



## Assessment of Perceived Competencies toward Palliative and End of Life Care among Nurses' in Beni-Suef University Hospital

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### Abstract:

**Background:** Palliative care is a crucial part of integrated people-centered health services that attempts to reduce a patients' suffering and improve their life during a chronic disease from the time of their life-threatening diagnosis. Nurses play a crucial role in caring for Palliative and End-of-Life patients and their families as part of the care team Therefore; nurses need a set of various competencies to provide high-quality palliative care. **Aim:** To assess Perceived Competencies toward Palliative and End of Life Care among Nurses' in Beni-Suef University Hospital. **Design:** Descriptive research design. **Sample:** A convenience sample was used to choose 104 nurses **setting:** The study was conducted in out-patient clinic Beni-Suef University Hospital, Egypt. **Tools:** **One tool** was used to collect the data a self-Interviewing administrative questionnaire it consisted of five parts: **part I** concerning with Socio demographic data for nurses 'part **II:** Participants' knowledge questionnaire. **part III:** Attitude toward Palliative and End of Life Care **part IV:** Reported practice **part V:** perceived competencies. **Results:** The study result revealed that, 27.9% of nurses had good total Knowledge scores, 23.1% of nurses had negative total attitude scores, 21.2% of nurses had Unsatisfactory total practices scores, 12.5 % of nurses had Law Competent total competency scores. **Conclusion:** No significant relation between demographic characteristics and total knowledge level, total reported practice, total attitude, total competency among the studied sample except income with total knowledge level and place of residence with total attitude level among studied sample. **Recommendations:** Adopting and application of competency-based program in different health care.

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**Keywords:** Beni-Suef University Hospital, Competencies Perceived, End of Life, Nurses, Palliative

### Introduction

Palliative care (PC) is a specialized medical care for people with serious illnesses. It focuses on providing patients with relief from the symptoms, pain and stress of serious illness whatever the diagnosis the goal is to improve life for both patients and the family. Also, it is provided by a team of doctor, nurses and other specialists who work together with a patient to provide an extra layer of support. (PC) is appropriate at any age and any stage in serious illness and can be provided along with curative treatment. Furthermore, Palliative care treats people suffering from serious illnesses such as cancer, cardiac disease, chronic obstructive pulmonary diseases, kidney failure, and many more. (PC) focuses on symptoms including shortness of breath, fatigue, constipation, nausea, loss of appetite, difficulty sleeping and depression. It also helps patient to gain the strength to carry on with daily life and improve his ability to tolerate medical treatments (Rosa *et al.*, 2023).



Each year an estimated 56.8 million people including 25.7 million in the last year of life are in need of palliative care worldwide, only about 14% of people who need palliative care currently receive. Adequate national policies, program, resources, and training on palliative care among health professionals are urgently needed in order to improve access. Palliative care is required for a wide range of diseases. The majority of adults in need of palliative care have chronic diseases such as cardiovascular diseases (38.5%), cancer (34%), chronic respiratory diseases (10.3%), AIDS (5.7%) and diabetes (4.6%). The global need for palliative care will continue to grow as a result of the ageing of populations and the rising burden of non-communicable diseases and some communicable diseases (**Hansen et al., 2023**).

End-of-life is the term used to describe the time period from receipt of a medical diagnosis determined by healthcare providers to be non-curative to the gradual or eventual demise or death of the diagnosed patient. End-of-life care —Refers generally to the processes of addressing the medical, social, emotional and spiritual needs of people who are nearing the end-of-life. It may include a range of medical and social services, including disease specific interventions, as well as palliative and hospice care for those with advanced serious conditions who are near the end-of- life”. End- of-life care has been provided throughout time in various settings and by different groups of people. Religious organizations were the first to care for dying individuals by providing a compassionate and spiritual haven for the terminally ill in 1899. Palliative care began with a focus on the care of the dying (**Laabar et al., 2023**).

Competency is a continuing process in nursing, and it is a part of ongoing education, practices and certification programs and is a prerequisite for licensure testing. The code of ethics in nursing practice dictates nurses to be competent to provide the community with safe efficient care. Nursing perceived competency are generally deliberated to signify a dynamic combination of knowledge (basic for specialized), skills (assessment, critical thinking, communication, time management, technical skills, teaching, and customer services) and abilities (caring, character and professional presentation) which donate to appreciative (**Alipanga and Kohrt, 2022**).

Perceived Competencies aim to ensure that palliative care service provision and education is meeting the Standards for the Provision of Quality Palliative Care Services .Thus the core competencies are underpinned by the standards for palliative care and by the following two principles: All patients have access to high-quality palliative care regardless of their care settings .National standards for education and practice are adapted for all palliative care providers to ensure provision of care. The competencies are expected to support ongoing improvement in knowledge, skills and attitudes among care providers and will provide guidance to organizations in designing staff development strategies. They can be used as performance indicators to assess the level of mastery which an individual has attained in a competency area (**Scott et al., 2023**).

Community health nurses have a unique opportunity not only help prepare the patient and family for the time of death, but also assist with the actual journey of how get to that final moment and play a distinctive role in advocating, promoting, providing excellent care to patients and families, providing relief from pain and other distressing symptoms, Affirms life and regards dying as a normal process, integrating the psychological and spiritual aspects of patient care, Offering a support to help patients live as actively as possible until death and to help the family cope during the patients' illness and in their own deprivation, using a team approach to address the needs of patients and families, including deprivation counseling. And may also positively influence the course of illness, Applicable early in the course of illness in alliance with other therapies that are intended to prolong life as chemotherapy or radiation therapy and includes investigations needed to better understand and manage distressing clinical complications .Education is the key to give nurses the skills and confidence need to do very important work and play an important role in (**Parikh et al., 2023**).

### Significance of study

Palliative care is the umbrella term that used to describe a philosophy of care that attempts to reduce a patients' suffering and improve their quality of life during a chronic disease from the time of their life-threatening diagnosis. End-of-life care falls under the palliative care philosophy with the same goals and focuses on patients who are near death. Palliative care is an important mode of care with life threatening illnesses in that the goal is to prevent or relieve physical, psychological, social, emotional and spiritual suffering while improving the life for patients and families. Palliative care education increase staff knowledge improves nursing skills and enhance competency (**Parikh et al., 2023**).



End-of-life care provides the same type of care but to patients closer to death. Knowledge consists of facts, information, and skills learned through education, experience or investigation. Palliative care should intend neither to hasten nor postpone death and regard dying as a normal process. PC should integrate the psychological needs of both the patient and family and help the patient live as actively as possible until death. Competency is an ongoing process in nursing, and it is part of continuing education and certification programs and is a requirement for licensure testing (**Ersek and Ferrell, 2022**).

Recently in Egypt, 20 million of people require palliative care at the end of life every year, 78% of adults in need of palliative care live in low and middle-income countries, 25% of people who need end of life care are between the ages of 15-59, indicating that this care is not limited to adults over 60 as commonly misconceived. Cancer in the developing world is characterized by far more advanced stages at diagnosis, fewer allocated resources for prevention and treatment, and higher incidence than in countries with more developed health systems. In Egypt, it is already and become an important health problem not only in terms of rank order, but also in terms of incidence and mortality. The commonest sites were liver among men and breast among women. During the period 2013–2050, population of Egypt is expected to increase to approximately 160% from population size (**Perez-Cruz et al., 2023**).

### **Aim of the study:**

To assess Perceived Competencies toward Palliative and End of Life Care among Nurses' in Beni-Suef University Hospital **through the following objectives:**

- 1) Determining nurses' Knowledge, Attitude and reported practice toward palliative and end of life care.
- 2) Appraising nurses' perceived competencies toward palliative and end of life care.

### **Research question**

1. Are nurses' having enough Knowledge, Attitude and practice toward palliative and end of life care?
2. Are nurses' have perceived competencies toward palliative and end of life care?

### **Subject and Methods**

The subject and methods for this study will portray under the four main items as follows:

- I- Technical item.
- II- Operational item.
- III- Administrative item.
- IV- Statistical item.

#### **I. Technical Item:**

The technical item includes research design, setting, subject and tools for data collection.

#### **Research design:**

Descriptive research design was used for conducting the study.

#### **Setting:**

The study was conducted in out-patient clinic that represent (4) clinics from total number (13) clinics as pain out-patient clinic, Oncology Out-Patient clinic, Renal out-patient clinic and palliative care out-patient clinic in Beni-suef University Hospital. The University Hospital is located in the North Obour area at the university's crossroads (Beni-Suef University) and include The Outpatient clinics in each of the following floors : **First** floor include Oncology clinic and pain clinic, **Second** floor include Renal clinic and Brain and nerve clinic and **finally third** floor include Rheumatoid clinic and palliative care clinic. The outpatient clinic includes two room for the checkup, first room as reception for the patients and the other room for oxygen pressure. Every clinic includes (8) nurses two nurses working with doctor, two nurses recording data and the other providing care to patients. The working in this clinic is three days per week Saturday, Monday and Wednesday from 9 am until 2 pm.

### Sampling:

**Type of the sample:** A convenience sample was used to choose 104 nurses who work in palliative and End of life care in Out-Patient clinic that contain all nurses invited to participate in the study.

### Tool for data collection:

**One tool was used to collect the data:** Structural interviewing questionnaire sheet was developed after reviewing of national and international related literature. It was consisted of **five parts:**

#### Part I:

Concerning with demographic data for nurses based on four categories including: **(1) personal characteristics** such as gender, age, marital status and education; Income, residence **(2) professional characteristics** such as previous education about palliative care, Nursing qualification, years of nursing experience , department of work, duration of experience about palliative care and training toward Palliative care and Period of training course.

#### Part II

Participants' knowledge questionnaire was assessed about palliative care this Questionnaire consists of 33 questions categorized in three subscales including :(1) philosophy and principles of palliative care , (2) Concept about palliative care (4) management of pain and symptoms and (3) psychosocial and spiritual care it was designed by researcher in Arabic form to avoid misunderstanding.

### Scoring system for knowledge

The answers were formulated as: Correct and Incorrect answer

- **33 closed end questions**
  - Incorrect = zero point.
  - Correct = one point.
- **The total knowledge scores ranged from (0-33).**
  - Good knowledge (< 75%).
  - Average knowledge (from 60% - 75%).
  - Poor knowledge (> 60%).

#### Part III

Attitude was measured through the original Frommelt Attitudes toward Care of the Dying (FATCOD questionnaire) it modified by (**Frommelt, 1991**) which consists of 34 items using a three-point Likert scale to indicate respondents' attitudes toward caring for Palliative and End of Life Care patients.

### Scoring system for attitude

The instrument consists of an equal number of positively and negatively worded statements with response options of agree, uncertain, and disagree.

- 34 close ended questions for attitude.
  - Disagree answer = one point.
  - Uncertain answer = two point.
  - Agree answer = three point.
  - Total score = 102 point.

- The total attitude score ranged from (34-102).
  - Positive attitude (< 60%).
  - Negative attitude (> 60%).

#### Part IV

Reported practice checklist was conducted after reviewing the relevant literature to assess nurses' practice regarding Palliative and End of Life Care. The checklist had 26 practical questions related to PC practice as Listening with empathy when providing care.

#### Scoring system for reported practices.

- 26 close ended questions for reported practice.
  - Done practice = one point.
  - Not done practice = zero point.
  - Total score = 26 point.
- The total reported practice scores range from (0-26).
  - Satisfactory reported practice (< 60%).
  - Unsatisfactory reported practice (> 60 %).

#### Part V

Thirty-seven items questionnaire under five explicit domains related to perceived competencies was administered amongst this group by (Rafeek *et al.*, 2004). The original questionnaire included twenty-eight items that covered areas related to diagnostic, patient management, clinical skills, team working and practice management. The researcher made some modification of the items in competencies from this study because the original items were tailored to the college and the present study on nurses as they hadn't enough time because all time on the shifts provide care to the patients who are on the end of life.

**Part A** included twenty-one items that covered areas related to communication and relationship domain and have 4 items, Communication Skills domain and have 5 items, Managing Change domain and have 6 items, Professional Development and Lifelong Learning domain and also have 6 items.

**Part B** Nursing specific competencies included in the study and had 16 items These skills were: general professional technical skills, complex professional technical skills, general clinical skills, specific clinical skills as ability to understand people and situations ,Ability to provide people-centered care, Ability to improve nursing quality, Ability to understand needs, Ability to support decision Making critical thinking/problem solving, and Ability to expand professional capacity, interpersonal communication, professional orientation, case management, ability to supervise, resource management, team building/team work.

#### Scoring system for competency

- 37 close ended questions for competency.
  - Not at All Competent answer = one point.
  - Competent answer = two point.
  - Very Competent answer = three point.



- Total score = 111 point.
- The total competency score ranged from (37-111).
  - Low competency (< 60%).
  - High competency (> 60%).

### Validity and Reliability

The study tools were tested for content and face validity by jury test of five experts in the field of nursing community to evaluate the individual items as well as the entire instrument as being relevant and appropriate to test what they wanted to measure. The face validity of the questionnaire was calculated based on experts' opinion.

The experts were asked to evaluate the individual items on the study tools in relation to its relevance and appropriateness in terms of the construct and if the items adequately measure all dimensions of the construct. The experts were asked to evaluate individual items and rate items on a 4-point scale as follows; not relevant scored (1), Little relevant scored (2), relevant scored (3) and very relevant (4).

### Reliability:

The study tools were tested for its internal consistency by the pilot subject's reliability for calculating cronbach's Alpha which was 0.826 for Nurses' Knowledge questionnaire sheet ,0.783 for nurses' attitude, and 0.931 nurses perceived competences.

### Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee in the Faculty of Nursing Helwan University. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent and that they had the right to refuse to participate. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs was respected.

## I. Operational Item:

### Preparatory phase:

It was included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

### Pilot study:

A pilot study was carried out on 10% (nurses worked in out-patient clinic) about (11) from the study subjects and were included from the total sample. To test the applicability, clarity and the efficiency of the tools. There were no major modifications found after the pilot study. The pilot showed very high levels of reliability.

### Field work:

- An official letter issued from the dean of faculty of Nursing Helwan University, and director of Beni-Suef University Hospital at Beni-Suef City including the aim of the study to obtain permission after establishing a trustful relationship each subject interviewed individually by the investigator to explain the study purpose.
- Data was collected within Six and a half months of academic year (2022- 2023) one day /week (Saturday) from 9am - 2 pm, till the needed sample completed, interview of nurses, Written approval obtained from nurses after the investigator introduced her-self for each nurses, then explained the purpose of the study to assess Perceived





Competencies toward Palliative and End of Life Care among Nurses' in Beni-Suef University Hospital. Study collected through structured face to face interview and the entire tool filled by the investigator

- the questionnaires were distributed and completed by the investigator.
- The investigator utilized one tools which was consisted of five parts, each part took 20 -30 minutes and met the nurses one day per week.
- The investigator taken 4 nurses each week consists about 16 nurses per month, total number of nurses = 104 nurses.

### Preparatory phase

Tools of data collection development review of past and current related literature covering various aspects of knowledge, reported Practice, Attitude and Perceived Competencies of nurses toward Palliative and End of Life Care. Using available books, articles and magazine.

### III) Administrative Items:

An official Permission was obtained from the dean of faculty of Nursing Helwan University and official Permission from director of Beni-Suef University Hospital at Beni-Suef City to conduct the study this letter included a permission to collect the necessary data and explain the purpose and nature of the study.

#### I- Statistical Item:

Data was collected from the study sample was revised, coded and entered using personal computer (PC). Computerized data entry and Statistical analysis were fulfilled using the statistical Package for the Social Science (SPSS), version 24. The collected data was organized, revised, analyzed and presented in numbers and percentage in tables, figures and diagram. Proper and suitable statistical tests were used to test the significance of the results obtained. The following statistical techniques were used (percentages, mean value, standard deviation, chi-square(X<sup>2</sup>), proportion probability (p-value) and T test.

#### Significance of the results:

- When  $P > 0.05$ , it is statistically insignificant difference.
- When  $P < 0.05$ , it is statistically significant difference.
- When  $P < 0.01$  or  $P < 0.001$ , it is high significant difference

### Results

**Part I** Demographic data for nurses (Tables 1-2 and figure 1-3)

**Part II** Nurses' Knowledge regarding Palliative and End of Life care (Table 3-4 and figure 4)

**Part III** Nurses 'Attitude regarding Palliative and End of Life (Tables 5-6 and figure 5)

**Part IV** Nurses' reported practice regarding Palliative and End of Life (Tables 7-8 and figure 6)

**Part V** Nurses' perceived competencies regarding Palliative and End of Life (Tables from 9 to 12 and figure 7)

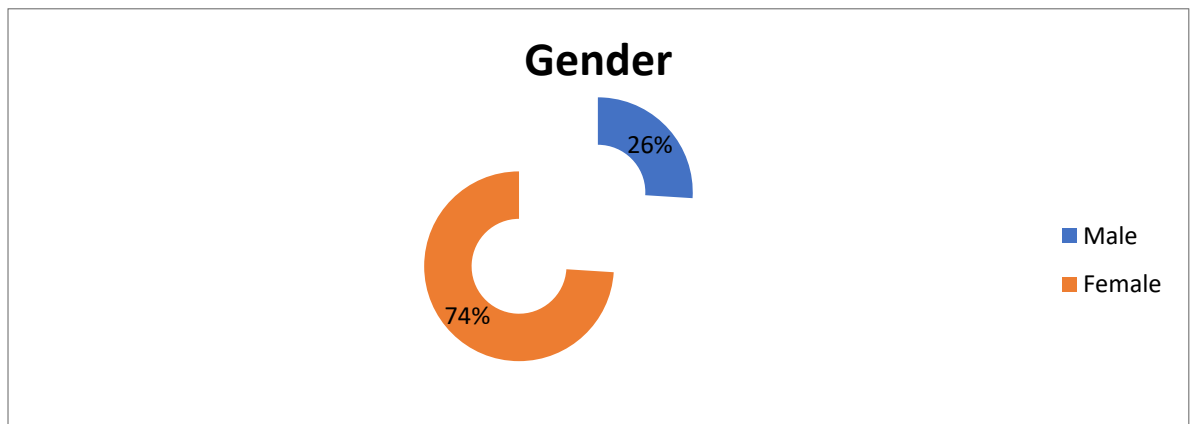
**Part VI** Relations and correlations between the study variable (Tables from 13 to 18)

**Part I Demographic data for nurses**

**Table (1):** Frequency Distribution of personal characteristics among Nurses' regarding Palliative and End of Life Care (n=104).

personal characteristics	The studied sample (N=104)	
	No.	%
<b>Age</b>		
20-30 years	74	71.2
31-40 years	30	28.8
<b>place of residence</b>		
Rural	75	72.1
Urban	29	27.9
<b>Marital status</b>		
Single	60	57.7
Married	44	42.3
<b>Income</b>		
Insufficient	52	50
Sufficient	52	50

**Table 1:** shows that, 71.2% of nurses aged from 20: 30 years old. Concerning place of residence 72.1% of nurses live in rural area. In addition to, Marital status 42.3% were married. Regarding income ,50% of nurses has insufficient income level.



**Figure (1)** percentage Distribution of personal characteristics (gender) among Nurses' regarding Palliative and End of Life Care (n=104).

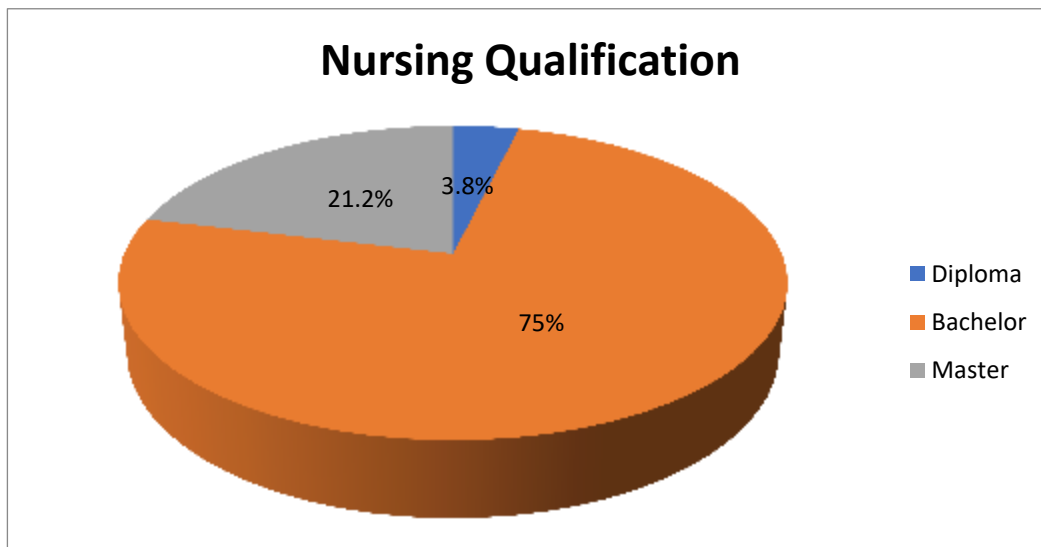
**Fig (1):** shows that, 26% of nurses were male and 74% were female



**Table (2):** Frequency Distribution of professional characteristics among Nurses' regarding Palliative and End of Life Care (n=104).

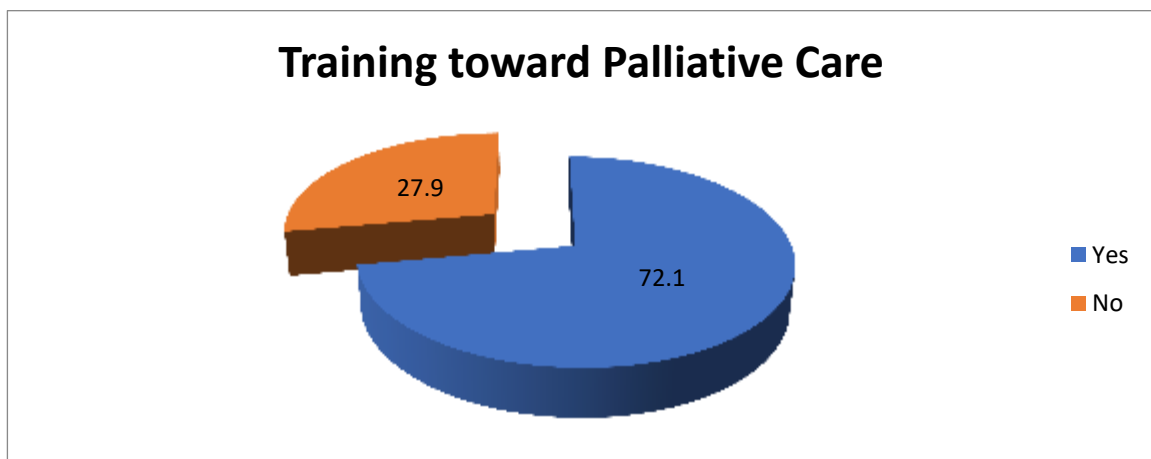
professional characteristics	The studied sample (N=104)	
	No.	%
<b>Department of work</b>		
Pain out-patient clinic	29	27.9
Oncology Out-Patient clinic	31	29.8
Palliative care out-patient clinic	32	30.8
Renal out-patient clinic	12	11.5
<b>Experience of palliative care</b>		
<5 years	65	62.5
5>10 years	29	27.9
11>15 years	10	9.6
<b>Period of training course</b>		
<1 week	15	14.4
>1 week	89	85.6

**Table (2)** shows that, 30,8% of nurses were worked at Palliative care out-patient clinic , 62.5% of nurses had experiences less than 5 years while 27.9% of nurses don't have training toward Palliative care and 85.6% of nurses had training period for one week and more



**Figure (2):** percentage Distribution of personal characteristics (Nurses' qualification) regarding Palliative and End of Life Care (n=104).

**Fig (2):** shows that, 75% of nurses had bachelor's degree in nursing sciences. While 3,8 were diploma and 21,2 had master's degree in nursing sciences.



**Figure (3):** Percentage Distribution of personal characteristics regarding training toward palliative care among Nurses (n=104).

**Fig (3):** shows that, 72.1% of nurses had trained toward Palliative care while 27,9 hadn't trained toward Palliative care.

**Table (3):** Number and Percentage Distribution of Total Knowledge among nurses regarding Palliative and End of Life care pre-Competencies Perceived Based Program (n=104).

Total knowledge scores about	Nurses pre applying program		$\chi^2$	P
	Pre-applying	No. %		
Average	75	72.1		
Good	29	27.9		
<b>Mean scores of total knowledge pre applying:</b>	<b>10</b>			
Range	23.42±2.53			
Mean ± SD				
<b>Mean change of scores of total knowledge post applying:</b>	<b>6</b>			
Range	31.03±1.36			
Mean ± SD				
Paired T test	26.83			
P	0.000			

**Table (3)** clarifies that, 27.9% of nurses had good total Knowledge scores regarding Palliative and End of Life Perceived Based Program with Mean ± SD 23.42±2.53 pre- program.

**Table (4):** Number and Percentage Distribution of nurse's total attitude regarding Palliative and End of Life Pre-Competencies Perceived Based Program (n=104).

Total attitude scores about	Nurses pre applying program		$\chi^2$	P
<b>Levels of total attitude:</b>			3.76	0.000
Negative	24	23.1		
Positive	80	76.9		
<b>Mean scores of total attitudes pre applying:</b>	<b>32</b>			
Range	72.33±11.20			
Mean ± SD				
<b>Mean change of scores of total attitude post applying:</b>	<b>20</b>			
Range	79.12±4.75			
Mean ± SD				
Paired T test	5.95			
P	0.000			

**Table (4)** clarifies that, 23.1% of nurses had negative total attitude scores regarding Palliative and End of Life Perceived Based Program with Mean ± SD 72.33±11.20 pre- program.

**Table (5):** Number and Percentage Distribution of nurse's total reported practices regarding Palliative and End of Life pre and post Competencies Perceived Based Program (n=104).

Total practices scores	Nurses pre applying program		$\chi^2$	P
<b>Levels of total practices:</b>			70.42	0.000
Unsatisfactory	22	21.2		
Satisfactory	82	78.8		
<b>Mean scores of total practices pre applying:</b> Range Mean $\pm$ SD	7 22.54 $\pm$ 2.14			
<b>Mean change of scores of total practices post applying:</b> Range Mean $\pm$ SD	3 24.91 $\pm$ 1.15			
<b>Paired T test</b> P	11.69 0.000			

**Table (5)** clarifies that, 21.2% of nurses had Unsatisfactory total practices scores regarding Palliative and End of Life Perceived Based Program with Mean  $\pm$  SD 22.54 $\pm$ 2.14 pre- program.

**Table (6):** Number and Percentage Distribution of Total competency among nurses regarding Palliative and End of Life pre and post Competencies Perceived Based Program (n=104).

Total competency	pre applying program		$\chi^2$	P
	Pre-applying No	%		
<b>Levels of competency level</b>			64.46	0.000
Low Competent	13	12.5		
High Competent	91	87.5		
<b>Mean scores of total competencies pre applying:</b> Range Mean $\pm$ SD	25 72.87 $\pm$ 5.05			

Mean change of scores of total competency post applying: Range Mean ± SD	22 93.50±7.05	
Paired T test P	25.03 0.000	

Table (6) clarifies that, 12.5 % of nurses had Low Competent total competency scores regarding Palliative and End of Life Perceived Based Program with Mean ± SD 72.87±5.05 pre-program .

**Part VI: Relations and correlations between the study variables**

Table (7): Correlation between Knowledge, practices, attitude, and competency pre applying program (N=104).

Knowledge, attitude, and competency	Changes of scores of total knowledge, practices, and attitude							
	Knowledge		Practices		Attitude		Competency	
	r	P	R	P	R	P	R	P
Knowledge	1	--	0.222	0.02	0.135	0.172	0.114	0.249
Practices	0.222	0.02	1	--	0.175	0.07	0.094	0.342
Attitude	0.135	0.172	0.175	0.07	1	--	0.056	0.569
Competency	0.114	0.249	0.094	0.342	0.056	0.569	1	--

Statistically significant P<0.05 high statistically significant P ≤0.001

Table (7) shows that, there was significant correlation was found between Total reported practice and total knowledge and total attitude except competency regarding Palliative and End of Life care.

**Discussion**

Perceived Competencies aim to ensure that palliative care service provision and education is meeting the Standards for the Provision of Palliative Care Services .Thus the core competencies are underpinned by the standards for palliative care and by the following two principles: All patients have access to high-quality palliative care regardless of their care settings .National standards for education and practice are adapted for all palliative care providers to ensure provision of care. The competencies are expected to support ongoing improvement in knowledge, skills and attitudes among care providers and will provide guidance to organizations in designing staff development strategies. They can be used as performance indicators to assess the level of mastery which an individual has attained in a competency area (Scott et al., 2023).



## Part I Demographic data for nurses

The present study shows that majority of nurses had 20: 30 years old. This is in the same line with (**Nurjono et al., 2022**) who conducted a study in Singapore about “A Study Protocol of Realist Evaluation of Palliative Home Care Program for Non-Cancer Patients in Singapore” and reported that the mean age was 74% of respondents were within the age ranged from 22:42.

Regarding gender and marital status of studied subjects the present study revealed that majority of nurses were female .Also more than half of nurses were single .This finding was in the same line with (Lin *et al.*, 2021) who conducted a study in southern Taiwan at a general hospital about “ Nurses’ knowledge, attitude, and competence regarding palliative and end-of-life care: a path analysis” and found that 95.2 % of study were female and 77.3% were single . From the researcher point of view these results might be due to school of nursing science on time were receive female more than male student that's is might be fact that females are patient and merciful than male.

In relation to residence and monthly income the current results showed that about nearly two thirds of nurses were live in rural areas, Also half of nurses' income were sufficient this is in the same line with (**Rossi et al., 2020**) who conducted a study in Meldola, Italy about “ The challenge for nutritional care in a cancer center: The need for integration between clinical nutritionist, oncologist, and palliative care physician “and reported that about three quarters of the respondent came from rural areas and three fifth of the study subjects had enough financial income .

Regarding years of experience the results of the present study showed that more than three fifth of nurses had experiences less than 5 years, These results similar with (**Boaventura et al., 2022**) who conducted a broadcast study in Brazil entitled as “Palliative care in the pre-hospital service in Brazil: experiences of health professionals” and reported that the majority of nurses 56.2% had less than 5 years of experience.

Regarding level of education the present study clarified that three quarters of nurses had bachelor’s degree in nursing sciences this study matches with (**Wu et al., 2023**) who conducted a broadcast study in Foshan, China about “Development and validation of a questionnaire to evaluate the knowledge, attitude, behavior and care preference of family members of Chinese older adults related to palliative care.” and reported that 79.5% participants had a bachelor’s degree.

Regarding department of work the present study showed that more than one quarter of nurses were worked at Palliative care out-patient clinic , These study coming in contact with (**Jewitt et al., 2023**) who administered a study in Ontario, Canada and about “The Effect of Specialized Palliative Care on End-of-Life Care Intensity in AYAs with Cancer” and revealed that 27,6 % of respondent had working in Palliative care out-patient clinic.

Regarding nurses training toward Palliative care and training period the current study revealed that nearly three quarters of nurses had training toward Palliative care and majority of nurses had training period for one week .These study matches with (**Salameh et al., 2023**) who conducted a published study in Palestine about “Nursing Students' Understanding of Palliative Care in Palestine” and reported that 59.4% obtaining training toward palliative care . And 57.9% had training period for 1 week. From the researcher point of view this might due to Palliative care clinic founded recently in the hospital.

## Part II Nurses’ Knowledge regarding Palliative and End of Life care

Regarding total nurses’ knowledge scores , the present study shows that more than one quarters of nurses had good total Knowledge scores this in the same line with (**Wilson et al., 2023**) who conducted the study in Rochester, Minnesota, USA about “Effect of an Artificial Intelligence Decision Support Tool on Palliative Care Referral in Hospitalized Patients: A Randomized Clinical Trial ” and revealed that there was significant difference in nurses' knowledge. From the researcher point of view Palliative and End of Life Care Perceived Based Program can make difference in nurses’ knowledge and provide information help them to increase their confidence.



### Part III Nurses' Attitude regarding Palliative and End of Life care

Regarding total nurses' attitude scores, the present study shows that more than one fifth of nurses had negative total attitude. This finding is in agreement with (Jewitt *et al.*, 2023) who conducted the study in Ontario, Canada about "The Effect of Specialized Palliative Care on End-of-Life Care Intensity in AYAs with Cancer" and revealed that 88.3% of nurses' total attitude scores had positive attitude and also, (Mazanec *et al.*, 2021) who conducted a study in Duarte, California about "Preparing Advanced Practice Registered Nursing Students to Provide Primary Palliative Care" and reported that half of the studied nurses' had positive total attitude scores toward caring for dying patients. From the researcher points of view this might be due to the fact that training provides the opportunity to create awareness and have more information for participants who involved in the training to have favorable attitude in this regard.

### Part IV Nurses' reported practice regarding Palliative and End of Life care

As Regarding total nurses' practices scores, the present study shows that more than one fifth of nurses had Unsatisfactory total practices scores. This finding is in agreement with (Jewitt *et al.*, 2023) who conducted the study in Ontario, Canada about "The Effect of Specialized Palliative Care on End-of-Life Care Intensity in AYAs with Cancer" and revealed that 76.2% of respondents had satisfactory total practices scores.

Also, this results was in agreement with (Kassam *et al.*, 2021) who conducted the study in Toronto, ON, Canada about "Impact of Palliative Care Involvement on End-of-Life Care Patterns Among Adolescents and Young Adults With Cancer: A Population-Based Cohort Study" and revealed that majority of respondents had satisfactory total practices scores. From the researcher points of view this might be due to the effective role of program which lead to improve nurses reported practice.

### Part V Nurses' perceived competencies regarding Palliative and End of Life care

Regarding total nurses' perceived competencies scores the present study shows that nearly one fifth of nurses had Low Competent total perceived competencies scores. This finding is in agreement with (Zhang *et al.*, 2023) who conducted the study in Shenzhen, China about "Analysis of the current status of community nurses' spiritual care competencies and the factors: A descriptive cross-sectional analysis" and revealed that 86.2% of respondents had high Competent total perceived competencies scores.

### Part VI: Relations and correlations between the study variables

Regarding Correlation between total Knowledge, total attitude, total reported practice and total competency, the present study shows that, there was significant correlation was found between Total knowledge, total attitude and total reported practice except competency. This finding was consistent with the findings of (Patarroyo-Aponte *et al.*, 2023) who conducted a study in University of Texas Health Science Center at Houston, USA about "The Role of Palliative Care Consultation in Withdrawal of Life-Sustaining Treatment among ICU Patients Receiving Veno-Venous Extracorporeal Membrane Oxygenation (VV-ECMO): A Retrospective Case-Control Study" and illuminated that there was highly positive correlation between nurses' knowledge, attitude and practice.

In Addition, the current study finding was comparable with (Muhammad *et al.*, 2022) who conducted a study in Faculty of Pharmacy, Turkey, about "Knowledge, attitude, practice and perceived barriers regarding COVID-19 among health-care professionals" and found a positive correlation between nurses' knowledge, attitude, and practice. Furthermore, (Yeung *et al.*, 2020) who conducted a study in Hong Kong (SAR), China about "Palliative Liver Radiotherapy (RT) for Symptomatic Hepatocellular Carcinoma (HCC)", and cited that knowledge affects the practice of preventive measures. From researcher point of view this may be due to the fact the successive educational sessions using different educational strategies and continuous evaluation improving nurses' knowledge additionally, palliative care education helps nurses felt comfortable in providing care to dying children and their families.





## Conclusion

**Based on the results of the present study and research question the present study concluded that:**

The Results of this study concluded that more than one quarters of nurses had good total Knowledge, while more than one fifth of nurses had negative total attitude, more than one fifth of nurses had unsatisfactory total practices scores and nearly one fifth of nurses had low Competent total perceived competencies among nurses regarding Palliative and End of Life care .

## Recommendations

**“On the light of the current study findings the following recommendations are suggested:**

- Adopting and application of competency-based program in different health care setting and collaboration with other organizations and institutions to improve knowledge and practice of nurses.
- Applying other program as educational program, instructional intervention or training to improve health care provider performance and crisis intervention.
- Developing palliative care evidence-based program which should available in all hospital to be followed by all nurses.
- Guidance to assist nurses who are involved in palliative care should be developed and provided accordingly.
- Further research: Train nurses in a wide range of facilities and settings provide educational support and help maintain stable nursing workforce.

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