, n=105).

Table (5.1): Socio-demographic variables of women with cancer

Variables		Frequency	Percentage
Age	Mean (years)	46.9	---
	≤45 years	63	47.7
	>45 years	69	52.3
	Total	132	100
	Missing	3	2.2
Education	≤12 years	69	52.3
	> 12 years	63	47.7
	Total	132	100
	Missing	3	2.2
Place of residence	city	84	63.6
	village	48	36.4
	Total	132	100
	Missing	3	2.2

Table (5.1) cont.: Socio-demographic variables of women with cancer

Variables		Frequency	Percentage
Monthly income	≤1000 – 2000 NIS	60	45.4
	>2000 – 3000 NIS	33	25
	>3000 – 4000 NIS	27	20.5
	more than 4000 NIS	12	9.1
	Total	132	100
	Missing	3	2.2
Marital status	Married	126	95.5
	Widow	6	4.5
	Total	132	100
	Missing	3	2.2
Family size	20.4 (small)	27	20.4
	5-8 (medium)	81	61.4
	>8 (large)	24	18.2
	Total	132	100
	Missing	3	2.2
Work	Yes	27	20.5
	No	105	79.5
	Total	132	100
	Missing	3	2.2

For the health-related data of women as presented in table (5.2), the treatment type was classified into 5 groups; those who received chemotherapy, biological treatment, radiation therapy or surgery, and palliative and others. Findings showed that 47.7% (n=63) of the participants received chemotherapy, 11.4% (n=15) received biological treatment, and 4.5% (n=6) received palliative care, and 27.3% (n=36) received radiation therapy. Some patients answer others (9.1% (n=12).

Also, the sample was taken from inpatient department and outpatient clinics in both hospitals, and 97.7% (n=129) were from outpatient clinic and 2.3% (n=3) were from in-patient ward. For the stage of disease, 76% (n=84) were in early stage (1&2) and the rest of the sample (24%, n=27) were in late stage (3&4).

Farther, the participants were asked if they were ill for less than or equal to one year or more than one year. Findings showed that 72.7 % (n=96) of the participants reported that their cancer onset was less than or equal to one year, and 27.3% (n=36) reported more one year. Farther, the participants were asked about duration of treatment for cancer, and findings showed that 48.7% (n=63) were less than 3 months, 23.3% (n=30) were between 3 – 6 months and 28% (n=36) were more than 6 months. For the types of cancer, findings showed that 72.7% (n=96) of them had breast cancer, and 27.3% (n=36) other cancer types, such as lung and colon cancers.

Table (5.2): Clinical history of women with cancer

		Frequency	Percentage
Place of treatment	Beit Jala Hospital	117	86.7
	AVH	18	13.3
	Total	135	100
	Missing	0	0
Type of treatment	Chemotherapy	63	47.7
	Radiotherapy	36	27.3
	Palliative care	6	4.5
	Biological	15	11.4
	Other	12	9.1
	Total	132	100
	Missing	3	2.2
Department of care	Outpatient clinic	129	97.7
	In-patient ward	3	2.3
	Total	132	100
	Missing	3	2.2
Stage of disease	Early stage (1&2)	84	76
	Late stage (3&4)	27	24
	Total	111	100
	Missing	24	17.8
Duration of cancer diagnosis	≤ 1 year	96	72.7
	> 1year	36	27.3
	Total	132	100
	Missing	3	2.2
Duration of treatment for cancer	Less than 3 months	63	48.7
	3 – 6 months	30	23.3
	more than 6 month	36	28

	Total	129	100
	Missing	6	4.4
Type of cancer	Breast cancer	96	72.7
	Other cancer types	36	27.3
	Total	132	100
	Missing	3	2.2

5.3 Socio-demographic characteristics of adolescents

For the adolescents, the baseline data analysis showed that 201 adolescents returned the questionnaires; 50.7% (n=102) of them were males, and 49.3% (n=99) were females, as shown in table (5.3). Also, 32.2% (n=57) of them aged between 12 years old to 15 years old, 22.0% (n=39) were more than15 years old to 18 years old, and 45.8% (n=81) were more than18 years old to 20 years old; and the age group of the participants ranged from 12-20 years old.

The educational level of the participants ranged from illiteracy to university level as shown in table (5.3). For example, 29.9% (n=60) of them had primary education at most, 40.7% (n=82) had secondary education, and 29.4% (n=59) had a university education. Moreover, 86.9% (n=195) of the participant did not work, and only 13.1% (n=24) answered yes for work.

Table (5.3): Socio-demographic characteristics of adolescents

		Frequency	Percentage
Sex	Male	102	50.7
	Female	99	49.3
	Total	201	100
	Missing	0	0
Age	12-15	57	32.2
	>15-18	39	22.0
	>18-20	81	45.8
	Total	177	100.0
	Missing	24	1.2
Education	Primary	60	29.9
	Secondary	82	40.7
	University	59	29.4
	Total	201	100
	Missing	0	0
Work	Yes	24	13.1
	No	159	86.9
	Total	183	100
	Missing	18	9

5.4 Socio-demographic characteristics of husbands

For husbands, the age distribution showed that 45.5% were less than 50 years old and 54.5% were equal to or above 50 years old. For educational level, 55.6 % were less than or equal to 12 years of education and 44.4% were above 12 years of education. Also, 87.5% of them had work and 12.5 % of them did not as shown in table (Table: 5.4).

Table (5.4): Socio-demographic characteristics of husbands

		Frequency	Percentage
Age	<50 years	30	45.5
	≥50 years	36	54.5
	Total	66	100.0
	Missing	18	21.4
Educational level	≤12 years	45	55.6
	> 12 years	36	44.4
	Total	81	100.0
	Missing	3	3.6
Work	Yes	63	87.5
	No	9	12.5

5.5 Participants' perception of death fear and depression, source of support and coping mechanism

Women were asked about their perception of their family members' death fear and depression. When women were asked did you notice any signs of anxiety or fear of death on any of your adolescents, 59.5% (n=66) of them answered yes and 40.5% (n=45) answered no. Also, when they were asked did you notice signs of sadness or depression on any of your adolescents, 66.7% (n=72) of them answered "yes" and 33.3% answer "no "as shown in (Table 5.5).

Similarly, when women were asked did you notice signs of fear of death on your husband, 73.8% (n=93) answered yes, while 26.2 %(n=33) answered no. Further, they were asked; did you notice and signs of sadness or depression on your husband, 71.4% (n=90) answered yes, and

28.6% (n=36) answered no. Finally, women were asked if they felt afraid of death, and 68.2% answer no and 31.8% answered yes, as shown in (Table: 5.5) below.

Table (5.5): Women's perception of their family members anxiety and depression

		Frequency	Percentage
Did you notice signs of anxiety or fear of death on any of your adolescents?	Yes	66	59.5
	No	45	40.5
Did you notice signs of sadness or depression on any of your adolescents?	Yes	72	66.7
	No	36	33.3
Did you notice signs of anxiety or fear of death on your husband?	Yes	93	73.8
	No	33	26.2
Did you notice signs of sadness or depression on your husband?	Yes	90	71.4
	No	36	28.6
Do you feel afraid of death?	Yes	42	31.8
	No	90	68.2

In addition, adolescents were asked about their perception of sadness and fear of death related to their mother cancer as shown in (table: 5.6). For example, they were asked: Are you sad due to your mother cancer? And 89.6% (n=180) reported yes, while 10.4% reported no. Also they were asked: Are you afraid due to your mother cancer and 61.5% (n=120) reported yes, and 38.5% said no. Further, they were asked: Are you afraid of getting cancer due to your mother cancer?, 28.4 % (n=57) answered yes, and the majority (71.6%) (n=144) said no. Also, they were asked: Are you afraid of death due to your mother cancer?, 25.8 % (n=51) answered "yes", and the majority (74.2%) (n= 147) answered "no". Finally, they were asked if they seek counselling after their mother diagnosis cancer, and only 16.4 (n=33) answered "yes", and 83.6% said "no".

In addition, husbands were asked the same questions similar to the adolescents as seen in (table: 5.6) below. They were asked: Are you sad due to your wife cancer and 85.7 % (n=72) reported yes, while 14.3% reported no. Also, they were asked are you afraid due to your wife cancer? and 42.9% (n=42.9) reported" yes", and 57.1% said" no". Further question was are you afraid of getting cancer due to your wife cancer, and 25.9% (n=21) of them reported yes, while the majority (74.1%) (n=60) of them said no. Moreover, they were asked: Are you afraid of death due to your wife cancer? And 35.7% of them said yes, while the majority (64.3%) (n= 54) answered no. Finally, they were asked if they seek psychotherapy after their wives diagnosis of cancer, and only 14.8% (n=12) of them answered yes, while 85.2% said "no".

Table (5.6): Family members perception of sadness and fear in relation to the women cancer

		Husbands		adolescents	
		Frequency	Percentage	Frequency	Percentage
Are you sad due to your mother/wife cancer?	Yes	72	85.7	180	89.6
	No	12	14.3	21	10.4
	Total	84	100	201	100
	Missing	0	0	0	0
Are you afraid due to your mother/wife cancer?	Yes	36	42.9	120	61.5
	No	48	57.1	75	38.5
	Total	84	100	195	100
	Missing	0	0	6	3
Are you afraid of getting cancer due to your mother/wife cancer?	Yes	21	25.9	57	28.4
	No	60	74.1	144	71.6
	Total	81	100	201	100
	Missing	3		0	0
Are you afraid of death due to your mother/wife cancer?	Yes	30	35.7	51	25.8
	No	54	64.3	147	74.2
	Total	84	100	198	100
	Missing	0	0	3	1.5
Did you seek psycho-therapy after your mother/wife cancer?	Yes	12	14.8	33	16.4
	No	69	85.2	168	83.6
	Total	81	100	201	100
	Missing	3	3.5	0	0

The reasons that prevented the adolescents and husbands from seeking psychotherapy were investigated in this study. For example, 75% of husbands (n=54) reported they did not need psychotherapy, 16.6% (n=12) mentioned the economic situation of the family, 4.2% (n=3) said that psychotherapy was not effective in solving their problems, and 4.2% (n=3) reported other reasons but they did not specify them as seen in (table: 5.7) below.

For adolescents, 82.8% (n=159) reported that they did not need psychotherapy, 6.3% (n=12) mentioned the economic situation of the family, 3.1 % (n=6) said that psychotherapy was not effective in solving their problem, 3.1 % (n=6) reported other reasons but they did not mention them, and 4.7% (n=9) were unaware about treatment centers availability as seen in table (Table: 5.7) below.

Table (5.7): Family members’ perception of psychotherapy treatment.

Why don’t you seek psychotherapy?	Husbands		adolescents	
	Frequency	Percentage	Frequency	Percentage
unaware of treatment centers	0	0	9	4.7
I don't need psychotherapy	54	75	159	82.8
family economic situation	12	16.6	12	6.3
psychotherapy isn't effective in solving my problem	3	4.2	6	3.1
other	3	4.2	6	3.1
Total	72	100	192	100
Missing	12	0.14	9	0.04

In addition, the participants were asked how they dealt with their tension which resulted from death anxiety. For husbands, 78.5% (n=66) reported prayer, and reading The Holly Quran, and 21.5% (n=18) reported other activities such as sport, smoking, music, and stay alone. For the adolescents, 72.7% (n=144) reported prayer and reading Quran, and 27.3% (n=54) reported other activities such as sport, smoking, music, and stay alone, as shown in table (5.8) below.

Table (5.8): Family members’ practices against fear of death.

What do you do if you feel afraid of death?	Husbands		adolescents	
	Frequency	Percentage	Frequency	Percentage
Practice religion (pray, read Quran)	66	78.5	144	72.7
Do other activities (play sport, smoking, music, stay alone)	18	21.5	54	27.3
Total	84	100	198	100
Missing	0	0	3	1.5

Moreover, the participants were asked about the time when they felt afraid and anxious of death. For husbands, 19.2% (n=15) of them said all the time, 15.4% (n=12) said in the evening, 7.7% answered Sometimes, 34.6% (n=27) reported they did not feel afraid at all, and 23.1% of them did not answer as in table (5.9). For adolescents, 14.8% (n=27) of them reported all the time, 32.8% (n=60) said in the evening, 4.9% answered “sometimes”, 14.8% (n=27) reported they did not feel afraid at all, and 32.7% of them didn’t answer it (see table: 5.9).

Table (5.9): Family members’ perception of frequency of fear of death.

When do you feel afraid and anxious of death?	Husbands		adolescents	
	Frequency	Percentage	Frequency	Percentage
All the time	15	19.2	27	14.8
In the evening	12	15.4	60	32.8
Sometimes when I think of death	6	7.7	9	4.9
Not at all	27	34.6	27	14.8
Other	18	23.1	60	32.7
Total	78	100	183	100
Missing	6	0.07	18	0.09

Finally, the adolescents and husbands were asked to mention the one who took care of them, and 66.7% (n=54) of the husbands reported they cared of themselves, and 33.3% (n=27) reported that others took care of them, while 50% (n=99) of adolescents reported that they took care of themselves, and 50% reported that others took care of them as seen in table (5.10) below.

Table (5.10): Care provider for family members as they perceive it

		Frequency	Percentage
Care giver for the husbands	Caring of myself	54	66.7
	Other	27	33.3
	Total	81	100
	Missing	3	3.6
Care giver for the adolescents	Caring of myself	99	50
	Other	99	50
	Total	198	100
	Missing	3	1.5

Also, the participants were asked about the source of their support, and 69.3% of (n=54) of the husbands reported they supported themselves and 30.7% (n=) reported that they were supported by others. Further, 38.5 % (n=75) of adolescents said that they supported themselves, and the majority (61.5%, n=120) reported they were supported by others as shown in table (5.11) below.

Table (5.11): Support provider for family members as they perceive it

		Frequency	Percentage
Supporter for the husbands	Supporting myself	54	69.3
	Other	24	30.7
	Total	78	100
	Missing	6	0.07
Supporter for the adolescents	Supporting myself	75	38.5
	Other	120	61.5
	Total	195	100
	Missing	6	0.03

Section two: Results of Beck Depression Inventory (BDI) and death anxiety scale (DAS)

As mentioned previously, the sample consisted of two main participating groups; husbands and adolescents. Also, adolescents were further categorized as sons and daughters of women with cancer. These classifications were used in presenting the results as per the variances among the different subgroups on the scales measurements. This section presented the different results for depression and death anxiety.

5.6 Beck Depression Inventory scores

Table (5.12) showed the detailed frequencies and percentages of each question of the BDI scales as distributed among the sons. It showed mainly that the highest frequency in BDI questionnaire in sons at level 3 was for question “change in appetite” (18.2%), at level 2 was “Feeling of punishment” (20.6%), at level 1 was “Feeling of guilt” (42.4%), and at level 0 was “Suicidal thoughts or wishes” (97.1%). Also, it showed mainly that the lowest frequency in BDI questionnaire in sons at level 3 was for questions: the severity of sadness, past failure, feeling of punishment, self-dislike, agitation, and loss of interest in sex (0.0%), at level 2 was in questions :self-dislike, suicidal thoughts or wishes, crying, worthlessness, change in sleep pattern, change in appetite and health worried (0.0%), at level 1 was “suicidal thoughts or wishes” (2.9%), and at level 0 was “Feeling of guilt” (51.5%).

Table (5.12): The percentages and frequencies of questions of Beck Depression Inventory among **sons**.

#	**Beck Depression Questions**	Level 0		Level 1		Level 2		Level 3	
		freq	%	freq	%	freq	%	freq	%
B1	The severity of sadness	60	58.8	30	29.4	6	5.9	0	0
B2	Pessimism	84	82.4	9	9.1	3	3	3	3
B3	Past failure	78	76.5	15	14.7	6	5.9	0	0
B4	Loss of pleasure	75	73.5	15	14.7	6	5.9	6	5.9
B5	Feeling of guilt	51	51.5	42	42.4	3	3	3	3
B6	Feeling of punishment	66	64.7	15	14.7	21	20.6	0	0
B7	Self-dislike	87	85.3	12	11.8	0	0	0	0
B8	Self-criticalness	72	72.7	15	15.2	6	6.1	6	6.1
B9	Suicidal thoughts or wishes	99	97.1	3	2.9	0	0	0	0
B10	Crying	87	90.6	6	6.3	0	0	3	3.1
B11	Agitation	84	84.8	9	9.1	6	6.1	0	0
B12	Loss of interest	69	67.6	24	23.5	3	2.9	6	5.9
B13	Indecisiveness	78	76.5	6	5.9	9	8.8	9	8.8
B14	Worthlessness	87	87.9	3	3	0	0	9	9.1
B15	Loss of energy	60	62.5	18	18.8	12	12.5	6	6.3
B16	Change in sleep pattern	78	81.3	9	9.4	0	0	9	9.4
B17	Tiredness or fatigue	75	75.8	15	15.2	3	3	6	6.1
B18	Change in appetite	63	63.6	18	18.2	0	0	18	18.2
B19	Weight loss	66	71	18	19.4	6	6.5	3	3.2
B20	Health worried	81	84.4	6	6.3	0	0	9	8.8
B21	Loss of interest in sex	72	85.7	3	3.6	9	8.8	0	0
Range of symptom		58-97		2.9-42		0-20.6		0-18.2	

Also, table (5.13) showed the detailed frequencies and percentages of each question of the BDI scales as distributed among the daughters. It showed mainly that the highest frequency in BDI questionnaire in daughters at level 3 was for questions “B10: crying” and “B16: Change in sleep pattern” (18.2%), at level 2 was “B15: Loss of energy” (18.2%), at level 1 was “B5: Feeling of guilt” (45.5%), and at level 0 was “B14: Worthlessness” (90.9%). Also, it showed mainly that the lowest frequency in BDI questionnaire in daughters at level 3 was for questions: B9: Suicidal thoughts or wishes, B14: Worthlessness, and B18: Change in appetite (0.0%), at level 2 was in questions: B8: Self-criticalness, B9: Suicidal thoughts or wishes, and B18: Change in appetite (0.0%), at level 1 was “B14: Worthlessness” (3%), and at level 0 was “B5: Feeling of guilt” (45.5%). So, in general more than 50% had a level 0 for most of symptoms, less than 42% of level 1, less than 20% level 2, and less than 18% level 3.

Table (5.13): The percentages and frequencies of questions of Beck Depression Inventory among **daughters**

#	**Beck Depression Questions**	Level 0		Level 1		Level 2		Level 3	
		freq	%	freq	%	freq	%	freq	%
B1	The severity of sadness	45	45.5	42	42.4	6	6.1	6	6.1
B2	Pessimism	63	63.6	21	21.2	6	6.1	9	9.1
B3	Past failure	78	78.8	6	6.1	12	12.1	3	3
B4	Loss of pleasure	60	60.6	30	30.3	3	3	6	6.1
B5	Feeling of guilt	45	45.5	45	45.5	3	3	6	6.1
B6	Feeling of punishment	75	75.8	9	9.1	9	9.1	6	6.1
B7	Self-dislike	78	78.8	12	12.1	3	3	3	3
B8	Self-criticalness	60	60.6	24	24.2	12	12.1	3	3
B9	Suicidal thoughts or wishes	87	90.6	9	9.4	0	0	0	0
B10	Crying	69	69.7	12	12.1	0	0	18	18.2
B11	Agitation	48	48.5	33	33.3	6	6.1	12	12.1
B12	Loss of interest	51	51.5	30	30.3	15	15.2	3	3
B13	Indecisiveness	66	66.7	15	15.2	9	9.1	9	9.1
B14	Worthlessness	90	90.9	3	3	6	6.1	0	0
B15	Loss of energy	51	51.5	27	27.3	18	18.2	3	3
B16	Change in sleep pattern	48	48.5	30	30.3	3	3	18	18.2
B17	Tiredness or fatigue	51	51.5	33	33.3	3	3	12	12.1
B18	Change in appetite	63	63.6	24	24.2	3	3	9	9.1
B19	Weight loss	66	68.8	30	31.3	0	0	0	0
B20	Health worried	60	62.5	27	28.1	3	3.1	6	6.3
B21	Loss of interest in sex	63	80.8	6	7.7	6	7.7	3	3.8
Range of symptom		45.5-90.9		3-45.5		0-18.2		0-18.2	

Further, table (5.14) showed the detailed frequencies and percentages of each question of the BDI scales as distributed among the husbands. It showed mainly that the highest frequency in BDI questionnaire in husbands at level 3 was for questions “B17: tiredness or fatigue” (14.3%), at level 2 was “B16: change in sleep pattern” (14.3%), at level 1 was for questions: B2: pessimism, B5: feeling of guilt, B16: change in sleep pattern, B19: weight loss, and B21: loss of interest in sex (21.4%), and at level 0 was “B9: suicidal thoughts or wishes” (100%). Also, It showed mainly that the lowest frequency in BDI questionnaire in husbands at level 3 was for questions B1: the severity of sadness, B2: pessimism, B3: past failure, B4: loss of pleasure, B7: self-dislike, B8: self-criticalness, B9: suicidal thoughts or wishes, B12: loss of interest, B13: indecisiveness, B14: worthlessness, B16: change in sleep pattern, B18: change in appetite and B19: weight loss (0.0%), at level 2 was in questions: B6: feeling of punishment, B7: self-dislike, B9: suicidal thoughts or wishes, B11: agitation, B12: loss of interest, B14: worthlessness, B17: tiredness or fatigue and B18: change in appetite (0.0%), at level 1 was for questions: B3: past failure, B7: self-dislike, B9: suicidal thoughts or wishes (0%), and at level 0 was “B1: the severity of sadness” (50%).

Table (5.14): The percentages and frequencies of questions of Beck Depression Inventory among **husbands**.

#	**Beck Depression Questions**	Level 0		Level 1		Level 2		Level 3	
		freq	%	freq	%	freq	%	freq	%
B1	The severity of sadness	42	50	36	42.9	6	7.1	0	0
B2	Pessimism	63	75	18	21.4	3	3.6	0	0
B3	Past failure	81	96.4	0	0	3	3.6	0	0
B4	Loss of pleasure	72	85.7	9	10.7	3	3.6	0	0
B5	Feeling of guilt	60	71.4	18	21.4	3	3.6	3	3.6
B6	Feeling of punishment	66	84.6	6	7.7	0	0	6	7.7
B7	Self-dislike	78	92.9	0	0	0	0	0	0
B8	Self-criticalness	60	71.4	12	14.3	3	3.6	0	0
B9	Suicidal thoughts or wishes	75	100	0	0	0	0	0	0
B10	Crying	60	80	3	4	3	4	9	12
B11	Agitation	54	72	12	16	0	0	9	12
B12	Loss of interest	66	88	9	12	0	0	0	0
B13	Indecisiveness	60	80	9	12	6	8	0	0
B14	Worthlessness	72	96	3	4	0	0	0	0
B15	Loss of energy	60	71.4	12	14.3	9	10.7	3	3.6
B16	Change in sleep pattern	60	71.4	12	14.3	12	14.3	0	0
B17	Tiredness or fatigue	54	64.3	18	21.4	0	0	12	14.3
B18	Change in appetite	63	75	12	14.3	9	10.7	0	0
B19	Weight loss	57	67.9	15	17.9	9	10.7	3	3.6
B20	Health worried	63	75	18	21.4	3	3.6	0	0
B21	Loss of interest in sex	57	67.9	18	21.4	6	7.1	3	3.6
Range of symptom		50-100		0-42.9		0-14.3		0-14.3	

In addition, depression was assessed by using Beck Depression Inventory Scale which included 21 items. The findings showed that the overall mean score of depression among the whole sample was 8.67 scale points as shown in table (5.16). When comparing adolescents with husbands mean scores, it showed a significant difference (p= 0.03) between adolescents and husbands (9.46 and 6.79 points; respectively).

Also, the depression scores were classified into 4 categories: Minimal, mild, moderate, and severe. Frequency and percentage were used to assess the levels of depression among the participants. The depression severity data at the baseline revealed that 75.7% (n=216) of all participants had minimal depression, 13.7% (n=39) had mild depression symptoms, 3.2% (n=9) had moderate depression symptoms, and 7.4% (n=21) had severe depression symptom.

Comparing the two sub-groups, the results showed that moderate and severe depression were more frequent in adolescents than in husbands (12% and 7.1%, respectively).

Table (5.16): Beck Depression Inventory scores for overall scale and among adolescents and husbands.

	Overall			adolescents			Husbands		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Total / overall scale	285	100	8.67 (9.9)	201	100	9.46* (10.3)	84	100	6.79 (8.5)
1. Minimal Depression (0-13)	216	75.7		144	71.6		72	85.8	
2. Mild Depression (14-19)	39	13.7		33	16.4		6	7.1	
3. Moderate Depression (20-28)	9	3.2		9	4.5		0	0	
4. Severe Depression (29-63)	21	7.4		15	7.5		6	7.1	

*significant difference between adolescents and husbands; t-test p-value =0.03

Also as seen in table (5.17) below, when comparing the three subgroups, findings showed statistically a significant difference (p= 0.01) in the mean depression scores in relation to daughters (mean= 11.4). Depression symptoms for the four depression levels findings were as follows: 79.4% (n=81) of sons had minimal, 14.7% (n=15) of them had mild depression symptoms, 0% (n=0) had moderate depression symptoms and 5.9% (n=6) had severe depression symptoms. Also, 63.6% (n=63) of daughters had minimal depression, 18.2% (n=18) had mild, 9.10% (n=9) had moderate depression symptoms, and 9.1% (n=9) had severe depression symptoms. Moreover, 85.8% (n=72) of husbands had minimal depression symptoms, 7.1% (n=6) had mild depression symptoms, 0% (n=0) had moderate depression symptoms, and 7.1% (n=6) had severe depression symptoms.

Table (5.17): Beck Depression Inventory scores among sample sub-groups.

	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Total / overall scale	102	100	7.62 (9.2)	99	100	11.36* (11.0)	84	100	6.79 (8.5)
1. Minimal Depression	81	79.4		63	63.6		72	85.8	
2. Mild Depression	15	14.7		18	18.2		6	7.1	
3. Moderate Depression	0	0		9	9.1		0	0	
4. Severe Depression	6	5.9		9	9.1		6	7.1	

*significant difference between daughter and both son & husband; ANOVA post-hoc analysis p-value =0.01

For significant depression score, it was considered at the cut-off point of 16 scale points. Table (5.18) below showed that up to 20% (n=57) of the whole sample had clinical depression symptoms. When comparing adolescents and husbands it showed no significant difference (p=0.16) in clinical depression, as 22.4% of adolescents had clinical depression symptoms, while it was 14.3% for husbands.

Table (5.18): Clinical Depression prevalence among overall sample, adolescents and husbands.

Cutoff point	Overall			Adolescents			Husbands		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
No Clinical Depression (<16 points)	228	80	1.2 (0.4)	156	77.6	1.22 (0.42)	72	85.7	1.14 (0.35)
Clinical Depression (≥16 points)	57	20		45	22.4		12	14.3	
Total	285	100		201	100		84	100	

*No significant difference between adolescents and husbands; χ^2p-value =0.16

On the other hand, when comparing the three sub-groups (son, daughter and husband), results revealed highly significant (p<0.01) difference in the prevalence of clinical depression. It showed that 33.3% of daughters had significant depressive symptom, while no difference between sons and husbands was found (11.8% and 14/3%; respectively) (table: 5.19).

Table (5.19): Clinical Depression prevalence among sons, daughters and husbands.

Cutoff point	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
No Clinical Depression (<16 points)	90	88.2	1.12 (0.32)	66	66.7	1.33 (0.47)	72	85.7	1.14 (0.35)
Clinical Depression (≥16 points)	12	11.8		33	33.3*		12	14.3	
Total	102	100		99	100		84	100	

*Significant difference between daughter and both son & husband; χ^2 p-value <0.01

Finally, the BDI questionnaire also was classified according to physical and psychological symptoms of depression, by considering the questions (b14,b15,b16,b17,b18,b19,b20,b21) for the physical symptoms and the questions (b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13) for the psychological symptoms. The overall mean score of psychological symptoms of depression was higher than that of the physical symptoms (mean= 5.0 and 3.6; respectively) for the whole sample, as shown in table (5.20). When comparing adolescents and husbands, it showed highly significant difference (p<0.01) in psychological symptoms in adolescents (mean= 5.8), compared to husbands (mean= 3.3).

Table (5.20): Depression symptoms types and SD among overall sample, adolescents and husbands.

Depression Symptoms	Overall			adolescents			Husbands		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Psychological symptoms	285	5.0	6.1	201	5.8*	6.5	84	3.3	4.6
Physical symptoms	285	3.6	4.1	201	3.7	4.3	84	3.2	3.5

*Significant difference between adolescents and husband; t-test p-value <0.01

On the other hand, when comparing the three sub-groups (son, daughter and husband) as shown in table (5.21), results revealed a highly significant (p<0.01) difference in the mean score of psychological symptoms of depression in daughters (mean= 7.2), while no statistically significant difference between sons and husbands was found (mean= 4.4 and 3.3; respectively).

Table (5.21): Depression symptoms average and SD among sons, daughters and husbands.

Depression Symptoms	Son			Daughter			Husband		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Psychological symptoms	102	4.4	5.2	99	7.2*	7.5	84	3.3	4.6
Physical symptoms	102	3.2	4.5	99	4.2	4.0	84	3.2	3.5

*significant difference between daughter and both son & husband; ANOVA post-hoc analysis p-value <0.01

5.7 Templer Death Anxiety Scale related findings

In order to examine and to assess death anxiety indicator, the responses of the 15 items were transformed to scores using 0/1 scale. The answer that is consistent with the positive direction for the indicator was given the number “1” and the answer that is in the opposite direction of the indicator was given the number “0”.

Table (5.15) showed the detailed frequencies and percentages of each question of Templer Death Anxiety Scale for the sample sub groups, as distributed among the sons. It showed mainly that the highest frequency of false answers in DAS questionnaire in sons was for question “I am very much afraid to die” and “I shudder when I hear people talking about a World War III” (82.4%), and the highest frequency of true answers in DAS questionnaire in sons was for question “It doesn’t make me nervous when people talk about death” (76.5%) while lowest answers of false was in question “It doesn’t make me nervous when people talk about death” (23.5%),and the lowest answers of true was in question “The subject of life after death troubles me greatly” (24.2%).

For daughters, it showed mainly that the highest frequency of false answers in DASS questionnaire in daughters was for question “I am really scared of having a heart attack” (84.8%), and the highest frequency of true answers in DAS questionnaire in daughters was for question “It doesn’t make me nervous when people talk about death” (75.8%) while lowest answers of false was in question “It doesn’t make me nervous when people talk about death” (24.2%),and the lowest answers of true was in question “I am very much afraid of dying” (17.6%).

Finally, for husbands, it showed mainly that the highest frequency of false answers in DAS questionnaire in husbands was for question “It doesn’t make me nervous when people talk about death” (88.9%), and the highest frequency of true answers in DAS questionnaire in husbands was for question “It doesn’t make me nervous when people talk about death” (85.7%) while lowest answers of false was in question “It doesn’t make me nervous when people talk about death” (14.3%),and the lowest answers of true was in question “I am very much afraid of dying” (11.1%).

Table (5.15): The percentages and frequencies of questions of Templer Death Anxiety Scale among sample groups.

		Son				Daughter				Husband			
#	DAS Question	False		True		False		True		False		True	
		N	%	N	%	N	%	N	%	N	%	N	%
T1	I am very much afraid of dying	84	82.4	18	17.6	81	84.4	15	15.6	72	88.9	9	11.1
T2	The thought of death seldom enters my mind	30	30.3	69	69.7	27	27.3	72	72.7	27	34.6	51	65.4
T3	It doesn't make me nervous when people talk about death	24	23.5	78	76.5	24	24.2	75	75.8	12	14.3	72	85.7
T4	I dread to think about having to have an operation	69	67.6	33	32.4	57	57.6	42	42.4	60	74.1	21	25.9
T5	I am not at all afraid to die	42	41.2	60	58.8	39	39.4	60	60.6	30	37	51	63
T6	I am not particularly afraid of getting cancer	39	38.2	63	61.8	39	39.4	60	60.6	18	21.4	66	78.6
T7	The thought of death never bothers me	42	41.2	60	58.5	39	39.4	60	60.6	21	25	63	75
T8	I am often distressed by the way time flies so very rapidly	81	79.4	21	20.6	39	39.4	60	60.6	39	46.4	42	51.9
T9	I fear dying a painful death	39	38.2	63	61.8	36	36.4	63	63.6	39	48.1	42	51.9
T10	The subject of life after death troubles me greatly	75	75.8	24	24.2	57	59.4	39	40.6	54	66.7	27	33.3

Table (5.15) cont.: The percentages and frequencies of questions of …

		Son				Daughter				Husband			
#	DAS Question	False		True		False		True		False		True	
		N	%	N	%	N	%	N	%	N	%	N	%
T11	I am really scared of having a heart attack	66	64.7	36	35.3	84	84.8	15	15.2	51	63	30	37
T12	I often think about how short life really	33	33.3	66	66.7	39	40.6	57	59.4	24	30.8	54	69.2

	is.												
T13	I shudder when I hear people talking about a World War III	84	82.4	18	17.6	63	63.6	36	36.4	66	81.5	15	18.5
T14	The sight of a dead body is horrifying to me	60	60.6	39	39.4	33	33.3	66	66.7	63	77.8	18	22.2
T15	I feel that the future holds noting for me to fear	45	44.1	57	55.9	51	51.5	48	48.5	24	28.6	60	71.4

Also, the 15-items Templar Death Anxiety Scale (DAS) was used to measure the level of death anxiety and the results presented in table (5.22) in terms of frequency, percentage, mean and standard deviation (SD). The total scores of this scale ranged from 0-15 and the higher scores indicated higher level of death anxiety. In general, this study showed that the overall mean scores of death anxiety among participants was 5.4 indicating that the concern of death among the study participants was below average. Also, the analysis revealed a statistically significant difference (p=0.02) between adolescents and husbands (5.7 and 4.6; respectively).

Further, the scale was divided into three categories as shown in table (5.22) as the following: 0-6= absence level of anxiety, 7-8= average level of anxiety, and 9-15= high concern of anxiety. Results showed that 62.1% of participants (n=177) had absence of death anxiety, 17.9% (n=51) of them had concerns of death, and 20.0% (n=57) had high concern to death. For the adolescents the results showed that 59.7% (n=120) of them had absence of death anxiety, 19.4% (n=39) of them had concerns of death, and 20.9% (n=42) had high concern to death. For the husbands, the results showed that 67.8% (n=57) of them had absence of death anxiety, 14.3% (n=12) had concerns of death, and 17.9% (n=15) had high concern to death.

Table (5.22): Templer Death Anxiety Scale categories, average and SD among overall sample, adolescents and husbands.

DAS categories	Overall			adolescents			Husbands		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Death Anxiety overall score (T1-T15)	285	100	5.4 (3.5)	201	100	5.7* (3.4)	84	100	4.6 (3.7)
1. Absence of death anxiety (T1-T6)	177	62.1		120	59.7		57	67.8	

2. Concerns of death(T7-T8)	51	17.9		39	19.4		12	14.3	
3. High concern to death (T9-T15)	57	20.0		42	20.9		15	17.9	

*significant difference between adolescents and husbands; t-test p-value =0.02

On the other hand, when comparing the three sub-groups (son, daughter and husband) as shown in table (5.23), results revealed highly significant difference (ANOVA p= 0.01), and Tukey post-hoc analysis of the ANOVA test showed significant difference ($p < 0.05$) between the subgroups in the mean score of death anxiety overall score in daughters (mean= 6.2), while no significant difference between sons and husbands was found (mean= 5.3 and 4.6 respectively). DAS categories analysis among the subgroups revealed that 24.2% of daughters had high concern of death, while sons and husbands had lower percentages than daughters (17.6% and 17.9%; respectively).

Table (5.23): Templer Death Anxiety Scale categories, average and SD among sons, daughters and husbands.

DAS categories	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Death Anxiety overall score (T1-T15)	102	100	5.29 (3.3)	99	100	6.18* (3.4)	84	100	4.6 (3.7)
1. Absence of death anxiety (T1-T6)	69	67.7		51	51.6		57	67.8	
2. Concerns of death (T7-T8)	15	14.7		24	24.2		12	14.3	
3. High concern to death (T9-T15)	18	17.6		24	24.2		15	17.9	

*significant difference between daughter and husband; ANOVA p-value=0.01 and Tukey post-hoc analysis p-value=0.01

Finally, the five major themes of death anxiety scale as seen in table (5.24): absolute death anxiety, fear of patience and pain, death related thoughts, time passing and short life and fear of future were assessed. Each death anxiety theme was assessed by 2-4 questions. Three themes (absolute death anxiety, death related thoughts, and time passing and short life) were assessed by three questions, one theme (fear of patience and pain) was assessed by four questions, and the last one (fear of future) was assessed by two questions.

Analyzing the mean scores of each theme revealed that the highest mean scores were for the fear of patience and pain in sons (mean 1.68 ± 1.28), in daughters (mean 1.61 ± 1.11) and in husbands (mean 1.37 ± 1.26). The lowest mean scores of death anxiety were for the fear of future theme in sons (mean 0.62 ± 0.65), in daughters (mean 0.88 ± 0.81) and in husbands (mean 0.48 ± 0.57). More importantly, table (5.24) presented a high statistical significance (p<0.01) between the subgroups in different themes. Daughters significantly have higher mean scores than sons and husbands in the themes "Death related thoughts" and "Fear of future" (1.28 and 0.88; respectively), while both husbands and daughters have significantly higher mean scores than sons in the theme "Time passing and short life" (1.6 and 1.5; respectively).

Table (5.24) The five major themes of Death Anxiety Scale among sons, daughters and husbands.

		Son		Daughter		Husband		ANOVA p-value
DAS Themes	Questions	Mean	SD	Mean	SD	Mean	SD	
1. Absolute death anxiety	(1,5,7)	1.0	1.14	0.97	1.11	0.74	1.05	0.24
2. Fear of patience and pain	(4,6,9,11)	1.68	1.28	1.61	1.11	1.37	1.26	0.22
3. Death related thoughts	(3,10,14)	0.84	0.91	1.28*	0.98	0.70	0.94	<0.01
4. Time passing and short life	(2,8,12)	1.19*	0.77	1.5	0.87	1.6	0.9	<0.01
5. Fear of future	(13,15)	0.62	0.65	0.88*	0.81	0.48	0.57	<0.01

*significant difference; post-hoc analysis p-value <0.05

5.8 Section Three: The relationship between the dependent and independent variables

This section described the relationships between the socio-demographic of all the participants, women with cancer health related variables, and Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score. Statistical analysis was done using T-test, one-way analysis of variance (One Way ANOVA) and post hoc analysis using Tukey test to determine the significant categories of the variables, Chi square, and non-parametric tests; when needed.

The statistical analyses revealed statistically significant relationship between some sociodemographic variables and the Beck Depression Inventory (BDI) and Templer Death Anxiety Scale (DAS) in sons as shown in table (5.25) below. Higher significant depression mean scores were seen in age group >15-18 years (M=9.33; p=0.001), monthly income group of >4000 NIS (M=20.25 p<0.01), and not working son and mother (M=7.88, p=0.04 and M=9, p=0.02;

respectively). However, there were no statistically significant relationships between BDI scores and the other demographic variables such as education, place of residence, mother education, and mother marital status. Tukey post-hoc analysis of the ANOVA test showed significant difference ($p < 0.05$) in the subgroups of age group >15-18 years and monthly income group of >4000 NIS.

Also, higher significant death anxiety mean scores were seen in those living in village (M=6.55; p<0.01), monthly income group of >4000 NIS (M=8.0 p<0.01), not working (M=5.81, p=0.04), and sons of less educated mothers (M=6.05, p=0.01). However, there were no statistically significant relationships between DAS scores and the other demographic variables such as age, education, mother marital status, and mother work (table: 5.25). Tukey post-hoc analysis of the ANOVA test showed significant difference ($p < 0.05$) in the subgroups of monthly income group of >4000 NIS.

Table (5.25): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **sons** and the demographic factors of the sample

Variables		BDI score			DAS score		
		Mean	test	P-value	Mean	test	P-value
Age	12-15 yrs	5.46	9.6	0.001	5.46	2.2	0.13
	>15-18 yrs	9.33*			5.33		
	>18-20 yrs	3.45			4.18		
Education	primary	6.07	1.21	0.30	5.67	0.53	0.59
	Secondary	9.21			5.09		
	University	8.30			4.87		
Place of residence	city	9.24	-1.64	0.10	4.90	-3.07	<0.01
	village	4.91			6.55		
Monthly income (NIS)	≤ 2000	4.33	11.62	<0.01	4.50	5.89	<0.01
	>2000 –3000	7.89			6.56		
	>3000 –4000	6.29			4.29		
	> 4000	20.25*			8.00*		
Work	No	8.77	2.94	0.04	5.81	2.95	0.04
	Yes	4.17			4.00		
Mother Education	≤ 12 years	9.14	2.50	0.34	6.05	2.90	0.01
	> 12 years	5.09			4.36		
Mother Marital status	Married	7.58	-5.46	0.13	5.45	-1.55	0.29
	Widow	13.00			6.00		
Mother Work	No	9.00	3.23	0.02	5.42	-0.26	0.79
	Yes	4.00			5.63		

*post-hoc Tukey analysis p-value <0.05

Moreover, the statistical analyses revealed significant relationship between some sociodemographic variables and the scales scores in daughters as shown in table (5.26) below.

Higher significant depression mean scores were seen in age groups >15yrs (M=13.57 and 13.63; p=0.001), those living in village (M=14.25 p<0.01), monthly income groups of 2000-4000 NIS (M=14.8 p<0.01), 2000-4000 NIS (M=14.8 p<0.01),had less educated mother (M=12.0 p=0.01), widow mother (M=20.0 p=0.01), and not working mother (M=11.81 p<0.01). However, there were no statistically significant relationships between BDI scores and the demographic variables of education. Tukey post-hoc analysis of the ANOVA test showed significant difference (p < 0.05) in the subgroups of age group 12-15 years and monthly income group of >4000 NIS.

Also, higher significant death anxiety mean scores were seen in age group 12-15 years (M=8.67; p<0.01), and monthly income group of 2000-3000 NIS (M=7.2 p=0.02). However, there were no statistically significant relationships between DAS scores and the other demographic variables such as education, residence, mother education, marital status, and work (table: 5.26). Tukey post-hoc analysis of the ANOVA test showed significant difference (p < 0.05) in the subgroups of age group 12-15 years and monthly income group of less than or equal to 2000 NIS.

Table (5.26): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **daughters** and the demographic factors of the sample

Variables		BDI score			DAS score		
		Mean	test	P-value	Mean	test	P-value
Age	12-15 yrs	4.50*	5.1	0.001	8.67*	6.9	0.004
	>15-18 yrs	13.57			5.14		
	>18-20 yrs	13.63			5.88		
Education	primary	8.60	0.56	0.57	7.20	2.10	0.13
	Secondary	12.00			6.50		
	University	11.67			5.33		
Place of residence	city	7.89	-2.79	<0.01	6.28	-0.19	0.85
	village	14.25			6.42		
Monthly income (NIS)	≤ 2000	8.38	8.49	<0.01	4.75*	3.56	0.02
	>2000 –3000	14.78			7.22		
	>3000 –4000	14.86			5.86		
	> 4000	1.50*			7.67		
Work	No	11.22	-2.04	0.04	6.07	0.40	0.69
	Yes	21.00			5.50		
Mother Education	≤ 12 years	12.00	1.45	0.01	6.00	-0.97	0.33
	> 12 years	8.64			6.71		

Mother Marital status	Married	10.10	-8.37	0.01	6.24	-7.37	0.09
	Widow	20.00			9.00		
Mother Work	No	11.81	1.84	<0.01	6.00	-1.40	0.16
	Yes	7.22			7.11		

*post-hoc Tukey analysis p-value <0.05

Likewise, the statistical analyses revealed significant relationship between some sociodemographic variables and the scales scores in husbands as shown in table (5.27) below. There were no statistically significant relationships between BDI scores and all demographic variables of husbands. However, higher significant death anxiety mean scores were seen in those living in village (M=5.45, p=0.03). ANOVA test showed significant difference (p< 0.05) in the subgroups of monthly income groups of >3000-4000 NIS (M=1.75, p=0.01), not working (M=7.0, p=0.03), and having a working wife (M=7.0; p=0.01). Tukey post-hoc analysis of the ANOVA test showed significant difference (p< 0.05) in the subgroups of monthly income group of 3000-4000 NIS.

Table (5.27): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **husbands** and the demographic factors of the sample

Variables		BDI score			DAS score		
		Mean	test	P-value	Mean	test	P-value
Age	<50 years	5.40	0.80	0.42	5.00	0.77	0.44
	≥50 years	4.33			4.33		
Education	≤ 12 years	7.93	1.213	0.23	5.20	1.181	0.24
	> 12 years	5.58			4.25		
Place of residence	city	6.56	-0.27	0.79	4.19	-2.12	0.03
	village	7.09			5.45		
Monthly income (NIS)	≤ 2000	7.71	1.71	0.64	5.21	11.8	0.01
	>2000 – 3000	4.14			4.43		
	>3000 – 4000	3.25			1.75*		
	> 4000	16.5			8.00		
Work	No	9.33	0.62	0.54	7.00	2.11	0.03
	Yes	7.33			4.90		
Wife Education	≤ 12 years	6.69	-0.08	0.93	4.77	0.15	0.88
	> 12 years	6.86			4.64		
Wife Work	No	6.68	-0.21	0.84	4.18	-2.69	0.01
	Yes	7.20			7.00		

*post-hoc Tukey analysis p-value <0.05

5.9 The relationship between health-related variables and the sociodemographic variables of the participants.

In table (5.28), the statistical analyses revealed significant relationship between health-related variables and the scales scores in sons. For depression only higher significant depression mean scores were seen in sons of mothers with late stage cancer (M=11.38; p=0.04). However, there were no statistically significant relationships between BDI scores and the other health variables as seen in table (5.28).

As well, for death anxiety higher significant death anxiety mean scores were seen in sons of mothers who were treated by radiotherapy and were on treatment for 3-6 months (M=7.36, p<0.01 and M=7.63, p<0.01; respectively). Nevertheless, there were no statistically significant relationships between DAS scores and the other health related such as place of treatment, treatment type, duration of treatment for cancer, duration of diagnosis stage of disease, and type of cancer (Table: 5.28). Tukey post-hoc analysis of the ANOVA test showed significant difference (p< 0.05) in the subgroups of treatment by radiotherapy and treatment for 3-6 months.

Table (5.28): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **sons** with the mother cancer history

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Place of treatment	BJGH	8.78	2.39	0.20	5.00	-1.29	0.20
	AVH	5.18			5.91		
Treatment type	Chemotherapy	4.62	3.32	0.11	4.00	5.39	<0.01
	Radiotherapy	11.91			7.36*		
	Palliative care	11.00			5.00		
	Other	6.00			5.25		
	Biological	5.50			5.50		
Duration of treatment for cancer	< 3 months	10.29	2.78	0.07	5.00	7.90	<0.01
	3 - 6 months	5.88			7.63*		
	> 6 months	5.70			4.40		
Duration of diagnosis	≤ 1year	7.30	-0.74	0.46	5.39	-0.43	0.67
	>1year	8.89			5.67		
Stage of disease	Early stage (1&2)	4.71	-3.09	0.04	5.29	-0.81	0.42
	Late stage (3&4)	11.38			5.92		
Type of cancer	Breast Ca	8.54	2.02	0.15	5.79	2.16	0.13
	Other Ca	5.38			4.50		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

For daughters in table (5.29), the statistical analyses revealed a significant relationship between some health-related variables and depression. Higher significant depression mean scores were seen in daughters of mothers with other treatments (M=13.25 and 13.50; p=0.01), and had been treated from 3-6 months (M=14.7; p<0.01). However, there were no statistically significant relationships between BDI scores and the other health related variables. Tukey post-hoc analysis of the ANOVA test showed significant difference (p< 0.05) in the subgroups of treatment by chemotherapy and treatment for 3-6 months.

As well, for death anxiety only a high significant death anxiety mean score was seen in daughters of mothers who were in early stage of cancer (M=7.21, p<0.01). Nevertheless, there were no statistically significant relationships between DAS scores and the other health related variables (table: 5.29).

Table (5.29): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **daughters** of mother with cancer**.**

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Place of treatment	BJGH	11.75	1.33	0.19	5.93	-1.79	0.08
	AVH	9.20			7.60		
Treatment type	Chemotherapy	11.88*	2.99	0.01	6.18	0.79	0.51
	Radiotherapy	4.43			7.29		
	Palliative care	13.25			5.75		
	Other	13.50			5.50		
	Biological	11.88			6.18		
Duration of treatment for cancer	< 3 months	5.92	6.14	<0.01	6.25	0.28	0.75
	3 - 6 months	14.7*			6.70		
	> 6 months	11.88			6.00		
Duration of diagnosis	≤ 1 year	9.33	-1.46	0.15	6.29	-0.20	0.84
	> 1 year	13.00			6.44		
Stage of disease	Early stage (1&2)	8.14	-0.54	0.59	7.21	3.11	<0.01
	Late stage (3&4)	9.50			4.50		
Type of cancer	Breast Ca	10.00	-0.68	0.20	6.17	-0.79	0.43
	Other Ca	11.86			6.86		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

For husbands as seen in table (5.30) below, higher significant depression mean score was seen in husbands or wives with radiotherapy treatment (M=15.29; ANOVA p<0.01). Though, there were no statistically significant relationships between BDI scores and the other health related variables. Tukey post-hoc analysis of the ANOVA test showed significant difference ($p < 0.05$) in the subgroups of treatment by radiotherapy. Also, there were no statistically significant relationships between DAS scores and all other health related variables.

Table (5.30): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in **husbands** of the wife with cancer history

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Place of treatment	BJGH	6.60	-0.57	0.57	4.76	0.83	0.41
	AVH	8.33			3.67		
Treatment type	Chemotherapy	4.54	10.58	<0.01	4.77	0.80	0.53
	Radiotherapy	15.29*			5.57		
	Palliative care	5.00			2.00		
	Other	3.33			4.00		
	Biological	.67			4.00		
Duration of treatment for cancer	< 3 months	8.33	1.69	0.19	4.58	0.47	0.63
	3 - 6 months	3.40			3.80		
	> 6 months	6.44			5.00		
Duration of diagnosis	≤ 1 year	7.35	1.00	0.32	4.65	-0.21	0.83
	> 1 year	5.14			4.86		
Stage of disease	Early stage (1&2)	7.17	-0.34	0.74	4.94	1.73	0.06
	Late stage (3&4)	8.00			3.17		
Type of cancer	Breast Ca	5.68	-1.77	0.08	4.95	1.05	0.30
	Other Ca	9.38			4.13		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

For sons as seen in table (5.31), the ANOVA statistical analyses revealed significant relationships between other independent variables and depression of the adolescents, and high significant depression mean scores were seen in those had other coping mechanisms other than religion ($M=14.0$; $p<0.01$). However, there were no statistically significant relationships between BDI scores and other variables in table (5.31).

As well, higher significant death anxiety mean scores were seen in sons of medium sized families ($M=6.73$, $p<0.01$), and those had other coping mechanisms of death other than religion ($M=6.88$; $p=0.01$). Nevertheless, there were no statistically significant relationships between DAS scores and the other independent factors (table: 5.31). Tukey post-hoc analysis of the ANOVA test showed significant difference ($p < 0.05$) in the subgroups of medium family size.

Table (5.31): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score other independent variables in sons

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Family size	1-4 (small)	6.50	3.91	0.12	3.00	21.27	<0.01
	5-8 (medium)	9.45			6.73*		
	>8 (large)	3.38			2.63		
Care provider	self-care	4.71	-1.79	0.15	4.29	-1.44	0.07
	Others	9.26			5.79		
Support provider	Self-Support	5.82	-1.50	0.14	4.55	-1.36	0.18
	Other	8.23			5.50		
coping mechanisms	Religion	5.65	-4.19	<0.01	4.81	-2.75	0.01
	Other coping mechanisms	14.00			6.88		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

For daughters as seen in table (5.32), the statistical analyses revealed a significant relationship between some other independent variables and depression and death anxiety. Higher significant depression mean scores were seen in small family sizes (M=20.0, p<0.01), in those cared for by others (M=15.14; p=0.01) and in those who had coping mechanisms other than religion (M=18.10; p<0.01). However, there were no statistically significant relationships between BDI scores. Tukey post-hoc analysis of the ANOVA test showed a significant difference (p< 0.05) in the subgroups of large family size.

As well, for death anxiety, higher significant death anxiety mean scores were seen in daughters of small sized families (M=9.0, p<0.01), and those cared for by others (M=7.27; p=0.01). Nevertheless, there were no statistically significant relationships between DAS scores and the other independent factors (table: 5.32). Tukey post-hoc analysis of the ANOVA test showed significant difference (p< 0.05) in the subgroups of large family size.

Table (5.32): The relationship between support providers and Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score in daughters

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Family size	1-4 (small)	20.00	9.33	<0.01	9.00	6.34	<0.01
	5-8 (medium)	12.30			6.83		
	>8 (large)	1.67*			4.00*		
Care provider	self-care	8.58	-2.83	0.01	5.42	-2.71	0.01
	Others	15.14			7.21		

Support provider	Self-Support	11.64	0.83	0.41	5.86	-0.68	0.50
	Other	9.94			6.33		
Coping mechanisms	Religious	8.82	-4.13	<0.01	6.27	-0.17	0.86
	Other coping mechanisms	18.10			6.40		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

For husbands as seen in in table (5.33), high significant depression mean scores were seen in husbands who had other coping mechanisms than religion (M=12.17, p=0.03). However, there were no statistically significant relationships with the other independent factors in table (5.33).

Table (5.33): The relationship between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score and other independent variables in husbands

Variables		Beck score			DAS score		
		Mean	T / F	P-value	Mean	T / F	P-value
Family size	1-4 (small)	5.57	0.60	0.55	5.29	1.93	0.15
	5-8 (medium)	7.73			5.00		
	>8 (large)	5.60			3.00		
Care provider	self-care	7.67	1.45	0.15	4.78	-0.13	0.90
	Others	5.44			4.89		
Support provider	Self-Support	7.56	1.07	0.29	4.72	-0.71	0.48
	Other	5.25			5.38		
Coping mechanisms	Religious	5.32	-2.40	0.03	4.00	-3.17	0.01
	Other coping mechanisms	12.17			7.00		

*post-hoc Tukey analysis p-value <0.05
T: true, F: false

5.10 Correlation (r) between the Study Scales (DAS & BDI)

Finally, Pearson correlation (r) test was used to test the correlations between the depression and death anxiety as seen in (Table: 5.34). Person's test showed a strong positive highly statistically significant relationship between depression and death anxiety (r =0.4; p<0.001). When testing this correlation among the three subgroups, a highly significant positive correlation was found in sons and husbands (r =0.7 and 0.5, p<0.001; respectively). But surprisingly, there was no correlation between the two scores in daughters (r =0.05; p=0.63).

Table (5.34): Pearson Correlation (r) between Beck Depression Inventory (BDI) score and Templer Death Anxiety Scale (DAS) score

	Overall			Son			Daughter			Husband		
	r	Sig.	N	r	Sig.	N	r	Sig.	N	r	Sig.	N
Correlation of scales	0.40	<0.001	285	0.68	<0.001	102	**0.05**	**0.63**	99	0.50	<0.001	84

5.11 Determinants of death anxiety and depression

In table 5.35, in the multivariate analysis, coping and work were significantly predicting BDI among sons of those women, while mothers' education, residence and monthly income of the family significantly predicated sons' depression. However, in daughters, Table 5.35: Multiple linear regression analysis of the determinants of death anxiety and depression scores in mothers' sons, daughters and husbands.

Table 5.35: Multiple linear regression analysis of the determinants of death anxiety and depression scores in sons

	BDI scores in Sons		DAS scores in Sons	
	Beta	Sig.	Beta	Sig.
Work	-0.46	0.00		
Coping	0.69	0.00	0.36	0.00
Education of woman	--	--	-0.40	0.00
residence	--	--	0.24	0.02
Monthly income of family	--	-	0.34	0.01
	model p-value <0.001 adjusted R^2 =0.48		model p-value <0.001 adjusted R^2 =0.33	

In table 5.36, in the multivariate analysis, age, coping, time and duration of treatment and care provider were significantly predict BDI among daughters of those women, while age, care provider, monthly income and mothers stage of her cancer significantly predicted daughters' depression. However, coping was a significant predicator for BDI and depression in husbands in addition to work (table 5.37).

Table 5.36: Multiple linear regression analysis of the determinants of death anxiety and depression scores in daughters

	BDI scores in daughters		DAS scores in daughters	
	Beta	Sig.	Beta	Sig.
Age	0.29	0.00	-0.39	0.00
coping	0.33	0.01		
Care provider	0.50	0.00	0.50	0.00
treatment type	-0.49	0.00		
treatment duration	0.46	0.02		
Monthly income			0.21	0.05
Stage of Cancer			-0.34	0.00
	model p-value <0.001 adjusted R^2 =0.4		model p-value <0.001 adjusted R^2 =0.47	

Table 5.37: Multiple linear regression analysis of the determinants of death anxiety and depression scores in husbands

	BDI scores in husbands		DAS scores in husbands	
	Beta	Sig.	Beta	Sig.
Coping	0.32	0.00	0.40	0.00
work	-0.28	0.03		
	model p-value =0.004 adjusted R^2 =0.11		model p-value =0.004 adjusted R^2 =0.25	

5.12 Summary

- This chapter represented the results of the quantitative analysis of the study.
- It went over the sociodemographic characteristics of women, adolescents and husbands, as well as the health related characteristics.
- Participants' perceptions of death anxiety and depression, sources of support and coping mechanisms were discussed as well.
- Further, Beck depression inventory and Templer death anxiety scales scores and findings were expressed.
- Finally, relationships and correlations between dependent and independent variables of the study were explored and detailed in tables and text.
- Next to this, the researcher will discuss the findings in view of available scientific literature in the following chapter.

Chapter Six: Discussion and Conclusion

Chapter Six

Discussion and Conclusion

6.1 Introduction

Most research on cancer focused on the patient and little researches were done on patient's partners as well their adolescent children. This chapter discussed the major findings of the current study and the interpretation of its findings in relation to previously conducted studies found in literature review. The participants' characteristics and their responses to the scales' items were discussed. Also, the relationship between dependent and independent variables were highlighted by using many statistical analyses tests such as ANOVA test, Chi square, Pearson correlation and T-test. The baseline data analysis showed that 285 respondents returned the questionnaires, with a good response rate of 89%.

6.2 Characteristics of the sample

Analyzing the sample distribution by the place of residence showed that nearly two thirds (63.6%) were living in cities, and this was expected as more population inhabiting cities. It was revealed that the 73.9% of the Palestinian population lived in urban at the mid of 2015 while16.7% and 9.4% respectively of population lived in rural and camps areas (PCBS, 2015). The World Health Organization stated that urbanization affected the availability of unhealthy food choices and accessibility which effected lifestyle that directly affect health and increased cancer incidence (WHO, 2010).

However, two other Palestinian studies showed lower percentages than the current study. For example, one study showed a higher distribution in a city; as 46 %(n=99) were from the city, and 38 %(n=80) were from the village, whereas 16% (n=35) were from the refugee camps, (Shehadah & Ahmead 2016). Maraqa and Ahmead study (2017) showed that 58.5% (n=148) of Palestinian women with cancer lived in a village, 37.5% (n=95) were from a city and 4% (n=10) were from the refugee camps. The difference between these studies might be because our current study targeted only women with cancer who had adolescents aged between 12 and 20 years old and excluded other women with other adolescents' age groups. In addition,

Ziegler (1993) reported that the urban areas had a risk of 30% of cancer higher than the rural.

With regards to the marital status, the results revealed that the majority (95.5%) of the women were married. This might be because the target women in this study were married, and in the productive age and they had adolescents of age group 12-20 years old, so they were young. The mean age of women in this study was 46.9 years. It was found that the majority of cancers affected parents aged 25-54 years old, and they had good 5-year survival rates of over 50% of cases. This means that children and adolescents were potentially dealing with the long-term consequences of this disease for a substantial portion of their childhood (Osborn, 2007). In Arab world, the average age of diagnosis was 48 years, which is considered as a young age (Najjar and Easson, 2010). These findings were inconsistent with Najjar and Easson (2010) study who found that two thirds of breast cancer cases occur after the age of 55. In addition, WHO (2014) reported that breast cancer is strongly related to age and only 5% of all breast cancers occurring in women under 40 years old.

Furthermore, most families (61.4%) were of medium size (5-8 persons), which is corresponding with mean family size in Palestine (5.4 persons), according to the last census (PCBS, 2018). For the economic status of the participants, 45.4% of them were earning less than 2000 NIS per month, and this finding indicated that the majority of the participants were under the poverty line. This was defined by the Palestinian Center Bureau of Statistics (PCBS) as a monthly income of less than 2,293 NIS per month (PCBS, 2018). Marqa and Ahmead study (2017) showed higher percentage of poverty than the current study where (64%) of the participants had monthly income less than 2000 NIS while Khleif & Imam study (2013) showed that 75.2% of the participants had income less than 2000 NIS. Many studies showed that high socioeconomic class has more risk for cancer particularly breast cancer due to life style (Braaten et al., 2004; Hussain et al., 2008; Melnychuk, 2009). While other studies showed that low socioeconomic status is a risk for cancer because it is not easy for the patients to access health services and often diagnosed at a later stage where they need advanced treatment (CDC, 2014).

Regarding the educational status, more than half of the women had more than 12 years of education (52.3%). These finding were similar to the finding of other Palestinian studies. For example, one study showed that 62.4% of Palestinian women with cancer had an educational level less than secondary education (Maraqa& Ahmead, 2017). Also, Khleif & Imam study (2013) revealed that (57.1%) of the participants (males and females) had an educational level less than secondary education. According to the Palestinian Central Bureau of Statistics (2018), the illiteracy rate among the Palestinians was considered low (3.3%) and it was a higher among females (5.1%) than males (1.5%). These results were inconsistent with previous studies which showed that the risk of cancer is high in educated women (Heck et al, 1997; Bratten, 2004; Gorden, 1995). Hussain et al (2008) found women who had less than 9 years of education, were less likely to be diagnosed with breast cancer than university education, but university graduates had the highest survival following a breast cancer diagnosis. On other hand one study found no association between education and breast cancer survival (Lund et al, 1991).

On the other hand, the clinical history data of women showed that most of the women received chemotherapy treatment (47.7) and 27.3% received radiotherapy. This is expected as chemotherapy is the first line of treatment for cancer and the targeted women were of young age and newly diagnosed, especially that 76% of them had early stage cancer. Additionally, the sample was mainly from outpatients (97.7%), and the most common cancer type was the breast cancer (72.7% of women), which was treated by chemotherapy in the day care unit. Further, the participants in this study were recruited from Beit-Jala Governmental hospital which is the only referral hospital for chemotherapy treatment in the south of West Bank and Augusta Victoria Hospital in Jerusalem which provides radiotherapy that is not available in Beit-Jala Governmental hospital.

Furthermore, the majority of the women (72.7 %) reported that their cancer onset was for less than one year and they started treatment for less than 3 months (48.7%). This is maybe due to the fact that the women in the current study were of young age and that the disease was newly diagnosed (early stage =76%). Another Palestinian study showed lower percentages than the current study as 36% (n=77) of the participants reported that the onset was less than one years, 35% (n=74) reported from one year to less than three years (Shehadah & Ahmead, 2016). These differences might be because the current study included women with all types of cancer while the later study included women with breast cancer only. Also, in Shehadah & Ahmead (2016) study most of the participants were younger than the current study and 60.3% were aged from 30 years old to less than 50 years old. Dent et al (2007) indicated that the risk of recurrence of breast cancer peaked at 3 years and declined rapidly thereafter. However, for the other types of cancer, the relapse risk is constant over the period of follow-up.

Also, the sample was taken from inpatient department and outpatient clinics in both hospitals, and 97.7% (n=129) were from outpatient clinic and 2.3% (n=3) were from in-patient ward. For the stage of disease, 76% (n=84) were in early stage (1&2) and the rest of the sample (24%, n=27) were in late stage (3&4). Other studies found that Palestinian women had their diagnosis of cancer in late stages when the tumor is large so mastectomy is performed in more than 80% of women with breast cancer (El Saghir et al., 2007; Nissan et al., 2004; Odeh, 2011).

Further, the participants were asked about duration of treatment for cancer, and findings showed that 48.7% (n=63) were less than 3 months, 23.3% (n=30) were between 3 – 6 months and 28% (n=36) were more than 6 months. For the types of cancer, findings showed that 72.7% (n=96) of them had breast cancer, and 27.3% (n=36) other cancer types, such as lung and colon cancers. According to the Palestinian ministry of health report in 2018, breast cancer ranked the first type of cancer in the West Bank among all type of cancer, with 503 cases, with incidence rate of 19.6 per 100,000 populations. In addition, breast cancer was the first type of cancer reported among females and accounted for 32.4% (498 cases) of the total reported cancer cases among Palestinian female, with incidence rate of 39.5 per 100,000 populations (MOH, 2018).

The adolescents' characteristics revealed that the majority of adolescents (45.8%) were between 18 to 20 years old, 40.7% had secondary education, and 86.9% were not working. This may be explained by the targeted age group for the sample, which is a young age that is of school age and not of the labor force. On the other hand, 45.5% of husbands were less than 50 years old, 55.6 % were less than 12 years of education, and 87.5% of them were working.

6.3 Perception of depression and death fear among the participants

The findings of the current study showed a discrepancy between how women's rated their adolescents and husbands' fear of death and depression and the findings of statistical analysis. Achenbach et al (1987) indicated that children and their parents provide meaningful but different perspectives on children's adjustment and problems, and both should be considered in a comprehensive evaluation of children's functioning. For example, for women's perception of their adolescents' fear of death and depression, the findings showed that these women noticed a high prevalence of signs of fear of death (59.5%) and signs of sadness or depression (66.7%) in their adolescents. This perception of mothers was inconsistent with depression scales scores, which showed low scores as 75.7% of their adolescents had minimal depression, 13.7% had mild depression symptoms, 3.2% had moderate depression, and 7.4% had severe depression. For death anxiety scale, similarly, scores showed lower level than women's perception as 59.7% of the adolescents reported that they had absence of death anxiety, 19.4% reported concerns of death, and 20.9% reported high concern to death.

One study indicated that women reported seeing the emotional impact of their cancer on their children was the most difficult piece of their cancer experience; as 35.8% of women described the emotional impact on their family as the hardest thing about advanced cancer including their children's grief, and guilt and jealousy of missing out on future family time (Turner et al, 2005). Also, in another study, it was found that parents reported more problems in children than a child's self-report. Children exhibited temporary behavior problems in acute stage of cancer; anxiety, disordered sleeping and compulsivity persisted and families with poor family functioning were more vulnerable, particularly with extreme high adaption (chaotic functioning) and low family cohesion (Huizinga et al, 2003). Also, these findings were supported by Siegel et al (2010) who found higher levels of emotional and behavioral problems in the reports of parents with cancer compared with children in the community. In contrary, Lewis et al (2011) found that the mothers with cancer and their husbands did not report significant emotional or behavioral problems in their children. Welch et al (1996) revealed that adolescents reported somewhat higher overall rates of anxiety /depression than did their parents. They concluded that parents did not perceive their children as being distressed, in terms of internalizing (anxiety/depression) so researchers should not rely upon the parent report alone, and health professionals should ask both parents and children about the symptoms that children may experience due to a parent's diagnosis of cancer (Welch et al, 1996).

Similarly, in the current study, the women' perceptions were clarified about their husbands. The findings showed these women noticed high prevalence of signs of fear of death (73.8%) and signs of sadness or depression (71.4%) in their husbands. This perception of wives was not consistent with depression scales scores, which showed that 85.8% of husbands had minimal depression, 7.1% had mild depression symptoms, 0% had moderate depression, and 7.1% had severe depression. While death anxiety scale scores in husbands showed that 67.8% had absence of death anxiety, and 32.2% had death anxiety (14.3% of them had concerns of death, and 17.9% had high concern to death).

This discrepancy between what women's reported and the findings of statistical analysis might be because of the high depression and anxiety that these women might had, which as a consequence, might affect their perception. For example, it was found that breast cancer treatment had profound influence on a woman's physical, psychological, social, and spiritual well-being and their anxiety, depression, anger, fatigue, and fear of recurrence were common responses to a diagnosis of breast cancer and its treatment (Bobbie et al, 2008). Ell et al (2005) found that 24% of women with cancer reported moderate to severe levels of depressive disorder and only 12% of women who had major depression reported receiving medications for depression, and 5% of women reported seeing a counselor. In addition, Burgess at el (2005) indicated that nearly 50% of the women with early breast cancer had depression, anxiety, or both in the year after diagnosis, 25% in the second, third, and fourth years, and 15% in the fifth year. Point prevalence was 33% at diagnosis, falling to 15% after one year.

Further, Shehadah and Ahmead study (2016) found a high percentage of fear of death among the Palestinian women with breast cancer which was (59%). This high prevalence of depression and fear of death among women with cancer might be because of their experience personal stress and anxiety related to the illness and disruption of their normal roles, as well as the functioning of the entire family. Patients with cancer are faced not only with the real-life problem of managing a household during their illness but also with the issue of how to tell their children about the cancer and address the psychological impact of their cancer on their children (Barnes et al, 2000; Semple & McCance, 2010).

Subsequently, adolescents in the current study perceived a strong feeling of sadness (89.6%), a lot of fear (61.5%), little fear of getting cancer (28.4%), and little fear of death (25.8%) due to the mother cancer. This perception of adolescents was inconsistent with depression scales scores, which showed that 75.7% of adolescents had minimal depression, 13.7% had mild depression symptoms, 3.2% had moderate depression, and 7.4% had severe depression. While death anxiety scale scores in children showed that 59.7% had absence of death anxiety, 19.4% had concerns of death, and 20.9% had high concern to death.

Furthermore, husbands perceived a strong feeling of sadness (85.7%) in relation to wife's cancer, a moderate feeling of fear of his wife's death (42.9%), little fear of getting cancer (25.9 %), and little fear of death (35.7%) due to the wife cancer. This perception of husbands is not consistent with depression scales scores, which showed that 85.8% of husbands had minimal depression, 7.1% had mild depression symptoms, 0% had moderate depression, and 7.1% had severe depression. While death anxiety scale scores in husbands showed that 67.8% had absence of death anxiety, 14.3% had concerns of death, and 17.9% had high concern to death.

These findings and the discrepancy in reporting symptoms among adolescents and husbands of women with cancer may reflect the disturbance in their psychological status, conflict and confusion as a result of cancer caregiving, process and treatment. Davis et al (1993) suggested the concept of cancer as a "family disease" where spouses worry more about patients' futures than the patients, yet patients report receiving significantly more social support than do spouses, who had a neglected experience. Another cohort study of 677 cancer patients found that almost half of caregivers (55%) cared for patients with complicated comorbidity and supported activities of daily living, as well as cancer specific care such as helping manage pain and symptoms or administering medicine. On the other hand, half of them had no training, which affected their confidence in the quality of the care they provided (Ryn et al, 2011). In addition, Ryn et al (2011) found that the majority of caregivers (71%) were confident in providing physical care for the patient, but not for emotional care needs. They suggested that most primary caregivers for cancer patients face substantial life needs along with cancer caregiving, which may have the risk of allostatic load, secondary stress in terms of role conflict, difficulty balancing work and caregiving demands, risk for strain, poor mental health, and diminished quality of life.

Within the same context, the timing of such previously reported feelings of fear and anxiety from death, 34.6% of husbands had it all the time or in the evening, and third of them (34.6%) did not have. On the other hand, 47.6% of adolescents had it all the time or in the evening, and 14.8% of them did not have. This means that adolescents had longer and more frequent harder times with anxiety and fear of death than husbands. Bugge et al (2008) found similar findings when they found that children had fear that parent would die; being unable to talk with parents about illness situation; being sad and frightened, seeing the changes in the parent's condition; Having fantasies and fears about cancer as an illness. These results may indicate the need to provide psychotherapy and psychological interventions and treatment for adolescents and husbands of women with cancer in Palestine.

Finally, most of the participants did not seek psychotherapy treatment (14.8% of husbands and 16.4% in adolescents), and the reasons for not seeking psychotherapy were no need for psychotherapy (75 % of husbands and 82.8% of adolescents), poor economic situation (16.6% of husbands and 6.3% of adolescents), and ineffectiveness of psychotherapy (4.2% of husbands and 3.1 % of adolescents). Iskandarsyah et al (2014) revealed similar themes concerning reasons for delay in seeking treatment such as: lack of awareness and knowledge, treatment beliefs, financial problems, emotional burden, severe side effects, paternalistic style of communication, and unmet information needs. Straker (1998) stated that psychotherapy is effective as an approach to understanding the psychological conflicts and the psychiatric symptoms of cancer patients as well as to planning useful psychological interventions. These findings may indicate the importance of providing counseling and psychotherapy for relatives and families of patients with cancer in the Palestinian community.

6.4 Beck Depression Inventory scores

The findings of the current study revealed an important presence significant depression score among the participants in general. The Beck Depression Inventory scale showed that the overall mean score of depression among the whole sample was 8.7 scale points. When comparing adolescents with husbands mean depression scores, it showed significant difference (p= 0.03) between adolescents and husbands (mean= 9.5 and 6.8 points; respectively), while when comparing the three subgroups it showed that the worst depression scores were in daughters (mean= 11.4; p= 0.01). This revealed that daughters were the highest depression scores more than sons and husbands of cancer women.

Also, depression severity levels revealed that 75.7% of all participants had minimal depression, and 13.7% had mild depression symptoms, while 10.6% had moderate to severe depression score. As well, the results showed that moderate and severe depression were more frequent in adolescents than in husbands (12% and 7.1%, respectively), but when comparing the three groups, it was more frequently apparent in daughters (18.2%) compared with sons and husbands (5.9% and 7.1%, respectively). This also may indicate that daughters were suffering or reporting more severe depression symptoms than their brothers and fathers in relation to the women cancer.

Moreover, up to 20% of the whole sample had clinical depression, but when comparing adolescents and husbands it showed no significant difference (p=0.16) in clinical depression, as 22.4% of adolescents had severe depression scores, while it was 14.3% in husbands. On the other hand, when comparing the three sub-groups, results revealed highly significant (p<0.01) difference in the prevalence of clinical depression in daughters (33.3%), while no difference between sons and husbands was found (11.8% and 14/3%; respectively). These results might be similar to Grunfeld et al (2004) study in which 11% of caregivers were depressed. The mean caregiver depression score was 9.04 (SD = 8.18), with 80% of the caregivers (n = 117) reporting a score below the cutoff score of the CES-D (i.e., < 16).

However, other studies reported higher prevalence of depression among caregivers than the current study. For example, a cross sectional study was conducted in Nepal by Sharma and Raj Mehtato (2015) to assess the level of depression among caregivers of patients with cancer including spouse, parents and children. In this study, 13 (26%) were husband, 10 (20%) were mother, 9 (18%) were wife, 8 (16%) were father, 5 (10%) were daughter and 5 (10%) were son. The findings revealed that 66% had feeling of sadness, 56% had feeling of something bad is going to happen in future, 52% had feeling of failure in life, 84% had loss of pleasure in life, 20% had guilty feeling and 28% had suicidal thought. Also, 34% had severe level of depression, 32% had moderate depression, 6% had mild depression and 28% had considered minimal range of depression. In addition, Gorji et al (2012) conducted a cross sectional study to assess the prevalence of depression among 63 caregivers of patients with breast cancer (26 cases (41.3%) were male and 37 (58.7%) were female) and the findings revealed mild to severe depressive symptoms in 60% of the sample, (24.8% mild and rest moderate and sever). Further, Karabekiroğlu et al (2018) in their study included 69 primary informal caregivers of patients with stage 4 cancer by using Beck Depression Inventory (BDI), found that depression was higher in caregivers who cared for men compared to those who cared for women (20.44 vs. 13.29). Katende and Nakimera (2017) conducted a cross sectional study to assess anxiety and depression among family carers of cancer patients in Uganda by using the Hospital Anxiety and Depression Scale (HADS including 119 family carers. Findings showed high level of anxiety and depression among family carers (45% V. 26 %). Also, 26% of the participants had abnormal levels of depression. The male carers reported high levels of depression than the female carers (30.8% v. 21.3%). 67% of the participants reported that care giving responsibility was burdening to them. Finally, family carers who were not first degree relatives" were 67% less likely to experience abnormal levels of anxiety compared to 73%- who are carers of extended family members.

This high level of depression among adolescents of women with cancer might be because parental cancer is a stressful experience for young people, constituting a potential threat to physical and mental health, and normative development. The struggle with a parent's cancer diagnosis can be very alarming for adolescents and often results in psychosocial problems such as "anxiety, confusion, sadness, anger, and feelings of uncertainty with respect to outcome of the illness" (Semple & McCance, 2010). Osborn indicated an increase in self-reported and parent-reported internalizing problems such death anxiety and depression in adolescents of parents with cancer (Osban, 2007). Another reason might be the burden of caregiving on adolescents, particularly female adolescents. It was found that young women tend to perceive caregiving as more negative than men and reported higher levels of psychological distress and depression (Blood et al, 1994; Zarit et al, 1986). One study found that symptoms of anxiety and depression in adolescent girls were significantly higher than boys, especially when the cancer patient was the mother (Given et al, 2012).

Moreover, Welch et al (1996) found that girls had significantly had clinically elevated anxiety and depression than boys, and none of the boys were in the clinical range of anxiety and depression. They indicated that these children felt the need to present themselves in a more positive way, and could have masked their distress and adolescent girls with ill mothers reporting significantly higher levels of anxiety and depression than their parents They concluded that adolescent girls whose mothers have cancer, regardless of the type, are a particularly vulnerable group and their parents did not perceive increased emotional distress among their daughters (Welch et al, 1996).

Moreover, spouse experience personal stress and anxiety related to the illness and disruption of their normal roles, as well as the functioning of the entire family. Patients with cancer are faced not only with the real-life problem of managing a household during their illness but also with the issue of how to tell their children about the cancer and address the psychological impact of their cancer on their children (Barnes et al, 2000; Semple & McCance, 2010).

Another study found that the mean physical functioning score for the caregivers was better than that of their patients and similar mean mental functioning scores, but more anxious and depressed caregivers than patients, with higher level of perceived burden. Burden was the most important predictor of both anxiety and depression in this study (Grunfeld et al, 2004). Similarly, Chekryn (1984) found that cancer recurrence caused individual and family hardships, grief, fear, and anger, concern with coping, family impact, and lack of shared meaning between patient and spouse about the cancer recurrence. Another study found that longer illness period were associated with higher levels of depression of parents, it negatively affected the family's coping behavior. While it’s functioning was affected positively by coping activity, where children functioned better in the case of more interaction with their families and coped better with their problems (Lewis et al, 1993).

Additionally, the psychological symptoms of depression were higher than that of the physical symptoms of depression (mean= 5.0 and 3.6; respectively) for the whole sample in the current study. When comparing adolescents and husbands, it showed highly significant difference ($p<0.01$) of psychological symptoms in adolescents (mean= 5.8), compared to husbands (mean= 3.3). On the other hand, results revealed high significant ($p<0.01$) scores of psychological symptoms of depression in daughters (mean= 7.2), with no difference between sons and husbands (mean= 4.4 and 3.3; respectively). This high level of psychological symptoms might be because of the cancer suffering symptoms and treatment process of the women with cancer which might affect family members’ mental health. Some studies reported that the patient's mental health was associated with more negative outcomes in caregivers than the patient's physical health (Given et al, 1990; Baillie et al, 1988). Given et al (1997, 1993) reported that a patient's dependency and symptoms had a negative impact on the caregiver's schedule. Another study revealed that only a patient's dependency and the burden of cancer care determined caregiver experiences and that other patient characteristics, such as disease-related and treatment-related symptoms, were not associated at all with mental health of caregivers(e.g. mood) (Siegel et al, 1991).

As a consequence, emotional strain, physical demands, uncertainty, fear of the patient dying, altered roles and lifestyles, finances, ways to comfort the patient, perceived inadequacy of services, existential concerns, sexuality, and non-convergent needs among household members are an important issues that health care providers and mental health professionals should assess and care about in patients with cancer (Lewis, 1986).

6.5 Templer Death Anxiety Scale scores

Caring for cancer patients may arouse fears and thoughts about personal mortality. Caregivers may experience anticipatory harm concerning the parent cancer and may have problems communicating with them about the impending death, which intensify distress. Caregivers and patients who experience insecure relationship attachment experience higher distress that negatively influences communication and caregiving. Additionally, distress among caregivers and patients is frequently interdependent (Taghiabadi et al, 2017).

For death anxiety, our study findings revealed a high level of death anxiety in general and it showed discrepancy between how the participants rated their death anxiety and the findings of statistical analysis of Templer Death Anxiety Scale. For example, women with cancer were asked directly if they were afraid of death and 31.8 said yes and 68.2 said no. These findings were inconsistent with Shehadah & Ahmead (2016) study, which revealed a higher percentage than the current study where 45% of the Palestinian women with breast cancer said "yes" and 55% said "no". This might be explained by the fact the current study included women with all types of cancer and not just breast cancer such as colon, and lung cancer. In addition, most of the women in the current study were married and had adolescents which may affect their level of death anxiety.

In addition, husbands and adolescents in the current study were asked directly if they had a fear of death due to the women cancer diagnosis and 35.7% of husbands and 25.8% of adolescents said "yes". Likewise, when the participants were asked by question number five in Templer Test if "they are not at all afraid to die." the majority of husbands (63%), sons (58.8%) and daughters (60.6%) answered yes. Further, the findings of the current study found that the overall mean scores of death anxiety among participants was 5.4 ± 3.5 indicating that the concern of death among the study participants was below average. Further, the anxiety three categories results, in our study, showed that 62.1% of all participants had absence of death anxiety and 39.9% had concerns or high concern of death. Furthermore, the adolescents separated results showed similarly that 59.7% had absence of death anxiety and 40.3% had concerns or high concern of death, while the husbands' results showed that 67.8% had absence of death anxiety and 32.2% had concerns or high concern of death. In contrary, one study revealed a higher death anxiety score among Palestinian women with cancer than the current study where TDAS score was 7.0 ± 1.6 indicating that the concern of death was on the average. Also, it was found that 40.6% of the participants had an average level of death anxiety and 40.2% had an absence level. High concern of death anxiety was only found in 19.2% of the patients (Shehadah & Ahmead 2016). Similarly, Koob and Davis revealed that that the spouses had a significantly higher death anxiety score than their husbands, and Soleimani et al (2016) study reported average to moderate death anxiety among caregivers including husbands with a mean of 46.7 while Ens & Bond (2005) study revealed a high mean score of death anxiety (40.42 with scores ranging between 3 and 82); using Hogan's Inventory of Bereavement and the revised Death Anxiety Scale within private schools.

In general, nearly 40 % of the participants in the current study, had concern and high concern of death which is considered high and require psychological intervention in clinical settings particularly hospitals. On other hand, low level of death anxiety in comparison with other studies might be because of the coping mechanisms that the adolescents and husbands used to face their stress and their social support system. Religiosity is commonly practiced within the Palestinian cultural and considered as the mean coping strategies throughout stressful events. For example, 78.5 % of the husbands and 72.7 of the adolescents reported that they used religion such as praying and reading Quran to deal with their fear of death. Soleimani et al, (2017) study found that the frequency of prayer activity was a significant predictor of lower death anxiety and positive life adjustment. Another study found that religious faith and church affiliations were helpful (Clemmens, 2009). Harding (2007) in his study, showed a negative relationship between religion and death anxiety. On other hand, Bachner et al (2011) found that fear of death was higher among religious family caregivers of cancer patients and another study found a high correlation between the adjustment mechanisms of women and husbands, with a tendency of the husbands' coping to get worse with time and with further treatment (Baider & DeNour, 1984).

Also, 61.5% of the adolescents reported that they were supported by the others while 69.3% of the husbands indicated that they supported themselves. Soleimani et al, (2017) emphasized that social support is a predictors of quality of life of caregivers because of time and effort expended in caregiving activities and social support can improve their quality of life. Interestingly, the findings in Shehadah & Ahmead (2016) study showed low percentages of Palestinian husband who provided social support for women with breast cancer (9.8%, n=20) and 38% (n=82) reported their father, 11.7% (n=25) reported the sister, 10.7% (n=24) reported their friend, 9.3 % (n=19) reported their mother, while 12.1% (n=26) reported no one. It was found that the most required source of social support and help seeking for women with breast cancer were their husbands (Pistrang & Barker, 1992; Barker, 1990) and 60% of women with cancer selected their spouse as a source of emotional support (Sandgren, 2004). These findings may indicate the need to assess the support system in the Palestinian families whose member has cancer in order to identify the factors that influences their social support. Also, these findings may indicate the need to provide a social support through the health professionals and psychotherapists in hospitals and clinics to the family of patients with cancer particularly their spouses or husbands.

Moreover, the analysis revealed a statistically significant difference (p=0.02) between adolescents and husbands (5.7 and 4.6 points; respectively), indicating that more death anxiety was found in adolescents. On the other hand, when comparing the three sub-groups, results revealed highly significant (p= 0.01) higher scores of death anxiety in daughters (mean= 6.2), while no difference between sons and husbands was found (mean= 5.3 and 4.6; respectively). Also, it revealed that 48.4% of daughters had concern or high concern of death, while sons and husbands had lower percentages (32.3% and 32.2%; respectively). These findings are similar to other studies in literature review in which women had higher level of death anxiety than men (Abdel-Khalek, 1998, 2000-2001; Aday, 1984-1985; Devins, 1980-1981; Koob & Davis, 1977; Lonetto & Templer, 1986; McDonald, 1976; Rasmussen & Johnson, 1994; and Young & Daniels, 1980). For example, Harding (2007) in his study found that being a woman was the only variable that was significantly associated with greater death anxiety and women had higher levels of death anxiety (M = 8.1, SD = 2.8) than men (M = 6.2, SD = 2.9). Also, Ens &

Bond (2005) study revealed higher death anxiety among females (the mean =43.24) than males (the mean= 37.11 (SD ¼ 14.96), but there was a significant difference between males and females.

This high level of death anxiety among adolescent particularly girls might be because of lack of communication between adolescents and their parents about cancer diagnosis because parents tried to avoid questions related to death, as found. Mothers assumed that children will not understand cancer. They wanted to keep their children's confidence and to promote conversation within the family, which they wished would relieve anxieties about death. Children become aware of changes in atmosphere at home and in their parent's health and they may have more potential to comprehend complex ideas of cancer. So, parents diagnosed with cancer should be supported as part of a family unit, because all members are affected by cancer and its treatment. Help is needed on how to communicate with children about the diagnosis and changes in life of the family (Barnes et al, 2000). Finally, Nelson et al, (1994) found that children of parents with cancer experienced problems and anxiety that affected their school lives, sports and leisure activities, family lives, and relationships. Factors associated with that were inability to discuss illness with parents; having less time with friends, sport and leisure activities; deterioration in schoolwork; and continuing anxiety over the disease process (Nelson et al, 1994). Parents may need considerable support when dealing with their children's feelings and reactions (Kroll et al, 1998).

In addition, the average scores of the five major themes of death anxiety were assessed more in-depth in the current study and results revealed that the highest mean scores were for the fear of patience and pain in sons (mean 1.68 ± 1.28), in daughters (mean 1.61 ± 1.11) and in husbands (mean 1.37 ± 1.26). This may reflect the degree of suffering of the women from pain and illness throughout the disease and treatment process, which may indicate not enough control of symptoms severity of cancer patients which may affect family members of women with cancer. For example, one study, by Khleif & Imam, among Palestinian women with cancer found that physical domain negatively affected their quality of life and the results revealed that about (30%) of the women had physical function score less than 33% cut off point which indicated very poor functioning. More than 60% of the participants reported problems or difficulty “very much” in physical function. Further, the results of pain showed that 11.46% of the participants had severe pain and 35.18% had moderate level of pain while 53.36% reported no pain in the past week. These results were consistent with Khleif & Imam study (2013) which showed that the mean of physical function was (48.5%), while (25.7%) of the participants had physical function score below 33% cut off point (Khleif & Imam, 2013).

More importantly is the presence of highly significant ($p<0.01$) differences in average themes scores between the subgroups in the current study. Daughters significantly had higher mean scores than sons and husbands in two of the five themes (Death related thoughts= 1.28 and fear of future= 0.88), while both husbands and daughters have significantly higher mean scores than sons in one theme (Time passing and short life; 1.6 and 1.5 respectively). This, as well, reinforce the previous results that showed more vulnerability of young female adults within the Palestinian context. Culturally, there is still a stigma of having cancer and the fear of death, as well as the social stigma of reluctance of marrying a daughter of a mother with cancer, especially in case of breast cancer (almost 73% of the study sample had breast cancer) which may increase family members fear of future. In addition, Gonen at el (2012), revealed that Axis I psychiatric diagnosis, pain scores, and negative believes about what will happen after death were found to be higher in patients having death anxiety than patients not having death anxiety. Further, life expectancy was perceived as shortened in patients with death anxiety and it is associated with anxiety, depressive symptoms, and beliefs about what will happen after death (Gonen at el., (2012). Patients who have death anxiety may try to avoid painful and intrusive thoughts related to death, and a situation that can perpetuate feelings of alienation (Neimeyer, 2011). They may think that discussing these issues may bring additional stress to family members, or they may want to appear strong (Lehto & Therrien, 2010). Neel et al (2012) found that the most distressing concern for patients with cancer involved fears about the impact of one's death on others, and the least distressing concerns were related to dying alone or suddenly. The physical symptoms most strongly associated with death anxiety were changes in physical appearance, and pain which may increase their fear of death and future. A study, found that not having sufficient time together, due to terminal illness, regrets about not having more quality time before the cancer, and loss of future were the main themes (Sheehan &Draucker, 2011).

Finally, in the current study, there was strong positive relationship between depression and death anxiety scores ($r = 0.4$; $p<0.001$). When testing this correlation among the three subgroups, a highly significant positive correlation was found in sons and husbands (r =0.7 and 0.5, p<0.001; respectively). But unpredictably, there was no correlation between the two scores in daughters (r =0.05; p=0.63). Many studies confirmed the presence of death anxiety in depressive disorders (Ongider & Eyuboglu, 2013; Saggino & Ronco, 1997; Simon et al, 1996). For instance, increased death anxiety has been associated with increased depression among patients with depressive disorder (Ongider & Eyuboglu, 2013), and similar findings have been reported among people with HIV/AIDS (Miller, Lee, & Henderson, 2013).

6.6 The relationship between dependent and independent variables

Several significant relationships with sociodemographic factors were found to be related with the two scales of death anxiety and depression. Age, income and working status were the three common significantly related factors, which affected depression in adolescents. Higher depression scores were seen in sons of age group (>15-18) years (M=9.33), monthly income group of (>4000) NIS (M=20.25), and not working son and mother (M=7.88 and M=9; respectively). While daughters had higher depression mean scores in age groups >15 years (M=13.57 and 13.63), monthly income groups of 2000-4000 NIS (M=14.8), working (M=21), as well as, those living in village (M=14.25), less educated mother (M=12), widow mother (M=20), and not working mother (M=11.81).

This is supported by many studies which indicated that adolescents; aged 12–18, suffer from more emotional problems, are most susceptible to negative psychosocial outcomes when faced with a parent’s illness, and have greater anxiety, depression, and emotional distress than school-age children and general population (Rainville et al, 2012; Huizinga, 2011; Grabiak, 2007; Visser, 2007). Kornreich et al (2008) described that adolescents (12-18 years) have a different experience to younger children as they have greater cognitive ability, and can engage in abstract and symbolic thought. This makes them more aware of the potential loss of their parent as well as the pain they may be going through. However, late adolescents (15 to 18 years) continued to show significant differences in their levels of distress, anxiety, and irritability compared with their peers (Rainville et al, 2012), older age of adolescent was associated with lower health-related quality of life (Kuhne, 2012). Adolescent daughters impacted by parental cancer were found to be more negatively impacted in psychosocial domains, and difficulties self-reported by offspring exceeded those reported by parents (Osborn, 2007), and older adolescents living with a parent with advanced cancer may experience higher distress and depression than young adults in the general population (Rainville et al, 2012). Late adolescents (15-18) had significantly higher distress, anxiety, and irritability compared to norms of the same age. Late adolescents experienced significantly higher distress, and anxiety than early adolescents (12-14) with an ill parent (Rainville et al, 2012).

On the contrary, husbands had no statistically significant relationships between BDI scores and the demographic variables. Grunfeld (2004) for example, found that there was no change in employment status of caregivers and they did not quit, lose or change their jobs at the beginning of the disease and treatment However, more caregivers missed work in the terminal period (77%). Also, they reported an increased inability to work regular hours and increased hours of work lost because of care provided.

In addition, higher death anxiety mean scores were seen in sons who were living in village (M=6.55), of income group >4000 NIS (M=8), not working (M=5.81), and less educated mothers (M=6). While higher death anxiety mean scores were seen in daughters of age group 12-15 years (M=8.67) and in income group 2000-3000 NIS (M=7.2). Further, the result in the current study showed that higher death anxiety was seen in husbands who were living in village (M=5.45), income groups >4000 NIS (M=8), not working (M=7.0), and having a working wife (M=7.2).

It is not clear why adolescents and husbands who lived in villages had higher prevalence of death anxiety than those who lived in cities in the current study. One study that was conducted among Palestinian women with cancer found that women who lived in cities used more coping mechanisms than those who lived in villages and the difference was significant (mean: 2.5 vs 2.3 respectively) at p-value (0.035) (Shehadah & Ahmead, 2016). In addition, it was found that the residents of the rural areas had significantly a higher incidence and mortality rates than urban residents (Chen et al, 2016). Wright et al. (1996) stated that inner-city residents might live nearby to hospitals and other health-care providers so they have more access to see their doctors and other health-care professionals than women who lived in the villages or camps. These two factors may decrease death anxiety and depression among family members of patients with cancer in cities.

For the income and working status, Soleimani et al (2016) study found that unemployment, high school, or college, education compared with primary education, average economic status, and being as a main source of income were associated negatively with death anxiety among caregivers. In the Palestine, cancer treatment is covered by the Palestinian Minister of Health and women with cancer can receive their treatment almost for free. Grunfeld (2004) found that prescription drugs were the most significant component of financial burden particularly for families without health insurance which may increase their anxiety. It concluded that income security and job protection for family members who care for people with cancer should be recommended. In the current study we did not investigate the availability of health insurance for the participants; however the findings in the current study showed that the majority of the families of patients with cancer were poor and lived under the poverty line, which may affect their mental health.

Moreover, higher depression scores were seen in sons of mothers with late stage cancer (M=11.38). Also, higher depression scores were seen in daughters of mothers with palliative and other treatments (M=13.25 and 13.50), and had been treated from 3-6 months (M=14.7). As well, higher depression scores were seen in husbands whose wives had radiotherapy treatment (M=15.29). Many studies showed the effects of care variables such as the duration of care, intensity of care, and different types of care on the level of depression among caregivers (Gilhooly et al, 1983; Northouse et al, 1987). Furthermore, it was found that time-flexibility and the disruption of the caregiver's schedule, personal tasks (e.g., feeding and washing the patient) had more negative mental health consequences on caregivers than non-personal tasks; such as buying the groceries (Given et al, 1990; Northouse et al, 1987). These variables may affect the time for personal recreation such as leisure, and visiting family and friends (George et al, 1986; Carey et al, 1991; Gilhooly et al, 1983). Because of the increased time that should be given to care of the patients with cancer which as a consequences may lead to increase the level of depression among family members (Kurtz et al, 1997; Gilhooly et al, 1983). Northouse and Swain (1987) indicated that partners particularly were expected to tolerate a high level of stresses and loads or burden that follow in the course of cancer. In addition, it was found that young women perceived caregiving as more negative than men and reported higher levels of psychological distress (Blood et al, 1994; Zarit et al, 1986).

Moreover, higher significant death anxiety scores were seen in sons of mothers who are treated by radiotherapy and were on treatment for 3-6 months (M=7.36 and M=7.63; respectively). As well, higher death anxiety scores were seen in daughters of mothers who are in early stage of cancer (M=7.21). However, there were no statistically significant relationships between DAS scores and all other health variables in husbands. Soleimani et al (2016) study reported similar finding and they found that caregivers of both patients who were not in treatment or who were receiving radiation therapy had higher levels of death anxiety in comparison with caregivers of patients receiving surgery or chemotherapy. Also, Gazendam-Donofrio et al (2011) found that adolescents of parents who underwent surgical treatment showed more positive emotions than when parents had long term treatments, as they might have witnessed fewer outward signs of illness. Internalizing problems and stress response symptoms (SRS) were greater in daughters than in sons, impaired functioning linked to female gender; older age; higher levels of parent anxiety and SRS, marital dissatisfaction, and poor communication, internalizing problems and SRS were associated with disease recurrence and externalizing problems were associated with treatment intensity (Huizinga et al2011). It was found that the psychological impacts of cancer on partners change with the passage of time since diagnosis. Both patients and their spouses experienced an acute phase of distress shortly after diagnosis that then subsides for most of them after a number of months (Welch et al, 1997). So, Welch et al (1997) concluded that time is an important factor in adaptation of being diagnosed with cancer. Huizinga et al (2010) revealed that more daughters reported clinically elevated stress response symptoms at 4 months following diagnosis, and daughters also reported higher rates of intrusion than sons at 6 months following diagnosis. Compared to sons whose parent had been diagnosed 1–5 years earlier, sons whose parent had been diagnosed 12 months earlier had less intrusion, avoidance and total distress. Further, daughters reported significantly less intrusion and less total distress at 12 months (Huizinga et al, 2010). On the other hand, Visser et al (2005) indicated that anxiety and stress remain constant regardless of how long the disease and treatment last.

6.7 Limitations and recommendations

There are many limitations in the current study. For example, this study utilized a cross sectional design, due to the limitation of the available time and scarcity of resources. This makes it difficult to assess accurately the magnitude of effect exerted by each factor or to differentiate precisely whether the interaction between these factors would be advised or antagonistic. Also, this type of design may have limitations in the generalization of the results to a wider population since it measures both the prevalence of the outcomes and the determinants in a population at a point in time or over a short period of time (Horn et al. 2008). Nevertheless, the cross-sectional studies are highly useful for descriptive purposes and it is relatively quick, cheap and easy to undertake (Grove & Burns, 2005; Monsen& Horn, 2008).

The data collection for this study was done by using a self- administered questionnaire. So, the reliability of the results may be affected, since the participants may hesitate to express their points of view or they may describe their own thoughts, feelings or behaviors in spurious way to please the researcher (Mitchell, 2000). Further, the sample included adolescents and husbands of patients who attending Beit-Jala Governmental Hospital and Augusta Victoria hospital which may limit the generalization of findings to other groups from other hospitals.

Recommendations

Recommendations for policy makers:

- Increase the knowledge and awareness of mental health professional and other medical team about the death anxiety and depression among family members of women with cancer.
- Employ full-time mental health professional or psychotherapist in the Oncology Departments to help overcome psychological problems particularly death anxiety and depression in patients with cancer and their families.
- To integrate palliative care models of care for cancer patients and their families, which include the use of multidisciplinary team approach to care for the patient with cancer and their family.

Recommendations for health and mental health professional:

- There is a need to for routine screening and evaluation of death anxiety depression and other mental disorders among patients with cancer and their families in Palestine.
- The community mental health professionals should focus on the negative thoughts in order to reduce death anxiety and other fears and to help them coping by providing psychotherapy such as cognitive behavior therapy.

- Mental health professional should focus on death anxiety and depression among high risk groups, especially on young female family members of cancer patients.
- To guide the family of the patients, especially the husband and adolescents on how to deal with the patients at different stages of the disease in order to decrease their anxiety and depression.

Further research:

- There is a need for further quantitative and /or qualitative studies to assess death anxiety and depression in a wider scale and larger samples to cover all geographical areas in Palestine, and emphasize the results. Maybe an interventional study would be the choice for such future research.
- There is need to conduct a qualitative study to understand in depth the effects of cancer on the mental health of family members of women with cancer.
- There is need to conduct a quantitative study to assess the relationship between death anxiety and sociodemographic data such as place of residency.

6.8 Conclusion

In conclusion, this study aimed to identify the dimensions of depression and death anxiety amongst adolescents and husbands of women with cancer, who were treated at two hospitals in Palestine. The study was a cross sectional one that used the death anxiety scale of Templer and the Beck Depression Inventory Scale, in addition to the sociodemographic sheets. The main findings of the study revealed that there were considerable moderate to below average levels of death anxiety and high level of depression among family members of women with cancer in Palestine, especially among adolescent girls, who scored the highest levels on both scales.

For depression: high scores were seen in sons of age group (>15-18) years, monthly income group of (>4000) NIS), and not working son and mother. While daughters had higher depression mean scores in age groups >15 years, monthly income groups of 2000-4000 NIS, working, as well as, those living in village, less educated mother, widow mother, and not working mother. On the other hand, husbands had no statistically significant relationships between BDI scores and the demographic variables. Further, higher depression scores were seen in sons of mothers with late stage cancer. Also, higher depression scores were seen in daughters of mothers with palliative and other treatments, and had been treated from 3-6 months. As well, higher depression scores were seen in husbands whose wives had radiotherapy treatment.

For death anxiety: high mean scores were seen in sons who were living in village, of income group >4000 NIS, not working, and less educated mothers. While higher death anxiety mean scores were seen in daughters of age group 12-15 years and in income group 2000-3000 NIS. Further, the result in the current study showed that higher death anxiety was seen in husbands who were living in village, income groups >4000 NIS, not working, and having a working wife. Moreover, higher significant death anxiety scores were seen in sons of mothers who are treated by radiotherapy and were on treatment for 3-6 months. As well, higher death anxiety scores were seen in daughters of mothers who are in early stage of cancer. However, there were no statistically significant relationships between DAS scores and all other health variables in husbands. A national policy for establishing counseling programs for cancer families, at both the community and hospital levels, is needed.

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Appendices

Appendices

Appendix 1: Study consent form

نموذج موافقة مستنيرة على المشاركة في بحث علمي

انتِ مدعوه للمشاركة في دراسة تقوم بها الطالبة أمل ذويب من أجل الحصول على درجة الماجستير من جامعة القدس، كلية الصحة العامة، برنامج ماجستير الصحة النفسية المجتمعية. حيث تهدف الدراسة الى قياس مستوى الاكتئاب وقلق الموت لدى المراهقين, والمراهقات ابناء السيدات المصابات بالسرطان.

المشاركة في هذا البحث هي اختيارية، حيث تم اختيارِكِ للمشاركه في هذه الدراسه. مع ضمان السرية و الخصوصية التامة للمشاركين، مع التعهد بعدم استخدام اي معلومات شخصية او طبية لغير اغراض البحث العلمي فقط, مؤكدين على ان الاسماء غير مطلوبة. كما ان المشاركة في هذا البحث تعود بالفائدة عليكِ و على جميع المرضى وابنائهم من خلال لفت الانتباه الى الحاجات النفسية للفئة المستهدفة، وسنقوم بالمساعدة على تحويل اي مشارك/ة بحاجة الى متابعة وعلاج الى المراكز المختصة اذا طلب المشارك/ة ذلك بشكل مباشر.

اذا قررتِ المشاركة في هذه الدراسة عليكِ تعبئة هذا الاستبيان, ونؤكد على انه يبقى لكِ كامل الحق في المشاركة في الدراسة او رفضها او الانسحاب منها في اي وقت تشائين. اذا قمتِ بتعبئة هذة الاستبانة هذا يعني انكِ موافقه على المشاركة في هذة الدراسة.

اسم الام المشاركه: ------------------ رقم هويتها: ---------------
تاريخ التشخيص: --------------------- نوع السرطان: --------------
نوع العلاج: ------------------------ تاريخ بداية العلاج: ----------
مكان العلاج: ---------------------- مكان السكن: ------------

في حال وجود اي استفسار يمكن الاتصال مع الباحثة في اي وقت على العنوان التالي:
الاسم: أمل ذويب.
هاتف: 0597970337 بريد الكتروني: adweib@yahoo.com

التاريخ: ________________

Appendix 2: Demographic questionnaire for women

اسم الأم: ____________

1) **العمر:** .... هاتف: ____________

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2) **التعليم**

أ) امي ب) من اول – سادس ج) من سابع – تاسع د) عاشر –ثاني عشر

ه) دبلوم و) جامعة غير ذلك، (اذكره) ....

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3) **السكن** أ) مدينة ب) قرية ج) مخيم

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4) **الحالة الاجتماعية**

أ) متزوجة ب) مطلقة ج) منفصلة د) ارملة

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5) **عدد افراد الاسرة الذين يسكنون في البيت:** ....

---

6) **هل تعملين؟ نعم لا**

---

7) **قسم العلاج:** أ) عيادات خارجية ب) أقسام داخلية

---

8) **نوع السرطان:**

أ) ثدي ب) قولون ج) المبايض د) المعدة ه) الرئة و) غير ذلك

---

9) **مدة التشخيص بالسرطان:**

أ) اقل من سنة ب) أكثر من سنة

---

10) **مرحلة المرض**

أ) مرحلة اولى ب) مرحلة ثانيه ج) مرحلة ثالثه د) مرحلة رابعه

---

11) **نوع العلاج**

أ) كيماوي ب) أشعاع ج) جراحي د) تلطيفي/أعراض ه) غير ذلك ......

---

12) **فترة اخذ العلاج:**

أ) أقل من 3 شهر ب) من 3 – 6 أشهر ج) اكثر من 6 اشهر

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13) **الدخل الشهري للأسرة**

أ) أقل من 1000 شيكل ب) اكثر من 1000 – 2000 شيكل ج) اكثر من 2000–3000 شيكل

د) اكثر من 3000–4000 شيكل ه) أكثر من 4000 شيكل

---

14) **هل لاحظتِ وجود علامات قلق أو خوف من الموت لدى احد ابنائك بعد إصابتك بالسرطان:**

أ) نعم ب) لا

---

15) **هل لاحظتِ إن احد ابنائك يعاني من الحزن أو الاكتئاب بعد إصابتك بالسرطان:**

أ) نعم ب) لا

---

16) **هل لاحظتِ وجود علامات قلق أو خوف من الموت لدى زوجك بعد إصابتك بالسرطان:**

أ) نعم ب) لا

---

17) **هل لاحظتِ إن زوجك يعاني من الحزن أو الاكتئاب بعد إصابتك بالسرطان:**

أ) نعم ب) لا

---

18) **هل تشعرين بالخوف من الموت**

أ) نعم ب) لا

Appendix 3: Demographic questionnaire for adolescents and husbands

1) القرابة للمريضة: أ) زوج ب) ابن ج) ابنة

2) العمر: ....

3) الجنس أ) ذكر ب) أنثى

4) التعليم

أ) اساسي ب) ثانوي ج) جامعي

5) هل تعمل؟ نعم لا اذكر العمل: ....

6) الشخص الذي يعتني بي

أ) أعتني بنفسي ب) أحد أفراد العائلة (اذكره).......... ج) الاقارب (اذكره)........

د) شخص بالاجر (اذكره).......... ه) غير ذلك، (اذكره) ....

7) الشخص الذي يدعمني

أ) أعتني بنفسي ب) أحد أفراد العائلة (اذكره).......... ج) الاقارب (اذكره)........

د) شخص بالاجر (اذكره).......... ه) غير ذلك (اذكره)..........

8) هل تشعر بالحزن بسبب إصابة والدتك /زوجتك بالسرطان:

أ) نعم ب) لا

9) هل تشعر بالخوف بسبب إصابة والدتك /زوجتك ربالسرطان:

أ) نعم ب) لا

10) هل تشعر بالخوف من أن تصاب بالسرطان بسبب أن والدتك /زوجتك لديها سرطان

أ) نعم ب) لا

11) هل لديك خوف من الموت بسبب إصابة والدتك /زوجتك بالسرطان

أ) نعم ب) لا

12) هل توجهت لعلاج نفسي بعد إصابة والدتك /زوجتك بالسرطان

أ) نعم ب) لا

13) إذا لم تذهب لتلقي العلاج النفسي ما السبب:

أ) عدم المعرفة بأماكن ومراكز العلاج النفسي ب) لا احتاج علاج نفسي ج) بسبب الوضع الاقتصادي للعائلة

د) لا اعتبر العلاج النفسي فعال لمساعدتي في حل المشكلة ه) غير ذلك (اذكرها)..........

14) إذا شعرت بالخوف من الموت ماذا تفعل

أ) أصلي ب) اقرأ قرآن ج) ألعب رياضة د) احاول إبعاد الفكرة عن رأسي

ه) أدخن و) أبقى لوحدي ز) اسمع موسيقى ح) غير ذلك (اذكرها)..........

15) متى ينتابك الخوف والقلق من الموت

أ) طول الوقت ب) في المساء ج) صباحاً د) غير ذلك (اذكرها).........

Appendix 4: DAS questionnaire

أختي الكريمة / أخي الكريم:

تقوم الباحثة بإجراء دراسة حول "قلق الموت والاكتئاب لدى أزواج وابناء وبنات السيدات المصابات بالسرطان في مستشفى بيت جالا الحكومي" ولتحقيق أهداف هذه الدراسة تضع الباحثة بين أيديكم ((مقياس قلق الموت ومقياس الاكتئاب)) لجمع البيانات اللازمة، لذا يرجى من حضرتكم التكرم بتمرير هذه الاستبانة الى افراد عائلتكم هذا الاستبيان للإجابة على فقرات المقياس باختيار المناسب لكل فقرة، علماً بأن هذا المقياس هو لأغراض البحث العلمي فقط واستكمالاً لمتطلبات الحصول على درجة الماجستير في كلية الدراسات العليا – كلية الصحة العامة – قسم الصحة النفسية المجتمعية / جامعة القدس.

مقياس قلق الموت

التاريخ: ________________

التعليمات:

إذا كانت العبارة صحيحة أو تنطبق عليك ضعي دائرة حول (ص)،

إذا كانت العبارة خاطئة أولا تنطبق عليك ضعي دائرة حول (خ)،

عبارات الاختبار:

1-	**أخاف كثيرا من أن أموت.**	**ص**	**خ**
2-	**فكرة الموت نادرا ما أفكر بها.**	**ص**	**خ**
3-	**لا اعصب عندما يتحدث الاخرون عن الموت أمامي.**	**ص**	**خ**
4-	**ارتعب كثيراً من التفكير في اجراء عملية جراحية.**	**ص**	**خ**
5-	**أنا لا أخاف مطلقا من الموت.**	**ص**	**خ**
6-	**لا أخاف بشكل خاص من إصابتي بالسرطان.**	**ص**	**خ**
7-	**لا يزعجني التفكير في الموت إطلاقا.**	**ص**	**خ**
8-	**أتضايق كثيرا من مرور الوقت بسرعة .**	**ص**	**خ**
9-	**أخشي أن أموت موتا مؤلما.**	**ص**	**خ**
10-	**إن موضوع الحياة بعد الموت يثير اضطرابي كثيرا .**	**ص**	**خ**
11-	**أخشى فعلا أن تصيبني سكتة قلبية.**	**ص**	**خ**
12-	**كثيرا ما أفكر كم هي قصيرة هذه الحياة.**	**ص**	**خ**
13-	**يقشعر بدني عندما أسمع الناس يتكلمون عن الحرب العالمية الثالثة.**	**ص**	**خ**
14-	**رؤية جسد ميت يخيفني .**	**ص**	**خ**
15-	**أرى أن المستقبل لا يحمل شيئا يخيفني .**	**ص**	**خ**

Appendix 5: BDI questionnaire

مقياس بيك للاكتئاب

ترجمة : فردوس عبد ربة و د. منى حميد /جامعة القدس

الاسم........................ التاريخ........................

ستجد-ي في هذه الاستمارة مجموعة من الجمل, أرجو أن تقرأ كل مجموعة بتمعن ثم اختار الجملة التي نصف حالتك بدقة خلال الأسبوع الماضي بما في ذلك اليوم. ضع دائرة حول رقم الجملة التي تختارها. إذا بدا لك أن أكثر من جملة في المجموعة تنطبق عليك فبإمكانك أن تضع دائرة حول كل جملة تناسب حالتك. تأكد من قراءة كل جملة في كل المجموعات قبل الاختيار.

1) 0- أنا لا اشعر بالحزن.
1- أنا اشعر بالحزن
2- أنا حزين طيلة الوقت ولا أستطيع أن أتخلص من هذا الشعور.
3- أنا حزين جدا أو غير سعيد إلى حد لا أستطيع تحمله.

2) 0- أنا تماما متشجعا نحو المستقبل
1- اشعر بان المستقبل غير مشجع
2- اشعر بأنه لم يعد لدي شيء أتطلع إليه في المستقبل.
3- اشعر بان المستقبل لا أمل فيه وان الأمور لا يمكن أن تتحسن.

3) 0- لا اشعر بأنني شخص فاشل.
1- اشعر باني فشلت أكثر من الشخص العادي.
2- عندما انظر إلى الفترة الماضية من حياتي أرى كثير من الفشل.
3- اشعر أنني فاشل تماما كانسان.

4) 0- استمتع بالأشياء كما تعودت عليها.
1- لم اعد استمتع بالأشياء بنفس الطريقة التي كنت متعودا عليها.
2- لم اعد احصل على الشعور بالرضى من أي شيء.
3- أنا غير راضي أو اشعر بالملل في كل الأشياء.

5) 0- ليس لدى شعور بالذنب بالذات.
1- اشعر بالذنب في بعض الاوقات.
2- اشعر بالذنب تقريبا معظم الوقت.
3- اشعر بالذنب طيلة الوقت.

6) 0- لا اشعر بأنني استحق ان اعاقب.
1- اشعر باني سأعاقب.
2- انا أتوقع أن أعاقب.
3- اشعر باني اعاقب الان .

7) 0- لا اشعر بخيبة أمل من نفسي.
1- اشعر بخيبة أمل من نفسي.
2- أنا مشمئز من نفسي.
3- أنا اكره نفسي.

8) 0- أنا لا اشعر إنني بحال أسوء من الآخرين .
1- أنا انتقد نفسي على أخطائي أوضعفي.
2- إنني ألوم نفسي طيلة الوقت على أخطائي .
3- إنني ألوم نفسي على أي شيء سيء يحدث.

9) 0- لا يوجد لدي أفكار لقتل نفسي.
1- لدي أفكار لقتل نفسي ولكني لن انفذها.
2- ارغب في قتل نفسي.
3- سوف اقتل نفسي إذا أتيحت لي الفرصة.

10) 0- لا ابكي أكثر من المعتاد.
1- أصبحت ابكي أكثر من المعتاد.
2- إنني الآن ابكي طيلة الوقت.
3- لقد كان بمقدوري أن ابكي ولكني الآن لا أستطيع أن ابكي رغم أنني أريد ذلك.

11) 0- أنا لست أكثر منزعجا من الأشياء الآن مما كنت عليه دائما.
1- أنا أكثر توترا الآن مما كنت عادة.
2- اشعر الآن بأنني متوتر ومنزعج بقدر جيد من الوقت.
3- اشعر أنني متوتر طوال الوقت.

12) 0- لم افقد اهتمامي بالناس الآخرين.
1- أصبحت اقل اهتماما بالناس الآخرين مما كنت عليه من قبل.
2- لقد فقدت معظم اهتمامي في الناس الآخرين.
3- لقد فقدت كل اهتمامي في الناس الآخرين.

13) 0- قدرتي على اتخاذ القرار لم تتغير.
1- اوجل اتخاذ القرارت اكثر مما كنت معتادا عليه سابقا.
2- أعاني من صعوبة أكثر في اتخاذ القرارات كما كنت متعود سابقاً.
3- أنا غير قادر على اتخاذ أي قرار في الوقت الحاضر.

14) 0- لا اشعر بأنني ابدو أسوء من المعتاد.
1- أنا قلق لأنني أبدو اكبر من عمري ولم اعد جذابا.
2- اشعر أن هناك تغيرات دائمة في مظهري الشخصي مما يجعلني أبدو غير جذاب.

3- اعتقد أنني أبدو بشعا.

15) 0- أنا أقوم بعملي كما في السابق.
1- احتاج إلى جهد إضافي للبدء في عمل شيء ما.
2- اضطر لان ادفع نفسي بقوة من اجل عمل ما.
3- لا أستطيع القيام بأي شيء.

16) 0- أستطيع أن أنام كالمعتاد.
1- لا انا كما كنت متعوداً.
2- استيقظ ساعة أو ساعتين قبل المعتاد واجد صعوبة في الرجوع إلى النوم مرة اخرى.
3- استيقظ عدة ساعات مبكراً قبل المعتاد ولا أستطيع العودة إلى النوم مرة اخرى.

17) 0- لا اشعر بالإرهاق أكثر من المعتاد.
1- اشعر بالارهاق بسرعة اكثر مما تعودت عليه.
2- اشعر بالإرهاق من أداء أي شيء تقريبا.
3- اشعر بالتعب الكثير للقيام بأي عمل كان.

18) 0- شهيتي للأكل ليست أسوء من المعتاد.
1- شهيتي للأكل ليست جيدة كالمعتاد.
2- شهيتي للأكل أصبحت أسوء الآن.
3- ليس لدى أي شهية للأكل على الإطلاق.

19) 0- لم افقد شيئا من وزني مؤخرا.
1- لقد فقدت أكثر من 2 كيلو من وزني.
2- لقد فقدت أكثر من 4.5 كيلو من وزني .
3- لقد فقدت أكثر من (6.5 كيلو) من وزني.

20) 0- لم اعد قلقا بشان صحتي اكثر من المعتاد.
1- اشعر بالقلق بشان مشكلات جسدية مثل الآلام ، اضطراب المعدة، الامساك، والصداع.
2- إنني قلق جدا بشان مشكلات جسدية وانه لمن الصعب أن افكر في شيء اخر.
3- إنني قلق للغاية بشان مشكلاتي الجسدية إلى درجة أنني لا استطيع ان أفكر في شيء آخر.

21) 0- لم ألاحظ أي تغيير حاليا في رغبتي الجنسية.
1- لدي رغبة في الجنس اقل مما كانت متعوداً عليه.
2- تقريبا لا يوجد لدي رغبة في الجنس.
3- لقد فقدت رغبتي في الجنس كليا.

Appendix 6: MOH permission for the study

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State of Palestine
Ministry of Health - Nablus
General Directorate of Education in Health

دولة فلسطين
وزارة الصحة- نابلس
الإدارة العامة للتعليم الصحي

Ref.: ....
Date:..................

الرقم: ١٦٢/١٤٤٥/٢٠١٧
التاريخ: ١/٩/٢٠١٧

الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،

تحية واحترام...

<u>الموضوع: تسهيل مهمة طالبة ماجستير</u>

تماشياً مع سياسة وزارة الصحة المتعلقة بتعزيز التعاون مع الجامعات والمؤسسات الأكاديمية بإتاحة فرص التدريب أمام الطلبة والخريجين والباحثين في المؤسسات الوطنية وإسهاماً في تنمية قدراتهم.

يرجى تسهيل مهمة **الطالبة: أمل ذويب – ماجستير الصحة العامة وعلم الابئة– جامعة القدس،** في عمل بحث الماجستير بعنوان: "**The Prevalence of Death Anxiety and Depression among Adolescents whose Mothers had Cancer and were Treated at Beit Jala Governmental Hospital in Bethlehem**"، لذا يرجى تسهيل مهمتها في الحصول على المعلومات اللازمة من خلال مقابلة ابناء المريضات المراهقين (بعد اخذ موافقة الامهات على مشاركة ابنائهن في البحث) لتعبئة استبانة الدراسة وذلك في:

- مستشفى بيت جالا الحكومي

علما بأنه سيتم الالتزام بمعايير البحث العلمي والحفاظ على سرية المعلومات.

مع الاحترام،،،

د. أمل ابو عوض
مدير عام التعليم الصحي

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