Effect of Instructional Guidelines on Nurses' Competency Regarding Palliative Care for Patients During End Stage of Cancer

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Abstract

Background: Cancer is the second leading cause of death so the need for palliative care has increased to enhance patient's quality of life and alleviate suffering. Nurses' level of competency in palliative care is an important factor affecting the quality of care applied to patients. Palliative care competency is centered on understanding palliative care, personal traits and capabilities, and essential abilities to carry out professional obligations through practice. **The current** study aims to evaluate the effect of instructional guidelines on nurses' competency regarding palliative care for patients during the end stage of cancer. **Research design**: This research was carried out using a quasi-experimental design. **Subjects**: A convenience sample of fifty nurses who work at the Oncology Institution at Sohag University Hospital was included in the current study. **Tools**: To collect data two Tools were used: Tool (I) Structured Interview Questionnaire which included two parts; (1) demographic characteristics and nurses' knowledge regarding cancer and palliative care and Tool (2) Palliative Care Competency checklist. **Results**: After a month of implementing instructional guidelines, the current study found that nurses' overall knowledge scores had improved. There were statistically significant variations in all competency domains before and after a month of implementing the instructional guidelines. **Conclusion**: Implementing instructional guidelines has a positive impact on nurses' knowledge and competency related to providing palliative care to patients in the end stages of cancer. **Recommendations**: implementing competency-based nursing interventions for cancer patients in their advanced stages. Periodically, a continuous in-service training program should be held to update nurses' knowledge and raise their competency levels in palliative care.

Keywords: Instructional guidelines, Nurses' Competency, Palliative Care, Patients during end Stage of Cancer

Introduction

Cancer is the second leading cause of death worldwide, and cancer cases are increasing annually, according to the World Health Organization reported that global cancer statistics estimated 18.1 million cancer cases around the world in 2020 of these 9.3 million cases were men and about 8.8 million women. Approximately 70% of deaths from cancer occur in low- and middle-income countries. In 2018, there were about 134,632 new cancer cases and 89,042 cancer-related deaths in Egypt. Liver and breast cancers are the most common tumors in terms of incidence and mortality. It is estimated that more than 40 million people internationally need palliative care and this number will increase, especially in developed countries (**World Health Organization, 2022**).

The need for palliative care has increased due to the present global increase in cancer incidence. According to the American Cancer Society's and the European Society of Medical Oncology's most recent recommendations, palliative care is an essential component of oncology care. Its skill set includes communication, social and spiritual support, and the management of physical and

psychological symptoms. Early consideration of palliative care throughout disease treatment yields the best results (**Siegel et al., 2021**). The WHO defines palliative care as a crucial part of integrated, people-centered health services. Relieving serious health-related suffering, physical, psychological, social, or spiritual, is a global ethical responsibility (**Zoheir et al., 2022**). Since nurse competency is a key component in the successful provision of palliative care, oncology nurses are intimately involved in the many supportive care concerns that cancer patients and their families face (**National Cancer Institute, 2023**).

Nursing competency is the capacity of a nurse to effectively exhibit a collection of qualities, including personal traits, professional attitudes, values, knowledge, and abilities, as well as to carry out professional responsibilities through practice. Palliative care specialist nurses, who meet patients' requirements and their families, must possess the fundamental knowledge and competency abilities necessary to help cancer patients lead normal lives (**Evans, 2019**). Conversely, Low confidence can result from a lack of palliative care nursing education, low self-efficacy, and feelings of hesitation in performing assigned tasks with fear that care may not be appropriate (**Beutler, 2021).**

Significance of the study:

Worldwide, over 56.8 million people are estimated to require palliative care every year including 31.1 million before and 25.7 million near the end of life. Of all people who need palliative care, (67.1%) are adults over 50 years old and at least 7% are children. The majority of adults who need palliative care have chronic diseases such as cardiovascular diseases, cancer, and chronic respiratory diseases, so many patients still require palliative care in most parts of the world (**Connor, 2020).**

According to earlier research, nurses were not well-versed in delivering palliative care for those patients. Therefore, an educational program about palliative care must be conducted for nurses to improve their knowledge and competency to help cancer patients receive high-quality competency-based

interventions that support them and their families during a challenging time (**Radwan et al., 2022**).

It was observed that most nurses who are working in oncology are not adequately prepared to provide palliative care and they have low levels of knowledge, practice, and skills about it. The knowledge and competency gap highlights the necessity of advancing knowledge and competency through ongoing education and enhancing competencies associated with palliative care (**Budkaew & Chumworathayi, 2023**). To improve nurses' knowledge and competency and enable them to provide patients with high-quality competency-based interventions, it is crucial to organize educational programs for nurses about palliative care (**Hao et al., 2021**). This study fills a significant void by providing focused instruction to improve nurses' practices, knowledge, and abilities. To provide oncology patients with high-quality treatment, particularly those who require palliative care, these competencies must be improved.

Aim of the study:

The aim of this study was to evaluate the effect of instructional guidelines on nurses' competency regarding palliative care for patients during the end stage of cancer.

Research hypothesis:

Following their receiving of the instructional guidelines regarding palliative care for patients in the end stages of cancer, nurses' competency is expected to be improved.

Subjects and Method

Research design

To conduct this study a quasi-experimental research design was used.

Sample:

All nurses who are working in the previously mentioned settings using a convenience sample of fifty nurses working at

the Oncology Institute at Sohag University Hospital were included in the current study.

To collect data two Tools were used:

Tool I: Questionnaire for Structured Interviews: After examining recent and related literature **(Budkaew, &Chumworathayi, 2023; Hao et al., 2021; Radwan et al., 2022)**, the researcher created a two-part tool to assess nurses' knowledge pre and post-month of the implementation of instructional guidelines.

Part 1: Nurses' age, sex, place of residence, educational level, years of experience, and prior training programs were all included.

Part 2: Nurses' Knowledge of cancer and palliative care: it included what cancer is, its typical symptoms, sedatives or opioids used to treat pain, What palliative care is, its goals, and its guiding principles Ten questions concerning the principles and philosophy of palliative care. Questions about the management of common physical symptoms in patients with cancer. Knowledge of nurses about managing pain (13 questions), how to treat dyspnea (9 questions), and how to handle gastrointestinal issues (10 questions).14 questions that test nurses' understanding of how to treat common psychological illnesses. Nursing interventions to alleviate cancer pain, nausea, vomiting, and dyspnea; nursing interventions to enhance the psychological and spiritual well-being of children with advanced cancer; the role of palliative care nurses; and nine questions that test nurses' knowledge of spiritual, social, and family support for cancer patients.

Scoring system:

About the nursing knowledge score methodology, there were sixty-five items. An answer that is "yes" receives a score of (2), one that is "no," and one that is "don't know" receives a score of (0). These results were totaled and transformed into a percentage score: If the percentage score was 70% or higher, the overall nurses' knowledge was deemed satisfactory; if it was less than 70%, it was deemed unsatisfactory.

Tool II: Palliative Care Competency Checklist:

This instrument, which was created by the researcher using the Palliative Care Competency Framework (Ryan et al., 2014) and Nurse's Core Competency in Palliative Care Scale (Meretoja et al., 2013), was used to assess nurses' knowledge of palliative care before, during, and one month following the implementation of the educational program. It included six core competency domains communication, the principles of palliative care, the optimization of comfort and quality of life, the care planning and collaborative practice domain, the loss, grief, and bereavement domain, the professional and ethical practice domain, and the optimization of comfort and quality of life domain and enabled nurses to self-report their nursing practice about professional competency regarding palliative care.

Scoring system:

The Palliative Care Competency Framework, which included 61 items, was used as the scoring mechanism for nurses' competency. Each item was given a score on a Likert scale from 1 to 3, with 1 scored never, 2 scored sometimes, and 3 scored always.

The overall score for nurses' competency was determined and categorized as follows: those with a total score of > 80% are competent in palliative care, while those with a total score of < 80% are incompetent.

Method

The steps listed below were used to complete the study:

Administrative design:

The Dean of the Faculty of Nursing, at Sohag University gives permission for Sohag oncology institute directors. The researcher obtained approval for data collection. The study objective and nature were explained, so it became possible to carry out the study with minimum resistance.

Ethical considerations:

1- The study was associated with ethical consent from the Sohag University faculty of nursing's ethical committee. It was explained to nurses that the information they provided would be kept private. The study's design did not injure or cause pain to any of the participants. Following an explanation of the purpose and advantages of the present study, nurses gave their informed consent to share in the study. Anytime they wanted, the nurses may leave the study.

2- Content validity:
Five experts in the fields of critical care and emergency nursing as well as medical-surgical nursing were asked to review the study's instruments. They assessed the tools' applicability, relevance, comprehensiveness, clarity, and comprehension. No changes were made in accordance with that. 96.7% is the content validity index.

Content reliability: The tools tested by Cronbach's alpha, a reliability test, were 0.934, indicating that the tools were very reliable.

Pilot study: Five nurses, or 10% of the sample, participated in a pilot research to evaluate the tool's feasibility, applicability, and clarity. The necessary modifications were made. The pilot study is part of the whole study sample.

Research phases: The study was conducted in four phases:

1.Assessment Phase:
The researcher collected baseline data from all study participants and used Tool I to measure nurses' knowledge of palliative care for patients in the terminal stages of cancer before and after one month of using instructional guidelines. Utilizing Tool II, the researcher was accessible two days a week in the aforementioned conditions.

2. Planning Phase:

- The creation of instructional guidelines followed a thorough analysis of the relevant literature. It was created based on an evaluation of nurses' needs, which comprised the following:

- The establishment of the instructional guidelines' goals.

- The creation of the content that addressed the rationale for the session's use.

- The researchers designed an Arabic instruction booklet that included the following:

- Knowledge about palliative care including definition, benefits, and principles, of palliative care.

- Nurses' knowledge about the management of common physical, psychological, and spiritual symptoms in patients with cancer.

- Nurses' knowledge regarding psychological symptoms management of cancer including (grieving, depression, anxiety, ineffective coping, and fear).

- The communication skills and communication methods during palliative care.

- The creation of appropriate media, such as lectures, films, PowerPoint presentations, and printed booklets with illustrations.

- The Arabic language was used to administer the palliative care competency checklist.

3. Implementation Phase:

- The researcher used Tools I and II to create different needs assessments (pretests) for each group before the instructional guidelines implementation and then created a plan for the educational sessions based on the results.

A series of educational sessions was conducted to implement the instructional guidelines for the nurses under study.

The four sessions of instructional guidelines were held twice a week. Each session lasted between thirty and forty-five minutes, Including discussion intervals according to the feedback and progress of the nurses.

- The researcher relied on multi-educational methods such as group discussion, demonstration, and re-demonstration and different illustrative methods such as PowerPoint, photos, and videos. Media utilized were handouts and data shows.

The nurses under study were divided into ten groups, with five nurses in each group.

The total number of sessions is four sessions as follows.

a- **First session**: It covered the following topics: what meaning of cancer and palliative care, pathophysiology, cancer types and manifestations, palliative care goals and principles, cancer pain causes and how to manage them, and when to offer palliative care to patients with end-stage cancer.

b- **Second session**: The researcher clarified the knowledge about palliative care including the definition, benefits, principles, aspects, and philosophy of palliative care. Nurses' knowledge about common physical, psychological, and spiritual symptoms of cancer. The duration of this session is about 60 minutes.

c- **Third session**: it focused on the main topics of practice about the management of common physical psychological and spiritual symptoms to patients with cancer management of cancer and the nurse's role in providing physical and emotional nursing care related to palliative care. The duration of the practice session was about 60 minutes for theoretical issues and 120 minutes for practical issues.

d- **Fourth session:** it focused on summarizing the instructional guidelines, continued to reinforce the gained information, answered any raised questions, and gave feedback and open discussion.

Evaluation Phase:

After a month, the same instruments were used to assess nurses' competency in providing palliative care for patients in the end stages of cancer.

Statistical analysis:

The collected data were organized, tabulated, and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 23). For quantitative data, the range, mean, and standard deviation were calculated. For qualitative data, a comparison between the two groups was done using the Chi-square test (x2). Significance was adopted at p<0.05 for interpretation of results of tests of significance.

Results:

Table (1) Shows that 62% of the studied nurses fall within the age range from 30 to 40 years. The majority 70% of them were female. More than half had a technical institute education, and More than three-fifths had ten or more years of experience (58% and 62%) respectively.

Figure (1): Illustrates that only 4% attended educational training related to palliative care.

With a high mean± SD of 28.21 ± 1.33 after the implementation of instructional guidelines, as opposed to 16.64 ± 3.55 before, **Table (2)** shows the knowledge mean score of the nurses under study with regard to cancer and palliative care pre and post the implementation of the guidelines. This difference is highly statistically significant (P=0.0001).

As can be observed in **Figure 2,** 96% of the nurses scored poorly on the pretest, but 94% of them had satisfactory knowledge after the application of the instructional instructions.

Table (3): Illustrates highly statistically significant differences were found regarding palliative care competency domains pre and post-instructional guidelines implementation at

(P=0.001) among the studied mothers.

There were highly statistically significant differences (P=0.0001) detected between the competency mean score of the nurses under study regarding palliative care pre- and post implementation of instructional guidelines. The mean score was 172.33± 5.15 after the implementation of the guidelines, compared to 101.22± 20.99 before. This is shown in **Table 4.**

Figure 3 illustrates that, in contrast to 10% of nurses in the pretest, all nurses (100%) demonstrated competence in providing palliative care following the introduction of instructional guidelines.

Table 5 portrays how the demographic information of the nurses and their total knowledge score before and after the study's nurses implemented the instructional guidelines on palliative care were significantly correlated. Educational level and experience levels were shown to be significantly positively correlated with nurses' age (P=0.001). Additionally, a positive association was found between experience and educational level. The total knowledge, educational level, and experience level of nurses before the implementation of instructional guidelines also showed a strong positive correlation. This can be explained by the fact that nurses' overall knowledge was impacted by their educational background and work unit experience before the installation of instructional guidelines, but that all nurses' overall knowledge improved following the implementation of instructional guidelines, irrespective of their educational level and experience level.

Table 6 shows that a correlation was discovered between nurses' demographic information and their overall competency score before and after the implementation of instructional guidelines for palliative care. The age of nurses was shown to be significantly positively correlated with their level of education and experience. Additionally, educational level was significantly positively correlated with both working unit and experience. It can be inferred that nurses acquire experience and enhance their competencies as they age. The competency of all nurses and their age and experience level before the implementation of instructional guidelines showed a substantial positive correlation. The competency of nurses and their age and experience level were significantly positively correlated after the implementation of the instructional guidelines. Additionally, after the application of instructional guidelines, there was a strong positive association between total competencies.

Table (7): Presents the correlation between total nurses' knowledge and competency scores pre and post-instructional guidelines implementation, it was apparent that there was a significant positive correlation between total competency before and total knowledge pre-instructional guidelines implementation. A positive correlation was also, discovered between total competencies and total knowledge post-instructional guidelines implementation. This means that when nurses gain knowledge post-instructional guidelines implementation their level of competence also improves.

Table (1): Nurses ' demographic data (n=50)

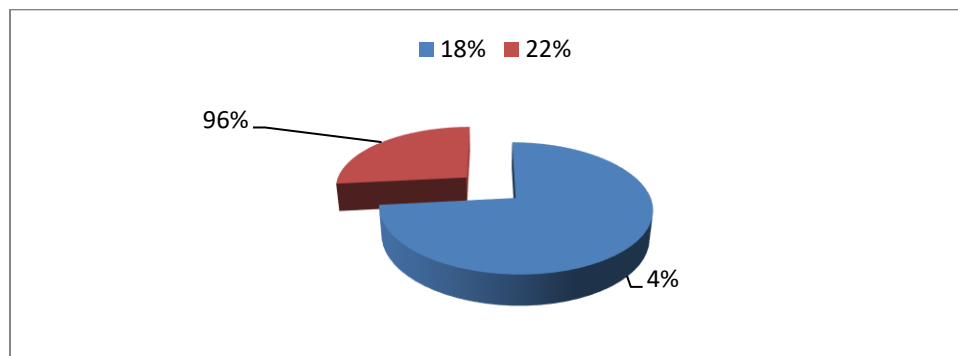| Variables	N	%
Age		
< 30 years	9	18
≥30 <40yrs	31	62
≥40yrs and more	10	20
Gender		
Male	15	30
Female	35	70
Level of education		
Secondary Nursing school	10	20
Technical Institute	26	58
Bachelor of Nursing	9	18
Postgraduate	2	4
Number of experience years		
< five years	8	16
5 – 10 years	11	22
Ten years	31	62

Figure (1): Attendance of educational training related to palliative care among the studied nurses (n=50).

Table (2): Total knowledge scores differences among the studied nurses concerning cancer and palliative care pre and post-instructional guidelines implementation (n=50).

Knowledge scores	Pre- instructional guidelines	Post- Post-instructional guidelines implementation	P -value
Mean ± SD	16.64 ± 3.55	28.21 ± 1.33	183.22 -0.001**

** Highly statistically significant difference at (P<0.001)

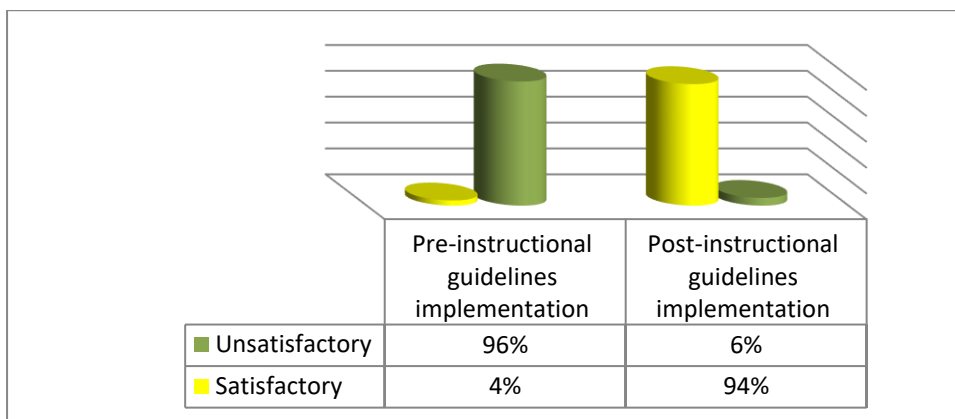|	Pre-instructional guidelines implementation	Post-instructional guidelines implementation
■ Unsatisfactory	96%	6%
■ Satisfactory	4%	94%

Figure (2): Total knowledge levels among the studied nurses concerning cancer and palliative care pre and post-instructional guidelines implementation (n=50).

Table (3): Differences in mean score among the studied nurses concerning palliative care competency domains pre and post-instructional guidelines implementation (n=50).

Nurses' competency	Pre - instructional guidelines Mean ± SD	Post- instructional guidelines Mean ± SD	P – value
Principles of palliative care	12.44 ± 3.21	25.44 ± 1.33	422.22 -0.001**
Communication	13.55 ± 3.23	22.67 ± 1.45	322.32 -0.001**
Optimizing comfort and quality of life	22.22 ± 5.42	40.78 ± 2.31	299.34 -0.001**
Care planning and collaborative practice	17.33 ± 5.16	29.96 ± 1.43	120.73 -0.001**
Loss, grief, and bereavement	16.56 ± 3.25	21.22 ± 1.22	188.21 -0.001**
Professional and ethical practice in the context of palliative care	18.72 ± 4.31	27.56 ± 2.41	77.11-0.001**

**Highly statistically significant difference at (P<0.001)

Table (4): Total nurses' competency scores differences among the studied nurses concerning palliative care pre and post-instructional guidelines implementation (n=50).

Total nurses' competency regarding palliative care	Pre- instructional guidelines implementation	Post- Post-instructional guidelines implementation	P -value
Mean ± SD	101.22 ± 20.99	172.33± 5.15	285.67 - 0.001**

** Highly statistically significant difference at (P<0.001)

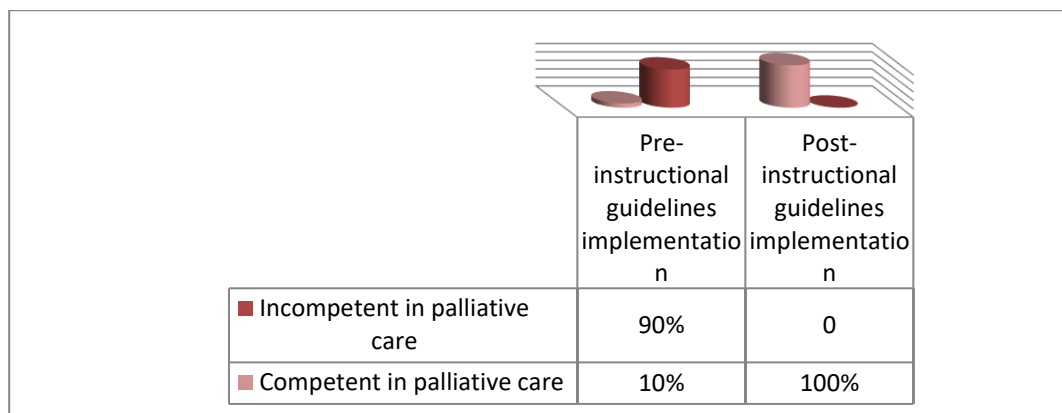|	Pre-instructional guidelines implementation	Post-instructional guidelines implementation
■ Incompetent in palliative care	90%	0
■ Competent in palliative care	10%	100%

Figure (3): Total palliative care competency levels among the studied nurses concerning cancer and palliative care pre and post-instructional guidelines implementation (n=50).

Table (5): Correlation matrix between nurses' demographic data and total knowledge score pre and post-instructional guidelines implementation (n=50)

Variables		Age	Educational level	Residence	Experience level	Total knowledge score pre	Total knowledge post
Educational level	r	.642	-	-	-	-	-
	p	0.001**	-	-	-	-	-
Residence	r	.023	-.017	-	-	-	-
	p	.880	.909	-	-	-	-
Experience level	r	.947	.700	.077	-	-	-
	p	.001**	.001**	.617	-	-	-
Total knowledge score pre	r	.155	.617	.101	.256	-	-
	p	.308	.001**	.507	.001**	-	-
Total knowledge post	r	.079	.164	-.207	.030	.175	-
	p	.525	.281	.173	.844	.249	-

**Correlation is significant at the 0.001 level

Table (6): Correlation matrix between nurses' demographic data and total competencies score pre and post-instructional guidelines implementation (n=50).

Variables		Age	Educational level	Residence	Experience level	competencies s	ompetencies s
Educational level	r	.639	-	-	-	-	-
	p	.001**	-	-	-	-	-
Residence	r	.025	-.018	-	-	-	-
	p	.876	.912	-	-	-	-
Experience level	r	.935	.702	.075	-	-	-
	p	.001**	.001**	.613	-	-	-
Total competencies score pre	r	.326	.756	-.039	.421	-	-
	p	.024*	.001**	.813	.005*	-	-
Total competencies score post	r	.386	.223	-.074	.347	.005	-
	p	.008*	.168	.642	.024*	.985	-
Total competencies score post	r	.323	.078	-.133	.285	.129	.831
	p	.046*	.621	.447	.048*	.408	.001**

**Correlation is significant at the 0.001 level

Table (7): Correlation matrix between total nurses' knowledge and competencies score pre and post-instructional guidelines implementation (n=50).

Variables		Total competencies score pre	Total competencies score post	Total knowledge score pre	Total knowledge post
Total competencies score post	r	.134	.731	-	-
	p	.405	.0001**	-	-
Total knowledge score pre	r	.789	.241	-	-
	p	.0001**	.131	-	-
Total knowledge post	r	-.025	.489	.167	.212
	p	.862	.0001**	.263	.193

** Correlation is significant at the 0.001 level

Discussion:

The word "cancer" refers to a class of illnesses in which aberrant cells proliferate uncontrollably, infiltrate neighboring tissues, and travel via the blood and lymphatic systems to other areas of the body. Leukemia, malignancies of the brain and other central nervous systems, and lymphoma are the most prevalent cancers in children. Thanks to new and improved treatment approaches, more people than ever before are surviving cancer and Palliative care is one of these approaches (**Park et al., 2024**)

A new medical specialty called palliative care is founded on a multidisciplinary team that includes social work, nursing, medicine, and other methods. Palliative care aims to alleviate the pain and support the highest possible standard of living for both the patients and their families. Palliative care can be administered at any stage of cancer and in any period. The patient and his family may receive it in addition to curative care (**Challinor et al., 2020**).

Giving nurses a thorough education in palliative care for cancer patients is a crucial first step in improving their ability to meet the complicated demands of patients nearing the end of their lives. Through this training, nurses will be better prepared to provide compassionate and comprehensive end-of-life care by gaining specific knowledge, communication skills, and emotional support techniques that are suited to the particular difficulties of palliative oncology treatment (**Brazil et al., 2022**).

Through an evaluation of communication effectiveness, symptom management, patient and family satisfaction, and overall quality of care, this assessment aims to show the concrete advantages of providing oncology nurses with specialized palliative care training, which will ultimately improve the quality of life and standard of care for patients with advanced cancer (**DeSanto-Madeya et al., 2020**). Nurses who participate in ongoing education programs stay current on the most recent developments in nursing care and treatment (**Morton &Fontaine et al., 2023**). The aim of this study was to evaluate the effect of instructional guidelines on nurses' competency regarding palliative care for patients during the end stage of cancer.

According to the current study, over three-fifths of the nurses under investigation are between the ages of thirty and forty. Almost all of them were women. More than three-fifths had ten or more years of experience, and over half had an education from a technical institute.

According to the current study, the average age of the nurses under investigation was 40.333 ± 11.457 years. This result was consistent with **Dedeli et al. (2019)**, who conducted a study to evaluate nurses' attitudes toward cancer patients and discovered that the average age of the nurses was between 40 and 55 years old. This result was contradicted by research by Al **Qadire (2023)** and **Karkada1 et al. (2022)**, which showed that the bulk of the sample under study was younger adults. This could be because the samples and settings were different. On the other hand, the finding of the current study contradicted **Udayar et al., (2024)**. who stated that the majority of oncology

nurses are over 50 years old, with only 10% falling within the 30 to 40 age range.

The present study showed that the majority of them were female. Regarding the researcher's opinion that the predominance of female oncology nurses due to the nursing profession in Egypt in the past was limited to females only, but recently become for both genders. This finding was similar to a study done by **Albargawi et al., (2022)** who reported that female dominance in the field of oncology may impact leadership opportunities, caregiving dynamics, and workplace culture. On the contrary, **Park et al., (2024**) stated that oncology nursing is a predominantly male-dominated field, with 70% of nurses being male.

The current analysis revealed that more than half of the nurses under investigation had received their education at a technical nursing institute. **Soubam (2018)** discovered that most nurses had graduated from a technical nursing institute, which corroborated these findings. Additionally, according to **Bahza (2023**), the largest percentage of nurses in his study were those who attended technical nursing institutes.

The researcher perspectives that the educational distribution illustrates a diverse background among oncology nurses, with a significant portion having attended technical institutes. This mix of educational backgrounds can contribute to a well-rounded team with varied skills and expertise. The distribution of experience levels among oncology nurses shows a majority with ten or more years of experience.

A study by **Martins Pereira et al., (2021**) and **Zagloul et al., (2020**) reported that technical education of nurses may provide specialized training relevant to oncology care.

However, **Paiva et al., (2021**) suggested that the majority of oncology nurses have doctoral degrees in nursing, with only ten percent had attended a technical institute. According to El-**Nagar et al. (2023**), the majority of the nurses in her study had bachelor's degrees, which is a contradictory finding.

According to the present study's findings, more than three-fifths had ten years or more of experience. In a study, Mahmoud (2024) discovered that two-thirds of the nurses had five years of experience in their specialization, which contrasted with this result. According to **Premetal (2022**), most of the nurses in his study had worked in the oncology department for two to five years. While, **Asefa et al., (2021**) reported that a significant number of oncology nurses are recent graduates with less than two years of experience.

According to this study, only four percent of participants went to palliative care-related educational training. From the researcher's point of view, it reflected the need of the studied nurses to implement guidelines to improve their knowledge and competency. Also, In the researcher's opinion, this might be because of the shortage of nurses number that didn't let them have time to attend courses or lack of awareness about the effect of training courses on the performance of the nurses, resulting in poor knowledge in about palliative care of patient with cancer.

In terms of nurses' knowledge of cancer and palliative care, the current study found that after the implementation of instructional guidelines, nurses' overall knowledge significantly improved. However, the majority of them lacked adequate information on cancer and palliative care before receiving education. This could be explained by the absence of dedicated palliative care units in Egypt, the exclusion of palliative care teaching from nursing curricula, and the absence of training courses or in-service educational programs regarding cancer and palliative care.

These results are compatible with **Chua & Shorey, (2021**) who reported that the level of knowledge about palliative care of the majority of the studied nurses generally was poor before implementing of educational program.

The findings were consistent with those of **AlQadire (2023), Karkada1 (2022), Prem (2022), Ayed (2019), and Pfister (2023**), whose research evaluated nurses' knowledge of palliative care and discovered that there was a low general level of awareness. The results of

Fadareetal's (2024) research, which also evaluated nurses' knowledge of palliative care and discovered that most nurses knew a lot about it, were consistent with the current findings.

This result is nearly similar to, **Aljehani et al., (2021)** who stated that obvious improvement had been found in participant knowledge of the post-intervention educational program compared to the pre-intervention educational program related to palliative care management expectations, including pain management, strategies for disease management using home interventions. This study on the contrary with **Dehghani et al., (2020)** illustrated that two-fifths of nurses had knowledge unsatisfactory after implementing the educational program.

The current study found that after the implementation of instructional guidelines, nurses' overall knowledge score improved, with all nurses having a satisfactory level of knowledge. This may be credited to the construction of guidelines based on the needs of nurses, the use of a range of training techniques, the simplicity and clarity of the material, the use of simple language, and frequent repetition to fix such knowledge.

According to **Ayed et al. (2019)**, **Saylor et al. (2019), Sorifa et al. (2019), and Brazil et al. (2022),** there has been a notable increase in the number of nurses knowledge scores post-intervention. The study by **Young-Ran et al. (2019)** found that nurses' understanding of palliative care was higher both during the follow-up period and immediately following the introduction of an educational program. This finding was also consistent with that study. Similar findings were made by **Joy (2019) and Kim et al. (2022),** who discovered that nurses in the intervention group showed a notable improvement in their understanding of palliative care post one month of the intervention.

According to the current study, the majority of nurses were not competent in palliative care prior to the implementation of instructional guidelines. This result may be explained by the fact that few nurses have received palliative care training, and nurses do not believe they are qualified to provide palliative care. It might also be linked to a rise in work overload and a lack of regular education and training. These results aligned with those of **El-Nagar et al. (2023),** who discovered that nurses lacked professionalism when it came to palliative care. This finding was also supported by **Anteneh et al. (2019)** who reported that over half of the nurses in their study had inadequate palliative care practices.

However, the overall competency level of nurses improved with the introduction of the instructional guidelines. **El-Nagar et al. (2023**) showed a statistically significant difference between the pre- and post-implementation of instructional guidelines for the management of cancer patient's symptoms. This conclusion was consistent with their findings. The results of the current study were also supported by **Abaszadeh et al. (2022**), which demonstrated that nurses' practice improved after the application of instructional guidelines. This improvement may be ascribed to the fact that organized and ongoing nursing education effectively raises nurses' competency.

The current study's findings demonstrated that there was no statistically significant correlation between nurses' age and general level of knowledge. There were no statistically significant associations found by **Prem et al. (2022)** between age and palliative care total knowledge levels, which was consistent with this finding. This result was not similar to that of **Soubam et al. (2018),** who discovered that nurses who knew enough about palliative care had a higher average age. Additionally, a substantial correlation between the nurses' age and their palliative care knowledge was shown **by Karkada et al. (2022).**

Based on the results of the current study, nurses' overall knowledge increased post-implementation of instructional guidelines, regardless of their educational level. This could be a result of the implementation of instructional guidelines meeting the educational needs of nurses. **Ayed et al. (2019**) observed no significant link between nurses' academic level and their knowledge levels regarding palliative care, which is consistent with the current study.

Additionally, the current study showed that nurses' years of experience before the implementation of the educational program were positively correlated with their knowledge. One possible explanation for this is that older nurses with more years of experience were exposed to a variety of scenarios in oncology and hematology units, which helped them to become more knowledgeable. **Morsy (2024)** observed that years of nursing experience had an impact on the understanding of palliative care, which was consistent with these findings.

Prem et al. (2022) observed no significant statistical associations between nurses' years of experience and palliative care total knowledge ratings, which contradicted this finding. Knowledge scores and professional experience did not significantly correlate, according to **Ayed et al. (2019**).

The age of nurses was shown to be significantly positively correlated with their level of education and experience. Additionally, educational level was significantly positively correlated with experience. It can be inferred that nurses acquire experience and enhance their competencies as they age. Additionally, the age of the nurse's pre and post-instructional guidelines implementation was positively correlated with their overall competency levels. This could be explained by the fact that as nurses get older, their exposure to various scenarios and cases may improve their proficiency and practice. In contrast to the current study, **Thomas (2022**) found no significant correlation between the nurse's age and their palliative care competency levels.

The results of the current study showed positive correlations between the years of experience of nurses and their overall competency levels. In a similar vein, **Morsy et al. (2024**) noted that an increase in the number of years of experience nurses was correlated to an improvement in the overall performance of healthcare professionals. **Fahim et al. (2024**) concurred with this outcome as well and discovered a statistically significant correlation between the total mean competency scores and years of experience.

The results of the current study showed that all palliative care competency domains had significant positive correlations with one another before, during, and following a month of the program. According to **El-Nagar et al. (2023),** this conclusion was supported by the fact that nurses should use all competency items and domains to improve results.

The results of the current study showed that nurses' competency and overall knowledge were positively correlated. This could be a result of nurses' knowledge and competency being improved by ongoing evaluation and subsequent instructional guidelines implementation sessions employing various educational methodologies. Palliative care education also makes nurses more at ease when caring for patients who are dying and their families. The results of **Sorifa et al. (2019)** showed that nursing staff knowledge and competency levels for palliative care were positively correlated with this conclusion.

Conclusion:

According to the current study's findings, nurses' knowledge and competencies in providing palliative care for patients in the latter stages of cancer are improved when instructional guidelines are implemented. Also, a positive correlation was detected between the nurses' total competency scores and their overall knowledge scores about providing palliative care to patients in the end stages of cancer.

Recommendations:

The following recommendations, based on the current study findings are suggested:

In nursing practices:

• Using competency-based nursing interventions for patients who are nearing the conclusion of their cancer treatment.

• It is recommended that nurses participate in ongoing in-service training programs on a frequent basis to enhance their knowledge and proficiency in palliative care.

• Creating a guide for nurses regarding palliative care for patients in the advanced stages of cancer.

For nursing education:

- Nursing education programs need to include palliative care.

- Holding frequent conferences and workshops to refresh nurses' palliative care-related knowledge and skills.

For future nursing research:

1. Creating a supportive program for family members to support spiritual health and dealing with their cancer patients.

2. Applying the current study to a bigger sample to increase generalizability.

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