



**Arab American University**  
**Faculty of Graduate Studies**

**Knowledge, Attitude, and Practice of nurses and physicians  
working with adult oncology patients toward palliative care  
services in Palestine**

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**This Thesis was submitted in Partial Fulfillment of the Requirements  
for the Master's Degree in Health Informatics.**

Jun 2022

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**Thesis Approval**  
**Knowledge, Attitude, and Practice of nurses and physicians**  
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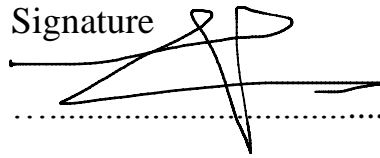
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## **Declaration**

This thesis was submitted in partial fulfillment of the requirements for the Master's degree in Health Informatics.

I declare that the content of this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

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## **Acknowledgments**

First, all praise is to Allah who has enabled me to complete this thesis on time.

Without faculty and colleagues this scientific study would not have been possible.

Although it would be impossible to name individually all of the people and the events that contributed to the success of this project and the accomplishment of a remarkable educational and experiential milestone, we know and value and appreciate each and every one.

Next, to express my deepest appreciation to Dr. Shahenaz Najjar and Dr. Mohamad Khleif for their diligent supervision, clear guidance and thoughtful mentoring throughout the whole of this thesis, you were for me a leaders, advisors, teachers, and supervisors, and our role model. Thank you.

For all Doctors in the Heath informatics program, you provide me intellectually challenge and helped me grow professionally. I have learned a lot from each of you and consider our self extremely fortunate to have worked with you

My warm appreciations are expressed to My families, respectful parents and brothers, sisters, who have continually supported me during our entire educational journey, what a pleasant it has been. I also wish to. Special thanks go to my wife Shymaa and my children (Jibreen, Amro, Sara, Feras, Nada, and Abed Alrahman) for their supportive.

Last but not least, our deepest gratitude for everyone who contributed to this works & appreciates their efforts.

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**List of Abbreviation**

<b>No</b>	<b>abbreviation</b>	<b>Meaning</b>
1	AVH	Augusta Victoria Hospital
2	IAH	Istishari Arab Hospital
3	KAP	Knowledge, Attitude, and Practice
4	ME	Middle East
5	NNUH	Al-Najah University Hospital
6	PC	Palliative care
7	PCQN	Palliative Care Quiz for Nursing
8	WB	West Bank
9	WHO	World Health Organization

## **Abstract**

**Background:** Palliative care is defined by the World Health Organization as “*an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness*”. In Palestine, Palliative care is new to the health care field and as such, limited understanding available about staff awareness of the kind of services offered and the readiness of health care professionals to provide Palliative care.

**Objectives:** Our study aims to assess the knowledge, attitude and practice toward palliative care among nurses and physicians working in oncology embedded hospitals and to identify its determinants in Palestine.

**Methods:** A quantitative research approach using cross sectional descriptive design was applied in our study. A validated questionnaire was used to gather the primary data from participants. The data was collected from nurses and physicians in seven Palestinian hospitals all over the West Bank governorates. Descriptive statistics (frequencies, percentages, means and standard deviations) were used to summarize hospital’s results. One-Way ANOVA, t-test and chi square tests were used to reveal significant relationships between the sample subgroups according to the independent variables of the study. In addition, simple, multiple linear and stepwise regression models were used as prediction model for our study.

**Results:** Nurses and physicians in oncology hospital in Palestine had satisfactory level of knowledge, attitude, and practice regarding palliative care. Statistical analysis indicated significant ( $p < 0.05$ ) association between KAP and several independent variables including; age, hospital, department, year of graduation, and years of experience, while other variables such as gender, profession, and hospital type were not

significantly associated. There is a significant positive relationship between knowledge and attitudes ( $r=0.446$ ,  $p < 0.001$ ), knowledge and Practices ( $r=0.597$ ,  $p < 0.001$ ), and attitudes and practices ( $r=0.592$ ,  $p = < 0.001$ ) of nurses and physicians working with adult oncology patients toward palliative care services. These results indicate that as knowledge increases, both attitudes and practices increase.

**Conclusion:** The results of this study emphasize the necessity for developing PC services in Palestine. more studies area unit required during this space to obviously perceive the issues encountered in the practice within the apply setting and to guide the adoption of a PC delivery model that's culturally sensitive and meets the wants of the Palestinians population.

# **Chapter One:**

# **Introduction**

## 1.1 Overview

Palliative Care PC is specialized unit of medical care. It focuses on reducing the suffering and amelioration the quality of life for patients, who are facing life-threatening illnesses, in addition to including their families in the provided care. Moreover, looking after dying patients is inseparable from the responsibility of physicians, and nurses, as it aims at improving the quality of life of patients and their families, who are facing problems due to life-threatening conditions. Nurses and physicians have a major role in providing early palliative care(1). It is considered as a new approach in the Palestinian context. Nurses and physician are the primary health care providers in many oncology hospitals in Palestine.

In Palestine in general, and in the West Bank specifically, there is an increase number of oncology hospitals attributable to the increase number of cancer patients(2). Cancer is becoming a major burden at national level, as it has been recognized the third leading cause of death in Palestine. In 2020, 3,191 cancer cases were reported in the West Bank, which means that there is an increase by 0.5% in the number of cancer cases, compared with year 2019. For all cancer sites combined the crude incidence rate is 115,8 per 100,000 populations in 2020(3) .

Pain, amongst many other symptoms, is a phenomenon that unites humans, especially patients, and specifically cancer patients. In the absence of cure for the disease, there is something that the health system and healthcare providers can provide, which is control of those symptoms via the palliative treatment. Palliative care (PC) is “an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment, and treatment of pain and other

problems – physical, psychosocial and spiritual”(4)(5). One of the main factors influencing a successful delivery of palliative health care is the health care professionals’ knowledge, attitudes, and practices, which determine not only their procedure but also their behavior during evaluation and treatment of patients (5).

Unfortunately, health care professionals’ knowledge, attitudes, and practices for palliative care team providers remains unclear in Palestine(6). Therefore, the objective of this study is to assess the knowledge, attitude and practices of nurses and physicians in regard of palliative care in oncology government and private Hospitals all over Palestine, in order to facilitate provision of quality health service for oncology patients in Palestine.

## **1.2 Statement of the Problem**

Nurses and physicians are of the most valuable palliative care team providers who address the multiple symptoms of their patients, especially for those at terminal or serious disease situations. One of the important factors influencing a successful delivery of palliative care is the health care professionals’ Knowledge, Attitude and Practice (KAP). Lack of knowledge, attitude, and practice about palliative care is an obstacle to nurses and physicians as they aim to deliver palliative care, the thing that is not well studied in Palestine(7).

There has been a lack of studies in Palestine to evaluate palliative care knowledge, attitude, practices among nurses and physicians. Therefore, this study will assess the palliative care knowledge, attitude, and practices among nurses and physicians through cancer therapy.

### **1.3 Importance of the Study**

World Health Organization (WHO) reported that 78% of people who are in need of palliative care, lives in low-and middle-income countries?(8). There are almost 40 million people are in need of palliative care each year (9).According to the 2020 statistics provided by Palestinian's Ministry of Health, cancer is the third cause of deaths in west bank(3), which in its turn increase the risk of further impairment in the quality of life of patients and their families. The aforementioned numbers reflects that there is a huge necessity to provide high quality palliative care services. Palliative care is considered as a new approach in the Palestinian context. This approach deals not only with physical problems but also with psycho-social and spiritual aspects(10). There is only one small scale study assessed the knowledge, attitude and practice of nursing and medical staff in two hospitals in North Palestine. The lack of studies on palliative care KAP in Palestinian medical system, makes this research a pioneer and comprehensive one.

### **1.4 Purpose of the Study**

The aim of our study is to assess the knowledge, attitude and practice toward palliative care among nurses and physicians working in oncology embedded hospitals in Palestine.

#### **Secondary Objectives**

1. To shed light on palliative care perceptions among physicians and nurses in Palestine.

2. To compare KAP results between different healthcare facilities (governmental and private hospitals) providing oncology services and among nurses and physicians in Palestine.
3. To explore the relationships between nurses and physicians' demographic variables (age, gender, and level of education), and working experience, with their palliative care knowledge, attitudes, and practice.
4. Find out any relationships between the knowledge and attitude on one side and the practice on the other side, in the area of palliative care.

### **1.5 Research Questions**

*The main research question:*

What is the level of knowledge, attitude and practice of the nurses and physicians working in oncology embedded hospitals in Palestine towards palliative care?

*The Research Sub-Questions:*

1. What are the relationships between nurses and physicians' demographic variables, and working experience, with their palliative care knowledge, attitudes, and practice?
2. What is the impact of knowledge and attitude on practicing palliative care?
3. What are the differences between nurses and physicians KAP toward palliative care?
4. What are the differences between nurses and physicians Knowledge, Attitude and Practice (KAP) in governmental and private hospitals?

## 1.6 Hypotheses of the Study

1. Nurses and physicians in the selected hospitals have insufficient knowledge about palliative care in oncology department.
2. Nurses and physicians in the selected hospitals have unfavorable attitudes towards palliative care in oncology department.
3. Nurses and physicians in the selected hospitals usually do not provide necessary (practices) palliative care in oncology department.
4. There is relation in knowledge, attitude and practice of palliative care among nurses and physicians working in oncology embedded hospitals in Palestine.
5. Palliative care knowledge, attitudes, and practices among nurses and physicians is not influenced by demographic characteristics and working experience.

## 1.7 Overview of the Study

The study is a descriptive cross-sectional study using self-administered closed-end questionnaire. It was conducted between December 2021 to January 2022, among nurses and physicians in the oncology departments of seven selected Palestinian hospitals (governmental and private hospitals).

### **Four Governmental Hospitals:**

- Alwatani Hospital.
- Al- Hussein Governmental Hospital, “Beit Jala”.
- Thabet Thabet Hospital,” Tulkarm”.
- Hebron Government Hospital, “Alia”.

### **Three Private Hospitals:**

- Al-Najah National University Hospital

- Istishari Arab Hospital
- Augusta Victoria Hospital.

## 1.8 Organization of the Study

The thesis includes five chapters. In this section you can find brief summary of each chapter.

- **Chapter One (Introduction):** it contains an overview, statement of the problem, purpose of study, research question, hypotheses of the study, importance of the study, organization of the study, and limitation of study.
- **Chapter Two (Literature review):** it contains of literature review which covers the following main topics: definition of cancer disease, definition of palliative care, the prevalence of cancer in the world and in Palestine, the developments that occurred in the field of palliative treatment in the previous years, and the knowledge, attitude and practice of nurses and physicians working with adult oncology patients toward palliative care services.
- **Chapter Three (Methodology):** it deals with the methodology of the study, which contains an introduction, study procedures, strategy and approach to data collection, questionnaire development, ethical considerations, population, sample, sampling, statistical analysis and the methods.
- **Chapter Four (Data presentation and results):** it discusses the results of the assessment about knowledge, attitude and practice of nurses and physicians, who are working with adult oncology patients, towards palliative care services in Palestine.

- **Chapter Five (Discussions and conclusions):** It contains the final conclusion and recommendations accordingly.

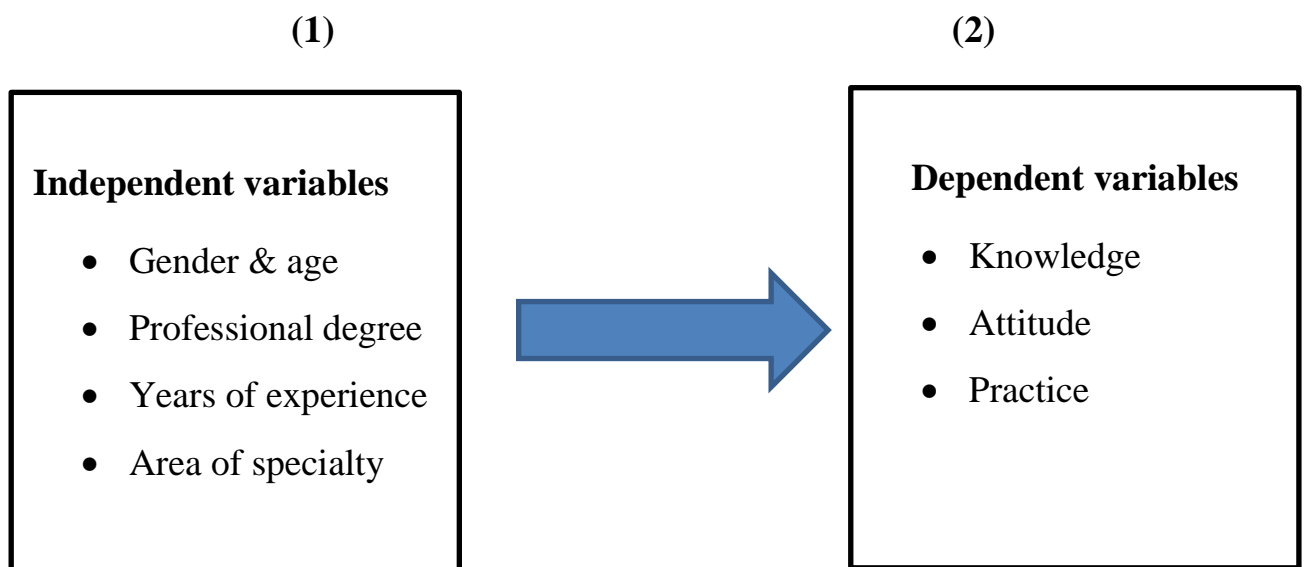
### 1.9 Conceptual Framework of the Study

In the current section, we illustrated the conceptual framework of the study in figure 2.

The figure shows the relationship between the independent variables and dependent variable which was influenced by the moderator variables that affect the strength and direction of the relationship. The conceptual framework represents:

- (1) The independent variables were age, gender, professional degree, years of experience, and area of specialty
- (2) The dependent variables included knowledge, attitudes and practice.

**Figure 2: Conceptual framework**



## 1.10 Operational Definitions

In the following sections we introduce the questionnaire sections and the operational definitions of our dependent and independent variables.

### **Section One: Demographic Data (6 questions)**

That section aims to gather information about respondents as follows: (gender, respondents' position, worksite, degree granting institution, year of graduation, and hospital experience). This section consists of (6) multiple-choice questions.

- 1- Gender was coded as 1 for male and 2 for female.
- 2- Profession was coded as 1: (MD), 2: (RN).
- 3- Worksite was coded as 1. Alwatani 2. Beit Jala 3. Tulkarm 4. Alia 5. an-Najah National University Hospital (NNUH) 6. Istishari Arab Hospital (IAH) 7. Augusta Victoria hospitals.
- 4- Department was as follows (1: oncology, 2: oncology and other departments, 3: no oncology).
- 5- Educational institution coded as 1: al-Quds, 2: Bethlehem, 3: al-Najah, 4: Hebron, 5: AAU, 6: Bir Zeit, 7: others.
- 6- Year of graduation coded as: 2: before year 2000, 3: 2000-2009, 4: 2010-2019, 5: 2020> years.

**Section Two:** to evaluate the knowledge of respondents in regard of palliative care.

This section consists of (22) multiple-choice questions (yes or no questions). All positive questions were coded as yes, and all negative questions coded as no with responses (the outcome of palliative care, the definition of PC. Please follow annex 3 to see the questioners).

**Section Three:** to check out the attitudes of respondents toward patients. This section consists of (19) questions developed and measured as a percentage; all positive questions were coded as follows: [5= SA= Strongly Agree] [4= A= Agree] all negative questions coded as: [3= U= Undecided] [2= D=Disagree] [1= SD=Strongly Disagree] with responses (please see the annex number 2.)

**Section Four:** to set the practice in the scope of applying palliative care in Palestine; this section consists of (47) questions developed and measured as a percentage, all positive questions were coded as follows: [5= SA= Strongly Agree] [4= A= Agree] all negative questions coded as: [3= U= Undecided] [2= D=Disagree] [1= SD=Strongly Disagree] with responses (please see the annex no. 3)

**Section Five:** concerns about needs assessment to develop palliative care service. This section consists of (12) questions developed and measured as a percentage. That is in effort to improve palliative care services in Palestine.

In the end, there were two open-ended questions to allow the respondents to shed light on issues that the researcher may have forgotten to ask about, or to free the respondents from the constraints of closed-ended questions. The answers to the two mentioned questions were analyzed based on the most prominent things that were talked about and focused on, and used as augmentation to the main themes covered by the body of the questionnaire.

# **Chapter Two:**

# **Literature Review**

## 2.1. Introduction

Palliative care, as a service, was introduced in early 1976 by St Christopher's Hospice(11). It was within the care of individuals, who suffer neurological disorder, with associate aim of high quality of lifetime of patients and their families. Since then, palliative care has witnessed international development. It has become a suggestion for various sorts of terminal diseases. It has its own rules and standardizations. Further, it is found worldwide and in numerous forms. Most of the chronic diseases need PC such as cancer, cardiovascular diseases, Renal failure, liver disease, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, neurological disease, psychiatric disease, congenital abnormalities , and drug-resistant tuberculosis. Nevertheless, cancer and cardiovascular diseases are the most diseases that custom palliative care (10). Today, there's a lot of foundations and departments in hospitals for palliative care around the world, with the aim of supplying palliative care, and improve it, so that it benefits as possible in-need patients as possible.

In the middle East, palliative care has been solely introduced to the Arab countries within the early 1990's, and is being simply applied in some countries (12). As for Palestine, palliative care has not been a widely used concept, and has only been introduced briefly in 2008 through Al-Sadeel Society (6) and in Augusta Victoria Hospital (AVH) in 2019, where a new department of palliative care was created to cancer patients (13).

Cancer is becoming a major burden at national level as it has been recognized the third leading cause of death according to the 2021 statistics provided by Palestinian's Ministry of Health. The statistic also showed that the incident rate of cancer is 115.8 per 100,000 in Palestine(3). Cancer patients are usually discover the cancer at a late stage

of disease, where there is no role for curative treatment (14). This might increase the risk of further impairment in the quality of life of patients and their families. In other words; there is a huge necessity to provide high quality palliative and end of life services. It is a crucial part of integrated, and people-centered health services. No service provided is more people-centered than relieving their suffering, from physical, psychological, social, or spiritual health status (8), which could be done through palliative care. In spite of hopes and best efforts, there are times when it becomes certain that a patient will die from his or her cancer. In such circumstances, end of life discussions, planning for death, and preparing the family for what they would expect is very important, and has implications for the family's ability to manage their grief better and to go forward and therefore decrease post loss experiences and traumas (15).

Palliative care is type of the nursing care that can be delivered at different levels of Health care(16)(17), and it is concerned about patients in any unit or any department, not only patients in specialize unit or department. As a result, it is not only advanced nurses and physician who can practice palliative care for patients; newly graduates of nurses and physicians must and can provide adequate care (10).

One of the major factors influencing a successful delivery of palliative health care is the health care professionals' knowledge, attitudes, and practice, which determine not only their procedure, but also their behavior during evaluation and treatment of patients (17).

There have been only few studies that evaluated the knowledge, attitude and practice of nurses and physicians towards palliative care in oncology hospitals in Palestine. Therefore, the aim of this study is to assess the nurses and physicians' knowledge, attitude and practice of palliative care in oncology government and private hospitals in Palestine.

## 2.2. Dimensions of Palliative Care (PC)

Palliative care is “a crucial part of incorporate, people-centered health services. Relieving serious health-related suffering, which could be physical, psychological, social, or spiritual”. It is a global ethical responsibility. Thus, whether the cause of suffering is chronic disease like heart dproblem, renal failure, pulmonary disease, burns last stage, and end stage of cancer important to be available at all levels of care(8).

Palliative Care (PC) is “*an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification, impeccable assessment and treatment of pain and other problems like physical, psychosocial and spiritual*”. According to WHO, the following principles represent adult palliative care:

- *“Provides relief from pain and other distressing symptoms;*
- *Affirms life and regards dying as a normal process;*
- *Intends neither to hasten or postpone death;*
- *Integrates the psychological and spiritual aspects of patient care;*
- *Offers a support system to help patients live as actively as possible until death;*
- *Offers a support system to help the family cope during the patient’s illness and in their own bereavement;*
- *Uses a team approach to address the needs of patients and their families, including bereavement counseling, if indicated;*
- *Will enhance quality of life, and may also positively influence the course of illness” (10).(18).*

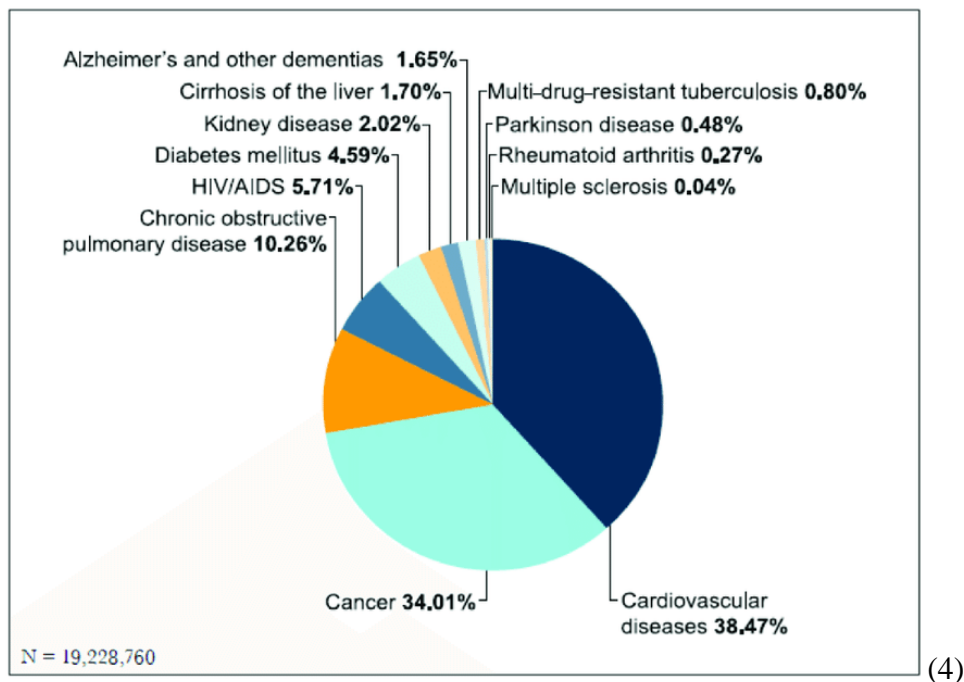
Therefore, PC includes; First, prevention, early diagnosis, assessment, and management of physical issues, including pain control, psychological distress, spiritual distress, and

social needs. Second, provision of support the patients to live without suffering until death by providing good ways of communication, that help the patients and families to define the type of care . Third, submitting in conjunction with disease-modifying therapies whenever needed; it may positively influence the course of illness. Fourth, delivering recognition and respect of the cultural values and beliefs of the patient and the family. Final, applicability throughout all health care departments and in all levels (primary to tertiary) and in can be provided by professionals with basic PC training(18).

Palliative care is looking as an essential part of comprehensive care throughout the life course, and as a basic of human rights. The PC is a rare specialty of Nurses in all settings. They lead part of multitasks teams, that are in charge for the present of all parts of palliative care. Nurses play a basic role in providing public education about palliative care in many settings(19).

The list of diseases that highly need PC is; “Alzheimer’s and other dementias, cancer, cardiovascular diseases (excluding sudden deaths), cirrhosis of the liver, chronic obstructive pulmonary diseases, diabetes, HIV/AIDS, kidney failure, multiple sclerosis, Parkinson’s disease, rheumatoid arthritis, and drug-resistant tuberculosis (TB)” as seen in figure 1.

**Figure 1: shows the Distribution in the World of Adults that are in Need of Palliative Care at the End of Life by Disease Groups in 2011.**



Data sources: Adviser Cancer Control, Chronic Diseases Prevention and Management, Chronic Diseases and Health Promotion, World Health Organization. Published online 2014 (4).

### **Knowledge, Attitude, and Practice (KAP) studies of Palliative Care (PC)**

KAP studies focus on three dimensions, Knowledge, Attitude and Practice. The **Knowledge** can be defined as “the announce, to know, to be able to do, tell, describe, explain, show or say”. **Attitude** refers to “an individual’s characteristic and way of responding to an object or situation. It is based on experience (or knowledge) and leads to certain behavior or expression of certain opinions”. As for **Practice**; “it as applied skills, techniques, methods or standard operating procedures”(20).

Knowledge, Attitude and Practice (KAP), is the most significant factor that influence in delivery of palliative care in the health care professionals. That define the treatment, behavior, procedure, and evaluation of treatment of patients(7).

KAP surveys depend on many issues that identify cultural behaviors, factors influencing cultural behaviors, reasons behind their beliefs and people's awareness, providing a target goal on knowledge gaps and assessment. In which, indicates problems, limitations on program supply, and high evaluation, which can be done throughout baseline, cohort and base line studies. Hence, lead us to solutions to improve quality, and accessibility of services (21).

The KAP survey has start in the field of family planning and population studies in the 1950s. They were intending to measure the extent to which an obvious hostility to the idea and organization, and to provide information on the knowledge, attitudes, and practices in the health field that could be used for programming purposes around the world(20). The Knowledge, Attitude and Practice were defined as follows (21).

*Knowledge in KAP is "the understanding, familiarity, and awareness, related a particular object. Including knowledge dimension in the study, which is important before starting the procedure of forming awareness, due to the significance of evaluating the environment in which the change will occur in."*

*Attitude in KAP is "the settled way of thinking, feeling, or common belief for a particular object. Counting Attitude in the KAP survey vary according to the literacy, residence, economic principles, level of education to which the issue under study would be known in media and elsewhere."*

*Practice in KAP is "the way respondents observe and note their knowledge, beliefs and attitudes through their actions. Including Practice in KAP is important to innovate a*

*baseline for the study, as finally the change could be discovered through the baseline of the respondents' practices and the results."*

The realization of the stages of Knowledge, Attitude and Practice will allow more practical ways of realization formation, as it will enable the program to be modified more appropriately to the necessities of the community(21).

### **2.3. International Models of Palliative Care**

As Palliative Care was developed, an emerge of different organizations and associations that concentrate on providing support facilities for caregivers, and assessing palliative care; effects, feasibility, approaches, and so on. Nevertheless, there are units around the world that have a totally different palliative cares systems applied. However, not all of them as area unit coated through legislation, or enforced through a company (14). In Kerala, India, a locality network in palliative care (NNPC) was shaped. It is a community program where native volunteer's area unit trained "to determine issues of the inveterately sick, and intervene effectively, with a full of life support from a network of trained professionals"(14). Within ten years, NNPC became a network of 500 community owned programs for palliative care in Asian country, with over 15000 volunteers all over the world. The high success rate for this program is not only due to the incontrovertible fact that it is community primarily based, but also due to the support of natives and authorities, which has helped within the resource of this program. An analogous community-based model was found in Sunshine State, US, Hope Hospice. In spite of the fact that the network reached by Hope Hospice was smaller than India's community primarily based network, it has supported in the provision of

palliative care, and reached a vicinity of individuals, who do not seem to be eligible for palliative care advantages from the government (14).

Hospice Casa Sprinted, which is a charity based in Romania in 1992, is one of the undefeated models for palliative care. It did not solely facilitate in introducing palliative care to Romania, nonetheless, it majorly contributed in teaching palliative care, and designating university courses for it. In China, Ho Chi Minh town Cancer Hospital is one of the most important cancer centers within the world, with around 700 persons in-house patients on daily basis. Its adopted palliative care, and over years of coaching and development, established a ward, and alternative facilities dedicated for palliative care. Providing most of their cancer patients die reception; they are attempting to further develop their care program by adding palliative care reception. However, it is terribly expensive.(14).(4).

A cross sectional study, included 150 nurses working in public hospital in Greece, the analysis was carried through a validated questionnaire based on the Palliative Care Quiz for Nursing (PCQN). The results show poor knowledge about PC of nurses in Greece reaching an 8.9 PCQN overall score out of 20. The findings from this study confirmed the association of gender, age, work experience and level of education on nurses' knowledge about PC(16).

Many alternative models exist worldwide, starting with a government-based models, which is the most common one, ending with a community program. The main drawback facing palliative care and palliative home care are the expenses required. Even though some organizations are charity based to give this monetary care. Conversely, given the model in India, community based mostly palliative care had a really high rate of success and reach, that resulted within the assist from the government to increase development

and expansion. The event of this model and application in numerous countries would cater for several terminally unwell patients, and supply home-care for them(22).

Over the past five decades, palliative care became new special medical service instead the traditional service focuses the care on end of life. Now focus on into a highly special service on delivering supportive care to patients and families with life-limiting illnesses, including patients who may live with end stage organ disease or cancer throughout the disease channel for many years (23)

### **International KAP of Nurses and Physician Towards Palliative Care**

European collaborative study was conducted for physicians across 7 countries (a comparison between seven countries) Belgium, Denmark, Italy, Netherlands, Sweden, Switzerland, and Australia as well(24). Physicians from different specialties that were seen to be involved in end-of-life care were asked to participate; these specialties were “Anesthesiology general practice, geriatric, gynecology, internal medicine, neurology, nursing home medicine (only in the Netherlands), oncology (not a registered separate specialty in the Netherlands), pulmonology and surgery.” 10139 questionnaires were answered and studied, giving most countries a 60% response rate, Italy 39%, Australia 50%, and Belgium 58%(24). At least 50% of physician respondents in all countries considered themselves religious, and between 7-22% to have a specific life philosophy. Whilst religious participants had more support for the statement that good palliative care prevents requests of physician-assisted death(24). Non-religious participants were less supportive of this statement. Female physician and older physicians were also more supportive of the statement that good palliative care prevents the request of physician-assisted dying. Training in palliative care was also associated to the perspective of the

participants of non-treatment methods, where physicians with training were more supportive of palliative care. Last but not least, physicians who have attended to more terminally-ill patients were also more supportive of palliative care than physicians who deal with less terminal diseases (24).

A cross sectional study was carried out on 341 nurses working in selected hospitals in Addis Ababa, Ethiopia. The aim of study to assess the knowledge, skills, attitudes and associated factors with PC in nurses working on that's hospitals. Results showed that of a response rate of 341 (94.2%) were registered. (30.5%) had good knowledge and (76%) had favorable attitude towards PC. The department as well as training on PC were positively associated with knowledge of nurses. Institutions and individuals' level of education, was significantly associated with the attitude the nurses had. Regarding of practice, the majority of the respondents (76.2%) had poor implementation.

(25).

A cross sectional study was carried out on 210 healthcare professionals, who were enrolled from a regional hospital in Taiwan from June 2018, to September 2018. The purpose of study: measure healthcare staff's knowledge, attitudes, and practices of Palliative Care Consultation Service (PCCS). Result: the healthcare participants has good knowledge and attitudes. The results also showed that knowledge, attitudes, and experience of having a family member(s) or friend(s) passing away, and being medical personnel constituted the major predictors of practices ( $p < 0.001$ ). These factors explained 43.2% of the overall variance for practices of KAP-PCCS.

(26).

A descriptive cross-sectional study was conducted at a provincial hospital in Zimbabwe. purpose of study: assess the knowledge and attitudes of registered nurses towards pain

management of adult medical patients. Data were collected through a self-administered questionnaire. The results were registered as follow; nurses at Bindura Hospital had low knowledge levels and poor attitude regarding pain management for adult medical patients. And the recommendation through the study was to curricular changes aiming to promote pain management in medical patients ,in addition to the need to correcting the ingrained misconceptions(27).

Another example in this study is from China. Between December 2011 and December 2013. questionnaire was designed and was carried out on 550 physicians in 11 hospitals. It was a face-to-face survey for physicians (oncologists, internists, hematologists), who are working with cancer patient. results showed that (32.6%) of physicians assessed patients' pain rarely, and 85.5% never or occasionally treated patients' cancer pain together with psychologists. More than 50% of physicians has poor knowledge and assessment for pain assessment related cancer. opioid assessment of pain and pain management (63.0%), patients' reluctance to take opioids (62.2%), and not enough staff knowledge of pain management (61.4%) were the three most frequently cited barriers to physicians' pain management(28)

In Iran, a study titles "Evaluating Resident Physicians' Knowledge, Attitude, and Practice Regarding the Pain Control in Cancer Patients" was conducted. It was a descriptive study; 69 respondents were randomly selected from third-year various residents practicing in teaching hospitals of Shahid Beheshti School of medicine. They have provided their demographic characteristics. The Results were as follow; including 32 anesthesiology residents. The average scores were (ranging from 20 to 49) for the residents' attitude, (ranging from 0 to 53) for their knowledge and (ranging from 0 to 17) for their practice. The overall scores of the questions have related to attitude and

knowledge were higher for residents of anesthesiology but the difference was not statistically significant. The average score for questions on physicians' practice was significantly higher in residents of anesthesiology (5).

#### **2.4. KAP of Nurses and Physician Towards Palliative Care in Middle East**

Palliative Care (PC) remains a comparatively new construct in Middle East (ME). It was first introduced in Kingdom of Saudi Arabia in 1992 and solely recently in countries like Qatar, Bahrain, and the UAE(12). As for the bulk of Middle-Eastern countries, together with Palestine, Iraq, Oman and Lebanon, had the area unit within the capability building section. Others, like Saudi Arabia and Jordan have already got localized provision. There are still units in some countries with very little or no noted Palliative Care activity, like it is the case in Yemen and Syria(12). Political problems, scarceness of resources, and lack of education and awareness appear to be the common factors proscribing the progress of this field in most countries. In order to improve the less than the highest standard PC services in the ME, emphasis should be directed toward providing formal education to medical staff and raising awareness of the public. It is also necessary to place all the problems aside, and develop cross-border collaborations(12).

In the Middle East, PC has only been formally introduced on in the last two decades in Saudi Arabia, and now in most of the Gulf countries. Jordan has the most advanced palliative care unit at King Hussein Care Center (KHCC).

in Kuwait, study for two groups differing in their palliative care attitude and knowledge. 35 oncologists and 76 physicians working in primary care clinics and general hospitals completed the questionnaire at the piloting stage. result item-to-total-score correlations

(r) was ranging from 0.347 up to 0.806. Internal consistency (Cronbach's alpha) was highly ranging from 0.636 to 0.824, oncologist scored consistently higher than the other physicians on all sections of the questionnaire ( $P < 0.001$ ). Test to retest reliability for each section was very high, ranging from 0.879 to 0.97. And the overall reliability was 0.95. The internal consistency reliability of each section was very good ranging (23).

A cross-sectional descriptive study in Lebanon was carried out on 1873 nurses and 1884 physicians in 15 hospitals. The aims to assess the knowledge, attitudes, and practices of physicians and nurses towards palliative care in Lebanon. Results showed that low of response rate was; 51% for nurses and 13% for physicians. High percent of nurses and of physicians were able to identify and definition the concept and the goals of PC. The majority of participants believed that "terminally ill patients and their families should be informed of the diagnosis and prognosis". Only low of physicians routinely "inform terminally ill patients about their diagnosis". Around all participants believe that PC services need to be developed in Lebanon during the need for continuing education in this field(29)

In Jordan, A quantitative descriptive study was carried out on 220 nursing students in five nursing schools (four governmental and one private). The aim of study to evaluate the nursing students' knowledge about palliative care. The methodology of the study PC quiz for nursing was used to measure knowledge of the students. The results were as follow; the mean age was young age, and most of the students where female was most of the participant were in their third year. It was found that there were no significant impacts for place of university. However, students' knowledge was strongly affected by their academic level. In the conclusion and recommendation, palliative care and education is required as the based to improve students' knowledge and practice(30)

A cross-sectional study was carried out on 433 residents of residents from many specialties training centers in Saudi Arabia during 2015-2016. The results showed that around 46% of the physicians showed low knowledge of PC. Half of them had negative views toward palliative care. more Half of them have good practice in pain management. most of respondents had never received training in PC. In the conclusion of the study: the results show a low level of knowledge and attitude regarding PC among sampled of physicians. in contrast, it highlights the importance of exposing the physicians to PC courses to improve their knowledge and attitude(1).

## **2.5. KAP of Nurses and Physician Towards Palliative Care in Palestine**

Moreover, as cancer is the third leading cause of death in Palestine (3), this represents important need for palliative care service in Palestine. The vision of the national health strategy for cancer is to have “Better quality of life for the Palestinian people through controlling cancer prevalence in Palestine”, and its fourth strategic objective is to consider palliative care, specifically pain relief, as an “essential part of cancer control and can be provided relatively simply and inexpensively”(31). In Palestine, palliative care was not part of the health care system, and was only first introduced in Palestine through Al-Sadeel Society in 2008(6). Although Palestinians, as part of their culture, care for the elderly and keep them in-house, the supplement report(32) show that there is no evidence of palliative care for cancer patients neither inside the hospitals, nor outside of them. Furthermore, it was clear that there was no community awareness or a national standard for palliative care(4).

Al-Sadeel society has provided palliative care to new cases for 544 patients in 2014, and 476 family caregivers, although 84.7% of the patients were cared for in hospital, 3% at

home, and 12.3% at the society's palliative care clinic. Knowledge on palliative care is so limited though, which is why Khleif & Dweib emphasize on the importance of educating nurses on palliative care, and its involvement in the daily lives. They also state that palliative care initiative should be developed focusing on "professional training, public awareness, and integrating palliative care into the healthcare system and health education"(31).

Despite of many international studies on palliative cancer care, no previous studies have been conducted in Palestine. Only few numbers of study about the palliative care were conducted to assess the knowledge, attitude, and practice of nursing and physician, which was in limited Hospitals in the North Palestine.

The study "The Nurses' Knowledge and Attitudes towards the Palliative Care" 2015, cross-sectional study was carried out on 96 nurses working in selected hospitals in North Palestine, the study aimed to assess the nurses' knowledge and attitudes towards PC among nurses. the results of the study; 20.8 % of the respondents had good knowledge towards PC, 59.4 % get training of PC, and low rate of participants had good attitude towards PC. There was a significant difference between Nurses' qualification, experience, and training of palliative care towards Knowledge of PC. The study shows that the nurses had poor knowledge, but their attitude towards PC was moderate(7)

The study "Physicians' knowledge, perceived barriers, and practices regarding cancer pain management: a cross-sectional study from Palestine" in 2018, cross-sectional study at 8 hospitals in the West Bank in Palestine. The aim of study to assessed "knowledge, perceived barriers, assessment practices, pain documentation, and delaying processes relating to Cancer Pain Management (CPM)". The result is shown that the age of the participants was  $32.3 \pm 7.0$  years and the majority of participant had less than 10 years

of professional experience. Also showed physicians' knowledge to be inadequate. The barriers that were perceived by the highest percentages of physicians to affect CPM were inadequate pain assessment (89%), insufficient experience (79.8%), and insufficient knowledge (76.1%), all of which are staff-related. However, 65% reported assessing pain on every round and 70% asked about all items related to the nature of pain(33)

The same publisher in other study that was about the nursing "Nurses' knowledge, perceived barriers, and practices regarding cancer pain management: a cross-sectional study from Palestine" in 2019, A cross-sectional survey including 8 hospitals across Northern West Bank. was carried out on of 220 Nurses working in governmental and private hospitals in West Bank/Palestine. the purpose, to assess "knowledge, practices, perceived barriers, and delaying processes relating to cancer pain management (CPM)". The Results show high response rate of. Participants', the mean of age was 30. 34 years. The majority of participant worked in governmental hospitals, then who worked in the private hospital. it showed that males significantly higher than females. Inadequate pain assessment (76.8%), insufficient knowledge of pain control (70.5%) and strict regulation on opioid use (69.5%) were the most frequently perceived barriers. Nurses reported that they would assess pain on every round and check all items related to pain assessment. Contacting the physician for the prescription of opioids was cited as the main delaying process by 56.4% of participants(34)

In Palestine, the capabilities of nurses and physician in palliative care is still rudimentary. Therefore, there is an obvious need to assess the level of knowledge, attitude, and practice for nurses and physician, in some of the hospitals in order to join JCIA. Which in its turn may increase the attention about the palliative care in general?

This study is the first to assess the knowledge, attitude, and practice of nurses and physician towards the palliative care in most cancer Hospital in Palestine. The two aforementioned studies were focusing on nurses KAP with small samples, and the results will serve as a baseline in Palestine to shed the light on palliative care, and contribute in national guidelines and protocols to encourage the oncology Hospital to give more attention to the palliative care. Our study will provide information that can help future research for the level of KAP of nurses and physician towards palliative care in the Hospital. Our study focuses on palliative care units through assessing the level of knowledge of nurses and physician, that rise the field in the nursing and medical school to apply that in those courses.

In these chapter searched about the international models of PC, then about the international KAP of nurses and physicians towards PC, in Middle East many study about the KAP of nurses and physicians towards PC in the Jordan, Saudi Arabia, and less than study in Syria and Yaman , the last section about the KAP of nurses and physicians towards PC in Palestine, there are few studies in Palestine, that focus the important of our study.

# **Chapter Three:**

# **Methodology**

### **3.1 Introduction**

This chapter deals with the strategy used to carry out the study, i.e., how the data were collected and analyzed. This chapter also presents the findings of the data collected. The study intends to collect information regarding assessment of knowledge, attitude and practice of nurses and physicians working with adult oncology patients toward palliative care services in Palestine. Moreover, questionnaire validation and reliability, distribution of the questionnaire and data management, analysis plan, and conceptual framework of the study with dependent and independent variables will be presented in this chapter.

### **3.2 Study Design**

A quantitative research approach using cross sectional descriptive study design was applied in this study. Moreover, a validated questionnaire was used to gather the primary data from participants. The data were collected from nurses and physicians in seven Palestinian hospitals.

### **3.3 Study Population and Sampling**

In order to achieve the objectives of the study, nurses and physicians working in government hospital in the West Bank are around 416 physicians and 1659 nurses in 14 hospitals. Which was reported through the follow-up to the assessment of government hospitals and primary health care directorates in the northern governorates 2017\2018(2). Unless the number of nurses and physicians in Private hospital around 209 physicians and 1100 nurses in west bank(35)(36)(37)(38)(39), so the Total was 625

physicians, 2759 nurses in most of department, except the staff in primary health care and in maternity department.

### **Sample Selection**

The samples were selected from the oncology hospitals in the West Bank. The respondents were nurses and physicians, who related or worked with oncology patients and dealt with or provided palliative care. The sample is a selection from governmental and private hospitals that are located all over West Bank.

To meet the study objectives, the targeted groups were nurses and physicians who serve cancer patients or give the treatment to the adult oncology patients. Therefore, government and private hospitals in the West Bank are the choice to go for, for this study. These hospitals are located all over the West Bank in Palestine, and are considered representative for the whole Palestinian nurses and physicians. The participants' distribution of the study population in governmental and private hospitals can be found in table 1 and 2. So the sample size was 344 participants in all hospitals. (181) were returned with response rate was 65%.

- **The Target Population of Physicians and Nurses in Governmental Hospitals**

**Table 1: Physicians and Nurses in Governmental Hospitals(2)**

<b>Name of the hospital</b>	<b>No. of physicians</b>	<b>No. of nurses</b>	<b>No. of physicians in oncology</b>	<b>No. of nurses in oncology</b>
Alwatani	15	92	5	25
Al-hussin,Beit Jala	37	148	13	45
Thabet Thabet,Tulkarm	28	137	5	20
Hebron Government,Alia	21	241	5	10
<b>Total</b>	<b>101</b>	<b>618</b>	<b>28</b>	<b>100</b>

- **The Target Population in Private Hospitals**

**Table 2: Physicians and Nurses in Private Hospitals from the Human Resources from Each Hospital**

<b>Name of the hospital</b>	<b>No. of physicians</b>	<b>No. of nurses</b>	<b>No. of physicians in oncology</b>	<b>No. of nurses in oncology</b>
an-Najah University Hospital (NNUH)	30	150	17	66
Istishari Arab Hospital (IAH)	25	150	8	20
Augusta Victoria hospital	30	185	20	85
<b>Total</b>	<b>85</b>	<b>485</b>	<b>45</b>	<b>171</b>

### **3.4 Study Tool: Questionnaire Description, Adaption and Modification**

A validation questionnaire was designed for this study. It was developed based on a review of the literature review and the information gained from a quantitative study conducted by the original author of the tool. It was tested for content validity and appropriateness for proper usages in Palestine by a team of experts(29).

#### **3.4.1 Validity of Questionnaire**

The researcher gets advantage of the arbitrators' experts and skills in the field of scientific research.

The questionnaire was revised for improvements and connecting its sections to the study objectives. The questionnaire was reviewed by six arbitrators, who were experts in public health, medical oncology and biostatistics (see annex number 1). Pearson correlation coefficient was calculated to all items and sub items (annex #2), which

revealed high validity for all of the items ( $r > 0.3$ ,  $p < 0.01$ ), except for one only (Q.35: patient prefer to die at hospital;  $r = -0.2$ ,  $p = 0.6$ ).

### 3.4.2 Reliability of the Tool

The reliability was measured by Cronbach alpha test to measure its internal consistency. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. The reliability refers whether you get the same answer by using an instrument to measure more than once (40). Reliability for each section was as follows:

**Table 3: Cronbach Alpha Values**

<b>The section of the questionnaire</b>	<b>Cronbach's Alpha</b>	<b>Number of items</b>	<b>Sample size (responses)</b>
Section 2: knowledge	0.835	22	165
Section 3: Attitudes	0.828	19	181
Section 4: Practice	0.958	47	181
Section 5: Palliative Care Services; Needs Assessment	0.778	12	181
<b>Overall reliability of all sections</b>	<b>0.957</b>	<b>100</b>	<b>181</b>

## 3.5 Data Collection and Analysis

### 3.5.1 Data Collection

The data for this study were collected between December 2021 and January 2022. The questionnaires were to be circulated via email, and social media by using google forms that allow to the participant filling the form once. Each hospital has a contact person, who was trained by the researcher and questionnaire developer about the research and

the questioner. So, the key person who distributed the questions to the target staff in a hospital by social media is a contact person who has been identified in each hospital as key person to answer participants questions when needed. The questionnaire has been distributed twice in some hospitals due to the low response rate.

### **3.5.2 Data Analysis**

To analyze data in this study, Statistical Package for Social Sciences (SPSS.28) was used. Frequencies, percentages, means and standard deviations were used to provide a comprehensive description of the different questionnaire statements. Means as one of central tendency measures, and standard deviation as one of dispersion measures to identify the extent of dispersion of respondents' answers in the various questionnaire statements. The mean for each section was multiplied to convert it into percentage; in the binary answers as in knowledge section, it was multiplied by 50, whereas in other section it was multiplied by 20 since it has five-answer options. Moreover, One-Way ANOVA, t-test and chi square Tests were used to reveal significant relationships between the sample subgroups according to the independent variables of the study. In addition, simple, multiple linear and stepwise regression models were used as prediction model for our variables.

# **Chapter Four:**

# **Data Presentation**

# **and Results**

#### 4.1 Introduction

The fourth chapter presents the findings of the results. It reported the demographic characteristic of respondents', as well as their perceptions, attitudes and understanding of addressed issues. The findings have been presented in charts and tables for more clarification and understanding.

#### 4.2 Socio-Demographic Characteristics of the Respondents

The sample selected from governmental and private hospitals that distributed in all west bank. The following table (4) shows frequencies (N) and percentages (%) of the socio-demographic characteristics of the respondents in the study sample.

**Table (4): Socio-Demographic Characteristics of the Participants In The Study**

Variable	Category	N	%
Gender	male	116	64.1%
	female	65	35.9%
	Total	181	100.0%
Age	less than 30 years	67	37.0%
	30-39	89	49.2%
	40 years or more	25	13.8%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Profession	MD	46	25.4%
	RN	135	74.6%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Hospital	Alwatani	14	7.7%
	Beit Jala	31	17.1%
	Tulkarm	9	5.0%
	Alia	12	6.6%
	an-Najah National University Hospital	35	19.3%
	Istishari Arab Hospital (IAH)	23	12.7%

	Augusta Victoria (AVU)	57	31.5%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Hospital type	Governmental	66	36.5%
	Private	115	63.5%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Department	oncology	86	47.5%
	non oncology	95	52.5%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Year of graduation	before 2000	13	7.2%
	2000-2009	29	16.0%
	2010-2019	85	47.0%
	2020 and after	54	29.8%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>
Years of experience	Less than 5 years	43	23.8%
	5-10	96	53.0%
	11-15	19	10.5%
	16 years or more	23	12.7%
	<b>Total</b>	<b>181</b>	<b>100.0%</b>

### 4.3 Responses Reflecting the Knowledge

In our study the average percentage of the correct answers of knowledge among nurses and physicians working with adult oncology patients toward palliative care services was 79%. The highest items of correct answers were in "provides relief from pain and other distressing symptoms" (92.3%) and "palliative care includes medical care" (92.8%).

On the other hand, the lowest items of correct answers were in "the outcome of palliative care prolong life" (40.3%), "palliative care destroys hope and leads to despair and depression" (54.1%), and "palliative care is not concerned with family bereavement" (58%).

The following table (5) shows frequencies and percentages of the knowledge among nurses and physicians working with adult oncology patients toward palliative care services.

**Table (5): Frequencies and Percentages of the Respondents' Answers Toward Knowledge Items**

No.	knowledge of nurses and physicians	No		Yes		Correct answer
		N	%	N	%	
To your knowledge, what would be the outcome of palliative care?						
1.	“Death without pain/suffering”	20	11.0%	161	89.0%	Yes
2.	“Prolonged life”	73	40.3%	108	59.7%	No
3.	“Living with dignity and respect”	20	11.0%	161	89.0%	Yes
To your knowledge palliative care includes:						
4.	“Medical care”	13	7.2%	168	92.8%	Yes
5.	“Social care”	18	9.9%	163	90.1%	Yes
6.	“Psychological care”	21	11.6%	160	88.4%	Yes
7.	“Physical care”	24	13.3%	157	86.7%	Yes
8.	“Spiritual care”	28	15.5%	153	84.5%	Yes
palliative care:						
9.	“Affirms life and regards dying as a normal process”	27	14.9%	154	85.1%	Yes
10.	“Is considered in some countries as a medical specialty by itself”	41	22.7%	140	77.3%	Yes
11.	“Does not support family coping with patient’s illness”	113	62.4%	68	37.6%	No
12.	“Promotes quality of life of patients”	21	11.6%	160	88.4%	Yes
13.	“Provides relief from pain and other	14	7.7%	167	92.3%	Yes

	distressing symptoms”					
14.	“Is not concerned with family bereavement”	105	58.0%	76	42.0%	No
15.	“Destroys hope and leads to despair and depression”	98	54.1%	83	45.9%	No
16.	“Supports patients in living as actively and creatively as possible”	25	13.8%	156	86.2%	Yes
17.	“Supports patients in living as actively and creatively as possible should be offered when multi-organs failure happens”	42	23.2%	139	76.8%	Yes
18.	“Supports patients in living as actively and creatively as possible someone has a life-limiting condition or chronic illness and they need intensive treatment to manage the condition”	35	19.3%	146	80.7%	Yes
19.	“Supports patients in living as actively and creatively as possible is part of the family responsibility so they should be involved in refusal of treatment (do not resuscitation)”	38	21.0%	143	79.0%	Yes
	<b>Total Knowledge</b>	<b>% Of correct answers= 79%</b> <b>% Of wrong answer=21%</b>				

In addition to participant’s responses in table (6), the participants were asked about receiving any continuing education in palliative care. Most of the respondents (77.3%) did not receive such education before as shown in table (6).

**Table (6): Frequencies and Percentages of the Respondents' Answers Toward Receiving any Continuing Education in Palliative Care**

<b>Receiving any continuing education in palliative care</b>	<b>N</b>	<b>%</b>
No	140	77.3%
Yes	41	22.7%
Total	181	100.0%

#### 4.4 Attitudes

Table (7) shows means and standard deviations of nurses and physicians' attitudes of working with adult oncology patients toward palliative care services, The total value of mean indicates that the respondents' attitudes are high, with a mean of (3.87).

The highest attitudes items are: the item “the patient should be informed about the side effects of treatment” with mean (4.35) and standard deviation (0.75), the item “the patient should be involved in the treatment choices” with mean (4.34) and standard deviation (0.7), the item “the family should be informed about the [Diagnosis]” with mean (4.31) and standard deviation (0.83), the item “the patient should be informed about his/her [Diagnosis]” with mean (4.29) and standard deviation (0.64) .

On the other hand, the lowest items are: the item “it is preferable for the terminally ill patient to die [at a hospice]” with mean (3.28) and standard deviation (0.88), the item “it is preferable for the terminally ill patient to die [at the hospital]” with mean (3.44) and standard deviation (0.85), the item “terminally ill patients have the right to choose "do not resuscitate (DNR)"" with mean (3.91) and standard deviation (1), the item “it is preferable for the terminally ill patient to die [at home]” with mean (3.94) and standard deviation (0.86) .

The following table (7) shows the means and the standard deviations of the attitudes of nurses and physicians working with adult oncology patients toward palliative care services.

**Table (7): Means and Standard Deviations of Attitudes of Nurses and Physicians Working with Adult Oncology Patients Toward Palliative Care Services**

No.	Attitudes of nurses and physicians	Mean	Standard Deviation	Level
1.	“The patient should be informed about his/her [Diagnosis]”	4.29	0.64	Very high
2.	“The patient should be informed about his/her [Prognosis]”	4.10	0.77	High
3.	“The family should be informed about the [Diagnosis]”	4.31	0.83	Very high
4.	“The family should be informed about the [Prognosis]”	4.10	0.99	High
5.	“The patient should be involved in the treatment choices”	4.34	0.70	Very high
6.	“The family should be involved in the treatment choices”	3.98	0.94	High
7.	“The patient should be informed about the side effects of treatment”	4.35	0.75	Very high
8.	“The family should be informed about the side effects of treatment”	4.26	0.83	Very high
9.	“Terminally ill patients have the right to choose” “do not resuscitate (DNR)””	3.91	1.00	High
10.	“Terminally ill patients’ wishes to seek alternative medicine should be respected”	4.04	0.70	High
11.	“Working with terminally ill patients is stressful”	4.20	0.79	High
12.	“The dignity and integrity of the terminally ill patient should be addressed throughout the caring process”	4.23	0.65	Very high
13.	“Terminally ill patients should be encouraged to have hope against all odds”	3.96	0.77	High
14.	“Discussing fears, beliefs and hope should be part	4.18	0.69	High

	of the terminally ill patient's care plan"			
15.	"Having same religious beliefs with patients enhances the caring process"	4.02	0.84	High
16.	"It is preferable for the terminally ill patient to die [at the hospital]"	3.44	0.85	High
17.	"It is preferable for the terminally ill patient to die [at home]"	3.94	0.86	High
18.	"It is preferable for the terminally ill patient to die [at a hospice]"	3.28	0.88	Moderate
19.	"The self-image of the terminally ill patient should be maintained at all times"	4.12	0.75	High
	Total Degree	3.87	0.40	High

#### 4.5 Practices

Means and standard deviations of practices among nurses and physicians working with adult oncology patients toward palliative care services can be followed in table (8). The nurses and physicians' practices toward palliative care are good according to the palliative care standards of care with a high mean value of (3.54).

The highest mean were reported in items "in your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Pain management]" with mean (4.43) and standard deviation (0.63), the item "in your current practice [You cooperate with health professionals]" with mean (4.23) and standard deviation (0.67), the item "in your current practice you involve the following in the decision-making process [Patient]" with mean (4.23) and standard deviation (0.69), the item "in your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Symptom management]" with mean (4.23) and standard deviation (0.74) .

From the other hand, the lowest items were found in item “you perceive a terminally ill patient's outburst as [An attack against you]” with mean (3.35) and standard deviation (1.05), the item “you perceive a terminally ill patient's outburst as [Unacceptable]” with mean (3.35) and standard deviation (0.97), the item “you perceive the terminally ill patients' questions and concerns as [Threat]” with mean (3.38) and standard deviation (1), the item “you perceive family's questions and concerns as [Threat]” with mean (3.39) and standard deviation (0.93) .

The following table (8) shows the means and the standard deviations of the practices of nurses and physicians working with adult oncology patients toward palliative care services.

**Table (8): Means and Standard Deviations of Practices of Nurses and Physicians Working with Adult Oncology Patients Toward Palliative Care Services**

No.	Practices of nurses and physicians	Mean	Standard Deviation	Level
1.	“Your current practice with terminally ill patients is guided by [Medical condition]”	4.22	0.63	Very high
2.	“Your current practice with terminally ill patients is guided by [Family’s wishes]”	3.57	0.84	High
3.	“Your current practice with terminally ill patients is guided by [Patient’s wishes]”	3.76	0.83	High
4.	“Information communicated to the terminally ill patient depends on [Patient’s ability to understand fully]”	4.14	0.69	High
5.	“Information communicated to the terminally ill patient depends on [Patient’s involvement in decision-making]”	3.96	0.75	High
6.	“Information communicated to the terminally ill patient depends on [Your desire as a professional to	3.57	0.90	High

	disclose information]”			
7.	“Information communicated to the family of the terminally ill patient depends on [Family’s ability to understand fully]”	4.07	0.76	High
8.	“Information communicated to the family of the terminally ill patient depends on [Their involvement in decision-making]”	4.01	0.75	High
9.	“Information communicated to the family of the terminally ill patient depends on [Your desire as a professional to disclose information]”	3.70	0.90	High
10.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Cultural background]”	4.08	0.73	High
11.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Socio-economic background]”	3.92	0.78	High
12.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Spiritual-religious background]”	4.02	0.79	High
13.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Medical situation]”	4.14	0.72	High
14.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Pain management]”	4.43	0.63	Very high
15.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Symptom management]”	4.23	0.74	Very high
16.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Psychological support]”	4.19	0.76	High
17.	“In your delivery of care, you consider the	4.12	0.78	High

	following to be integral to the care management of terminally ill patients [Spiritual/ Religious support]”			
18.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Family support]”	4.12	0.78	High
19.	“In your current practice [You cooperate with health professionals]”	4.23	0.67	Very high
20.	“In your current practice [You respect terminally ill patients’ wishes]”	4.20	0.72	High
21.	“In your current practice [You provide terminally ill patients with alternative choices of treatment]”	3.98	0.81	High
22.	“In your current practice you involve the following in the decision-making process [Patient]”	4.23	0.69	Very high
23.	“In your current practice you involve the following in the decision-making process [Family]”	3.98	0.82	High
24.	“In your current practice you involve the following in the decision-making process [Physicians]”	4.20	0.70	Very high
25.	“In your current practice you involve the following in the decision-making process [Nurses]”	4.04	0.77	High
26.	“In your current practice you involve the following in the decision-making process [other professionals]”	3.88	0.74	High
27.	“You perceive a terminally ill patient’s outburst as [An attack against you]”	3.35	1.05	Moderate
28.	“You perceive a terminally ill patient’s outburst as [Rebellion against the situation]”	3.64	0.84	High
29.	“You perceive a terminally ill patient’s outburst as [Unacceptable]”	3.35	0.97	Moderate
30.	“You perceive a terminally ill patient’s outburst as [Acceptable given the patient’s condition]”	3.75	0.72	High
31.	“You perceive the family’s outburst as [An attack	3.51	0.93	High

	against you]”			
32.	“You perceive the family’s outburst as [Rebellion against the situation]”	3.66	0.84	High
33.	“You perceive the family’s outburst as [Unacceptable]”	3.55	0.85	High
34.	“You perceive the family’s outburst as [Acceptable given their patient’s condition]”	3.70	0.74	High
35.	“You perceive the terminally ill patients’ questions and concerns as [Right]”	4.22	0.64	Very high
36.	“You perceive the terminally ill patients’ questions and concerns as [Threat]”	3.38	1.00	Moderate
37.	“You perceive the terminally ill patients’ questions and concerns as [Doubting your professionalism]”	3.43	0.94	High
38.	“You perceive the terminally ill patients’ questions and concerns as [Attention seeking behavior]”	3.56	0.85	High
39.	“You perceive family’s questions and concerns as [Right]”	4.14	0.68	High
40.	“You perceive family’s questions and concerns as [Threat]”	3.39	0.93	Moderate
41.	“You perceive family’s questions and concerns as [Doubting your professionalism]”	3.42	0.88	High
42.	“You perceive family’s questions and concerns as [Attention seeking behavior]”	3.54	0.83	High
	Total Degree	3.54	0.34	High

#### 4.6 Needs Assessment

In our study the participants were asked to identify the most needed issues for PC in Palestine from their point of view. Our study highlighted the following items as highest needs “palliative care services need to be developed in Palestine” with mean (4.49) and standard deviation (0.66), “continuing education program in palliative care needs to be

developed in Palestine” with mean (4.43) and standard deviation (0.63), “successful palliative care service should have [Consultation services]” with mean (4.25) and standard deviation (0.72), “as a health care provider, I would be interested in attending a continuing education program” with mean (4.22) and standard deviation (0.68) .

On the other hand, the lowest needed items were “palliative care should be initiated when a patient's disease becomes incurable” with mean (3.66) and standard deviation (1.05), “in my hospital, palliative care is provided by a special palliative care unit / team “ with mean (3.77) and standard deviation (1.14) , “palliative care may be provided at home by [Hospice programs]” with mean (4.06) and standard deviation (0.73) , “palliative care may be provided at home by [Home care agencies]” with mean (4.06) and standard deviation (0.72) .

The following table (9) reports the means and the standard deviations of the needs assessment of nurses and physicians working with adult oncology patients toward palliative care services.

**Table (9): Means and Standard Deviations of Needs Assessment of Nurses and Physicians Working with Adult Oncology Patients Toward Palliative Care Services**

No.	Needs Assessment of nurses and physicians	Mean	Standard Deviation	Level
1.	“Palliative care services need to be developed in Palestine”	4.49	0.66	Very high
2.	“As a health care provider, I consider myself involved in a palliative care team”	4.12	0.75	High
3.	“In my hospital, palliative care is provided by a special palliative care unit / team “	3.77	1.14	High
4.	“Palliative care should be initiated when a patient’s disease becomes incurable”	3.66	1.05	High
5.	“A successful palliative care service should have	4.25	0.72	Very high

	[Consultation services]”			
6.	“A successful palliative care service should have [Inpatient units]”	4.15	0.72	High
7.	“A successful palliative care service should have [Hospice programs]”	4.14	0.75	High
8.	“Palliative care may be provided at home by [Ambulatory outpatient clinics]”	4.09	0.74	High
9.	“Palliative care may be provided at home by [Home care agencies]”	4.06	0.72	High
10.	“Palliative care may be provided at home by [Hospice programs]”	4.06	0.73	High
11.	“A continuing education program in palliative care needs to be developed in Palestine”	4.43	0.63	Very high
12.	“As a health care provider, I would be interested in attending a continuing education program”	4.22	0.68	Very high

#### **4.7 Analysis of Differences in Knowledge, Attitudes and Practices According to the Professional and Demographic Independent Variables**

Our data identified a significant difference at the level (0.05) in practices of nurses and physicians working with adult oncology patients toward palliative care services (as seen in table (10)) according to the gender, the Tukey post-hoc multiple comparisons showed that the mean of male (Mean= 3.86) is significantly higher than the mean of female (Mean=3.89), that is the Male have better practice from female.

according to age, ( $F = 6.052$ ,  $p = 0.003$ ), and the Tukey Post-hoc multiple comparisons showed that the mean of the age group 40 years or more (Mean=3.74) is significantly higher than the mean of the age group less than 30 years (Mean =3.47) and also significantly higher than the mean of the age group 30-39 (Mean =3.53); that is, older professionals have better practice.

**Table (10): Means, Standard Deviations and the Results of One-Way Analysis of Variance (ANOVA) or the Independent Samples T-Test of Differences in Knowledge, Attitudes and Practices According to the Personal and Demographic Variables**

Variable			Knowledge		Attitudes		Practices	
	Category	N	Mean $\pm$ S.D	F or T (P-value)	Mean $\pm$ S.D	F or T (P-value)	Mean $\pm$ S.D	F or T (P-value)
gender	Male	116	78.54 $\pm$ 21.08	0.98 (0.329)	4.04 $\pm$ 0.42	-0.731 (0.466)	3.86 $\pm$ 0.48	-0.523 (0.602)
	Female	65	75.47 $\pm$ 18.66		4.09 $\pm$ 0.44		3.89 $\pm$ 0.43	
Age	Less Than 30 Years	67	73.92 $\pm$ 20.02	1.845 (0.161)	3.99 $\pm$ 0.46	1.685 (0.188)	3.75 $\pm$ 0.55	3.664 (0.028)
	30-39	89	78.83 $\pm$ 21.97		4.07 $\pm$ 0.42		3.95 $\pm$ 0.39	
	40 Years Or More	25	81.89 $\pm$ 11.78		4.17 $\pm$ 0.33		3.93 $\pm$ 0.4	
profession	MD	46	81.12 $\pm$ 15.87	1.434 (0.153)	4.08 $\pm$ 0.34	0.444 (0.658)	3.84 $\pm$ 0.38	-0.557 (0.578)
	RN	135	76.18 $\pm$ 21.44		4.05 $\pm$ 0.46		3.88 $\pm$ 0.49	
hospital	Alwatani	14	71.05 $\pm$ 16.48	0.454 (0.841)	3.9 $\pm$ 0.37	3.956 (0.001)	3.86 $\pm$ 0.42	1.08 (0.376)
	Beit Jala	31	77.08 $\pm$		3.93 $\pm$ 0.44		3.87 $\pm$ 0.47	

			27.77					
	Tulkarm	9	76.61 ± 26.72		4.43 ± 0.27		4.2 ± 0.35	
	Alia	12	73.25 ± 24.73		3.91 ± 0.53		3.82 ± 0.51	
	(NNUH)	35	78.65 ± 19.1		3.95 ± 0.41		3.78 ± 0.54	
	(IAH)	23	76.89 ± 19.61		4.03 ± 0.47		3.84 ± 0.42	
	(AVU)	57	79.69 ± 15.03		4.2 ± 0.36		3.9 ± 0.44	
Hospital type	Governmental	66	75.04 ± 24.66	-1.208 (0.229)	3.99 ± 0.45	-1.552 (0.122)	3.91 ± 0.46	0.796 (0.427)
	Private	115	78.81 ± 17.18		4.09 ± 0.41		3.85 ± 0.47	
department	Oncology	86	81.21 ± 16.06	2.42 (0.017)	4.17 ± 0.37	3.497 (0.001)	3.97 ± 0.4	2.933 (0.004)
	Other	95	74.02 ± 22.95		3.95 ± 0.46		3.78 ± 0.49	
Year of graduation	Before 2000	13	72.87 ± 30.75	0.237 (0.87)	4.17 ± 0.43	11.725 ( $<0.001$ )	3.95 ± 0.49	3.344 (0.02)
	2000-2009	29	77.5 ± 21.23		4.11 ± 0.34		4.01 ± 0.39	
	2010-2019	85	77.77 ± 16.69		4.18 ± 0.38		3.91 ± 0.5	
	2020 Or Above	54	77.97 ±		3.79 ± 0.44		3.72 ± 0.4	

			22.19					
Years of experience	Less Than 5 Years	43	73.93 ± 20.02	1.976 (0.119)	3.97 ± 0.48	1.522 (0.21)	3.73 ± 0.44	3.19 (0.025)
	5-10	96	79.71 ± 19.56		4.04 ± 0.42		3.87 ± 0.48	
	11-15	19	69.81 ± 29.08		4.12 ± 0.39		4.08 ± 0.38	
	16 Years Or More	23	80.78 ± 11.62		4.19 ± 0.35		3.99 ± 0.41	
<p>*N is the number of individuals occurrence in the defined category, % is the percentage of cases in the defined category, Mean = the average of the numbers, S.D= is a measure of how dispersed the data is in relation to the mean, T= used to determine if there is a significant difference between the means of two groups, which may be related in certain features. , F= used by a researcher in order to carry out the test for the equality of the two population variances, p-value was considered significant at &lt; .05.) measurement used to validate a hypothesis against observed data.</p>								

By comparing the palliative care according to the profession, no significant differences were reported at the level (0.05) in knowledge, and practices of nurses and physicians working with adult oncology patients. Regarding knowledge, the results show that the mean of the physicians (Mean=83.41) is significantly higher than the mean of the nurses (Mean =77.5) with a T value =2.003 and  $p= 0.047$ . Regarding Practices, the results show that the mean of the physicians (Mean=3.62) is significantly higher than the mean of the nurses (Mean =3.51) with T value =2.083 and  $p= 0.039$ .

Regarding differences between hospitals significant differences were found at the level (0.05) in knowledge, attitudes, and practices of nurses and physicians. Knowledge of the hospitals participants was significantly different ( $F =3.601$ ,  $p= 0.002$ ), and the Tukey Post-hoc multiple comparisons tests showed that the mean of AVU hospital (Mean=86.33) was significantly higher than the mean of Alwatani hospital (Mean =68.8) and the mean of Beit Jala hospital (Mean =73.01). Attitudes of the hospitals participants was significant ( $F =4.684$ ,  $p <0.001$ ), and the Tukey Post-hoc multiple comparisons tests showed that the mean of AVU hospital (Mean=4.03) was significantly higher than the mean of Alwatani hospital (Mean =3.64) and the mean of Beit Jala hospital (Mean =3.78) and the mean of NNUH hospital (Mean =3.75), and also the mean of Tulkarm hospital (Mean=4.19) was significantly higher than the mean of Alwatani hospital (Mean =3.64) and the mean of NNUH hospital (Mean =3.75). Regarding practices, the results showed a significant difference between hospitals participants ( $F =2.565$ ,  $p= 0.021$ ), and the Tukey Post-hoc multiple comparisons tests found that the mean of Tulkarm hospital (Mean=3.81) was significantly higher than the mean of Beit Jala hospital (Mean =3.44) and the mean of

NNUH hospital (Mean =3.46). That means better attitude and knowledge of professionals at AVH hospital toward PC.

The knowledge of the participants was significantly different according to the hospital type ( $T = -3.042$ ,  $p = 0.003$ ). The mean of the private hospitals (Mean=81.92) was significantly higher than the mean of the governmental hospitals (Mean =73.92).

At the department's level, knowledge level between departments was significant ( $T = 2.751$ ,  $p = 0.007$ ), and the mean of the oncology department (Mean=82.68) was significantly higher than the mean of the other departments (Mean =75.68). The same apply to attitudes ( $T = 2.629$ , the  $p = 0.009$ ), with oncology department (Mean=3.95) and practices ( $T = 2.517$ ,  $p = 0.013$ ), with oncology department (Mean=3.6) comparing to the other departments (Mean =3.48). That means the knowledge, attitude, and practice are better in oncology department than other departments.

Year of graduation, and years of experience data reported significant differences between groups. Old graduates' participants have a better attitude and practice than new graduates ( $F = 6.573$ ,  $p < 0.001$ ). Moreover, more experienced participants have a better practice than others ( $F = 3.729$ ,  $p = 0.012$ ). More details on that regard can be found in table (10) above.

#### **4.8 Analysis of Relationships Between Knowledge, Attitudes and Practices**

The Pearson correlation matrix between knowledge, attitudes and practices found a significant moderate positive relationship at the level (0.05) between knowledge and attitudes of nurses and physicians ( $r = 0.446$ ,  $p < 0.001$ ). In addition significant weak positive relationship at the level (0.05) was revealed between knowledge and Practices of nurses and physicians ( $r = 0.452$ , the  $p < 0.001$ ), and a significant strong positive relationship at the level

(0.05) between attitudes and practices of nurses and physicians ( $r=0.597$ ,  $p<0.001$ ). These results indicate that as knowledge increases, both attitudes and practices increase. in a weak relationship, while as attitude increases practice increases in a strong relationship, and vice versa.

The following table (11) shows the relationships between knowledge, attitudes and practices of nurses and physicians.

**Table (11): Pearson Correlation Matrix between Knowledge, Attitudes and Practices**

		Attitudes	Practices
Knowledge	Pearson Correlation	0.446	0.452
	Sig. (2-tailed)	< 0.001	< 0.001
Attitudes	Pearson Correlation		0.597
	Sig. (2-tailed)		< 0.001

#### 4.9 Regression Analysis of Knowledge, Attitudes and Practices as Dependent

##### Variables and the Personal and Demographic Information as Independent Variables

###### 1) Knowledge

The regression analysis of knowledge as dependent variable was done with the profession, hospital, department, and year of graduation variables. The analysis was based on the following regression equation: **Knowledge =  $B_0 + B_1 * Department + e$** . Where  **$B_0$**  and  **$B_1$**  are the regression coefficients, and (e) is the error term.

simple linear regression found a significant effect of profession, hospital, department, and year of graduation on knowledge (the significant levels are less than 0.05), and only the hospital type is not effective based on the results of regression analysis because its high

collinearity with the hospital variable (table 12). The value of the coefficient of determination  $R^2 = 0.166$  indicates that about 17% of the variation in knowledge is due to the variability in these variables. That result indicates that knowledge of PC by professionals is generally not really affected by the independent variables studied in this research.

**Table (12): Analysis of Simple Linear Regression Equation for Knowledge.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	101.963	9.188		11.098	<0.001		
Profession	-5.829	2.790	-0.146	-2.089	0.038	0.974	1.027
Hospital	3.507	1.335	0.423	2.628	0.009	0.184	5.427
Hospital type	-7.058	5.791	-0.196	-1.219	0.225	0.185	5.408
Department	-5.835	2.462	-0.168	-2.371	0.019	0.951	1.052
Year of graduation	-3.025	1.441	-0.150	-2.100-	0.037	0.928	1.078
Dependent Variable: Knowledge							
F-ANOVA=6.971, P-value=<0.001							
R2=0.166							

On the other hand, and in order to emphasize the results in the previous regression analysis, the analysis of linear regression was conducted based on the stepwise method which allows to specify and select the most effective set of independent variables that can be entered into the regression equation. The estimated linear regression equation was:

$$\text{Knowledge} = 98.012 + -5.973 * \text{profession} + 2.043* \text{hospital} + -5.445* \text{Department} + -3.345* \text{Year of graduation}$$

The results in the table (13) show that only the hospital type was excluded from the regression equation based on the stepwise method, and the value of the coefficient of determination  $R^2$  become 0.159, which indicates that about 16% of the variation in knowledge is due to the variability in the profession, hospital, department, and year of graduation.

**Table (13): Analysis of the Multiple Linear Regression Analysis for Knowledge Based On Stepwise Selection Method.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	98.012	8.609		11.385	0		
Profession	-5.973	2.791	-0.15	-2.14	0.034	0.976	1.025
Hospital	2.043	0.583	0.246	3.505	0.001	0.969	1.032
Department	-5.445	2.444	-0.157	-2.228	0.027	0.967	1.034
Year of graduation	-3.345	1.419	-0.166	-2.357	0.02	0.96	1.042
Dependent Variable: Knowledge F-ANOVA=8.320, P-value=<0.001 $R^2=0.159$							

## 2) Attitudes

The regression results in the table (14) show a significant effect of hospital, and year of graduation on attitudes (the significant levels are less than 0.05). Only the department was not effective based on the results of regression analysis. The value of the coefficient of determination  $R^2 = 0.160$  indicates that about 16% of the variation in attitudes is due to the variability in these variables. The analysis will be based on the following regression

equation: **Attitudes = B<sub>0</sub> + B<sub>1</sub> \* Hospital + B<sub>2</sub> \* Department + B<sub>3</sub> \* Year of graduation + e.** Where: **B<sub>0</sub>, B<sub>1</sub>, B<sub>2</sub>, and B<sub>3</sub>** are the regression coefficients, and **(e)** is the error term.

**Table (14): Analysis of Multiple Linear Regression Equation for Attitudes.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.244	0.147		28.940	<0.001		
Hospital	0.037	0.013	0.194	2.788	0.006	0.981	1.020
Department	-0.105	0.056	-0.130	-1.858	0.065	0.969	1.032
Year of graduation	-0.130	0.033	-0.279	-3.997	<0.001	0.971	1.029
Dependent Variable: Attitudes							
F-ANOVA=11.208, P-value=<0.001							
R2=0.160							

On the other hand, the analysis of linear regression based on the stepwise method (as shown in table (15)) which allows to specify and select the most effective set of independent variables that can be entered into the regression equation, the department was excluded from the regression equation based on the stepwise method, and the value of the coefficient of determination  $R^2$  become 0.143, this indicates that about 14% of the variation in attitudes is due to the variability in the hospital, and Year of graduation. The estimated linear regression equation was: **Attitudes = 4.098+ 0.040\* hospital + -0.138\* Year of graduation**

**Table (15): Analysis of the Multiple Linear Regression Analysis for Attitudes Based on Stepwise Selection Method.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.098	0.125		32.889	0.000		
hospital	0.040	0.013	0.207	2.963	0.003	0.990	1.010
Year of graduation	-0.138	0.032	-0.297	-4.266	0.000	0.990	1.010

Dependent Variable: Attitudes  
 F-ANOVA=14.881, P-value=<0.001  
 $R^2=0.143$

### 3) Practices

The regression analysis of practices as dependent variable and independent variables show (table (16)) significant effects of profession, department, and year of graduation on practices (the significant levels are less than 0.05). However, age, hospital, years of experience had no significant effect on practices. The value of the coefficient of determination  $R^2=0.175$  indicates that about 18% of the variation in practices is due to the variability in these variables. The analysis was based on the following regression equation:

**Practices =  $B_0 + B_1 * \text{Age} + B_2 * \text{profession} + B_3 * \text{hospital} + B_4 * \text{Department} + B_5 * \text{Year of graduation} + B_6 * \text{Years of experience} + e$ .** Where:  $B_0$  is the regression constant,  $B_i$ ,  $i=1, \dots, 6$  are the regression coefficients, and (e) is the error term.

**Table (16): Analysis of Multiple Linear Regression Equation for Practices.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.062	0.205		19.840	0.000		
Age	0.078	0.054	0.155	1.438	0.152	0.408	2.453
Profession	-0.127	0.055	-0.164	-2.293	0.023	0.932	1.073
Hospital	0.012	0.011	0.075	1.064	0.289	0.950	1.053
Department	-0.097	0.048	-0.143	-2.031	0.044	0.955	1.047
Year of graduation	-0.106	0.032	-0.271	-3.357	0.001	0.728	1.374
Years of experience	-0.016	0.043	-0.044	-0.385	0.701	0.358	2.793
Dependent Variable: Practices F-ANOVA=6.159, P-value=<0.001 R2=0.175							

On the other hand, and by using stepwise method age, hospital, and years of experience were excluded from the regression equation, and the value of the coefficient of determination  $R^2$  become 0.156, this indicates that about 16% of the variation in practices is due to the variability in the profession, department, and year of graduation. The estimated linear regression equation used was:

$$\text{Practices} = 4.319 + -0.151 * \text{profession} + -0.100 * \text{Department} + -0.123 * \text{Year of graduation}$$

**Table (17): Analysis of the Multiple Linear Regression Analysis for Practices Based on Stepwise Selection Method.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.319	0.147		29.328	0.000		
Profession	-0.151	0.054	-0.194	-2.794	0.006	0.988	1.013
Department	-0.100	0.047	-0.148	-2.115	0.036	0.977	1.023
Year of graduation	-0.123	0.027	-0.313	-4.462	0.000	0.968	1.033
Dependent Variable: Practices F-ANOVA=10.875, P-value=<0.001 R2=0.156							

# **Chapter Five: Discussion and Conclusions**

### 5.1. Introduction:

This is the first comprehensive study to evaluate knowledge, attitude, and practices in relation with adult cancer patients among doctors and nurses in WB of Palestine. The majority of the studied samples were covering younger participant, where adults who less than 30 years are 37%, ones between 30 to 39 years were 49.2%, and the ones who were 40 years or above were 13.8%. This finding is in agreement with that of Al Qadire(30), and other two study conduct in Palestine 2015; The Nurses' Knowledge and Attitudes towards the Palliative Care(7). In 2018 a study conducted on “physicians’ knowledge, perceived barriers, and practices regarding cancer pain management: a cross-sectional study from Palestine”(33), had approximately similar findings to the current study. Concerning gender, the current study revealed the dominance of males, with a 64.1% of males, and 35.9% of females. This finding is in agreement of Al Qadire study(30), and with other studies in Palestine(33)(34). On the contrary, the results in the study that took place in China, presented a higher percentage of females over males(28). Lead to thinking about the nature of work in oncology department, which makes us think about doing research studies about it.

In regard to the years of experience, the current study revealed that around half of the studied sample 53% had an experience in working between 5-10 years. Correlated to the studied sample, it was younger from what was mentioned above, Palestinian study was done by Ayed.A et. al 2015 indicated that most of the participants had experience less than 2 years(7). These findings reflect the need for the participants or staff to be encouraged for a continuation of education and update for the information.

The distribution of participants based on hospital type was 36% in government hospital, and 63.5% in private hospital. The interpretation of these findings related to the study focus on oncology hospitals. These majority of oncology hospitals are provided in private hospitals in Palestine. Which explain these findings.

## **5.2 Knowledge Level**

In this study, only 22.7% of participants receive educations in PC. These findings are similar other studies conducted in Lebanon, the participants who received education in PC were 29%.(29). This number is very low compared to results from other studies. In China, 81.1% of general practitioners were found to have training in pain control(28), and in Palestine by A,Ayed, 59.4% of participants get PC training(7). The lack of training programs related to the PC could be associated with low specific palliative care units in the hospitals in Palestine. This could lead to more awareness toward definition the concept of PC curriculums to focus them with the needed knowledge and efficiency to provide high quality end-of-life care for the terminally oncology ill patients. That supports implementing continuing education programs about PC to ensure the best knowledge and practice.

Almost 80% of nurses and physicians working with adult oncology patients had the good knowledge toward palliative care services. In contrary to our findings, et. al 2015 (7); stated in his study, done in Palestine, that 20.8% of the participants had good knowledge on PC. The same findings apply to study in Lebanon(29). Despite the low percentages of participant who get training of PC, the participant has good knowledge about PC. That might be due to the fact that in recent years there have been increase of PC courses in the nursing curriculum in Palestinians universities. Moreover, and in attempt to identify areas

of knowledge deficit among the lowest of the studied sample, who had unsatisfactory knowledge level, it was found that family related issues “palliative care is not concerned with family bereavement (58%)” as area for future improvement.

### **5.3 Attitude Level**

The respondents' attitudes were high (3.87) in our study. These findings were going along with A, Ayed et. al 2015 (7), Zhang, Qiongwen et. al 2015(28) and Kassa, Hiwot et. al 2014 findings (41). In general, the attitudes of our nurses and physicians favored informing and involving the patient and the family. These results focus that the family play in real protective role in the life of the patients in Palestine. However, with the progress in education and technology especially in medicine, Palestinians patients are becoming empowered and as such increasingly knowledgeable on diseases and treatment shapes, leading to an increase in their involvement in the decision-making process.

The lowest percentage of attitude for the participants was towards thinking that patients do not have the right to choose “do not resuscitate”, with mean (3.91). That goes along with findings of a study in Lebanon(29), Furthermore, more lowest items were the items "It is preferable for the terminally ill patient to die [at a hospice]", and the item "It is preferable for the terminally ill patient to die [at the hospital]". The lowest attitude rises in these items related to the Palestinian family's culture and religion that have close family relations and prefer to take care of their patients. Other low items like "Terminally ill patients have the right to choose "do not resuscitate (DNR)""", the item "It is preferable for the terminally ill patient to die [at home]", are more likely related to the lack of legal guidelines in Palestine

regarding end-of-life decisions and the fact that the majority of Palestinians are very religious and as such value the sanctity of life.

#### **5.4 Practice Level**

The respondents' practices of nurses and physicians working with adult oncology patients toward palliative care service was high, with mean value (3.54). That was similar to other studies in Addis Ababa, that indicate the majority 76.2% having good practice(41). The highest items in our study were: the item (In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Pain management]), the item (In your current practice [You cooperate with health professionals]), the item (In your current practice you involve the following in the decision-making process [Patient]), and the item (In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Symptom management]). That's mean the participants in our study has a good practice towards pain management, and cooperate with other professional, may the cause, the participants have experience and mature to communications with other staff.

The majority of nurses and physicians took into consideration the cultural, socio-economic, and spiritual-religious background of the patient. This could be due to the Palestinians mentality which gives high importance to culture, tradition, and religion.

Similar to the findings of Lebanon study(29), the lowest items were: (You perceive a terminally ill patient's outburst as [An attack against you]), (You perceive a terminally ill patient's outburst as [Unacceptable]), (You perceive the terminally ill patients' questions and concerns as [Threat]), and (You perceive family's questions and concerns as [Threat]).

It is possible that these results could be led to lack of practice and might related to the (possible) nurses' inability to deal with emotional outbursts in difficult situations.

### **5.5 Needs Assessment**

The study in this document indicates a high opinion number with mean value (4.12) of needs assessment of nurses and physicians. That indicates the desire of participant to continues education about PC, A possible reason for that the increase demand from oncology hospital and cancer patients and employment opportunities for the nurses and physicians. Based on the highest items "Palliative care services need to be developed in Palestine" and "A continuing education program in palliative care needs to be developed in Palestine" that were indicated, we can conclude that palliative care services need to be developed in Palestine.

According to the highest items, the following conclusions can be obtained: Palliative care services need to be developed in Palestine, A continuing education program in palliative care needs to be developed in Palestine, A successful palliative care service should have [Consultation services], As a health care provider, I would be interested in attending a continuing education program, A successful palliative care service should have [Inpatient units], A successful palliative care service should have [Hospice programs], As a health care provider, I consider myself involved in a palliative care team, Palliative care may be provided at home by [Ambulatory outpatient clinics], Palliative care may be provided at home by [Home care agencies], Palliative care may be provided at home by [Hospice programs], In my hospital, palliative care is provided by a special palliative care unit / team.

## 5.6 The Relationships Between Demographic Variables, Background Information, Working Experience and Knowledge, Attitudes and Practices

Our results reported a significant relationship between level of practices and age. The mean age group 40 years or more had significantly higher level of practices comparing with the age group less than 30 years and also significantly higher than the mean of the age group 30-39. Thus, the older participants have better practice with younger. Similar results were found in China, and Lebanon(29)(28).

Regarding knowledge, and practices and professions. Knowledge and practices of the physicians were significantly higher than the nurses. This finding might be due to the lack of informal education and well-structured programs in PC.

With regards to hospital, knowledge, and attitude of AVH hospital was significantly higher than the mean of other hospital. That might be related to having palliative care department in AVH, and PC team from specialist, nurses, pharmacy, social worker, and physiotherapy which supported the knowledge, and attitude of AVH hospital.

Moreover, working in oncology department increased significantly the level of knowledge, attitudes, and practices of nurses and physicians with comparison to the other departments. No similar studies were found that compare oncology and non-oncology departments. Our results encourage the policy makers to increase the interest of building up specialized PC department, and staff trainings.

## 5.7 Study Limitation

Due to the limited access from the Israeli occupation, our study was limited to the West Bank part of Palestine, which prevented Gaza strip to be part of the study. Other limitations

related to Covid-19 pandemic and data collection that was during the multiple lockdowns and movement restrictions that were implemented by the Palestinian government. To solve that issue, data collection done using social media, and e-mail.

## **5.8 Recommendations**

The following recommendations can be formulated based on our study findings:

- Provide facilitation to implement palliative care initiatives such as; special place, teams, formulate policies, and continuing courses.
- Update knowledge and performance of nurses and physicians through carrying out continuing educational programs about palliative care.
- Encourage the Palestinians hospital to establish new palliative care departments.
- Encourage studies about needed assessment the oncology hospital of palliative care departments in Palestine.

## **5.9 Conclusions**

Based on the findings of this study, that nurses and physicians in oncology hospitals in Palestine have satisfactory knowledge, attitude, and practice regarding palliative care which is considered as fertile ground of improving cancer patients' quality of life. However, our results emphasize the need for developing PC services in Palestine.

The higher education institutions of nursing and medical sciences in Palestine should also incorporate courses related to PC issues to strengthen graduates' level of understanding and practices. The development of this new field in Palestine It needs a concerted effort the

commitment of governments and policy makers university, hospital, and the ministry of health as such the allocation of budget and human resources. Other challenges facing this field include establishing practice guidelines, protocol, and policies on end-of-life care such as advanced directives, breaking bad news, and with holding and withdrawing life-sustaining treatments. Further studies are encouraging the understand the PC that's leads to efficient in the practice and guide the adoption of a PC. to delivery model that is culturally sensitive and meets the needs of the Palestinians population.

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- تقرير متابعة التقييم الخاص بالـ مستشفيات الحكومية ومديريات الأولوية الصحية الرعاية في الشمالية المحافظات 2017 م-2018
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# Appendices

## **Appendix 1: Experts review of the study tool for validity**

The questionnaire reviewers were:

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### **3-Dr Waseem Sharabati** (specialist palliative care in Augusta Victoria Hospital)

Head of palliative care department in Augusta Victoria Hospital.

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### **4-Dr Hanan Hazboun**

EDUCATION: Villanova University, Villanova, P.A., U.S.A.; Doctor of Philosophy, Nursing Education, 2017

PROFESSIONAL EXPERIENCE: Assistant Professor

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Al-Maha cancer foundation 2018 – Present

- Mediterranean Task Force for Cancer Control 2019 – Present
- International Association for Hospice & Palliative Care 2011 – Present
- National League of Nursing 2010 – Present
- Sigma Theta Tau / Alpha Nu Chapter 2010 – Present
- Multinational Association for Supportive Care in Cancer 2006 – Present
- Oncology Nursing Society 2005 – Present

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**5- Dr Ahmad Ayed (AAUP):** Ph.D., is an assistant professor at Arab American University Palestine, Faculty of Nursing. He obtained his BSN from Jordan University of Science and Technology, MPH from Al-Najah University, and MSN from Al-Quds University. Ayed completed his Ph.D. at the University of Jordan (2019).

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**6- Dr Emad Abu Khader (AAUP):** is the dean of the faculty of nursing at Arab American University. he is Dean, Assistant Professor he is an expert in the field of adult health nursing and critical care, researcher and advisor on issues related to leadership, management and health education. worked with several educational institutions in Palestine as well as with some leading international and national institutions. committed to constant learning, knowledge and experience sharing.

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**Appendix 2:** Statistical validity testing results

Pearson Correlation coefficients between the items of Knowledge, attitude, and practice items and their total degree (N=181).

**Table (1): Pearson Correlation coefficients between the items of Knowledge items and their total degree (N=181).**

No.	Item	Pearson Correlation	Significant Level
“To your knowledge, what would be the outcome of palliative care?”			
20.	“Death without pain/suffering”	0.392	0.000
21.	“Prolonged life”	0.452	0.000
22.	“Living with dignity and respect”	0.649	0.000
“To your knowledge palliative care includes:”			
23.	“Medical care”	0.492	0.000
24.	“Social care”	0.625	0.000
25.	“Psychological care”	0.625	0.000
26.	“Physical care”	0.621	0.000
27.	“Spiritual care”	0.677	0.000
“palliative care”:			
28.	“Affirms life and regards dying as a normal process”	0.692	0.000
29.	“Is considered in some countries as a medical specialty by itself”	0.624	0.000
30.	“Does not support family coping with patient’s illness”	0.427	0.000
31.	“Promotes quality of life of patients”	0.665	0.000

32.	“Provides relief from pain and other distressing symptoms”	0.701	0.000
33.	“Is not concerned with family bereavement”	0.414	0.000
34.	“Destroys hope and leads to despair and depression”	0.320	0.000
35.	“Supports patients in living as actively and creatively as possible”	0.630	0.000
36.	“Supports patients in living as actively and creatively as possible should be offered when multi-organs failure happens”	0.495	0.000
37.	“Supports patients in living as actively and creatively as possible someone has a life-limiting condition or chronic illness and they need intensive treatment to manage the condition”	0.525	0.000
38.	“Supports patients in living as actively and creatively as possible is part of the family responsibility so they should be involved in refusal of treatment (do not resuscitation)”	0.506	0.000

**Table (2): Pearson Correlation coefficients between the items of Attitudes items and their total degree (N=181).**

No.	Item	Pearson Correlation	Significant Level
20.	“The patient should be informed about his/her [Diagnosis]”	0.521	0.000
21.	“The patient should be informed about his/her [Prognosis]”	0.568	0.000
22.	“The family should be informed about the [Diagnosis]”	0.725	0.000
23.	“The family should be informed about the [Prognosis]”	0.754	0.000
24.	“The patient should be involved in the treatment choices”	0.693	0.000
25.	“The family should be involved in the treatment choices”	0.625	0.000
26.	“The patient should be informed about the side effects of treatment”	0.608	0.000
27.	“The family should be informed about the side effects of treatment”	0.682	0.000
28.	“Terminally ill patients have the right to choose “do not resuscitate (DNR)””	0.547	0.000
29.	“Terminally ill patients’ wishes to seek alternative medicine should be respected”	0.634	0.000
30.	“Working with terminally ill patients is stressful”	0.489	0.000
31.	“The dignity and integrity of the terminally ill	0.641	0.000

	patient should be addressed throughout the caring process”		
32.	“Terminally ill patients should be encouraged to have hope against all odds”	0.536	0.000
33.	“Discussing fears, beliefs and hope should be part of the terminally ill patient’s care plan”	0.702	0.000
34.	“Having same religious beliefs with patients enhances the caring process”	0.465	0.000
35.	“It is preferable for the terminally ill patient to die [at the hospital]”	-0.036	0.630
36.	“It is preferable for the terminally ill patient to die [at home]”	0.350	0.000
37.	“It is preferable for the terminally ill patient to die [at a hospice]”	0.215	0.004
38.	“The self-image of the terminally ill patient should be maintained at all times”	0.516	0.000

**Table (3): Pearson Correlation coefficients between the items of Practices items and their total degree (N=181).**

<b>No.</b>	<b>Item</b>	<b>Pearson Correlation</b>	<b>Significant Level</b>
43.	“Your current practice with terminally ill patients is guided by [Medical condition]”	0.614	0.000
44.	“Your current practice with terminally ill patients is guided by [Family’s wishes]”	0.510	0.000
45.	“Your current practice with terminally ill patients is guided by [Patient’s wishes]”	0.594	0.000
46.	“Information communicated to the terminally ill patient depends on [Patient’s ability to understand fully]”	0.586	0.000
47.	“Information communicated to the terminally ill patient depends on [Patient’s involvement in decision-making]”	0.603	0.000
48.	“Information communicated to the terminally ill patient depends on [Your desire as a professional to disclose information]”	0.468	0.000
49.	“Information communicated to the family of the terminally ill patient depends on [Family’s ability to understand fully]”	0.683	0.000
50.	“Information communicated to the family of the terminally ill patient depends on [Their involvement in decision-making]”	0.628	0.000
51.	“Information communicated to the family of the	0.575	0.000

	terminally ill patient depends on [Your desire as a professional to disclose information]”		
52.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Cultural background]”	0.687	0.000
53.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Socio-economic background]”	0.652	0.000
54.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Spiritual-religious background]”	0.706	0.000
55.	“Factors that you take into consideration when dealing with a terminally ill patient are his/her [Medical situation]”	0.623	0.000
56.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Pain management]”	0.634	0.000
57.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Symptom management]”	0.616	0.000
58.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Psychological support]”	0.625	0.000
59.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Spiritual/ Religious	0.680	0.000

	support]”		
60.	“In your delivery of care, you consider the following to be integral to the care management of terminally ill patients [Family support]”	0.659	0.000
61.	“In your current practice [You cooperate with health professionals]”	0.606	0.000
62.	“In your current practice [You respect terminally ill patients’ wishes]”	0.645	0.000
63.	“In your current practice [You provide terminally ill patients with alternative choices of treatment]”	0.663	0.000
64.	“In your current practice you involve the following in the decision-making process [Patient]”	0.658	0.000
65.	“In your current practice you involve the following in the decision-making process [Family]”	0.673	0.000
66.	“In your current practice you involve the following in the decision-making process [Physicians]”	0.666	0.000
67.	“In your current practice you involve the following in the decision-making process [Nurses]”	0.625	0.000
68.	“In your current practice you involve the following in the decision-making process [other professionals]”	0.653	0.000
69.	“You perceive a terminally ill patient’s outburst as [An attack against you]”	0.449	0.000

70.	“You perceive a terminally ill patient’s outburst as [Rebellion against the situation]”	0.500	0.000
71.	“You perceive a terminally ill patient’s outburst as [Unacceptable]”	0.463	0.000
72.	“You perceive a terminally ill patient’s outburst as [Acceptable given the patient’s condition]”	0.496	0.000
73.	“You perceive the family’s outburst as [An attack against you]”	0.506	0.000
74.	“You perceive the family’s outburst as [Rebellion against the situation]”	0.544	0.000
75.	“You perceive the family’s outburst as [Unacceptable]”	0.549	0.000
76.	“You perceive the family’s outburst as [Acceptable given their patient’s condition]”	0.522	0.000
77.	“You perceive the terminally ill patients’ questions and concerns as [Right]”	0.490	0.000
78.	“You perceive the terminally ill patients’ questions and concerns as [Threat]”	0.525	0.000
79.	“You perceive the terminally ill patients’ questions and concerns as [Doubting your professionalism]”	0.515	0.000
80.	“You perceive the terminally ill patients’ questions and concerns as [Attention seeking behavior]”	0.518	0.000
81.	“You perceive family’s questions and concerns as [Right]”	0.534	0.000
82.	“You perceive family’s questions and concerns	0.586	0.000

	as [Threat]”		
83.	“You perceive family’s questions and concerns as [Doubting your professionalism]”	0.545	0.000
84.	“You perceive family’s questions and concerns as [Attention seeking behavior]”	0.534	0.000

**Table (4): Pearson Correlation coefficients between the items of Needs Assessment items and their total degree (N=181).**

No.	Item	Pearson Correlation	Significant Level
13.	“Palliative care services need to be developed in Palestine”	0.614	0.000
14.	“As a health care provider, I consider myself involved in a palliative care team”	0.544	0.000
15.	“In my hospital, palliative care is provided by a special palliative care unit / team “	0.360	0.000
16.	“Palliative care should be initiated when a patient’s disease becomes incurable”	0.266	0.000
17.	“A successful palliative care service should have [Consultation services]”	0.728	0.000
18.	“A successful palliative care service should have [Inpatient units]”	0.679	0.000
19.	“A successful palliative care service should have [Hospice programs]”	0.668	0.000
20.	“Palliative care may be provided at home by [Ambulatory outpatient clinics]”	0.665	0.000

21.	“Palliative care may be provided at home by [Home care agencies]”	0.718	0.000
22.	“Palliative care may be provided at home by [Hospice programs]”	0.737	0.000
23.	“A continuing education program in palliative care needs to be developed in Palestine”	0.582	0.000
24.	“As a health care provider, I would be interested in attending a continuing education program”	0.500	0.000

### Appendix 3: Study tool

The questionnaire

#### Introduction:

Dear participants, I am Mohammad Alhaddar, I am master student in AAUP, Health Informatics, now in my second year, work on my thesis about:

**knowledge, Attitude, and Practice of nurses and physicians working with adult oncology patients toward palliative care services in Palestine.** The aim of this study is to assess the knowledge, practice, and attitude toward palliative care among nurses and physicians working in oncology embedded hospitals in Palestine.

I am requesting you to participate in this research by completing the following questionnaire. However, this questionnaire will require approximately 10-15 minutes of your cooperation.

Everyone's experience matters in this study, and it is assured that your responses will be treated with extreme confidentiality.

For any question please contact me in the address below.

Thank you

#### “Section 1: General Information”

- i. Gender:            M    F
- ii. Age: \_\_\_\_\_
- iii. Professional degree:    MD    RN
- iv. Area of specialty: \_
- v. Degree granting institution: \_\_\_\_
- vi. Year of graduation: \_\_\_\_

vii. a. Current work:

government                      private

b. Name of Hospital:

Thabet   Najah   Rafidia   Isteshari   Avh   Hussen   Alia

viii. Years of experience: \_\_\_\_

ix. Other related hospital experiences (Select all applicable):    Oncology  
 Medical/SurgicalCCU

ICU    ER    Others, specify \_\_\_\_

x. "Have you ever been exposed to terminally ill patients?"

No    Yes, please estimate number in the past 12 months: \_\_\_\_\_

xi. "Prior to reading the introductory letter have you heard of palliative care before?"

Yes   No

xii. "Have you received any continuing education in palliative care?"    No    Yes,  
 specify: \_\_\_\_\_

## Section 2: Perception

Please answer the following (Yes) or (No) questions dealing with the definition of palliative care to the best of your knowledge.

13."To your knowledge, what would be the outcome of palliative care?" (Select all applicable.)

i) Death without pain/suffering    Yes    No

ii) Prolonged life    Yes    No

iii)"Living with dignity and respect"    Yes    No

14. "To your knowledge palliative care includes": (Select all applicable.)

- i) "Medical care"      Yes    No  
 ii) "Social care"      Yes    No  
 iii) "Psychological care"      Yes    No  
 iv) "Physical care"      Yes    No  
 v) "Spiritual care"      Yes    No

According to you, palliative care:

15. "Affirms life and regards dying as a normal process"      Yes    No  
 16. "Is considered in some countries as a medical specialty by itself"      Yes    No  
 17. "Does not support family coping with patient's illness"      Yes    No  
 18. "Promotes quality of life of patients"      Yes    No  
 19. "Provides relief from pain and other distressing symptoms"      Yes    No  
 20. "Is not concerned with family bereavement."      Yes    No  
 21. "Destroys hope and leads to despair and depression"      Yes    No  
 22. "Supports patients in living as actively and creatively as possible"      Yes    No

- should be offered when

\* multi-organs failure happens      Yes    No

\* "someone has a life-limiting condition or chronic illness and they need intensive treatment to manage the condition"      Yes    No

- "is part of the family responsibility so they should be involved in refusal of treatment (do not resuscitation)"      Yes    No

Yes    No

### Section 3: Attitudes

“Please answer the following questions based on your **OPINION** and **NOT** on what is done in practice. Please answer the following questions by checking the category which best describes your judgment on each item.”

Categories: [5= SA= Strongly Agree] [4= A= Agree] [3= U= Undecided] [2= D=Disagree] [1= SD=Strongly Disagree]

	5	4	3	2	1
23. “The patient should be informed about his/her:”					
i) “Diagnosis”	SA	A	U	D	SD
ii) “Prognosis”	SA	A	U	D	SD
24. “The family should be informed about the:”					
i) “Diagnosis”	SA	A	U	D	SD
ii) “Prognosis”	SA	A	U	D	SD
25. “The patient should be involved in the treatment choices.”	SA	<input type="checkbox"/> A	U	D	SD
26. “The family should be involved in the treatment choices.”	SA	A	U	D	SD
27. “The patient should be informed about the side effects of treatment.”	SA	<input type="checkbox"/> A	U	D	SD
28. “The family should be informed about the side effects of treatment.”	SA	<input type="checkbox"/> A	U	D	SD
29. “Terminally ill patients have the right to choose “do not resuscitate (DNR)”.”	SA	<input type="checkbox"/> A	U	D	SD
30. “Terminally ill patients’ wishes to seek alternative medicine					

should be respected.”	SA	<input type="checkbox"/>	A	U	D	SD
31. “Working with terminally ill patients is stressful.”	SA	<input type="checkbox"/>	A	U	D	SD
32. “The dignity and integrity of the terminally ill patient should be addressed throughout the caring process.”	SA	<input type="checkbox"/>	A	U	D	SD
33. “Terminally ill patients should be encouraged to have hope against all odds.”	SA	<input type="checkbox"/>	A	U	D	SD
34. “Discussing fears, beliefs and hope should be part of the terminally ill patient’s care plan.”	SA	<input type="checkbox"/>	A	U	D	SD
35. “Having same religious beliefs with patients enhances the caring process.”	SA	<input type="checkbox"/>	A	U	D	SD
36. “It is preferable for the terminally ill patient to die:”						
i) “at the hospital”	SA		A	U	D	SD
ii) “at home”	SA	<input type="checkbox"/>	A	U	D	SD
iii) “at a hospice”	SA	<input type="checkbox"/>	A	U	D	SD
37. “The self-image of the terminally ill patient should be maintained at all times.”	SA	<input type="checkbox"/>	A	U	D	SD

#### Section 4: Practice

“Please skip this section if you have never been exposed to terminally ill patients.”

“Please answer the following questions based on your PRACTICE and NOT on what you think should be done.”

38. “Do you tell all your terminally ill patients about their diagnosis?”

Yes No depending on family wishes not applicable

“Please answer the following questions by checking the category which best describes your judgment on each item.”

Categories: [5= SA= Strongly Agree] [4= A= Agree] [3= U= Undecided] [2= D=Disagree] [1= SD=Strongly Disagree]

38. “Your current practice with terminally ill patients is guided by:”

- i) “Medical condition SA A U D SD”
- ii) “Family’s wishes SA A U D SD”
- iii) “Patient’s wishes SA A U D SD”

39. “Information communicated to the terminally ill patient depends on:”

- i) “Patient’s ability to understand fully SA A U D SD”
- ii) “Patient’s involvement in decision-making SA A U D SD”
- iii) “Your willingness as a professional to disclose information SA A U D SD”

40. “Information communicated to the family of the terminally ill patient depends on:”

- 
- 
- i) “Family’s ability to understand fully”  SA  A U D SD
- ii) “Their involvement in decision-making”  SA  A U D SD

iii) “Your willingness as a professional to disclose information”  SA  A U D SD

41. “Factors that you take into consideration when dealing with a terminally ill patient are his/her:”

- i) “Cultural background” SA A U D SD
- ii) “Socio-economic background” SA A U D SD
- iii) “Spiritual-religious background” SA A U D SD
- iv) “Medical situation” SA A U D SD

42. “Factors that you take into consideration when dealing with a terminally ill patient are his/her:”

- i) “Cultural background” SA A U D SD
- ii) “Socio-economic background” SA A U D SD
- iii) “Spiritual-religious background” SA A U D SD
- iv) “Medical situation” SA A U D SD

43. “In your delivery of care, you consider the following to be integral to the care management of terminally ill patients.”

- i) “Pain management”  SA  A U D SD
- ii) “Symptom management”  SA  A  U U D D SD
- iii) “Psychological support” SA A U D SD

iv) "Spiritual/ Religious support"	<input type="checkbox"/> SA	<input type="checkbox"/> A			SD
v) "Family support"	<input type="checkbox"/> SA	<input type="checkbox"/> A	U	D	SD
44. "In your current practice:"					
i) "You cooperate with health professionals"	<input type="checkbox"/> SA	<input type="checkbox"/> A	U	D	SD
ii) "You respect terminally ill patients' wishes"	<input type="checkbox"/> SA	<input type="checkbox"/> A	U	D	SD
iii) "You provide terminally ill patients with alternative choices"	<input type="checkbox"/> SA	<input type="checkbox"/> A	U	D	SD
of treatment					
45. "In your current practice you involve the following in the decision-making process:"					
i) Patient	SA	A	U	D	SD
ii) Family	SA	A	U	D	SD
iii) Physicians	SA	A	U	D	SD
iv) Nurses					
v) other professionals	A	U	D	SD	
46. "You perceive a terminally ill patient's outburst as:"					
i) "An attack against you"	SA	A	U	D	SD
ii) "Rebellion against the situation"	SA	A	U	D	SD
iii) "Unacceptable"	SA	A	U	D	SD
iv) "Acceptable given the patient's condition"	SA	A	U	D	SD

47. "You perceive the family's outburst as:"

- i) "An attack against you" SA A U D SD
- ii) "Rebellion against the situation" SA A U D SD
- iii) "Unacceptable" SA A U D SD
- iv) "Acceptable given their patient's condition". SA A U D

SD

48. "You perceive the terminally ill patients' questions and concerns as" (a):

- i) Right SA A U D SD
- ii) Threat SA A U D SD
- iii) "Doubting your professionalism" SA A U D SD
- iv) "Attention seeking behavior" SA A U D SD

49. "You perceive family's questions and concerns as"

(a):

- i) Right  SA  A U D SD
- ii) Threat  SA  A U D SD
- iii) "Doubting your professionalism" SA A U D SD
- iv) "Attention seeking behavior" SA A U D SD

## Section 5: Palliative Care Services; Needs Assessment

**“In an effort to improve palliative care services in Palestine, please answer the following questions.”**

50. “Palliative care services need to be developed in Palestine”.  SA  A U  D SD
51. “As a health care provider, I consider myself involved in a palliative care team.”  SA  A U  D SD
52. “In my hospital, palliative care is provided by a special palliative care unit / team.”  SA  A U  D SD
53. “Palliative care should be initiated when a patient’s disease becomes incurable.”  SA  A U  D SD
54. “A successful palliative care service should have:
- i) Consultation services”  SA  A U  D SD
  - ii) “Inpatient units”  SA  A U  D SD
  - iii)” Hospice programs”  SA  A U  D SD
55. “Palliative care may be provided at home by:”
- i) Ambulatory outpatient clinics  SA  A U  D SD
  - ii) “Home care agencies”  SA  A U  D SD
  - iii) “Hospice programs”  SA  A U  D SD
56. “A continuing education program in palliative care needs to

be developed in Palestine:

SA  A U D SD

57. “As a health care provider, I would be interested in attending a continuing education program”

SA  A U D SD

**“Please use the space provided below to answer questions 58 and 59 using your own words.”**

58. “In your opinion, what is the best model for delivering palliative care in Palestine?”

58. “Please provide additional comments on any questions and issues addressed in this questionnaire.”

**Contact Address:**

Mohammad alhaddar

[alhaddarm@gmail.com](mailto:alhaddarm@gmail.com)

0542279205.....0599963896

Thank you

## Appendix 4:

## Ethical Approval from our University and the Hospitals:

Arab American University  
Faculty of Graduate Studies

الجامعة العربية الأمريكية  
كلية الدراسات العليا

2021-11-30

حضرة إدارة مستشفى النجاح الوطني الجامعي المحترمين،

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهديكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة الى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب محمد جبريل شحدة الهدار والذي يحمل الرقم الجامعي 201912949 هو طالب ماجستير في الجامعة العربية الأمريكية تخصص معلوماتية صحية، ويعمل على رسالة بعنوان: " knowledge, Attitude, and Practice of nurses and physicians working with adult oncology patients toward palliative care services in Palestine. اشرف د. شاهيناز نجار و د. محمد خايف، نأمل من حضرتكم الإيعاز لمن يلزم لمساعدته للحصول على المعلومات اللازمة للدراسة، علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بسرية تامة، وقد أعطي هذه الرسالة بناءً على طلبه.

وتفضلوا بقبول فائق الاحترام،،،

د. شاهيناز نجار  
عميد كلية الدراسات العليا

كلية الدراسات العليا  
Faculty of Graduate Studies  
NNUH  
Medical Management

Page 1 of 1

Jenin Tel: +970-4-2418888 Ext.:1471,1472 Fax: +970-4-2510810 P.O. Box 240  
Ramallah Tel: +970-2-2941999 Fax: +970-2-2941979 Abu Qash - Near Alrehan  
E-mail: FGS@aaup.edu ; PGS@aaup.edu Website: www.aaup.edu


**IAH Research Application Form**

Date	5/12/2021
Name of investigator	Mohammad Jibreel Haddar
Mobile No.	0599963896
Email	alhaddar m@guil.com
Expected start date	15/11/2022
Expected completion date	15/12/2022
Name of Company/University	Arab American University.
<b>Attached needed</b>	
Investigator CV	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Study Proposal	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Consent Form	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Data Collection Tools	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Informed Consent (Arabic & English)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>For COO Office</b>	
Receiving Date	
Application completed	<input type="checkbox"/> Yes <input type="checkbox"/> No
COO Director Note	
Transfer Date	
COO director Sig.	
<b>For Ethical Committee</b>	
Receiving Date	
Ethical Committee Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ethical Committee Note	
Head of Ethical committee Sig.	
CEO Note	
CEO Sig.	

- For Non Experimental Research only

*Arab American University*

*Faculty of Graduate Studies*



الجامعة العربية الأمريكية

كلية الدراسات العليا

Study title: **“knowledge, Attitude, and Practice of nurses and physicians working with adult oncology patients toward palliative care services in Palestine”**

**Submitted By:**

Student's Name: Mohammad Al- Hadar

Supervisor: Dr. Shahenaz Najjar

Co-advisor: Dr. Mohammad Khleif

**Date Reviewed:**

15 April 2021

**Date approved:**

1 June 2021

Study titled: **“knowledge, Attitude, and Practice of nurses and physicians working with adult oncology patients toward palliative care services in Palestine”** was reviewed by AAUP research committee for research and ethical principles and was approved on **1 June 2021**.

  
Dr. Shahenaz Najjar

Dean of Graduate studies



State of Palestine  
Ministry of Health  
General Directorate of Education in  
Health and Scientific Research



دولة فلسطين  
وزارة الصحة  
الإدارة العامة للتعليم الصحي  
والبحث العلمي

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

الرقم: ٤٤٠٦١ / ٢٠٢١  
التاريخ: ٢٠٢١ / ١٠ / ٢٠٢١

الأخ مدير عام الإدارة العامة للمستشفيات المحترم،،،  
تعبية واحترام...

الموضوع: تسهيل مهمة بحث

يرجى التكرم بتسهيل مهمة الطالب: محمد جبريل شحدة الهدار، ماجستير معلوماتية  
صحية- الجامعة العربية الأمريكية، لعمل بحث بعنوان:

**" Knowledge, Attitude, and Practice of nurses and physicians working "  
" with oncology patients toward palliative care services in Palestine**

حيث سيقوم الطالب بجمع معلومات من خلال عمل مقابلات لتعبئة استبانة، مع العلم أن مشرف  
الدراسة: د. شهناز نجار ود. محمد خليف.

وذلك في:- مستشفى الوطني - مستشفى بيت جالا - مستشفى طولكرم - مستشفى عاليه

على ان يتم الالتزام بجميع تعليمات واجراءات الوقاية والسلامة الصادرة عن وزارة الصحة  
بخصوص جائحة كورونا، وتحت طائلة المسؤولية.

على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر الا بعد الحصول  
على موافقة وزارة الصحة على النتائج.

مع الاحترام...



نسخة: عميد كلية الدراسات العليا المحترم/ الجامعة العربية الأمريكية

## الملخص

**مقدمة:** تعرّف منظمة الصحة العالمية الرعاية التلطيفية على أنها "نهج يحسن نوعية حياة المرضى وأسره الذين يواجهون المشاكل المرتبطة بالأمراض التي تهدد الحياة". في فلسطين ، تعتبر الرعاية التلطيفية جديدة في مجال الرعاية الصحية ، وعلى هذا النحو ، يتوفر فهم محدود حول وعي الموظفين بنوع الخدمات المقدمة واستعداد المتخصصين في الرعاية الصحية لتقديم الرعاية التلطيفية.

**الأهداف:** تهدف دراستنا إلى تقييم المعرفة والموقف والممارسة تجاه الرعاية التلطيفية بين الممرضات والأطباء العاملين في مستشفيات الأورام المدمجة وتحديد محدداتها في فلسطين.

**منهجية البحث:** تم تطبيق منهج بحث كمي باستخدام التصميم الوصفي المقطعي في دراستنا. تم استخدام استبيان تم التحقق من صحته لجمع البيانات الأولية من المشاركين. تم جمع البيانات من الممرضات والأطباء في سبعة مستشفيات فلسطينية في جميع أنحاء محافظات الضفة الغربية. تم استخدام الإحصاء الوصفي (التكرارات والنسب المئوية والوسائل والانحرافات المعيارية) لتلخيص نتائج المستشفى. تم استخدام اختبارات ANOVA أحادية الاتجاه واختبار t واختبارات مربع كاي للكشف عن العلاقات المهمة بين المجموعات الفرعية للعينة وفقاً للمتغيرات المستقلة للدراسة. بالإضافة إلى ذلك ، تم استخدام نماذج الانحدار الخطي والمتدرج البسيطة والمتعددة كنموذج تنبؤ لدراستنا.

**النتائج:** كان لدى الممرضات والأطباء في مستشفى الأورام في فلسطين مستوى مرض من المعرفة والسلوك والممارسة فيما يتعلق بالرعاية التلطيفية. أشار التحليل الإحصائي إلى ارتباط معنوي والعديد من المتغيرات المستقلة بما في ذلك ؛ العمر والمستشفى والقسم وسنة التخرج وسنوات الخبرة ، بينما لم ترتبط المتغيرات الأخرى مثل الجنس والمهنة ونوع المستشفى ارتباطاً كبيراً. هناك علاقة إيجابية ذات دلالة إحصائية بين المعرفة والمواقف ( $r = 0.446$  ،  $p < 0.001$ ) ، والمعرفة والممارسات ( $r = 0.597$  ،  $p < 0.001$ ) ، والمواقف والممارسات ( $r = 0.592$  ،  $p = 0.001$ ) من الممرضات والممرضات الأطباء الذين يعملون مع مرضى الأورام البالغين نحو خدمات الرعاية التلطيفية. تشير هذه النتائج إلى أنه مع زيادة المعرفة ، تزداد المواقف والممارسات.

**الخلاصة:** تؤكد نتائج هذه الدراسة على الحاجة إلى تطوير خدمات العلاج التلطيفي في فلسطين. هناك حاجة إلى مزيد من الدراسات في هذا المجال لفهم المشكلات التي تمت مواجهتها في بيئة الممارسة بشكل واضح وتوجيه تبني نموذج مقبول ثقافياً للعلاج التلطيفي والتي تلبي احتياجات السكان الفلسطينيين.