



**An-Najah National University**  
**Faculty of Graduate Studies**

**ASSESSMENT OF THE PALLIATIVE CARE AND  
DEPRESSION SYMPTOMS AMONG CANCER  
PATIENTS: A CROSS-SECTIONAL STUDY**

**By**  
**Maher Mohammad Khalil Battat**

**Supervisors**  
**Dr. Sa'ed H. Zyoud**  
**Dr. Aidah Alkaissi**

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Maher Mohammad Battat

This Thesis was Defended Successfully on 24/2/2022 and approved by

Dr. Sa'ed H. Zyoud  
Supervisor

  
Signature

Dr. Aidah AlKaissi  
Co-Supervisor

  
Signature

Dr. Ibrahim Aqtam  
External Examiner

  
Signature

Dr. Ramzi Shawahna  
Internal Examiner

  
Signature

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وانتقدم بجزيل الشكر والعرفان لمشرفي الاول الدكتور سائد زيود الباحث العالمي المتألق بمستواه البحثي العالي على ما قدمه لي من اشراف على هذه الرسالة وافادة من خبرته في البحث العلمي ولمشرفي الثاني لمدروستي الام الفاضلة الدكتورة عائدة القيسي علمنا في التمريض لما بذلت معي من جهد واشراف على هذه الرسالة فدمتم ودام عطائكم وانتقدم بالشكر والتقدير للممتحنين الداخلي والخارجي على ملاحظاتهم.

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## Declaration

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

### ASSESSMENT OF THE PALLIATIVE CARE AND DEPRESSION SYMPTOMS AMONG CANCER PATIENTS: A CROSS-SECTIONAL STUDY

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

Student's Name: Maher Mohammad Khadil Bettat

Signature: \_\_\_\_\_

Maher

Date: \_\_\_\_\_

24-02-2022

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## ABSTRACT

**Background:** Palliative care is critical for redundancy in cancer patients looking for quality of life improvement; symptom assessment should be incorporated in clinical practice routines at all stages of cancer. The Edmonton Symptom Assessment System (ESAS) used to rate the intensity of ten symptom assessment that has been designed and validated for cancer patients in a variety of languages and cultures. On the other hand, Beck's Depression Inventory (BDI II) used to assess depression symptoms and depression severity, which is one of the palliative care symptoms among cancer patients that can be assessed by ESAS. Therefore, the study aims to assess cancer patients reported symptoms focusing on depression using ESAS scores and the BDI II scale to identify patients who would benefit from palliative care that can improve the integration of palliative care into standard oncology care at An-Najah National University Hospital (NNUH).

**Methods:** A cross-sectional study was selected for 271 cancer patients by using a convenience sampling method at NNUH. Demographic, clinical, and lifestyle characteristics are described. The results of the moderate to severe symptoms (score >4) reported by the patients were obtained using the ESAS. The BDI II scale was used to detect the level of depression.

**Results:** The survey consisted of 271 patients, with a response rate of 95%. The average age of the patients was  $47 \pm 17.7$  years, with a range of 18 to 84 years. The male to female ratio was around 1:1 and 59.4 % of the patients were outpatients, and 153 (56.5 %) had hematologic malignancies. Fatigue (62.7 %) and drowsiness (61.6 %) were the most common moderate to severe symptoms in ESAS, also Pain (54.6 %), nausea (40.2 %), , lack of appetite (55.0 %), Sortness Of Breath (SOB) (28.5%), depression (40.6 %), anxiety (47.2 %), and poor well-being (56.5 %) were reported. In terms of BDI II

depression scores, the majority of cancer patients (n=104, 38.4%) had minimal depression, while 22.5 %, 22.1 %, and 17.0 % had mild, moderate, and severe depression, respectively, with statistically significant associations between all symptoms of ESAS symptoms and BDI II scores.

**Conclusions:** Fatigue and drowsiness were the most reported symptoms according to the ESAS scale among cancer patients, while depression ranged from minimal to severe according to BDI II mostly minimal depression, whereas moderate to severe depression symptom was reported on cancer patients using ESAS. ESAS and BDI II were functional tools for depression symptoms among cancer patients to establish palliative care services.

**Implications:** ESAS is an applicable tool for assessing palliative care symptoms among cancer patients at NNUH to improve their quality of life.

**KeyWords:** Palliative Care; Palliative Care symptoms; Depression symptoms; ESAS; Palestine; Cancer patients; Oncology.

# **Chapter One**

## **Introduction**

### **1.1 Introduction**

Cancer is the second leading cause of death worldwide, and it is also the second leading cause of mortality in Palestine, accounting for 14% of all deaths, trailing only heart disease (30%) (1). The number of Palestinians diagnosed with cancer is expected to increase, putting further strain on the financial and infrastructural resources of the current healthcare system, which are exacerbated by financial and political uncertainty (2). Cancer, also known as malignancy, is abnormal cell growth. Solid tumors (breast cancer, lung cancer, skin cancer, colon cancer, and prostate cancer) and hematologic malignancies (such as lymphomas and leukemia) are among more than 100 types of cancer; symptoms vary depending on the type. Chemotherapy, radiation, and/or surgery are methods to treat cancer (3).

As effective cancer treatments continue to be discovered and refined, an increasing number of patients are being cured or their life expectancy extended, and more attention is being paid to the psychological problems that can accompany cancer diagnosis and treatment. According to studies, approximately 30% of patients have mental disorders (e.g. anxiety, depression, and adjustment disorders) (4), despite the fact that this proportion changes depending on the disorder. Depression, as an example, has a prevalence ranging from 1.5 % to more than 53% (5). Improved psychosocial and emotional well-being can be attributed to depression treatment, despite the mounting burden of physical symptoms, the mood is a determinant of the experience of Quality of Life (QOL) and suffering. The idea of palliative care or supportive care can be used to treat symptoms suffered by cancer patients, including physical and/or psychological symptoms, Palliative care is an important component of cancer care and treatment that aims to slow, stop, or cure the disease (6). It influences the physical, emotional, and psychological well-being of cancer patients (7), which can start from being diagnosed with cancer and may continue after the end of cancer treatment (8). Although some cancer patients tend to use Complementary and Alternative Medicine (CAM) (9) as herbal therapy in Palestine (10).

Methods have been developed to assess the effectiveness of symptom management to assist in the identification of associated symptoms. The therapeutic aim of these instruments ranges from complete symptom and functional evaluation to in-depth examinations of particular symptoms, one tool devised and validated for rapid identification and monitoring of the symptoms with minimal patient burden is the Edmonton Symptom Assessment System (ESAS). ESAS is developed to aid in the pain assessment, fatigue, nausea, depression, anxiety, drowsiness, appetite, well-being, and shortness of breath (SOB) among cancer patients (11). Regarding depression, it is associated with decreased functional status, lower adherence to treatment, longer hospitalizations, and the desire to die sooner (12).

Alternatively, other instruments can be used to assess these symptoms of depression, such as the Beck Depression Inventory (BDI II)-21 items, can assess one of the most common psychological symptoms in cancer patients. BDI II continues to fuel research on the nature and assessment of depression. The accuracy of the BDI II as a screening instrument in medically ill and oncology samples has been evaluated in several studies, and it is a reliable self-report measure (13).

## **1.2 Background**

Palliate means "to cloak." Palliation has the negative connotation of simply masking difficulties, "palliative care" is quickly becoming a well-accepted word in American medicine for a terminal disease management plan that emphasizes symptom control and support rather than cure or life extension (14), but now in modern times, palliative care is more likely offered earlier in the disease, not just at the end of life (15, 16). Integrating early palliative care into routine oncology care improves the QoL, lowers depression and symptom burden, and increases survival in patients with advanced cancer which early palliative care involvement in cancer patients is becoming increasingly advocated. Systematic assessment of symptoms must be addressed to the integration of overcome barriers to palliative care integration (17). As reported in a prospective observational study using the Arabic version, the most common severe symptoms among Egyptian cancer patients were pain (93%), then after tiredness (74%), poor well-being (67%), lack of appetite (62%), anxiety (60%) and drowsiness (56%) (18).

On the other hand, almost 25% of cancer patients experienced severe depressive symptoms, with the rate rising to 77 % in those with advanced disease (19). Depression is common in cancer patients and is strongly associated with cancer of the oropharyngeal (22%–57%), pancreatic (33% to 50%), breast (1.5%–46%), and lung (11% to 44%). Patients with other malignancies, such as colon (13%–25%), gynecological (12-23%), and lymphoma (8%–19%), had a lower frequency of depression (5).

Depressive symptoms are often identical to those of physical illness or its treatments, making it difficult to diagnose depression in physically ill people. This is especially true when a cancer patient is diagnosed with depression. Many of the symptoms needed to diagnose depression are often caused by cancer treatments (e.g chemotherapy, biological therapy), such as fatigue, weight loss, anhedonia (inability to feel pleasure in typically enjoyable activities), and psychomotor retardation. Depression (sometimes known as clinical depression or severe depressive disorder) is a common but significant mood illness. Create severe symptoms that affect how you feel, think and cope with daily activities such as sleeping, eating, and working. Symptoms of depression must be present for at least two weeks to be identified (5).

### **1.3 Objectives**

#### **1.3.1 General objectives**

The purpose of the study is to assess cancer patients reported symptoms focusing on depression using Edmonton Symptom Assessment System scores and Beck's depression scale to identify patients who would benefit from palliative care to promote palliative care into standard cancer care at An Najah National University Hospital (NNUH).

#### **1.3.2 Specific objectives of the study**

- Pre-screening of cancer patients reported symptoms using ESAS scores.
- Determine whether ESAS is reflective of the depression of cancer patients depression without using BDI II.
- Determine the severity of factors associated with depression among cancer patients.
- Determine the level of depression in cancer patients using BDI II.

- To find out how demographic, medical, clinical and prognostic variables, and depression all contribute to a higher symptom burden.

#### **1.4 Statement of the problem and rationale of the study**

Cancer patients suffer from many symptoms during the cancer journey that negatively affects their QoL, and by this research, we will screen palliative care symptoms and the level of depression using instruments of the Arabic version instruments (ESAS and BDI) to determine the need for cancer patients to receive palliative care. And there is no palliative care assessment tool among cancer patients at NNUH as ESAS.

#### **1.5 Research Questions**

- What are the most common symptoms in cancer patients that determine their need for palliative care?
- What are the risk factors associated with elevated symptom burden among cancer patients?
- What is the level of depression in cancer patients measured using Beck's Depression Inventory?
- What are the factors associated with depression symptoms?

#### **1.6 Significance of the Study**

Jordan was one of the first Arab countries to get accredited in this domain (20), and to our knowledge, this is the first study assessing palliative care symptoms focusing on depression using two scales (ESAS and BDI) in Occupied Palestinian terrorists in the context of mental health, so this study will initiate a palliative care assessment tool at NNUH-Palestine that will benefit for establishing palliative care concepts in Palestine.

Additionally Providing evidence supporting the physical symptoms and well-being impact of these disorders in patients with palliative cancer, and determine whether the subsequent intervention will benefit palliative care in cancer patients with cancer and that it is possible to identify cases with an accepted level of sensitivity and specificity. The utility is also more relevant when “non-specialists” can do the screening with an instrument in the subject under consideration that is easy to use in routine clinical

practice. Finally Increase recognition in the detection and treatment of comorbid depression in hospitals, also improve the management of symptoms.

## **1.7 Review of the Literature**

Throughout this chapter, we examined the literature and studies on the topics covered in this study: cancer patients' reported symptoms and depressive symptoms.

A large cross-sectional study from an international multicentre observational study (European Palliative Care Research Collaborative – Computerised Symptom Assessment and Classification of Pain, Depression and Physical Function) was conducted in 2008 and 2009 to assess depression among 1,051 cancer patients recruited from 17 centers in eight countries; 696 patients completed an evaluation for depression using the ESAS and Patient Health Questionnaire-9 [PHQ-9]. The study aimed to investigate the association between self-reported depression disorder (DD) and symptoms in patients with advanced cancer controlled for prognostic factors. Grotmol concluded that depression in advanced cancer patients causes a high burden of symptoms, which affects the patient's somatic symptoms. Using ESAS to identify depression in cancer patients and treat it is critical in palliative care to improve patient QoL (21).

In a retrospective study in United States of America reviewed the charts of 216 patients, the instruments used the Edmonton Symptom Assessment System (ESAS) and the subscales of the Hospital Anxiety and Depression Scale (HADS-A and HADS-D), to determine the relationship between the frequency and intensity of the physical symptoms and their expression of depression and anxiety. Delgado-Guay et al. concluded that the frequency and intensity of the expression of physical and psychological symptoms vary in advanced cancer patients with depression, a remarkable connection was observed between the presentation of depression and the expression of well-being and psychic symptoms, screening for mood disorders should be performed, or patients with high expression and/or intensity of multiple symptoms should provide, which implementation of screening protocols in outpatient and inpatient settings for early detection and management of both untreated physical symptoms and psychological abnormalities using simple tools such as ESAS and BDI II– 21 items, assessment of physical symptoms and mood disorders using simple tools such as ESAS

and BDI II– 21 items, early detection and management of both untreated physical symptoms and psychological abnormalities (22).

In a study conducted between January and March 2006, Arslan et al. analyzed 101 Turkish patients with cancer undergoing chemotherapy who presented to an oncology clinic's outpatient unit for outpatient chemotherapy to determine whether they experienced depression and hopelessness. This finding adds to the planning of nursing interventions by knowing the levels of hopelessness and depression in these patients. An analysis of sociodemographic characteristics, along with Beck Hopelessness Scale and Beck Depression Inventory scores, was conducted. Depression and hopelessness were strongly correlated, according to the findings (23).

A cross-sectional retrospective study was conducted to look at the sociodemographic characteristics and depression symptoms of 125 newly diagnosed breast cancer in 2011 cases reported to the Hatay Provincial Health Directorate's Cancer Control Department which is Clinical Centre of Niš is a medical centre located in Niš, Serbia. BDI was used to assess depressive symptoms. Only four cases were financed and supported by psychological evidence. Nazlican et al. identified a significant prevalence of depression in this study, indicating that psychological care is critical for patients with a life-threatening condition such as cancer (24).

Alacacioglu et al. used the BDI and the State-Trait Anxiety Inventory (STAI) scoring systems to explore depression and anxiety levels, as well as the factors that impact patients receiving chemotherapy and their family. This research involved 330 Turkish people, including the families of 330 patients families. Concluded that a great deal of emphasis should be placed on identifying and treating their mental illnesses because there are so many emotional and psychological illnesses in patients and their families (25).

Using the Beck Depression Inventory to determine the level of depression among breast cancer patients in the oncology ward of University Clinical Hospital in Niš in Serbia, Cvetkovi\* & Nenadovi\* concluded that depression is more frequent in cancer patients undergoing cytotoxic therapy; mild depression is the most common, followed by moderate and severe depression (26).

Meta-analysis study was used to integrate the results of 105 samples derived from 76 prospective studies. Conducted by Pinquart & Duberstein to analyze the associations between depression and mortality in cancer patients and test whether these associations would vary by study characteristics. It concluded that depression screening should be performed regularly in cancer treatment facilities. Mental health specialists should be referred to if necessary. More research is needed to determine whether treating depression could improve QoL and extend the survival of depressed cancer patients (27).

In Poland cross-sectional study was conducted among 800 patients with cancer of the Podkarpackie Oncology Centre, Clinical Provincial Hospital in Rzeszów in 2018–2020 who were receiving chemotherapy. The goal of the study was to assess their life quality, and one of the instruments used was the ESAS, which concluded that cancer undoubtedly has a negative impact on the QoL of patients, which is related to the disease process itself, the treatment used, and the duration of the disease as reported symptoms of anxiety and depression (28).

Finally in an Arabic country in a cross-sectional survey study conducted by Alquraan et al. among breast cancer patients in two major hospitals in Jordan to assess the prevalence of depressive symptoms and the impact of the disease on QoL. A validated questionnaire was used to assess the prevalence of depressive symptoms and QoL in patients who used the Beck's Depression Inventory-II score and the 36-Item Survey Form (SF-36), respectively. Around one-third of breast cancer patients had depressive symptoms (29).

Following the reviewed literature, cancer patients can be detected as having symptoms using ESAS and BDI II in order to provide palliative care that minimizes symptoms and improves their QoL including psychological complaints such as depression.

## **Chapter Two**

### **Materials and Methods**

Research methods and techniques discussed in this chapter include study design, sample description, and formulation of the study instrument, including validity and reliability calculations. Moreover, a discussion of the statistical management used in data analysis, as well as the techniques used by the researcher in implementing the study, is included.

#### **2.1 Study Design**

An quantitative cross-sectional study was conducted to achieve the objectives of the study.

#### **2.2 Study Setting**

The An-Najah National University Hospital (NNUH) It's in Nablus' northern mountainous region, near the Asira Al Shamaliah exit. was established in 2013, in partnership with the Faculty of Medicine and Health Sciences at An-Najah National University. NNUH consist of medical care units, an emergency room, a dialysis department, Radiology, ultrasound and tomography department, and 120 beds, the hospital provides services for extremely complex cases that need cardiac care and eye surgery, including corneal and artificial cornea transplantation, and the hospital provides the possibility to perform advanced liver surgeries, general surgery and orthopedics, cancer treatments including surgeries, chemotherapy, biological therapy, and autologous bone marrow transplant in addition to the hospital's provision of health care services for children, including advanced surgeries in the spine, cancer, and blood diseases in children, in addition to providing many other advanced and modern services. An-Najah National University Hospital is, at present, the only provider of medical services related to advanced electrophysiology, complex open heart surgery, and bone marrow transplants for adults and children for the treatment of leukemia, making the hospital one of the most advanced and modern health and medical service providers in Palestine, welcoming patients from all over the West Bank and the Gaza Strip (30).

### **2.3 Study population**

Cancer patients included solid tumors / oncologic tumors such as sarcomas, carcinomas, and adenocarcinoma. And non-solid tumor/ hematologic malignancies such as leukemia, lymphomas, multiple myeloma ...etc., cancer patients at NNUH consult outpatient oncology clinics, receive treatment in outpatient oncology clinics or inpatient may come for diagnosis, chemotherapy cycle, autologous bone marrow transplant or treatment side effects/complications. On the other hand, some of the oncological emergencies, such as neutropenic fever, require patient to go the emergency department and then be admitted to the hospital.

### **2.4 Sample size**

The NNUH was visited by approximately 600 cancer patients every month during the study period (April 2021 to August 2021). This value was used as a reference to determine the sample size needed for the analysis. A sample size of 235 was calculated using the Raosoft sample size calculator by setting the response distribution at 0.50, the error margin at 5% and the confidence interval at 95%. When we calculated using Raosoft, 259 patients were needed patients to cover the dropout, we added 10% of the sample (24 patients), the target sample size increased to 285 participants to decrease erroneous outcomes and improve research reliability.

Pilot testing was first for 10% of the sample size (24 questionnaires) and excluded from the study because sociodemographic data was edited after the questionnaire was tested for validity and reliability. Data were tested for their validity only by triangulation that is a panel that included two hemato-oncology physicians, three oncology nurses, one statistician. And reliability was tested for 11 patients (22 questionnaires) between two visits. In addition, following the development of the questionnaire, the contents and design were pilot-tested on 11 patients, with modifications made as needed.

### **2.5 Sampling Procedure**

Convenience sampling method consist of 271 cancer patients.

## **2.6 Inclusion and exclusion criteria**

### **Inclusion criteria:**

1. Patients who agreed to participate
2. Age 18 years and older can read and write.
3. Both sexes
4. Inpatients and outpatients with cancer and hematologic malignancies.

### **Exclusion criteria:**

1. Patients who need ICU care.
2. Comatose patients.
3. Patients with cognitive impairment.
4. Patients in isolation.

## **2.7 Data Collection Instrument**

All questionnaires were filled out by the patients or read to them by a nurse or caregiver. If patients had difficulty understanding the meaning of the question, a palliative care nurse explained it simply. All instruments were completed in paper forms and then entered into an electronic database for analysis. Demographic data from the patients and clinical factors were also collected.

Data collected in 5-months from April 2021 to August 2021, cross-sectionally at any time during cancer treatment that includes the time of diagnosis, chemotherapy, clinic visit, autologous bone marrow transplantation (Auto-BMT), in advanced stages of cancer, or at outpatient and inpatient oncology visits and related factors, this information documented by the researcher in separated papers. The ESAS Arabic version (31) (Appendix A shows use approval) and the Arabic version of BDI II (32) (Appendix B shows use approval) was provided immediately to the patient promptly directly by the delegated researcher or the nurse delegated (one nurse in outpatient oncology clinics, one nurse in the medical oncology ward) to be filled out by the patient

himself and any assistance provided by the researcher or the two delegated nurses and the questionnaires saved in a special file in the targeted wards that receive adult patients with oncologic and/or hematologic malignancies: outpatient oncology clinics, medical oncology ward, vascular ward, surgical ward, bone marrow transplant and leukemia ward, surgical cardiac care unit), and then other medical-related information taken from the patient's files by the researcher, approximately 15 patients refused to participate and 10 incomplete questionnaires were excluded.

Assessment tools of palliative care symptoms such as ESAS (Appendix C) among cancer patients and psychological symptoms such as the BDI II (Appendix D) provide a baseline assessment and evaluation for required palliative care, especially psychological care. The following defines what the ESAS and BDI II is.

## **2.8 Edmonton Symptom Assessment System (ESAS)**

ESAS is a valid and reliable tool for assessing nine common symptoms common to patients with cancer (33). ESAS is a key assessment tool in the Palliative Care Integration Project. The original tool has been developed and slightly modified for this project by the Capital Health Regional Palliative Care Program in Edmonton, Alberta.

### **2.8.1 Purpose of the ESAS**

This tool is designed to aid in the assessment of pain, fatigue, nausea, depression, anxiety, drowsiness, appetite, well-being, and SOB. Patients can use one blank scale to assess and "other problems" as needed. A numerical scale of 0 to 10 is used to rate the severity of each symptom, with 0 denoting no symptom and 10 being the worst possible severity. The ESAS was meant to be self-administered by the patient or his family caregiver. Therefore, the patient should be taught how to complete the scale. The gold standard for symptom evaluation is the patient's assessment of the severity of the symptoms. The ESAS assesses the severity over time and provides a clinical profile. It provides a context in which symptoms can be fully understood. However, it is not a comprehensive assessment on its own. To achieve good symptom management, ESAS must be used as a part of a comprehensive clinical evaluation.

### **2.8.2 How to do the ESAS**

The number of patients who indicate the symptom between the two extremes is best circled as the following example:

No Depression 0 1 2 3 4 5 6 7 8 9 10 severe depression

The circled number is then typed onto the medical chart (e.g., flow sheet) or the ESAS form address, graphed, and recorded.

### **2.8.3 The conceptual definition of ESAS variables**

Pain is a physically unpleasant sensation caused by illness or damage. Drowsiness – sleepiness, tiredness – decreased energy level (but not necessarily sleepy), depression – sad or blue, anxiety – a mood disorder that causes a persistent feeling of sadness and loss of interest (nervousness or restlessness), as well-being – overall comfort, both physical and otherwise; truthfully answering the question ‘How are you?’, nausea - a feeling of being sick to your stomach and the desire to puke SOB is a feeling of not being able to breathe well enough. Appetite is the urge to eat and drink. Patients should mark where they hurt on the Body Diagram if they are in pain Although it is not necessary to do this daily, but it should be done regularly. Discuss the best strategy for accomplishing this with your patient. Its possible to perform ESAS When a cancer patient is at home and in a clinic,. It is a good practice to complete the ESAS daily when a cancer patient is admitted to a hospital, palliative care unit, or long-term care facility. Patients who have satisfactory symptom control and no major social difficulties can complete the ESAS weekly. An ideal situation would be for patients to complete the ESAS at the same time every day, Additionally the ESAS should ideally be completed by the patient. The ESAS should be completed with the help of a caregiver (a relative or friend) or a healthcare professional involved in the patient's care if the patient has cognitive impairments or is otherwise unable to complete it independently ESAS is performed by the caregiver or professional if the patient is unable to participate in the symptom assessment. The method used to complete ESAS must be indicated on the flowsheet in the space provided as follows: by the patient, a caregiver assisted by the caregiver or by a health professional (34). ESAS is a useful screening tool to assess patients' psychological symptoms, including depression, that is time-free and simple to use by cancer care team professionals to provide the necessary palliative care and

regular evaluation of the patient by ESAS and the cutoff point  $>3$  (35). Furthermore, in a systematic review and Meta-Analysis of 6 studies, that concluded that an optimal ESAS could be used with cutoff point 4 to detect possible cases of depression in cancer patients, a simple and not timely questionnaire rather than thorough Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria (36). Furthermore, in a systematic review of eighteen articles conclude that no clear evidence exists for many symptoms of optimal cuts. A symptom score of 4 is recommended as a trigger for a more detailed symptom assessment in daily clinical practice (37).

## **2.9 Beck Depression Inventory (BDI) II**

Many factors contribute to the variation of depression incidence and include patient age and sex, medical status, cancer diagnosis, and stage cancer (38). These questions also help to assess depression in cancer patients. The method of diagnosis (e.g. inclusion, substitution), measurement type (i.e., diagnostic interviews vs. self-reportage measures), and inclusion criteria (clinical vs. subclinical) are some other questions that are important to evaluate depression in this population.

The BDI is an inventory of 21-point self-report ratings measuring characteristic attitudes and depression symptoms. The Beck Depression Inventory (BDI) takes approximately 10 minutes to complete, but clients must have a fifth or sixth-grade reading level to understand the questions BDI. Clinicians use it to determine the level of depression and the therapy a person needs. It was created by Aaron T. Beck, a well-known psychiatrist known as the "Father of Cognitive Behavior Therapy" (39).

Depression is a medical term that refers to a persistently depressed state. When a person is depressed, they lose interest in the activities they used to enjoy, and depression is well known to cause significant difficulties in a person's daily life. When a family member dies, there is financial stress, a breakup, or they lose their job, it is common for people to feel sad. When sadness lasts for an extended period for no apparent reason, you may be suffering from clinical depression (39).

### **2.9.1 Questions on BDI-II**

The BDI II consists of 21 questions. These 21 questions are based on the DSM-V diagnostic criteria used by psychiatrists and psychologists to diagnose mental health disorders. The 21 multiple choice questions have a score range of 0 to 3 assigned to them.

The BDI questions are about Sadness, Pessimism, Past failure, loss of Pleasure, Guilty sentiments, Punishment feelings, punishment feelings, self-dislike, self-criticism, suicidal ideation Crying, agitation, loss of interest in previously appreciated hobbies or activities Indecision, worthlessness Energy depletion, Sleeping patterns, irritability, Appetite changes, Difficulties concentrating, Tiredness or fatigue Loss of sexual interest.

### **2.9.2 Scoring of the BDI II**

The BDI has a clear scoring system, and a point value of 0 to 3 is assigned for each of the four multichoice answers. At the end of the assessment, in all 21 questions, you summarize the total points of the answers. The results are as follows: The results Minimum depression from 0 to 13, mild depression from 14 to 19, moderate depression from 20 to 28, and severe depression from 29 to 63 (39). In a cross-sectional study using BDI – 21items, the Greek version of advanced cancer patients attending a palliative care unit showed that 69.5 % scored more than 10 the cut-off point for ‘mild depression; 39% scored more than 16, the cut-off point for 'moderate to severe depression; and 11.4 % scored more than 30, the cut-off point for ‘severe depression. Furthermore, women were more depressed than men, with 76 % having mild depression and 16 % having severe depression (40).

### **2.10 Ethical approval**

Institutional Review Boards (IRB) and local health authorities approved all components of the study protocol, including access to and use of patient clinical data, IRB approval in Appendix E, which human body protected with no risk..

This study was done following Helsinki and European guidelines for good clinical practice and approval was requested and obtained from the NNUH search center, as shown in Appendix F.

### **2.11 Confidentiality**

We confirm that the information collected was used only for clinical research. All personal information patients provide is kept private and is only used for the purposes of this study.

All participants received an informed consent form (Appendix G) form that confirms data privacy, and all data was kept confidential and used specifically for research purposes. All information was stored in a locked cabinet for human body right and there was no access to anyone except the researcher.

### **2.12 Statistical analysis**

The Statistical Package for Social Sciences (SPSS) version 21 was used to enter and analyze the data. Descriptive statistics were used to summarize basic demographic information. The Mann-Whitney U test is used to compare continuous variables presented as the median and interquartile range. The chi-square test or Fisher's exact test is used to compare categorical variables that are presented as a percentage. All statistical tests are two-sided, with P-values of less than 0.05 considered statistically significant.

### **2.13 Study budget**

This is a non-funded research project.

## Chapter Three

### Results

This chapter shows results shows the analysis of sociodemographic, ESAS and BDI II.

#### 3.1 Demographic Data

A total of 271 patients were included in the study, with a response rate of 95%. Fifty-two percent of those were 50 years or less, and the majority of the participants (n=184, 67.9%) were married. The demographics of the patients are summarized in Table H.1 in (Appendix H). The mean age of the patients was  $47 \pm 17.7$  years, with a range of 18 to 84 years. The male to female ratio was approximately 1:1; 51.3% and 48.7%, respectively. Regarding education, most of the participants (n=183, 67.5%) reached school education, and 88 (32.5%) underwent university or college education. The socioeconomic status of the subjects was as follows: 146 (53.9%) were affordable with low income, 104 (38.4%) were good and only 21 (7.7%) were very good. Among all participants, 13 (4.8%) had deformities such as Tal Hashomer syndrome, 60 (22.1%) were smokers, 99 (36.5%) had a job, 111 (41.0%) were living in a city, and 129 (47.6%) living in a village. Furthermore, 59.4% were outpatients and 153 (56.5%) were diagnosed with hematologic malignancies including: Acute lymphoblastic leukemia (ALL) 9.6%, Acute myeloid leukemia (AML) 10.3%, Chronic lymphocytic leukemia (CLL) 2.2%, Hodgkin lymphoma (HL) 11.8%, Non-Hodgkin lymphoma (NHL) 11.4%, Multiple myeloma (MM) 9.6%, Myelodysplastic syndromes (MDS) 1.5%, and 43.5% were diagnosed with solid tumors including: breast cancer 14.0%, colorectal cancer 6.6%, gastric cancer 3.0%, duodenal cancer 0.7%, pelvic retroperitoneal mass 0.4%, sarcoma 3.3%, uterine cancer 1.1%, ovarian cancer 1.8%, teratoma 0.4%, bladder cancer 1.8%, pancreatic cancer 3.7%, gallbladder cancer 0.7%, lung cancer 2.2%, hepatocellular carcinoma 0.4%, nasopharyngeal cancer 0.4%, vocal cord cancer 0.4%, larynx cancer 0.4%, prostate cancer 1.1%, malignant mesothelioma 0.4%, esophageal cancer 0.4%, brain cancer 0.4%. and some of participant had history of co-morbid illness as hypertension 24.4%, diabetes mellitus 18.1%, respiratory problems such as asthma 9.6%, crohn's disease 0.7%, End Stage Renal Disease (ESRD) 1.1%, gout 1.8%, bone related problems as osteoporosis 10.7%, neurologic problems 5.7%, genitourinary disorders 5.2%, ophthalmic problems 18.8%, hyperthyroidism 0.7%, hypothyroidism

0.4%, liver cirrhosis 0.4%, rheumatism 0.7%. It should be noted that most cancer patients (n=241, 88.9%) were in the treatment stage and 205 (75.6%) were actively on the chemotherapy protocol. Regarding the types of support that patients received, family psychological support was the top (59.8%), 44.3% received support from the healthcare team, 38.0% for religious support, and 34.3% received social support.

### 3.2 ESAS symptoms

Table 3.1 shows ESAS symptoms among study participants. Current findings reported that the mean score of tiredness (fatigue) was  $4.6 \pm 3.0$ , and 62.7% of the patients complained about it moderate to severe tiredness. Furthermore, 61.6% had moderate to severe drowsiness with a mean score of  $4.5 \pm 3.0$ . The frequency of other moderate to severe symptoms was the following: pain (54.6%), nausea (40.2%), loss of appetite (55.0%), SOB (28.4%), depression (40.6%), and anxiety (47.2%).

Regarding wellbeing dimension in ESAS the highest value means worse feeling of wellbeing, and the frequency of moderate to severe feeling of poor wellbieng was 56.5% with a mean score of  $4.0 \pm 3.1$

**Table 3.1**

*Description of ESAS symptoms*

ESAS symptoms	Mean $\pm$ SD	Median [Q1-Q3]	Frequency (%) of moderate to severe symptoms
Pain	$4.1 \pm 3.1$	4.0 (1.0-6.0)	148 (54.6)
Tiredness	$4.6 \pm 3.0$	5.0 (2.0-7.0)	170 (62.7)
Drowsiness	$4.5 \pm 3.0$	5.0 (2.0-7.0)	167 (61.6)
Nausea	$3.1 \pm 3.1$	2.0 (0.0-5.0)	109 (40.2)
Appetite loss	$4.1 \pm 3.2$	4.0 (1.0-7.0)	149 (55.0)
SOB (SOB)	$2.2 \pm 2.7$	1.0 (0.0-4.0)	77 (28.4)
Depression	$3.2 \pm 3.0$	2.0 (1.0-5.0)	110 (40.6)
Anxiety	$3.8 \pm 3.2$	3.0 (1.0-6.0)	128 (47.2)
Wellbeing	$4.0 \pm 3.1$	4.0 (1.0-6.0)	153 (56.5)

### 3.3 Depression severity among cancer patients by BDI II.

Based on BDI depression scores shown on Table 3.2, 38.4% of cancer patients had minimal depression (n=104, 22.5%), while 22.1%, 22.1%, and 17.0% had mild, moderate, or severe depression, respectively, as shown in Table 3. The median BDI score [Q1-Q3] was 17.0 [10.0-24.0], and the mean  $\pm$  SD was 18.2  $\pm$  11.0.

**Table 3.2**

*BDI II Categories.*

Depression severity		Frequency	Percent
Valid	0-13 minimal	104	38.4
	14-19 mild	61	22.5
	20-28 moderate	60	22.1
	29-63 severe	46	17.0
	Total	271	100.0

### 3.4 The association between patient's characteristics and depression (BDI).

The association between patient characteristics and depression is shown in Table H.2 in (Appendix H). The results showed that cancer patients over 50 years of age had significantly more depression than those their age  $\leq$  50 ( $p = 0.024$ ), where the median BDI score was 18.5 [11.0-25.0] for the age group of  $> 50$  years, and 15.0 [9.0-24.0] for patients  $\leq 50$  years of age. A significant difference was also found in the categories of educational levels ( $p < 0.001$ ), where cancer patients with low educational levels had higher depression scores compared to those with higher educational levels (university or college). Furthermore, poor socioeconomic status was significantly associated with an increase in depression intensity. The current study showed that smokers had moderate depression, as their BDI II score was 20.0 [13.0-29.0], while non-smokers had mild depression, with a BDI II score of 16.0 [10.0-24.0]. This difference was significant ( $p = 0.004$ ). Other factors, such as gender, social status, types of cancer, hospitalization status, and psychological support, were not found to be significantly associated with the BDI II score.

### **3.5 Association between patients' characteristics and palliative care symptoms.**

The following tables show the associations between the characteristics and palliative care symptoms; pain, fatigue (tiredness), drowsiness, nausea, loss of appetite, SOB, anxiety, well-being, and ESAS global scores.

#### **3.5.1 Pain**

According to ESAS, the dimension of pain was significantly associated with many factors as shown in Table H.3 in (Appendix H), including the age ( $p = 0.003$ ), gender ( $p = 0.007$ ), marital status ( $p = 0.001$ ), socioeconomic status ( $p = 0.53$ ), stage of work ( $p = 0.001$ ), treatment stage ( $p = 0.039$ ), chemotherapy ( $p = 0.036$ ), type of cancer ( $p < 0.001$ ), and pancytopenia condition ( $p = 0.011$ ).

At first, we found that cancer patients aged  $> 50$  years of age had more pain, the median [Q1-Q3] score was 4.0 [2.0-7.0] than those with age  $< 50$  years, the median [Q1-Q3]: 3.0 [1.0-5.0]. It was also found that women had a higher pain score than men. Additionally, the pain was higher in cancer patients in the treatment stage, with a score of 4.0 [1.0-6.0] compared to cancer patients in the diagnosis stage with a score of 3.0 [0.7-5.0]. Cancer patients who underwent chemotherapy were reported to have significantly more pain, with a pain score of 4.0 [2.0-6.0] compared to those who were not actively receiving chemotherapy. Furthermore, patients with solid tumors had significantly higher pain scores than patients with hematologic malignancies ( $p < 0.001$ ).

#### **3.5.2 Fatigue**

As indicated in Table H.4 in (Appendix H), fatigue/tiredness among cancer patients connected with marital status ( $p = 0.006$ ), with married patients experiencing increased fatigue and with socioeconomic status ( $p = 0.053$ ), which is associated with a high level of fatigue due to low income, as well as Work ( $p = 0.042$ ), which causes fatigue in non-worker patients, solid tumors ( $p = 0.021$ ), and health team assistance ( $p = 0.053$ ).

### **3.5.3 Drowsiness**

As shown in Table H.5 in (Appendix H) that drowsiness significantly associated with Socioeconomic status ( $p = 0.002$ ) which high in low income level with median score of 5 from 10.

### **3.5.4 Nausea.**

In Table H.6 in (Appendix H) shows that nausea score was significantly higher in patients on active chemotherapy, with a score of 3.0 [1.0-5.0] and a p-value of 0.023, and significantly associated with socioeconomic status (p value 0.007).

### **3.5.5 Lack of appetite**

As shown in Table H.7 in (Appendix H) Lack of appetite was significantly associated with smokers ( $p = 0.016$ ), hospitalized patients ( $p = 0.007$ ), and Auto-BMT ( $p = 0.037$ ), and associated with marital status ( $p = 0.002$ ), and socioeconomic status ( $p = 0.004$ ).

### **3.5.6 Shortness of breath.**

In Table H.8 in (Appendix H) the SOB domain, smoking was reported to be highly associated with this symptom ( $p = 0.021$ ), where the SOB score was 2.5 [0.0-5.0] for smokers and 1.0 [0.0-3.0] for non-smokers, also SOB significantly associated with family support ( $p = 0.021$ ) that indicate family support lower SOB severity.

### **3.5.7 Depression**

As shown in Table H.9 in (Appendix H) below the variables, such as smoking ( $p = 0.004$ ) and good or affordable socioeconomic status ( $p = 0.026$ ), were significantly associated with depression.

### **3.5.8 Anxiety**

As shown in Table H.10 in (Appendix H) anxiety was discovered to be associated with educational level ( $p = 0.044$ ) and treatment stage ( $p < 0.001$ ). The anxiety score was 5.0 [3.8-9.3] for cancer patients who were in the diagnosis stage, while the score was 3.0 [1.0-6.0] for those who were in the treatment phase, and significantly associated with socioeconomic status ( $p = 0.012$ ).

### **3.5.9 Well-being**

In the current analysis as shown in Table H.11 in (Appendix H), a poor feeling of well-being was identified in cancer patients with deformities ( $p = 0.026$ ), with a score of 5.0 [3.5-9.5], compared to cancer patients without deformities, 4.0 [1.0-6.0] and wellbeing significantly associated with socioeconomic status ( $p = 0.016$ ), Work ( $p = 0.05$ ) and smoking ( $p = 0.028$ ).

### **3.5.10 Total score of ESAS**

Total score of ESAS indicated overall symptom burden, as shown in Table H.12 in (Appendix H) that show no significant relation of total score of ESAS with sociodemographic data.

## **3.6 Correlations between BDI and ESAS**

Table 3.3 showed statistically significant correlations between all ESAS symptoms; pain, fatigue (tiredness), drowsiness, nausea, loss of appetite, global scores of SOB, anxiety, wellbeing, and ESAS, and BDI score.

**Table 3.3***Pearson's correlation between BDI and ESAS.*

		Pain	Tiredness	Drowsiness	Nausea	Loss of Appetite	SOB	Depression	Anxiety	Wellbeing*	ESAS Global
BDI score	Correlation Coefficient	0.347**	0.460**	0.488**	0.365**	0.373**	0.287**	0.577**	0.544**	0.222**	0.200**
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001

\*Higher value demonstrates the worst feeling of well-being.

BDI: Beck Depression Inventory.

ESAS: Edmonton Symptom Assessment System.

## **Chapter Four**

### **Discussion and Conclusion**

This chapter sums up the connection between our results and the result in the related studies we went through in our research.

#### **4.1 Discussion**

In our study, we evaluated 271 cancer patients including 43.5% with solid tumors and 56.5% with hematologic malignancies, to report palliative care symptoms focusing on depression using ESAS scores and the BDI scale and determine the severity of these symptoms on each scale and their associated factors.

In our study sample, the male to female ratio was approximately 1:1, which is similar to the overall distribution of malignancies in Palestine. According to the Palestinian Ministry of Health report (41), in 2020, male patients with cancer were 49.3% and female patients 50.7%. However, a similar study in Italy showed that 58% of the participants were female (35).

In our study, the mean age of the participant was 47 years, while in other studies the mean age was 49.12 years (29), and 61.9 years (35). In our study, 88.9% of the cancer patients were in the treatment stage and the others were in the diagnostic stage. This percentage is somewhat similar to a previous study that included patients who were recently on chemotherapy protocol (82%) (35).

The most common symptoms reported by our study were fatigue (62.7%), drowsiness (61.6%), poor well being (56.5%), loss of appetite (55.0%) and pain (54.6%). In a study conducted in Egypt, the symptoms of advanced cancer were pain (93%), followed by fatigue (74%), poor wellbeing (67%), lack of appetite (62%), anxiety (60%), and drowsiness (56%) (18). However, another study reported that pain was the most common symptom in the diagnosis stage of incurable cancers (42). Most of the patients included in the study were tired (94%), anxious (87.5%), and depressed (83 % ) (43). Importantly, using the ESAS scale as a guide to identify and comprehend patients' major problems can help in establishing appropriate care for cancer patients (44).

In Palestine, depression represents around 15.3 % of mental disorders (45). In this study, the severity of depression among cancer patients measured by BDI II was 38.4% had minimal depression, 22.5% mild depression, 22.1% moderate depression, and 17.0% severe depression. On the other hand, a study conducted in Gaza Strip, Palestine, used the same scale (BDI) and reported that 7.7 % of cancer patients were minimally depressed, 15% were mildly depressed, 53.4 % were moderately depressed, and 24.2 % were severely depressed. Another used a different scale (the Center for Epidemiological Studies Depression Scale, CES-D) and reported that a total of 44% of the Palestinian cancer patients had severe depression. (46). Looking for another population group in Palestine, a study showed that 33.9% of hemodialysis patients were moderately depressed and 29% had severe depression (47). The high prevalence of depression in Palestine may be explained by the presence of life stressors, such as siege, occupation (48), and increased anxiety level (49) the difficulties in accessing healthcare (50).

Compared to other studies carried outside Palestine. In Jordan, depression was found among breast cancer patients as follows: 52.7% with minimal depression, 26.0% with mild depression symptoms 19.5% with moderate symptoms, and 1.8% with severe symptoms. (29). In Turkey, 52.0% of breast cancer patients had a BDI score of 17 or higher (24). Furthermore, a study used the Hospital Anxiety Depression Scale (HADS) to evaluate the screening performance of depression among cancer patients and showed that mild, moderate, and severe depression was 23.1%, 11.1%, and 2.3%, respectively (51). Using HADS, cross-sectional research was conducted in Milan-Italy for 194 non-advanced patients with solid and hematologic malignancies and reported that 4.1% of cancer patients had severe depression. On the other hand, in the same study, The best performance was for the ESAS depression score >6, which properly identified 96% of patients by detecting 50% of true positive severe depression and 98 % of true negative cases according to HADS (35).

In a study analyzed, the median (range) score for depression was 2 (0–10) in ESAS with a cutoff of 2 out of 10 or more had a sensitivity of 77 % and 83 %, respectively, with a specificity of 55 % and 47 % for depression and moderate/severe depression (51).

Unfortunately, in Palestine, there is a lack of specialized centres or palliative care specialists, which is essential to reduce the intensity of these symptoms (52). In the United States of America (USA), the research examined the determinants of symptom improvement in 406 advanced cancer patients who were referred to palliative care. In this study, fatigue was found to be more likely to improve in individuals who had higher levels of other symptoms at baseline, such as dyspnea, sadness, and nausea. Pain relief was more prevalent in drowsy people. After 1–4 weeks of palliative care, old age was associated with better well-being (53). Similarly, Canadian researchers looked at the factors that influence the improvement in 150 cancer patients who were part of a palliative care team intervention. This study discovered that after one week of intervention, the female sex was related to symptom improvement, with nausea, anxiety, dyspnea and pain showing the most improvement (54). Another research conducted in the USA examined gastrointestinal symptoms in 202 advanced cancer patients who had been referred for palliative surgical consultation. Patients who had surgical treatment had better symptoms than those who did not, and there was no link between symptom improvement with sex, age, or current chemotherapy or biotherapy (55).

In the current study, we found that depression was more prominently prevalent in the age of cancer patients' age >50 years, as previously demonstrated in a study that used the HADS for breast cancer patients undergoing radiation therapy in Palestine, age older than 51 years old was associated with a higher level of depression (56). While a cross-sectional study conducted in two Jordanian hospitals concluded that age was not significantly associated with BDI II scores (29).

Regarding the educational level, we found that cancer patients with low educational levels had more depression, which is similar to other studies (26, 57). However, other publications did not show significant difference between both variables; educational level and depression (23, 29). Depression was also associated with socioeconomic status, as patients with poor socioeconomic status had more depression. Compared to other studies, depression was not significantly associated with socioeconomic status (26, 29).

Our findings revealed that smoker cancer patients had higher depression scores compared to nonsmokers. Smoking habits may be developed by experiencing stressful life events, for example, in Palestine, many people complain of psychological problems as a result of traumatic events from the Israeli occupation (45, 49, 58) and anxiety (49, 50) which Smokers account for more than a fifth of people aged 18 and over, according to the Palestinian Household Survey conducted by Palestinian Central Bureau of Statistics (PCBS) in 2010, 22.5 % of Palestinians aged 18 and over in the Palestinian territory are smoker as 26.7% in West Bank (compared to 14.6% in Gaza Strip). Jenin Governorate had the highest percentage of smokers (32.2%), while north Gaza Governorate had the lowest number (11.3%) (59). And smoking is also common in cancer patients too (60). The current study's findings revealed that psychosocial assistance was not linked to lower depression scores; nevertheless, these findings contradict previous research that suggested that cancer patients should take advantage of accessible psychological support services to lessen their depression, cancer patients must take advantage of available psychological support services to reduce their depression (61, 62).

In the current analysis, it was observed that female cancer patients and those with age > 50 years of age had significantly higher pain scores. It seems that older individuals with depression may be more likely to show discomfort due to concurrent health conditions (63). Additionally, those who work had lower pain scores, maybe because work requires the body to move, which is excellent for circulation, prevents muscular tightness and joint stiffness, and raises the pain tolerance threshold (64). The painscore was significantly higher in cancer patients who were in the treatment stage. That could be due to adverse effects of anticancer medications, such as chemotherapy-induced peripheral neuropathy (ie, Vince alkaloid) (65). Pain was more severe in solid tumors (median pain score = 4) than in hematologic malignancies (median pain score =3), which is supported by previous studies (66) previous studies.

As reported in the present study, the fatigue score was lower in workers than in non-workers. It should be noted that fatigue due to malignancy is not alleviated by the rest, and this symptom is multifactorial, either the primary disease or the side effects of cancer therapy, while the specific underlying pathophysiology is unknown (67, 68). As expected, cancer patients who were actively on chemotherapy had significantly higher

nausea scores than those who were not on chemotherapy. Nausea and vomiting are distressing symptoms. Despite the availability of strong antiemetic's and evidence-based recommendations, up to 40% of cancer patients receiving chemotherapy experience nausea and vomiting (69). Furthermore, the SOB score was significantly higher in smokers than in non-smokers, which is in agreement with previous findings that identified an increased prevalence of dyspnea in cancer patients who smoke (70). Furthermore, the depression score showed a statistically significant association with Socioeconomic status and smoking, which was supported by other studies (71-74). Regarding the anxiety score associated with the educational level, the anxiety level is higher in cancer patients their educational level school and below with a score of 4.0 and the anxiety score in the patient with the university or college educational level was 2.0, perhaps due to a higher educational level appears to have a protective impact against the accumulation of anxiety and sadness over life (75). Our result showed that anxiety was higher in cancer patients in the diagnosis stage than in those with the treatment stage. A previous study concluded that chronic inflammatory conditions have been documented as risk factors for anxiety and depression among cancer patients. The diagnostic phase was found to be associated with a high level of anxiety (76). Which moderate anxiety or depression reported through the corresponding ESAS items (cutoff=4) can be considered a useful screening tool for anxiety and depression in non-advanced patients with solid or hematologic malignancies (35).

Regarding well-being, cancer patients with deformities had worse well-being compared to cancer patients without deformities. Deformity due to malignant disease affects the appearance and QoL of patients, such as oral cancer (77) Tel Hashomer syndrome, and Guillain-Barre syndrome in lymphoma patients (78). Additionally, poor well-being was reported in smokers, which was supported by other studies (79, 80). In particular, poor socioeconomic status was found to be associated with an increase in almost all symptom severity in ESAS, which requires paying more attention to the socioeconomic status, as poor quality of life was also documented in Palestine due to low income (81).

Finally, all palliative symptoms (pain, fatigue, drowsiness, nausea, loss of appetite, SOB, anxiety, and well-being) were significantly and positively correlated with the BDI score. Supported by another study reviled that physical symptom for their degree and frequency among advanced cancer patients who are depressed. The manifestation of

depression and the expression of several bodily symptoms and well-being have been found to have a substantial association. Patients who have a high level of expression and/or intensity of various symptoms should be screened for mood disorders so that appropriate treatment may be given to enhance the patients' QoL (22). In terms of quality of life, Palestinian cancer patients face several challenges. To improve QoL and minimize suffering in these patients, palliative care for these patients should be included in the healthcare system. Furthermore, policy makers should integrate specific services, such as palliative care in oncology patients, into the healthcare system (82).

Regarding the strengths of the scales used, the ESAS is a practical, patient-centered symptom evaluation instrument that is simple to use, understand, and report. Simultaneous evaluation of ten symptoms enables the identification of symptom clusters and quick assessment. Many clinical and research organizations around the world use it to benchmark their results. They have psychometrically confirmed its face validity and it is available in more than 20 languages. It has been determined that there are limited clinically significant differences and responsiveness. It is available in a variety of languages. It is freely available (83). The strengths of the BDI II scale are: it is simple to use, applicable to a broad age range (13 years and older), low reading level (average Flesch-Kincaid grade level 3.6), and extensive research base (84).

## **4.2 Conclusion**

The symptoms reported by cancer patients at NNUH according to the ESAS screening tool arranged in descending order of percentage were fatigue, drowsiness, poor wellbeing, loss of appetite, pain, anxiety, depression, nausea, and SOB. The depression reported according to the severity of depression symptoms scores in BDI II organized in descending order of percentage were minimal depression (38.4%), mild depression (22.5%), moderate depression (22.1%) and severe depression (17.0%). And the BDI II score was impacted by different factors, including age, educational level, Socioeconomic status, and smoking. In addition, a significant correlation was found between ESAS and BDI II. Finally, the BDI II and ESAS useful tools for assessment and evaluation of depression and other symptoms in ESAS for integrated palliative care that affect cancer patients' QoL.

### **4.3 Recommendations**

- ESAS as a routine screening tool for cancer patients at NNUH in the initial assessment to establish the required palliative care.
- Establish pain management guidelines to control pain in cancer patients using an ESAS numerical pain scale of the ESAS.
- BDI II used for depressed cancer patients is defined by high depression score in ESAS and referral to the social worker and, if needed to a psychiatric nurse or/and psychiatric doctor.
- Report depression symptoms and refer them to the social worker or available psychosocial personnel.
- Do a palliative care course for the staff of NNUH to identify the importance of palliative care in the management of symptoms.
- Involve a psychiatric/mental health nurse or social worker in the session to break the bad news about the cancer diagnosis.
- More research is recommended on the topic considering different hospitals in Palestine and sample randomization, on the other hand further experimental research is recommended using pre-post palliative care assessment using the ESAS tool.

### **4.4 Strengths and Limitations**

This study included cancer patients from all parts of Palestine, the West Bank, and The Gaza Strip, who have different socioeconomic statuses. It is also the first study in Palestine documenting depression and palliative care symptoms among oncology patients. However, the current study has several limitations. The major limitation is its cross-sectional design, which does not allow us to see how depression in cancer patients changed over time between different paths of treatment. Other limitations include the use of convenience sampling from a single tertiary hospital, along with the use of a small sample size. On the other hand, we have not fully defined all factors of palliative care as the patients may receive care/support not defined in our research. Therefore, the current findings cannot be generalized. And the BDI scale was used for the diagnosis of

depression, not DSM IV. And the ESAS scale is a short one-dimensional measure that simply assesses the intensity and severity currently, several versions of ESAS are used, each with a distinct time anchor and number of elements, making it impossible to compare or combine the findings, Some concepts (for example, well-being) are not clearly defined and the tenth symptom is different cannot be unified as headache, constipation, etc.

## List of Abbreviations

Abbreviation	Meaning
BDI	Beck Depression Inventory.
ESAS	Edmonton Symptom Assessment System.
NNUH	An-Najah National University Hospital.
QoL	Quality of life.
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders.
CAM	Complementary and Alternative Medicine
SOB	Shortness of breath.
SF-36	36-Item survey form.
BMT	Bone marrow transplantation.
Auto-BMT	Autologous Bone Marrow Transplant
STAI	State-Trait Anxiety Inventory.
DD	Depression disorder.
HADS	Hospital Anxiety and Depression Scale.
MOH	Ministry of health.
USA	United States of America.
ALL	Acute lymphoblastic leukaemia
AML	Acute myeloid leukemia
CLL	Chronic lymphocytic leukemia
HL	Hodgkin lymphoma.
NHL	Non-Hodgkin lymphoma.
MM	Multiple myeloma.
MDS	Myelodysplastic syndromes.
ESRD	End stage renal disease.
PCBS	Palestinian Central Bureau of Statistics

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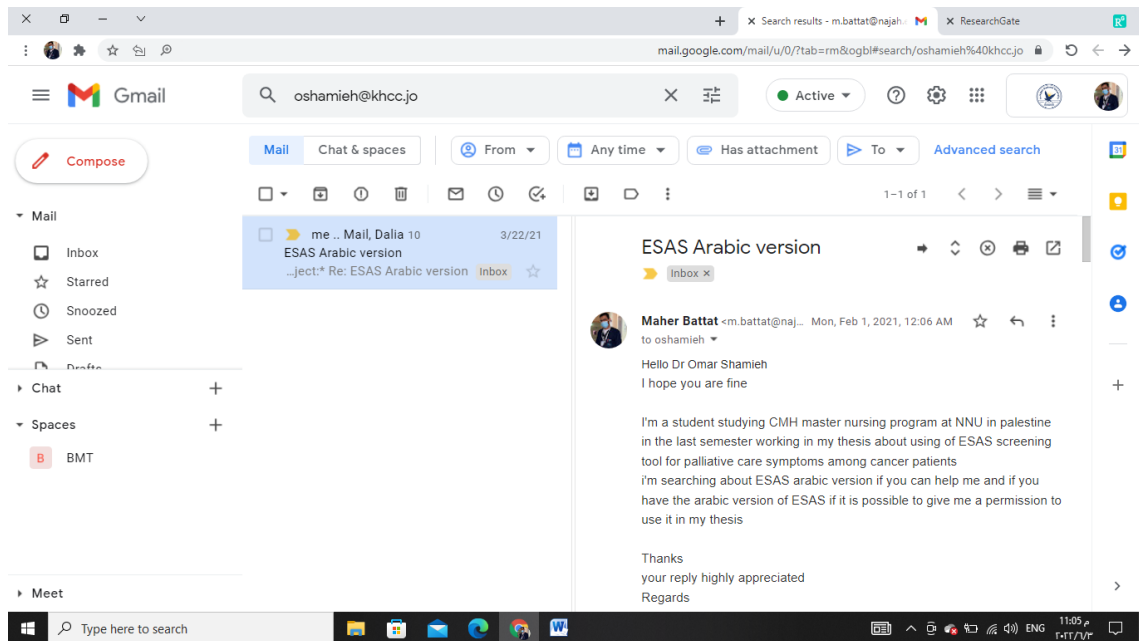
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## Appendices

### Appendix A

#### ESAS arabic version use permission



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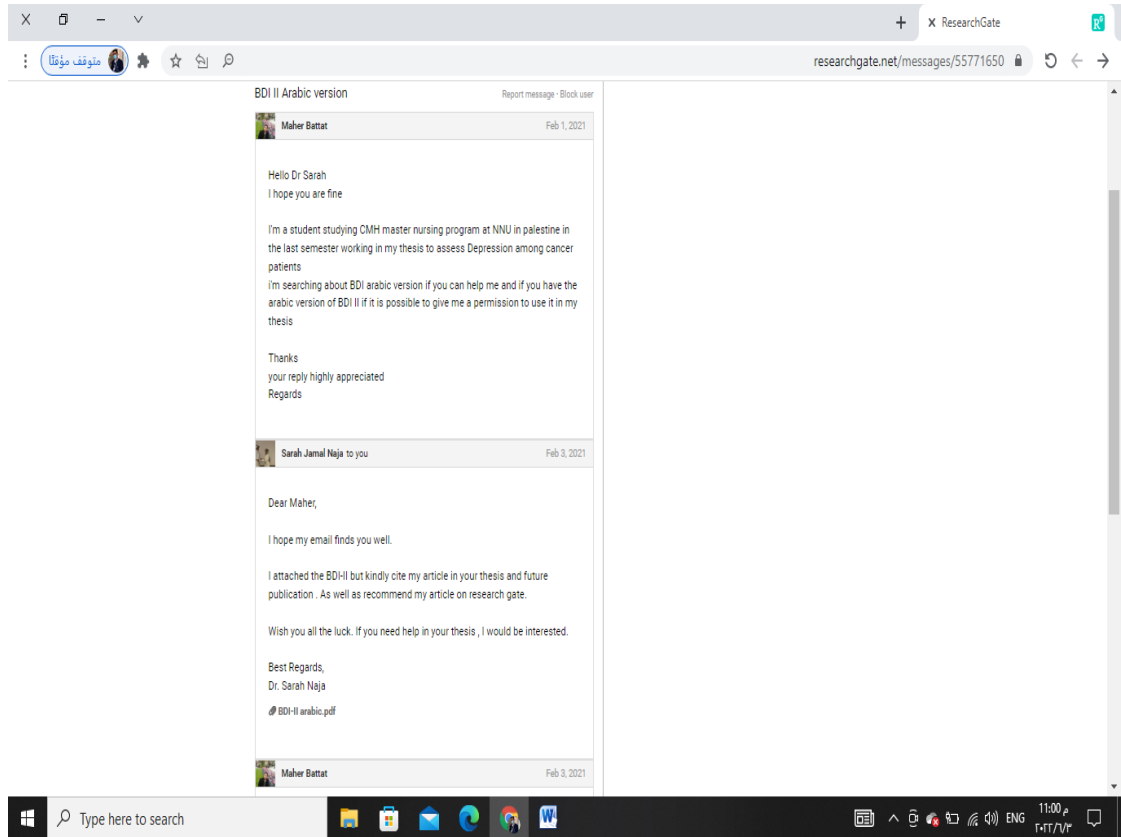
[https://books.google.ps/books/about/Validation\\_Of\\_Edmonton\\_Symptom\\_Assessment.html?id=4Z7zgEACAAJ&redir\\_esc=y](https://books.google.ps/books/about/Validation_Of_Edmonton_Symptom_Assessment.html?id=4Z7zgEACAAJ&redir_esc=y)

<https://doi.org/10.26226/morressier.5afadd8bf314ac000849af89>

<https://www.cancercare.on.ca/cms/one.aspx?objectId=58189&contextId=1377>

## Appendix B

### BDI II Arabic version use permission



## Appendix C

### ESAS questionnaire

الرجاء وضع دائرة حول الرقم الذي يصف على اكمل وجه كيف تشعر الآن:

الم	لا يوجد الم	0 1 2 3 4 5 6 7 8 9 10	أسوأ الم ممكن
اجهاد	لا يوجد اجهاد	0 1 2 3 4 5 6 7 8 9 10	أسوأ اجهاد ممكن
خمول	لا يوجد خمول	0 1 2 3 4 5 6 7 8 9 10	أسوأ خمول ممكن
غثيان	لا يوجد غثيان	0 1 2 3 4 5 6 7 8 9 10	أسوأ غثيان ممكن
فقدان الشهية	لا يوجد فقدان للشهية	0 1 2 3 4 5 6 7 8 9 10	أسوأ فقدان ممكن للشهية
ضيق تنفس	لا يوجد ضيق تنفس	0 1 2 3 4 5 6 7 8 9 10	أسوأ ضيق تنفس ممكن
اكتئاب	لا يوجد اكتئاب	0 1 2 3 4 5 6 7 8 9 10	أسوأ اكتئاب ممكن
توتر	لا يوجد توتر	0 1 2 3 4 5 6 7 8 9 10	أسوأ توتر ممكن
العافية	افضل عافية	0 1 2 3 4 5 6 7 8 9 10	أسوأ عافية ممكنة
مشاكل اخرى	اقل ما يمكن	0 1 2 3 4 5 6 7 8 9 10	أسوأ ما يمكن

قام بتعبئة الجدول:

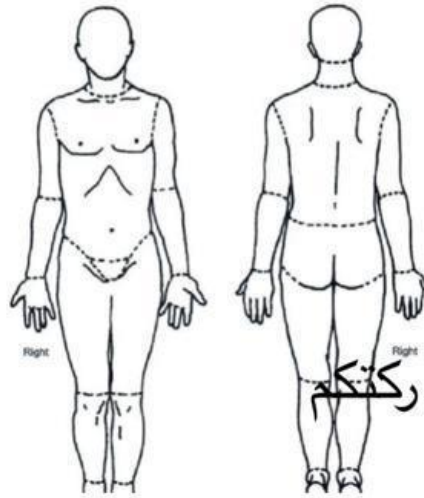
① المريض بدون مساعدة

② المريض بمساعدة

③ المراقب مقدم الخدمة

التاريخ: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

الرجاء وضع علامة على الصورة في مكان موضع الألم



نشكركم لمشاركتكم

## Appendix D

### BDI\_II

#### مقياس (د-2) BDI-II

#### توجيهات

تتضمن هذه الورقة 21 مجموعة من العبارات . الرجا أن تقرأ كل مجموعة من العبارات بعناية ، ثم اختار من كل مجموعة عبارة واحدة والتي تصف بطريقة أفضل الطريقة التي تشعر بها خلال الأسبوعين الأخيرين بما في ذلك اليوم. ضع دائرة حول الرقم جوار العبارة التي اخترتها . ولو بدا لك أن أكثر من عبارة في مجموعة العبارات تنطبق عليك بطريقة متساوية ، ضع دائرة حول أعلى رقم في هذه المجموع. وتأكد أنك لا تختار أكثر من عبارة في أي مجموعة بما في ذلك المجموعة 16 ( تغيرات في نمط النوم ) أو المجموعة 18 ( تغيرات في الشهية ).

الرقم	اسم المجموعة	العبارات
1	الحزن	0- لا اشعر بالحزن 1- اشعر بالحزن في كثير من الاحيان 2- انا حزين طوال الوقت 3- اشعر بالحزن والتعاسة الى درجة لا تطاق
2	التشاؤم	0- لم تضعف همتي فيما يخص مستقبلي 1- اشعر بضعف همتي فيما يخص مستقبلي على غير عادتي 2- اتوقع الا تسير اموري بشكل جيد 3- اشعر ان مستقبلي لا امل فيه، وان الامور تزداد سوء-
3	الفشل او الاخفاق فيما سبق من العمر	0- لا اشعر بانني فاشل 1- فشلت اكثر مما ينبغي 2- كلما افكر في حياتي السابقة اكتشف الكثير من الفشل 3- اشعر انني فاشل في حياتي تماما
4	فقدان المتعة او الاستمتاع	0- استمتع دائما بالحياة كما كنت من قبل 1- لا استمتع بالحياة بنفس القدر الذي اعتدت عليه 2- احصل على قدر قليل جدا من الاستمتاع بالحياة مما تعودت عليه من قبل 3- لم احصل على اي استمتاع بالحياة كعادة استمتاعي سابقا
5	الشعور بالذنب او الاتم	0- لا اشعر شعورا خاصا بالذنب 1- اشعر بالذنب من عديد الاشياء التي فعلتها او من اشياء واجبة الاداء ولم اقم بها 2- اشعر بالذنب معظم الاوقات 3- اشعر بالذنب جل الاوقات
6	الشعور بالعقاب او الاذى	0- لا اشعر بان هناك عقابا او اذى يحل بي 1- اشعر بان عقابا او اذى سيحدث او يحل بي 2- اتوقع عقابا يقع علي بالفعل 3- اشعر انني ساتعرض للعقاب او الاذى
7	الاحساس السلبي نحو الذات	0- شعوري نحو ذاتي لم يتغير 1- فقدت الثقة في نفسي 2- خاب املي في نفسي 3- لا احب نفسي
8	موقف نقد الذات	0- لا الوم او لا انتقد نفسي اكثر من المعتاد 1- انتقد نفسي اكثر من المعتاد 2- الوم نفسي لما ارتكب اخطاء 3- الوم نفسي على كل ما يحدث من سوء بسببي
9	الافكار او الرغبة في الانتحار	0- لا تتابني اي افكار للتخلص من نفسي 1- تراودني افكار للتخلص من حياتي ولكني لا انفذها 2- اريد ان انتحر 3- سانتحر في اي فرصة متاحة

10	البكاء	<p>0- لا ابكي اكثر من المعتاد</p> <p>1- ابكي اكثر من المعتاد</p> <p>2- ابكي لانتفه الاسباب او لاقبل اصغر الاشياء</p> <p>3- كنت قادرا على البكاء ولكنني اعجز الان على البكاء حتى لو اردت ذلك</p>
11	الهيجان او الإستثارة	<p>0- لست منزعجا او متوترا هذه الايام عن اي وقت مضى</p> <p>1- اشعر بالانزعاج او التوتر هذه الايام عن اي وقت مضى</p> <p>2- اتهيح و اتوتر لدرجه يصعب علي البقاء هادئا</p> <p>3- اتهيح و اتوتر لدرجه تدفعني الى الحركة او فعل شيء ما</p>
12	فقدان الاهتمام	<p>0- لم افقد اهتمامي بالآخرين او بالانشطة</p> <p>1- انا قليل اهتمام بالآخرين او بالانشطة عن السابق</p> <p>2- فقدت معظم اهتمامي بالآخرين وبالمور الأخرى</p> <p>3- لدي صعوبة في ان اهتم بأي شيء مهما كان</p>
13	التردد في اخذ القرار	<p>0- اتخذ قرارات صائبة و حكيمة دائما كمثلي ما كنت عليه سابقا</p> <p>1- لم اجد صعوبة في اتخاذ القرارات</p> <p>2- لدي صعوبة كبيرة اكثر من ذي قبل في اتخاذ القرارات</p> <p>3- اعجز تماما عن اتخاذ اي قرار مهما كان بالمره</p>
14	انعدام القيمة	<p>0- اظن اني شخص مهم ولدي قيمة</p> <p>1- اعتقد اني لست شخصا مهما وذا قيمة كما تعودت</p> <p>2- اشعر اني اقل قيمة مقارنة بالآخرين</p> <p>3- اشعر اني عديم القيمة تماما</p>
15	فقدان الطاقة	<p>0- لدي دائما نفس القدر من الطاقة كما كنت من قبل</p> <p>1- لدي قدر من الطاقة اقل مما كنت عليه من قبل</p> <p>2- ليس لدي طاقة كافية للتمكن من فعل اشياء كثيرة</p> <p>3- ليس لدي طاقة لفعل شيء مهما كان</p>
16	التغير في عادات النوم	<p>0- عادات نومي لم تتغير</p> <p>1 أ- انا أكثر بقليل على ما تعودت عليه</p> <p>1 ب- انا أقل بقليل على ما تعودت عليه</p> <p>2 أ- انا أكثر مما تعودت عليه بشكل كبير</p> <p>2 ب- انا أقل مما تعودت عليه بشكل كبير</p> <p>3 أ – انا تقريبا كل اليوم</p> <p>ب- استيقظ من النوم مبكرا 2-3 ساعات, واعجز عن استئناف نومي 3</p>
17	قابلية الغضب	<p>0- لا اغضب اكثر من المعتاد</p> <p>1- اغضب اكثر من المعتاد</p> <p>2- اغضب اكثر بكثير من المعتاد</p> <p>3- انا دائم الغضب</p>
18	تغير الشهية	<p>1- لم يحدث اي تغير في شهيتي</p> <p>شهييتي ليست جيدة كما كانت 2-</p> <p>شهييتي ساءت حاليا 3-</p> <p>ليس لدي شهية على الاطلاق 4-</p>
19	صعوبة التركيز	<p>0- استطيع التركيز دائما كما تعودت</p> <p>1- لا استطيع التركيز كما تعودت</p> <p>2- لدي صعوبة في ان اركز لمدة طويلة في اي شيء كان</p> <p>3- اجد نفسي عاجزا على التركيز في اي شيء مهما كان</p>
20	الارهاق او الاجهاد	<p>0- لست اكثر ارهاقا من السابق</p> <p>1- ارهق واتعب بسهولة اكثر مما تعودت عليه</p> <p>2- كثرة الارهاق تعيقني عن القيام باشياء كثيرة اعتدت عليها</p> <p>3- اصبحت مشغولا تماما باموري الصحية</p>
21	فقدان الاهتمام بالجنس	<p>0- لم لاحظ اي تغيرات حديثة في رغبتني الجنسية</p> <p>1- اصبحت اقل اهتماما بالجنس من ذي قبل</p> <p>2- قلت رغبتني الجنسية بشكل ملحوظ</p> <p>3- فقدت تماما رغبتني الجنسية</p>

## Appendix E

### IRB Approval

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



جامعة النجاح الوطنية  
كلية الطب وعلوم الصحة  
لجنة أخلاقيات البحث العلمي

Ref: Mas. Feb. 2021/17

#### IRB Approval Letter

Study Title:

**"Assessment of the palliative care and depression symptoms among cancer patients: A cross-sectional study"**

**Submitted by:**  
Maher M. Battat

**Supervisor:**  
Aida Alkaisi, Sa'ed Zyoud

**Date Approved:**  
24<sup>th</sup> Feb. 2021

Your Study Title **"Assessment of the palliative care and depression symptoms among cancer patients: A cross-sectional study"** viewed by An-Najah National University IRB committee and was approved on 24<sup>th</sup> Feb. 2021

  
Hasan Fitian, MD

IRB Committee Chairman



## Appendix F

طلب تسهيل مهمة جمع بيانات البحث

تسهيل مهمة ماهر بطاط مستشفى... X

An-Najah  
National University

Faculty of Medicine & Health Sciences  
Department of Nursing

بسم الله الرحمن الرحيم



جامعة النجاح  
الوطنية

كلية الطب وعلوم الصحة  
دائرة التمريض

التاريخ: 17/03/2021

حضرة السيد لؤي الزين المحترم /مدير دائرة التمريض في  
مستشفى النجاح الوطني الجامعي ، ،

الموضوع: تسهيل مهمة طالب الماجستير ماهر محمد خليل بطاط / ماجستير  
تمريض الصحة النفسية المجتمعية

تحية طيبة وبعد،

تهديكم دائرة التمريض والقبالة في كلية الطب وعلوم الصحة / جامعة النجاح الوطنية  
أطيب التحيات ونشكر لحضرتكم حسن تعاونكم معنا ونرجو التكرم بالموافقة على تسهيل  
مهمة الطالب المذكورة أعلاه في مستشفائكم الموقر، حيث أنه سيقوم بعمل دراسة بغرض  
البحث العلمي لأطروحة التخرج تحت عنوان:

**Assessment of the palliative care and depression symptoms among  
cancer patients: A cross-sectional study**

تحت اشراف: د. عائدة القيسي / د. سائد الزبيد

IRB مرفق ملخص الدراسة و -

Data Sheet

وتفضلوا بقبول الطلب ولكم فائق الاحترام ، ،

منسقة برنامج ماجستير تمريض العناية المكثفة

د. عائدة أبو السعود القيسي

دائرس - صر 7 أو 707 هاتف (970) 2342902; 4; 7; 8; 14 فاكس (970) 2342910 (970) 2342910  
(Nablus- P.O.Box: 7 or 707- Tel (970) 2342902; 4; 7; 8; 14- Faximile (970) 2342910  
Email nursing@najah.edu Web Site: www.najah.edu

نابلس - صرب 7 أو 707 هاتف (970) (09) 2342902; 4; 7; 8; 14 فاكسيميل (970) (09) 2342910  
(Nablus - P.O.Box: 7 or 707 - Tel (970) (09) 2342902; 4; 7; 8; 14 - Faximile (970) (09) 2342910  
Email: nursing@najah.edu Web Site: www.najah.edu

## Appendix G

### Inform consent

استمارة الموافقة على المشاركة في البحث العلمي  
**عنوان الدراسة: تقييم الرعاية التلطيفية وأعراض الاكتئاب لدى مرضى السرطان: دراسة مقطعية**

الباحث: ماهر بطاط الجامعي/جامعة النجاح الوطنية	مستشفى النجاح الوطني
المشرفون: دكتور سائد زيور دكتور عائدة القيسي	جامعة النجاح الوطنية

انا الطالب ماهر محمد خليل بطاط/ طالب دراسات عليا في جامعة النجاح الوطنية يسرنى أن ادعوك/ي إلى المشاركة في بحثي لاستكمال متطلب درجة الماجستير في الصحة النفسية التمريضية المجتمعية  
يتعلق البحث بجمع بيانات لتقييم اعراض الرعاية التلطيفية واعراض الاكتئاب لدى مرضى السرطان في مستشفى النجاح الوطني الجامعي باستخدام مقياسين عالميين (مقياس ادمونتون لتقييم اعراض الرعاية التلطيفية ومقياس بيك 2 للاكتئاب) من أجل تحديد حاجة الرعاية التلطيفية لمرضى السرطان خلال جميع المراحل العلاجية والتي تهدف لمعالجة الأعراض والتقليل منها وتحسين جودة حياته خلال مسيرة العلاج.

اقدر مشاركتك/ي في هذه الدراسة ولك/ي كامل الحرية والارادة في المشاركة في هذا البحث ولك/ي الحق في أخذ الوقت الكافي للتفكير في المشاركة من عدمها وسؤال الباحث عما تراه مناسباً والتحدث لأي شخص أو جهة عن هذا البحث.

كما يمكنك الاستفسار عن أي جزء يتعلق في البحث الان أو فيما بعد وإذا كان هناك كلمات أو اجزاء غير مفهومة بإمكانك سؤال الباحث وستجد/ين الوقت والاجابة الكافيتين.  
نؤكد أن كافة المعلومات التي سوف يتم جمعها منك هي لأغراض البحث العلمي فقط و سوف يتم المحافظة على السرية التامة وعدم استخدام هذه المعلومات لأغراض أخرى.  
يرجى من المشارك/ة تعبئة مقياسين مرفقين: مقياس بيك يتكون من 21 سؤال بوضع دائرة على الرقم الذي يدل على حدة الأعراض ويليه مقياس ادمونتون يتكون من 10 اسئلة.  
انا الموقع ادناه اوافق على المشاركة في هذه الدراسة

..... التاريخ:  
..... القسم/المكان:.....

لمعرفة المزيد عن هذه الدراسة يمكنك الاتصال بالباحث ماهر البطاط  
على جوال 0599186081

## Appendix H

### Tables of Study

**Table H.1**

*Patients' characteristics*

Variable	Frequency (%)
Age	
≤ 50	141 (52.0)
> 50	130 (48.0)
Gender	
Male	139 (51.3)
Female	132 (48.7)
Marital status	
Singe	87 (32.1)
Married	184 (67.9)
Educational level	
School	183 (67.5)
University or college	88 (32.5)
socioeconomic status	
Affordable (low income)	146 (53.9)
Good (middle income)	104 (38.4)
Very Good (high income)	21 (7.7)
Deformities	
Yes	13 (4.8)
No	258 (95.2)
Smoker	
Yes	60 (22.1)
No	211 (77.9)
Work	
Yes	99 (36.5)
No	172 (63.5)
Living location	
City	111 (41.0)
Village	129 (47.6)
Camp or refugee	31 (11.4)
Hospitalization status	
Inpatient	110 (40.6)
Outpatient	161 (59.4)
Type of cancer	
Hematology	153 (56.5)
Solid	118 (43.5)
Treatment stage	
Yes	241 (88.9)
No	30 (11.1)
Currently on chemotherapy	
Yes	205 (75.6)
No	66 (24.4)
Recently pancytopenia	
Yes	86 (31.7)
No	185 (68.3)
Autologous Bone Marrow Transplant (Auto-BMT)	
Yes	24 (8.9)

No	247 (91.1)
Admitted for surgery	
Yes	10 (3.7)
No	261 (96.3)
Types of psychological support	
Family support	162 (59.8)
Social support	93 (34.3)
Religious support	103 (38.0)
Health care team support	120 (44.3)

**Table H.2***Association between patient characteristics and depression (BDI II).*

Variable	Frequency (%)	Depression Median [Q1-Q3]	P-value
Age			0.024*
≤ 50	141 (52.0)	15.0 [9.0-24.0]	
> 50	130 (48.0)	18.5 [11.0-25.0]	
Gender			0.815
Male	139 (51.3)	17.0 [10.0-26.0]	
Female	132 (48.7)	16.0 [10.3-24.0]	
Marital status			0.226
Single	87 (32.1)	15.0 [9.0-25.0]	
Married	184 (67.9)	17.0 [10.3-24.0]	
Educational level			< 0.001*
School	183 (67.5)	18.0 [11.0-27.0]	
University or collage	88 (32.5)	14.0 [7.0-20.0]	
Socioeconomic status			< 0.001*
Affordable	146 (53.9)	18.5 [11.8-27.3]	
Good	104 (38.4)	15.0 [9.3-21.8]	
Very Good	21 (7.7)	10.0 [4.5-15.5]	
Deformities			0.571
Yes	13 (4.8)	17.0 [11.5-27.0]	
No	258 (95.2)	16.0 [10.0-24.0]	
Smoker			0.004*
Yes	60 (22.1)	20.0 [13.0-29.0]	
No	211 (77.9)	16.0 [10.0-24.0]	
Work			0.074
Yes	99 (36.5)	16.0 [8.0-22.0]	
No	172 (63.5)	17.0 [11.0-27.0]	
Living location			0.751
City	111 (41.0)	17.0 [10.0-25.0]	
Village	129 (47.6)	16.0 [10.0-24.0]	
Camp or refugee	31 (11.4)	16.0 [10.0-24.0]	
Hospitalization status			0.234
Inpatient	110 (40.6)	17.0 [11.0-26.0]	
Outpatient	161 (59.4)	16.0 [10.0-24.0]	
Type of cancer			0.066
Hematology	153 (56.5)	16.0 [9.0-24.0]	
Solid	118 (43.5)	17.5 [11.0-26.3]	
Treatment stage			0.647
Yes	241 (88.9)	16.0 [10.0-24.0]	
No	30 (11.1)	17.5 [10.8-27.3]	
Currently on chemotherapy			0.466
Yes	205 (75.6)	16.0 [10.0-24.0]	
No	66 (24.4)	17.5 [11.7-26.3]	
Recently pancytopenia			0.588
Yes	86 (31.7)	17.0 [10.0-25.3]	
No	185 (68.3)	16.0 [10.0-24.0]	
Auto-BMT			0.547
Yes	24 (8.9)	16.5 [10.0-27.7]	
No	247 (91.1)	17.0 [10.0-24.0]	
Admitted for surgery			0.688

Yes	10 (3.7)	17.0 [11.5-28.3]	
No	261 (96.3)	17.0 [10.0-24.0]	
Types of psychological support			
Family support	162 (59.8)	Yes 16.0 [10.8-24.0] No 17.0 [10.0-27.0]	0.264
Social support	93 (34.3)	Yes 17.0 [10.5-24.0] No 16.5 [10.0-25.0]	0.885
Religious support	103 (38.0)	Yes 16.0 [11.0-24.0] No 17.0 [10.0-25.0]	0.839
Health care team support	120 (44.3)	Yes 17.0 [11.0-25.8] No 16.0 [9.0-24.0]	0.168

**Table H.3***Pain Dimension (ESAS)*

Variable	Pain Median [Q1-Q3]	P-value
Age		0.003*
≤ 50	3.0 [1.0-5.0]	
> 50	4.0 [2.0-7.0]	
Gender		0.007*
Male	3.0 [1.0-5.0]	
Female	4.0 [2.0-7.0]	
Marital status		0.001*
Single	3.0 [0.0-5.0]	
Married	4.0 [2.0-7.0]	
Educational level		0.301
School	4.0 [1.0-6.0]	
University or college	4.0 [1.0-6.0]	
Socioeconomic status		0.053*
Affordable (low)	4.0 [2.0-6.0]	
Good (middle)	4.0 [1.0-5.85]	
Very Good (high)	3.0 [0.0-5.5]	
Deformities		0.458
Yes	4.0 [2.5-7.0]	
No	4.0 [1.0-6.0]	
Smoker		0.17
Yes	4.0 [2.0-6.0]	
No	4.0 [1.0-6.0]	
Work		0.001*
Yes	3.0 [0.0-5.0]	
No	4.0 [2.0-7.0]	
Living location		0.659
City	4.0 [1.0-5.0]	
Village	4.0 [1.0-7.0]	
Camp or refugee	4.0 [2.0-6.0]	
Hospitalization status		0.786
Inpatient	4.0 [1.0-6.0]	
Outpatient	4.0 [1.0-6.0]	
Type of cancer		< 0.001*
Hematology	3.0 [1.0-5.0]	
Solid	5.0 [2.0-7.3]	
Treatment stage		0.039*
Yes	4.0[1.0-6.0]	
No	3.0 [0.0-5.0]	
Currently on chemotherapy		0.036*
Yes	4.0 [2.0-6.0]	
No	3.0 [0.7-5.0]	
Recently pancytopenia		0.011*
Yes	3.0 [1.0-5.0]	
No	4.0 [1.5-7.0]	
Auto-BMT		0.505
Yes	4.0 [2.3-6.0]	
No	4.0 [1.0-6.0]	
Admitted for surgery		0.232
Yes	4.5 [2.0-8.5]	

No	4.0 [1.0-6.0]	
Types of psychological support		
Family support	Yes 4.0 [1.0-6.0]	0.456
	No 4.0 [1.5-6.0]	
Social support	Yes 4.0 [2.0-7.0]	0.133
	No 4.0 [1.0-5.3]	
Religious support	Yes 4.0 [1.0-7.0]	0.376
	No 4.0 [1.0-5.0]	
Health care team support	Yes 4.0 [2.0-7.0]	0.1
	No 4.0 [1.0-5.0]	

**Table H.4***Fatigue Dimension (ESAS)*

Variable	Fatigue Median [Q1-Q3]	P-value
Age		
≤ 50	4.0 [2.0-6.5]	0.069
> 50	5.0 [3.0-7.0]	
Gender		0.164
Male	4.0 [2.0-6.0]	
Female	5.0 [3.0-7.8]	
Marital status		
Single	4.0 [2.0-5.0]	
Married	5.0 [3.0-7.0]	0.006*
Educational level		
School	5.0 [3.0-7.0]	0.262
University or college	4.0 [1.0-7.0]	
Socioeconomic status		0.053*
Affordable (low)	5.0 [3.0-7.0]	
Good (middle)	4.0 [2.0-6.0]	
Very Good (high)	3.0 [0.0-5.5]	
Deformities		0.213
Yes	6.0 [4.0-7.0]	
No	5.0 [2.0-7.0]	
Smoker		0.164
Yes	5.0 [3.0-7.0]	
No	4.0 [2.0-7.0]	
Work		0.042*
Yes	4.0 [1.0-6.0]	
No	5.0 [3.0-7.8]	
Living location		0.729
City	4.0 [2.0-7.0]	
Village	5.0 [3.0-7.0]	
Camp or refugee	4.0 [2.0-8.0]	
Hospitalization status		
Inpatient	5.0 [2.0-7.0]	0.487
Outpatient	5.0 [2.0-6.5]	
Type of cancer		0.021*
Hematology	4.0 [2.0-6.0]	
Solid	5.0 [2.7-7.0]	
Treatment stage		0.236
Yes	5.0 [2.5-7.0]	
No	4.0 [1.0-7.0]	
Currently on chemotherapy		
Yes	5.0 [3.0-7.0]	0.185
No	4.0 [2.0-6.0]	
Recently pancytopenia		0.212
Yes	4.0 [2.0-6.0]	
No	5.0 [3.0-7.0]	
Auto-BMT		0.463
Yes	5.0 [3.0-6.8]	
No	5.0 [2.0-7.0]	

Admitted for surgery		0.335
Yes	6.0 [2.5-7.5]	
No	5.0 [2.0-7.0]	
Types of psychological support		
Family support	Yes 5.0 [2.0-7.0]	0.546
	No 5.0 [3.0-7.0]	
Social support	Yes 5.0 [2.5-8.0]	0.115
	No 4.0 [2.0-6.0]	
Religious support	Yes 5.0 [2.0-8.0]	0.116
	No 4.0 [2.3-6.0]	
Health care team support	Yes 5.0 [3.0-7.0]	0.053*
	No 4.0 [2.0-6.0]	

**Table H.5***Drowsiness Dimension (ESAS)*

Variable	Drowsiness Median [Q1-Q3]	P-value
Age		0.379
≤ 50	4.0 [1.5-7.0]	
> 50	5.0 [3.0-7.0]	
Gender		0.219
Male	4.0 [1.0-7.0]	
Female	5.0 [2.3-7.0]	
Marital status		0.333
Single	4.0 [2.0-6.0]	
Married	5.0 [2.0-7.0]	
Educational level		0.630
School	5.0 [3.0-7.0]	
University or college	4.5 [1.3-7.0]	
Socioeconomic status		0.002*
Affordable (low)	5.0 [3.0-7.0]	
Good (middle)	4.0 [1.3-6.0]	
Very Good (high)	3.0 [0.0-4.5]	
Deformities		0.229
Yes	5.0 [4.0-7.5]	
No	5.0 [2.0-7.0]	
Smoker		0.085
Yes	5.0 [3.0-8.0]	
No	4.0 [2.0-7.0]	
Work		0.075
Yes	4.0 [1.0-6.0]	
No	5.0 [2.3-7.0]	
Living location		0.756
City	4.0 [2.0-7.0]	
Village	5.0 [2.0-7.0]	
Camp or refugee	5.0 [2.0-7.0]	
Hospitalization status		0.442
Inpatient	4.5 [2.0-7.0]	
Outpatient	5.0 [ 2.0-6.5]	
Type of cancer		0.122
Hematology	4.0 [2.0-6.0]	
Solid	5.0 [2.0-7.0]	
Treatment stage		0.545
Yes	4.0 [2.0-7.0]	
No	5.0 [2.5-6.3]	
Currently on chemotherapy		0.522
Yes	5.0 [2.0-7.0]	
No	4.5 [2.0-6.0]	
Recently pancytopenia		0.743
Yes	4.0 [2.0-6.0]	
No	5.0 [2.0-7.0]	

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Auto-BMT		
Yes	4.5 [3.0-7.8]	0.778
No	5.5 [2.0-7.0]	
Admitted for surgery		0.778
Yes	4.5 [1.0-8.5]	
No	5.0 [2.0-7.0]	
Types of psychological support		
Family support	Yes 5.0 [2.0-7.0]	
	No 5.0 [2.0-7.0]	0.955
Social support	Yes 5.0 [2.0-7.5]	
	No 4.0 [2.0-6.0]	0.06
Religious support	Yes 5.0 [2.0-7.0]	
	No 4.0 [2.0-6.0]	0.155
Health care team support	Yes 5.0 [2.3-7.0]	0.207
	No 4.0 [2.0-7.0]	
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**Table H.6***Nausea Dimension (ESAS).*

Variable	Nausea Median [Q1-Q3]	P-value
Age		
≤ 50	2.0 [0.0-5.0]	0.835
> 50	2.5 [1.0-5.0]	
Gender		0.795
Male	2.0 [1.0-5.0]	
Female	3.0 [0.0-5.0]	
Marital status		
Single	2.0 [0.0-4.0]	0.142
Married	3.0 [1.0-5.0]	
Educational level		
School	3.0 [1.0-5.0]	0.280
University or college	1.5 [0.0-5.0]	
Socioeconomic status		0.007*
Affordable (low)	3.0 [1.0-5.0]	
Good (middle)	2.0 [0.3-5.0]	
Very Good (high)	1.0 [0.0-2.0]	
Deformities		0.762
Yes	3.0 [0.0-4.0]	
No	2.0 [0.7-5.0]	
Smoker		
Yes	2.5 [1.0-6.0]	0.152
No	2.0 [0.0-5.0]	
Work		
Yes	2.0 [1.0-4.0]	0.602
No	3.0 [0.0-5.0]	
Living location		
City	2.0 [0.0-4.0]	
Village	3.0 [0.5-5.0]	0.312
Camp or refugee	3.0 [1.0-7.0]	
Hospitalization status		
Inpatient	3.0 [0.0-5.0]	0.213
Outpatient	2.0 [1.0-5.0]	
Type of cancer		
Hematology	2.0 [0.0-5.0]	0.562
Solid	3.0 [1.0-5.0]	
Treatment stage		
Yes	2.0 [1.0-5.0]	0.719
No	1.5 [0.0-5.3]	
Currently on chemotherapy		0.023*
Yes	3.0 [1.0-5.0]	
No	1.0 [0.0-4.0]	
Recently pancytopenia		0.304
Yes	2.0 [0.0-5.0]	

No	3.0 [1.0-5.0]	
Auto-BMT		
Yes	3.0 [1.0-7.0]	0.228
No	2.0 [0.0-5.0]	
Admitted for surgery		0.887
Yes	2.0 [0.8-4.5]	
No	2.0 [0.0-5.0]	
Types of psychological support		
Family support	Yes 2.5 [0.8-5.0]	0.849
	No 2.0 [0.0-5.0]	
Social support	Yes 3.0 [1.0-5.]	
	No 2.0 [0.0-4.0]	0.201
Religious support	Yes 3.0 [1.0-5.0]	
	No 2.0 [0.0-5.0]	0.375
Health care team support	Yes 2.0 [1.0-5.0]	
	No 2.0 [0.0-5.0]	0.549

**Table H.7***Lack of Appetite Dimension (ESAS)*

Variable	Lack of appetite Median [Q1-Q3]	P-value
Age		0.098
≤ 50	4.0 [1.0-6.0]	
> 50	4.0 [1.0-7.0]	
Gender		0.728
Male	4.0 [1.0-7.0]	
Female	4.0 [1.0-7.0]	
Marital status		0.036*
Single	3.0 [1.0-6.0]	
Married	4.0 [1.0-7.0]	
Educational level		0.109
School	4.0 [1.0-7.0]	
University or college	3.0 [1.0-6.8]	
Socioeconomic status		0.004*
Affordable (low)	4.0 [2.0-7.0]	
Good (middle)	4.0 [1.0-6.0]	
Very Good (high)	1.0 [0.0-4.5]	
Deformities		0.798
Yes	4.0 [0.5-5.5]	
No	4.0 [1.0-7.0]	
Smoker		0.016*
Yes	4.5 [2.0-8.0]	
No	4.0 [1.0-6.0]	
Work		0.027*
Yes	3.0 [1.0-5.0]	
No	4.0 [1.0-7.0]	
Living location		0.681
City	4.0 [1.0-7.0]	
Village	4.0 [1.0-7.0]	
Camp or refugee	3.0 [1.0-6.0]	
Hospitalization status		0.007*
Inpatient	4.5 [1.0-8.0]	
Outpatient	3.0 [1.0-5.5]	
Type of cancer		0.724
Hematology	4.0 [1.0-7.0]	
Solid	4.0 [1.0-6.3]	
Treatment stage		0.713
Yes	4.0 [1.0-7.0]	
No	4.0 [0.0-7.0]	
Currently on chemotherapy		0.094
Yes	4.0 [1.0-7.0]	
No	3.0 [1.0-5.0]	
Recently pancytopenia		0.687
Yes	4.5 [1.0-7.0]	
No	4.0 [1.0-6.0]	

Auto-BMT		0.037*
Yes	6.0 [1.3-9.5]	
No	4.0 [1.0-7.0]	
Admitted for surgery		0.493
Yes	2.5 [1.0-5.0]	
No	4.0 [1.0-7.0]	
Types of psychological support		
Family support	Yes 4.0 [1.0-7.0]	
	No 4.0 [1.0-7.0]	0.359
Social support	Yes 4.0 [1.0-7.0]	
	No 4.0 [1.0-7.0]	0.726
Religious support	Yes 3.0 [1.0-6.0]	
	No 4.0 [1.0-7.0]	0.517
Health care team support	Yes 4.0 [1.0-7.0]	0.6
	No 4.0 [1.0-7.0]	

**Table H.8***Shortness of breath Dimension (ESAS).*

Variable	SOB Median [Q1-Q3]	P-value
Age		0.651
≤ 50	1.0 [0.0-4.0]	
> 50	1.0 [0.0-4.0]	
Gender		0.22
Male	1.0 [0.0-4.0]	
Female	1.0 [0.0-4.0]	
Marital status		0.461
Single	1.0 [0.0-4.0]	
Married	1.0 [0.0-4.0]	
Educational level		0.123
School	1.0 [0.0-4.0]	
University or college	0.0 [0.0-4.0]	
Socioeconomic status		0.114
Affordable (low)	1.0 [0.0-4.0]	
Good (middle)	1.0 [0.0-5.0]	
Very Good (high)	0.0 [0.0-2.0]	
Deformities		0.264
Yes	3.0 [0.0-5.5]	
No	1.0 [0.0-4.0]	
Smoker		0.021*
Yes	2.5 [0.0-5.0]	
No	1.0 [0.0-3.0]	
Work		0.145
Yes	1.0 [0.0-4.0]	
No	1.0 [0.0-4.0]	
Living location		0.361
City	1.0 [0.0-4.0]	
Village	1.0 [0.0-4.0]	
Camp or refugee	2.0 [0.0-5.0]	
Hospitalization status		0.088
Inpatient	1.0 [0.0-4.0]	
Outpatient	1.0 [0.0-4.0]	
Type of cancer		0.553
Hematology	1.0 [0.0-4.0]	
Solid	1.0 [0.0-4.0]	
Treatment stage		0.81
Yes	1.0 [0.0-4.0]	
No	1.5 [0.0-5.0]	
Currently on chemotherapy		0.082
Yes	1.0 [0.0-4.0]	
No	0.5 [0.0-3.0]	
Recently pancytopenia		0.231

Yes	1.5 [0.0-4.0]	
No	1.0 [1.0-4.0]	
Auto-BMT		0.672
Yes	1.5 [0.0-4.8]	
No	1.0 [0.0-4.0]	
Admitted for surgery		0.729
Yes	1.5 [0.8-2.0]	
No	1.0 [0.0-4.0]	
Types of psychological support		
Family support	Yes 1.0 [0.0-4.0]	0.034*
	No 2.0 [0.0-5.0]	
Social support	Yes 1.0 [0.0-4.0]	0.86
	No 1.0 [0.0-4.0]	
Religious support	Yes 1.0 [0.0-4.0]	0.511
	No 1.0 [0.0-4.0]	
Health care team support	Yes 1.0 [0.0-4.0]	0.505
	No 1.0 [0.0-4.0]	

**Table H.9***Depression Dimension (ESAS).*

Variable	Depression Median [Q1-Q3]	P-value
Age		0.232
≤ 50	3.0 [1.0-5.0]	
> 50	2.0 [1.0-5.0]	
Gender		0.82
Male	2.0 [1.0-5.0]	
Female	3.0 [1.0-5.0]	
Marital status		0.599
Single	3.0 [1.0-4.0]	
Married	2.0 [1.0-5.0]	
Educational level		0.151
School	3.0 [1.0-5.0]	
University or college	2.0 [0.0-5.0]	
Socioeconomic status		0.026*
Affordable (low)	3.0 [1.0-3.3]	
Good (middle)	2.0 [1.0-5.0]	
Very Good (high)	1.0 [0.0-3.5]	
Deformities		0.441
Yes	4.0 [0.0-6.5]	
No	2.0 [1.0-5.0]	
Smoker		0.004*
Yes	4.0 [1.0-6.0]	
No	2.0 [1.0-4.0]	
Work		0.193
Yes	2.0 [1.0-4.0]	
No	3.0 [1.0-5.0]	
Living location		0.213
City	3.0 [1.0-5.0]	
Village	2.0 [1.0-5.0]	
Camp or refugee	4.0 [0.0-6.0]	
Hospitalization status		0.12
Inpatient	3.0 [1.0-6.0]	
Outpatient	2.0 [1.0-4.5]	
Type of cancer		0.739
Hematology	2.0 [0.5-5.0]	
Solid	3.0 [1.0-5.0]	
Treatment stage		0.375
Yes	3.0 [1.0-5.0]	
No	2.0 [0.0-4.0]	
Currently on chemotherapy		0.503
Yes	3.0 [1.0-5.0]	
No	2.0 [1.0-4.3]	

Recently pancytopenia		0.444
Yes	3.0 [1.0-6.0]	
No	2.0 [1.0-5.0]	
Auto-BMT		0.219
Yes	3.0 [1.0-6.8]	
No	2.0 [1.0-5.0]	
Admitted for surgery		
Yes	3.5 [0.0-6.0]	0.7
No	2.0 [1.0-5.0]	
Types of psychological support		
Family support	Yes 2.0 [1.0-5.0]	
	No 3.0 [1.0-5.5]	0.124
Social support	Yes 2.0 [1.0-4.5]	0.498
	No 3.0 [1.0-5.0]	
Religious support	Yes 2.0 [1.0-5.0]	0.851
	No 3.0 [0.3-5.0]	
Health care team support	Yes 2.5 [1.0-5.0]	0.669
	No 2.0 [0.0-5.0]	

**Table H.10***Anxiety Dimension (ESAS).*

Variable	Anxiety Median [Q1-Q3]	P-value
Age		0.242
≤ 50	4.0 [1.0-7.0]	
> 50	3.0 [1.0-6.0]	
Gender		0.107
Male	3.0 [1.0-6.0]	
Female	4.0 [1.0-7.0]	
Marital status		0.607
Single	3.0 [1.0-7.0]	
Married	3.0 [1.0-6.0]	
Educational level		0.044*
School	4.0 [1.0-7.0]	
University or college	2.0 [1.0-6.0]	
Socioeconomic status		0.012*
Affordable (low)	4.0 [1.0-7.0]	
Good (middle)	3.0 [1.0-5.0]	
Very Good (high)	2.0 [0.5-4.5]	
Deformities		0.258
Yes	6.0 [1.5-7.5]	
No	3.0 [1.0-6.0]	
Smoker		0.056
Yes	4.0 [1.0-7.0]	
No	3.0 [1.0-6.0]	
Work		0.296
Yes	3.0 [1.0-6.0]	
No	3.5 [1.0-7.0]	
Living location		0.381
City	3.0 [1.0-6.0]	
Village	3.0 [1.0-6.0]	
Camp or refugee	4.0 [2.0-8.0]	
Hospitalization status		0.14
Inpatient	4.0 [1.0-7.0]	
Outpatient	3.0 [1.0-5.5]	
Type of cancer		0.208
Hematology	3.0 [1.0-7.0]	
Solid	3.0 [1.0-5.0]	
Treatment stage		< 0.001*
Yes	3.0 [1.0-6.0]	
No	5.0 [3.8-9.3]	
Currently on chemotherapy		0.353
Yes	3.0 [1.0-6.0]	
No	3.0 [0.8-6.3]	
Recently pancytopenia		0.148
Yes	3.5 [1.0-7.0]	
No	3.0 [1.0-6.0]	
Auto-BMT		0.544
Yes	3.0 [1.0-8.0]	
No	3.0 [1.0-6.0]	

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Admitted for surgery		
Yes	5.5 [0.8-10.0]	0.208
No	3.0 [1.0-6.0]	
Types of psychological support		
Family support	Yes 3.0 [1.0-6.0]	0.195
	No 4.0 [1.0-7.0]	
Social support	Yes 3.0 [1.0-6.0]	0.696
	No 3.0 [1.0-7.0]	
Religious support	Yes 3.0 [1.0-6.0]	0.713
	No 3.0 [1.0-6.0]	
Health care team support	Yes 3.0 [1.0-6.0]	0.359
	No 3.0 [1.0-6.0]	
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**Table H.11***Poor Feeling of Well-being Dimension (ESAS)*

Variable	Well-being* Median [Q1-Q3]	P-value
Age		0.306
≤ 50	4.0 [1.0-6.0]	
> 50	4.0 [1.0-6.0]	
Gender		0.11
Male	4.0 [1.0-5.0]	
Female	4.0 [1.0-7.0]	
Marital status		
Single	3.0 [1.0-6.0]	0.104
Married	0.154	
Educational level		0.47
School	4.0 [1.0-7.0]	
University or college	3.0 [1.0-5.8]	
Socioeconomic status		0.016*
Affordable (low)	4.0 [1.0-7.0]	
Good (middle)	4.0 [1.0-5.0]	
Very Good (high)	2.0 [0.0-4.0]	
Deformities		0.026*
Yes	5.0 [3.5-9.5]	
No	4.0 [1.0-6.0]	
Smoker		0.028*
Yes	5.0 [1.3-7.0]	
No	4.0 [1.0-6.0]	
Work		0.05*
Yes	3.0 [1.0-5.0]	
No	4.0 [1.0-6.8]	
Living location		0.47
City	4.0 [1.0-6.0]	
Village	4.0 [1.0-6.0]	
Camp or refugee	5.0 [1.0-8.0]	
Hospitalization status		
Inpatient	4.0 [1.0-7.0]	0.169
Outpatient	4.0 [1.0-6.0]	
Type of cancer		0.938
Hematology	4.0 [1.0-6.0]	
Solid	4.0 [1.0-6.0]	
Treatment stage		0.81
Yes	4.0 [1.0-6.0]	
No	4.0 [0.0-8.0]	
Currently on chemotherapy		0.125
Yes	4.0 [1.0-6.]	
No	3.0 [0.8-5.3]	
Recently pancytopenia		0.319
Yes	4.0[0.7-6.0]	
No	4.0[1.0-6.0]	
Auto-BMT		0.736

Yes	4.0 [2.0-5.8]	
No	4.0 [1.0-6.0]	
Admitted for surgery		0.899
Yes	4.5 [1.0-5.5]	
No	4.0 [1.0-6.0]	
Types of psychological support		
Family support	Yes 4.0 [1.0-6.0]	0.096
	No 4.0 [2.0-6.0]	
Social support	Yes 4.0 [1.0-6.5]	0.866
	No 4.0 [1.0-6.0]	
Religious support	Yes 4.0 [1.0-6.0]	0.553
	No 4.0 [1.0-6.0]	
Health care team support	Yes 4.0 [1.0-6.0]	0.632
	No 4.0 [1.0-6.0]	

**Table H.12***Total Score Dimension (ESAS)*

Variable	Total score Median [Q1-Q3]	P-value
Age		0.267
≤ 50	184 [110.0-245.0]	
> 50	161 [93.7-236.3]	
Gender		0.717
Male	170.0 [111.0-230.0]	
Female	166.0 [93.3-256.3]	
Marital status		0.450
Single	173.0 [111.0-247.0]	
Married	165.0 [94.5.0-234.0]	
Educational level		0.611
School	167.0 [104.0-234.0]	
University or college	177.0 [101.0-257.0]	
Socioeconomic status		0.1
Affordable (low)	180.0 [103.7-245.5]	
Good (middle)	167.0 [105.5-232.0]	
Very Good (high)	123.0 [69.5-170.0]	
Deformities		0.703
Yes	170.0 [1.01.5-264.0]	
No	238.5 [168.0-277.0]	
Smoker		0.285
Yes	183.0 [108.0-239.5]	
No	166.0 [101.0-240.0]	
Work		0.553
Yes	179.0 [106.0-232.0]	
No	165.5 [96.5-273.0]	
Living location		0.39
City	178.0 [105.0-240.0]	
Village	159.0 [93.5-234.5]	
Camp or refugee	210.0 [119.0-257.0]	
Hospitalization status		0.935
Inpatient	181.0 [ 79.3-255.3]	
Outpatient	167.0 [109.5-228.0]	
Type of cancer		0.392
Hematology	183 [92.0-251.0]	
Solid	160.5 [105.7-116.7]	
Treatment stage		0.214
Yes	169.0 [108.0-239.0]	
No	134.5 [61.3-252.3]	
Currently on chemotherapy		0.602
Yes	165.0 [98.0-240.0]	
No	169.5 [107.3-236.7]	
Recently pancytopenia		0.442
Yes	166.0 [86.7-249.0]	

No	170.0 [108.5-236.5]	
Auto-BMT		0.97
Yes	202.0 [90-228.5]	
No	167.0 [104.0-244.0]	
Admitted for surgery		0.3
Yes	144.5 [64.0-211.0]	
No	169.0 [104.5-242.0]	
Types of psychological support		
Family support	169.5 [99.5-246.0]	0.799
	167.0 [104.5-231.0]	
Social support	Yes 169.0 [96.0-249.5]	0.701
	No 168.0 [104.7-232.7]	
Religious support	Yes 173.0 [106.0-251.0]	0.264
	No 165.5 [101.0-232.0]	
Health care team support	Yes 185.0 [106.3-250.5]	0.238
	No 164.0 [101.0-232.0]	



جامعة النجاح الوطنية  
كلية الدراسات العليا

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إعداد

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قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول علي درجة الماجستير في برنامج تمريض الصحة النفسية المجتمعية، من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين.

2022

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د. عايدة القيسي

### الملخص

**الخلفية:** الرعاية التلطيفية أمر بالغ الأهمية للتحسين نوعية الحياة لدى مرضى السرطان. يستخدم مقياس إدمونتون لتقييم أعراض (ESAS) في إجراءات الممارسة السريرية لمرضى السرطان في جميع مراحل السرطان حيث ان مقياس ادمنتون لتقييم الأعراض مكون من عشرة بنود تم تصميمه والتحقق من صحته لمرضى السرطان في مجموعة متنوعة من اللغات والثقافات. من ناحية أخرى، يستخدم مقياس بيك للاكتئاب (BDI II) لتقييم أعراض الاكتئاب ودرجته، وهو أحد أعراض الرعاية التلطيفية بين مرضى السرطان التي يمكن تقييمها من قبل مقياس ادمنتون لتقييم الأعراض (ESAS).

**هدف الدراسة:** تقييم اعراض مرضى السرطان والتركيز على الاكتئاب باستخدام مقياس ESAS ومقياس BDI II لتحديد المرضى الذين سيستفيدون من الرعاية التلطيفية التي يمكن أن تحسن دمج الرعاية التلطيفية في رعاية الأورام الأساسية في مستشفى النجاح الوطني الجامعي.

**الطريقة:** تم اختيار دراسة مقطعية لـ 271 مريضاً بالسرطان في اقسام الأورام في مستشفى النجاح الوطني الجامعي، تم وصف الخصائص الديموغرافية والسريرية ونمط الحياة للمرضى. تم الحصول

على نتائج الأعراض المتوسطة إلى الشديدة (الدرجة <4) التي أبلغ عنها المرضى باستخدام ESAS تم استخدام مقياس BDI II للكشف عن مستوى الاكتئاب.

**النتائج:** اشتمل البحث 271 مريضاً، وبلغ معدل الاستجابة 95%. كان متوسط عمر المرضى  $47 \pm 17.7$  سنة، مع مدى 18 إلى 84 سنة. كانت نسبة الذكور إلى الإناث حوالي 1:1 و59.4% من المرضى كانوا مرضى من عيادات الأورام والباقي مرضى مبيت، و153 (56.5%) يعانون من سرطانات الدم. وكانت الأعراض المتوسطة إلى الشديدة الأكثر شيوعاً حسب مقياس ادمنتون (ESAS) وهي ألم (54.6%)، غثيان (40.2%)، تعب (62.7%)، النعاس (61.6%)، قلة الشهية (55.0%)، ضيق النفس (28.5%)، اكتئاب (40.6%)، قلق (47.2%)، وسوء الرفاهية (56.5%). من حيث درجات الاكتئاب BDI II، فإن غالبية مرضى السرطان (العدد = 104، 38.4%) يعانون من حد أدنى من الاكتئاب، بينما 22.5% اكتئاب خفيف، 22.1% اكتئاب متوسط، و17.0% يعانون من اكتئاب شديد، مع وجود ارتباطات ذات دلالة إحصائية بين جميع أعراض ESAS ودرجات BDI II.

**الاستنتاجات:** التعب، والحمول (أو النعاس) هما أكثر الأعراض التي تم الإبلاغ عنها وفقاً لمقياس ESAS بين مرضى السرطان، وتراوح حالة الاكتئاب من الحد الأدنى إلى الشديد وفقاً لـ BDI II في الغالب كانت النتيجة الاكتئاب الأدنى، في حين تم الإبلاغ عن أعراض الاكتئاب المعتدلة إلى الشديدة على مرضى السرطان باستخدام ESAS. كانت ESAS وBDI II ووظيفية لأعراض الاكتئاب بين مرضى السرطان لإنشاء خدمات الرعاية التلطيفية.

**التطبيقات:** ESAS هي أداة قابلة للتطبيق لتقييم وتقييم أعراض الرعاية التلطيفية بين مرضى

السرطان في مستشفى النجاح الوطني الجامعي لتحسين نوعية حياتهم.

**الكلمات المفتاحية:** الرعاية التلطيفية، أعراض الرعاية التلطيفية، أعراض الاكتئاب، ESAS،

فلسطين، مرضى السرطان، علم الأورام.