

Effect of Palliative Care Program on Nurses' Knowledge, Attitude and Self- Efficacy toward Care of Cancer Patients

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Abstract

Background: Palliative care is an essential aspect of comprehensive cancer treatment, aiming to enhance patients' quality of life by addressing their physical, emotional, and psychosocial needs. As key caregivers, nurses play a vital role in providing this support, particularly for individuals in the advanced stages of illness. **The current study aimed to evaluate the effect of palliative care program on nurses' knowledge, attitudes, and self-efficacy toward the care of cancer patients. Research design:** A quasi-experimental research design was used to achieve the aim of the study. **Sample:** A convenience sample of 150 nurses working at Minia Oncology Center was divided into study and control groups. **Study Tools:** Tool (I): A structured interview questionnaire, including Part 1: demographic characteristics of the nurses and Part 2: assessment of nurses' palliative care knowledge using the 20-item Palliative Care Quiz for Nursing (PCQN). **Tool (II):** Nurses' attitudes toward palliative care were assessed using an 11-item tool, with 6 positive and 5 negative items. **Tool (III):** Self-efficacy toward palliative care was assessed using the 12-item Palliative Care Self-Efficacy Scale. **Results:** There was a significant improvement in nurses' knowledge, a positive shift in their attitudes toward end-of-life care, and enhanced self-efficacy in managing the complex needs of cancer patients. Additionally, significant positive correlations were found between nurses' knowledge, attitudes, and self-efficacy regarding palliative care in the study group after the educational program. **Conclusion:** The study concluded that the palliative care program positively impacted nurses' knowledge, attitudes, and self-efficacy toward palliative care among cancer patients. **Recommendations:** The study recommends continuous education in palliative care for nurses, integrating palliative care into nursing education programs, and distributing accessible Arabic booklets in oncology centers.

Keywords: Attitude, Cancer, Knowledge, Palliative care, Self-Efficacy.

Introduction

Palliative care is a vital component of cancer treatment, aimed at enhancing the quality of life for patients by addressing their physical, emotional, and psychosocial needs, especially in the later stages of the disease. Cancer patients frequently face complex symptoms such as pain, fatigue, and emotional distress, which can greatly affect their overall well-being (Arshad et al., 2024). As primary caregivers, nurses play a key role in delivering palliative care, managing symptoms, communicating with patients and families, and offering emotional support (Applebaum et al., 2024).

Approximately 40 million people require palliative care, with 78% of them residing in low- and middle-income countries each year. (Gautam & Adhikari, 2021). Worldwide, only about 14% of people who need palliative care currently receive it. In addition to unnecessarily restrictive regulations for morphine and other essential controlled palliative medicines deny access to adequate palliative care. So, adequate national policies, programmers, resources, and training on palliative care among health professionals are urgently needed in order to improve access (OSMAN, et al., 2022).

The knowledge, skills and attitudes of healthcare professionals who provide care for the dying has a significant impact on what kind of care is delivered in practice. To ensure the quality of palliative care, healthcare professionals working in palliative care teams need to have a sufficient level of competence in palliative and end-of-life care. The self-

assessment of competence has been shown to develop the palliative care skills of nurses and improve the quality of care (Periyakoil & Gunten, 2023).

Many nurses encounter difficulties in providing optimal palliative care due to deficiencies in their knowledge, attitudes, and self-efficacy. These challenges are often compounded by limited training and exposure to palliative care practices, particularly in oncology settings. A solid understanding of palliative care, including pain and symptom management, communication skills, and ethical considerations, is essential for nurses to effectively meet the needs of cancer patients (Fadaei et al., 2024). Furthermore, having positive attitudes toward end-of-life care and high levels of self-efficacy are crucial for nurses to feel confident and capable in addressing the complex needs of patients with advanced cancer (Rubbai et al., 2024).

Self-efficacy for nurses refers to their confidence in providing nursing care (emotional or physical) to their ill patients (Hebdon, et al., 2021). So that Palliative care nurses are at high-stress risk at work, such as exposure to numerous deaths, and grieving families. Nurses' palliative care expertise, attitudes toward death and dying, and self-efficacy can all impact nursing care (Elrefaey, et al., 2022). An individual's generalized self-efficacy is their assessment of their overall capacity to execute tasks. Across various work types, job performance and job-related attitudes are associated with generalized self-efficacy (Cha, et al., 2020).

Palliative care programs have demonstrated effectiveness in enhancing nurses' knowledge, attitudes, and

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self-efficacy, providing them with the necessary skills and confidence to deliver high-quality care to cancer patients. Additionally, improving nurses' self-efficacy can result in greater job satisfaction, lower stress levels, and a higher overall standard of care (Li et al., 2024).

Community health nurses play diverse roles in their practice, including care provider, educator, advocate, manager, collaborator, leader, and researcher, addressing the needs of individuals, families, and communities (Cassola et al., 2022). So that Palliative care clinical nurse specialists play a vital role in supporting cancer patients and their families, helping them manage emotional and practical challenges, facilitating communication, providing information, and offering expertise in pain and symptom management. These nurses possess specialized skills to assess and address the complex palliative care needs of patients (Moran et al., 2024).

Significance of the study

Globally, over 29 million people die from conditions that require palliative care, with an estimated 20.4 million individuals needing palliative care at the end of life. Of those in needs, 94% are adults, with 69% being over 60 years old and 25% aged between 15 and 59 years. A significant portion, 78%, of those requiring palliative care reside in low- and middle-income countries. Palliative care is necessary for 40-60% of all deaths worldwide. The majority of adults requiring palliative care suffer from chronic conditions, such as cardiovascular diseases, cancer, chronic respiratory diseases, AIDS, and diabetes mellitus (Fahim et al., 2023).

The global increase in chronic, severe illnesses has resulted in a decline in patients' quality of life, difficulties with medication adherence, inability to work, higher out-of-pocket costs, and a heavy burden on caregivers. These factors have significantly amplified the worldwide demand for palliative care services (Murota et al., 2024).

In Egypt, palliative care and cancer pain management are still in the early stages of development. Few services are available, and significant barriers exist, such as limited access to opioids for medical use. With 78% of adults in need of hospice and palliative care residing in low- and middle-income countries, there is a clear and urgent need for expanded palliative care services in Egypt (Ibrahim et al., 2024)..

Furthermore, the complexity and demands of caring for palliative care patients can be stressful for nurses and may present challenges when providing care to individuals with terminal or chronic illnesses. Due to the intricate nature of palliative care, many nurses are unprepared to manage the needs of these patients. The absence of adequate training and education in palliative care can lead to negative attitudes, which in turn can affect the quality of care and patient outcomes (Zhou et al., 2021).

Aim of the Study

This study aimed to evaluate the effect of palliative care program on nurses' knowledge, attitude and self- efficacy toward care of cancer patients.

Research hypotheses:

H1- The nurse's knowledge and attitude regarding the palliative care related to cancer will be improved post palliative care program implementation.

- H2- Palliative care programs will have a positive impact on nurses' self-efficacy
- H3- There will be a significant positive association between nurse's knowledge with their attitude regarding palliative care of cancer patient.
- H4- There will be a significant correlation between the knowledge, attitude and self-efficacy post palliative care program implementation.

Subjects and Method

Research design:

A quasi-experimental research design was used to achieve the aim of the study.

Setting:

The study was conducted at Minia Oncology Center, which covers Minia governorate. a medical facility focused on cancer diagnosis and treatment. It is situated on Al-Hurriya Street, just off Nile Corniche Street in Minia, Egypt.

Sample

A convenience sample of all available nurses who are working at Minia oncology center with total number 150 nurses were distributed to study and control groups by simple random sample as the study group were received the palliative care program unlike the control group filled structured interview questionnaire sheet including Nurses' knowledge ,attitude and self-efficacy toward palliative care.

Department	No. of staff nurse
Internal chemotherapy	27
Surgical	31
Intensive care unit (ICU)	20
Operating room	16
Emergency	9
Out- patient clinics	21
External chemotherapy	8
Pediatric	18
Total = 150 nurses	

Tools of data collection:

Three tools were used for the data collection

Tool I: The structured interview questionnaire included two parts: **Part 1** covered socio-demographic data (8 items: age, sex, education, marital status, department, residence, experience, and palliative care training). **Part 2** assessed nurses' palliative care knowledge using the 20-item Palliative Care Quiz for Nursing (PCQN) by M. Ross (1996), with three subscales: Philosophy & Principles (4 items), Psychosocial & Spiritual Care (3 items), and Pain/Symptom Management (13 items). Responses were "True," "False," or "Don't Know."

Scoring system:

For nurses correct answer were scored **(one)** and incorrect answers or don't know were scored **(zero)**. All items were summed up with total scores **from 0 to 20**; the total knowledge score were divided into:-

- The nurses' knowledge $\geq 70\%$ considered satisfactory knowledge.
- The nurses' knowledge $< 70\%$ considered unsatisfactory knowledge (Dimoula, et al., 2019).

Tool II : Nurses' attitudes toward palliative care were developed by Ayed et al. (2015). using an 11-item tool. It included 6 positive and 5 negative items, scored on a 5-point Likert scale, with negative items reverse-scored.

Scoring system:-

Attitude was assessed using 5-items Likert scale (ranging from strongly agree 5 to strongly disagree, 1). First six items were worded positively and five were worded negatively. It had 11 item rating scale with the highest score of 5 for each option and total possible score was 55 (100%).

The total attitude scores were be categorized into:

- positive attitude ($\geq 60\%$), negative attitude $< 60\%$.

Tool III: Self-efficacy toward palliative care was developed using the 12-item Palliative Care Self-Efficacy Scale by Phillips et al. (2011), measuring perceived capacity to address patients' End of life (EOL) concerns and symptoms.

Scoring system:-

Nurses were asked to rate their perceived capacity to successfully perform each task using a 4-point likert scale

- 1 = need further basic instruction
- 2 = confident to perform with close supervision/coaching
- 3 = confident to perform with minimal consultation
- 4 = confident to perform independently

Total scores ranged from 12 to 48. Scores were categorized into:-

High self-efficacy ($\geq 76\%$), Moderate self-efficacy (51-75%), and low self-efficacy ($\leq 50\%$).

Validity and Reliability

The validity of the instruments was assessed by submitting them panel of 5 experts of community health nursing staff, Nursing professors who reviewed the instruments for clarity, relevance, comprehensiveness, understanding, applicability and easiness. Expert feedback resulted in a few modifications, which have been implemented. Internal consistency of interview questionnaire was assessed with the Cronbach's alpha coefficient. Cronbach's alpha for reliability testing was performed and the result was 0.79 for knowledge of palliative care assessment tool, while Nurses' attitude toward palliative care was 0.88 and for Self-efficacy toward palliative care was 0.81.

Pilot Study

Pilot study was conducted on (10%) of the entire research sample (15 Nurses). It was carried out with the goals of determining the applicability and clarity of the tools, determining whether or not fieldwork was viable, and locating any potential roadblocks that the researcher might encounter, and which could impede the gathering of data. The findings of the pilot research served as the basis for the necessary adjustments, which were made to either reinforce the contents or make them simpler and more transparent. The pilot sample was included into the primary sample for the investigation.

Ethical consideration:

Before the conduction of the pilot study as well as the actual study, an official permission and consent was obtained from the dean of the Faculty of Nursing, as well as the Director of Minia Oncology Center. Research proposal was approved from ethical committee in faculty of nursing. There

was a unique code assigned to each assessment form, and the nurse's name did not appear on the sheets for privacy and confidentiality. Nurses were assured that they could withdraw from the current study at any time and that their data would not be reused without their approval.

Data Collection Procedure

The study was conducted in four phases:

Assessment Phase:

Permissions were obtained from Minia University and the Oncology Center. Data collection began with researchers visiting the center twice weekly (morning and afternoon shifts). Nurses were greeted, study details explained, and oral consent obtained. Participants were divided into control and study groups by simple random sample as the study group were received the palliative care program unlike the control group filled structured interview questionnaire sheet including Nurses' knowledge ,attitude and self-efficacy toward palliative care (15–20 minutes per nurse).

Planning Phase:

A palliative care program was designed using literature and expert input, with an Arabic instructional booklet featuring visuals. Topics included palliative care principles, symptom management, and psychosocial/spiritual care.

Implementation Phase:

The study was conducted from November 2023 to July 2024, the program included 5 sessions over two days per week (Saturday and Wednesday). Sessions used simple Arabic and visual aids and adapted to work conditions, starting with a review of previous content and objectives. In this phase, nurses were divided into a control group, who only filled out the palliative care questionnaire, and a study group, further split into small subgroups (2–4 nurses). The study group received an orientation on the program's aim during the first session, with each session starting with a review of prior content. Data collection utilized three tools: Tool I (Structured Interview Questionnaire) for demographic data and knowledge assessment, and Tools II & III to evaluate attitudes and self-efficacy toward palliative care. Completing each questionnaire took 15–20 minutes.

The evaluation phase included two assessments:

- Pretest: Conducted before the teaching program using Tools I, II, and III to assess knowledge, attitude, and self-efficacy in both study and control groups.
- Posttest: Conducted three months later, using the same tools to evaluate the program's impact on the study group compared to control group.

Statistical analysis:

Data was organized in tables, analyzed, and computerized using SPSS (statistical package for the social science version 28). Descriptive and inferential statistics were utilized to present the study data. The data were expressed descriptively through the use of numbers and percentages. Quantitative data were presented by mean and standard deviation. In case of comparison between two groups. The chi-square was used to test the association between two qualitative variables or to detect differences between two groups. The level of significance was accepted at a p-value < 0.05 .

Results

Table 1: Distribution of control and study group of nurses regarding their demographic characteristics at Minia Oncology Center, 2024 (n=150):

Demographic characteristics	Control group		Study group		X ²	P-value
	No	%	No	%		
Age per year						
20-30 years	54	72.0	47	62.7	1.934	0.380
>30-40 years	14	18.7	16	21.3		
>40-50 years	7	9.3	12	16.0		
>50-60 years	0	0.0	0	0.0		
Mean ±SD	25.2± 3.12		27.4±2.31		1.22	0.221
Sex						
Male	22	29.3	30	40.0	1.884	0.115
Female	53	70.7	45	60.0		
Educational Qualification						
Diploma degree	17	22.7	21	28.0	4.979	0.173
Technical institute degree	24	32.0	30	40.0		
Bachelor degree	31	41.3	24	32.0		
Others	3	4.0	0	0.0		
Marital Status						
Single	26	34.7	17	22.7	2.641	0.074
Married	49	65.3	58	77.3		
Divorced	0	0.0	0	0.0		
Widow	0	0.0	0	0.0		
Department						
In patient	55	73.3	57	76.0	0.141	0.426
Out patient	20	26.7	18	24.0		
Residence						
Rural	36	48.0	34	45.3	0.107	0.435
Urban	39	52.0	41	54.7		
Experience						
Less than 5 years	42	56.0	39	52.0	2.566	0.277
Between 5 and 10	18	24.0	26	34.7		
More than 10	15	20.0	10	13.3		
Attendance of training courses						
Yes	22	29.3	20	26.7	0.132	0.428
No	53	70.7	55	73.3		

P > 0.05 insignificance, P ≤ 0.05* significance, SD= Standard Deviation. Chi-Square test for p value

Table (1) shows that the mean age for the control and study groups are 25.2 and 27.4 years, respectively. Regarding gender, 70.7% and 60.0% of the control and study groups are female, respectively. In terms of educational background, 40.0% of the study groups hold a technical institute degree, compared to 41.3% of the control groups who hold a bachelor's degree. Concerning marital status, 65.3% and 77.3 % of the control and study groups are married. In terms of the department, 73.3% and 76.0% of the two groups, respectively, are employed in the inpatient department. 52.0% and 54.7% of the two categories, respectively, reside in urban areas. Regarding experience 56.0 % and 52.0% of both groups have less than of 5 years. 56.0% and 52.0% of both groups, respectively, have fewer than five years of experience. More over two-thirds of both groups 70.7% and 73.3% do not participate in training programs on palliative care program. Lastly, there are no significant differences between the control and study groups regarding demographic characteristics.

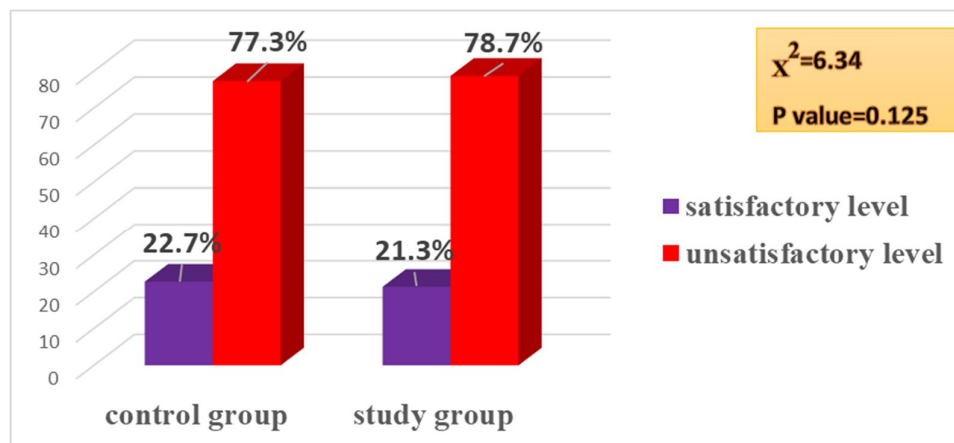


Fig (1) Percentage distribution of total knowledge score among study and control group of nurses regarding palliative care pre intervention at Minia Oncology Center, 2024 (n=150).

Fig (1) shows that, within the study group, 78.7% of nurses have unsatisfactory knowledge about palliative care, compared to 77.3% of nurses in the control group.

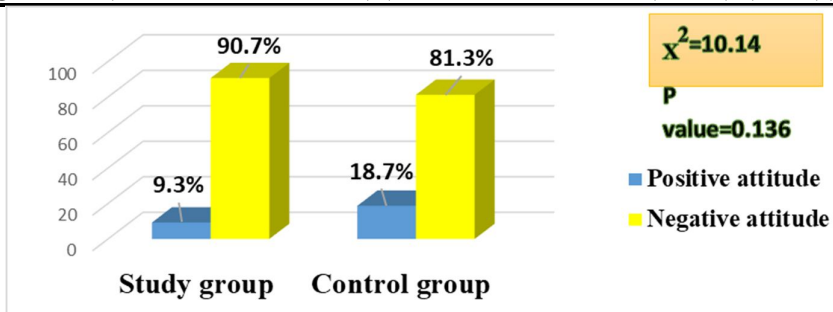


Fig (2): Percentage distribution among study and control group of nurses according to their total attitude score toward palliative care pre intervention at Minia Oncology Center, 2024 (n=150).

Fig (2) demonstrates that a negative attitude about palliative care is held by 90.7% and 81.3% of nurses, respectively, in the study and control groups.

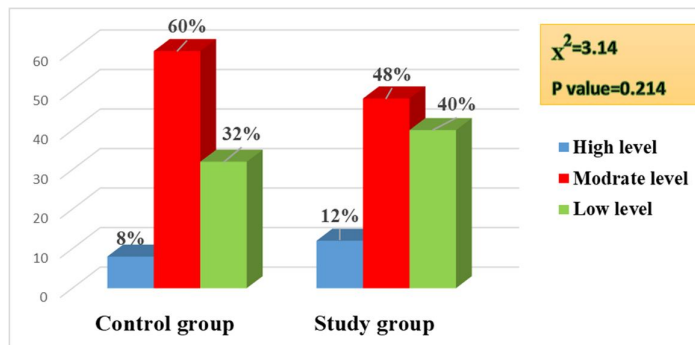


Fig (3): Percentage distribution among study and control nurses based on their total self-efficacy score toward palliative care pre intervention at Minia Oncology Center, 2024 (n=150)

Fig (3) presents that, 60% and 48% of nurses among study and control group have a moderate level of self-efficacy toward palliative care.

Table (2): comparison of mean scores of nurses' knowledge of palliative care before and after intervention at Minia Oncology Center, 2024 (n=75).

Items	Pre intervention (Mean SD)	Post intervention (Mean SD)	X ²	P-value
Philosophy & principle of palliative care	12.81±2.01	30.14±4.12	6.11	0.000*
Psychosocial & spiritual care	11.41±1.32	40.71±3.14	2.47	0.000*
Management of pain and other symptoms	12.34±2.61	44.35±5.24	2.15	0.000*
Total	36.56±7.40	115.2±12.5	9.53	0.000*

* Significance P≤0.05, SD= Standard Deviation. Chi-Square test for p value

Table (2) illustrates there are statistically significant differences between pre-intervention and post-intervention program among the study group regarding nurses' knowledge of palliative care (P- value: 0.000), with total mean score 36.56±7.40 and 115.2±12.5, respectively.

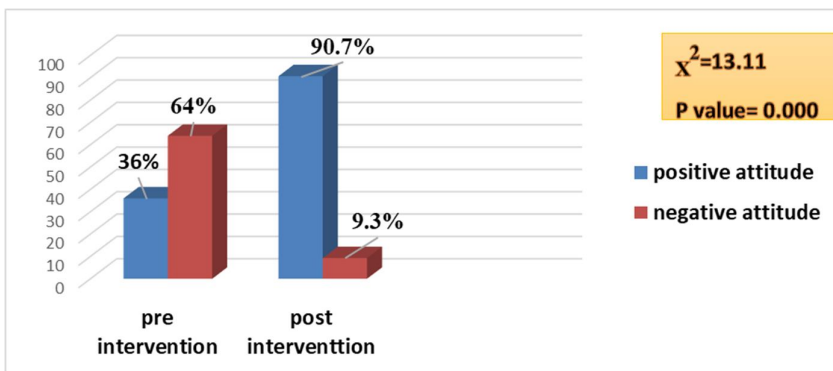


Fig (4): Percentage distribution of total attitude score of studied nurses regarding palliative care before and after intervention at Minia Oncology Center, 2024 (n=75).

Figure 4: depicts that 64% of nurses initially held a negative attitude towards palliative care, which improved to 90.7% having a positive attitude after the intervention program.

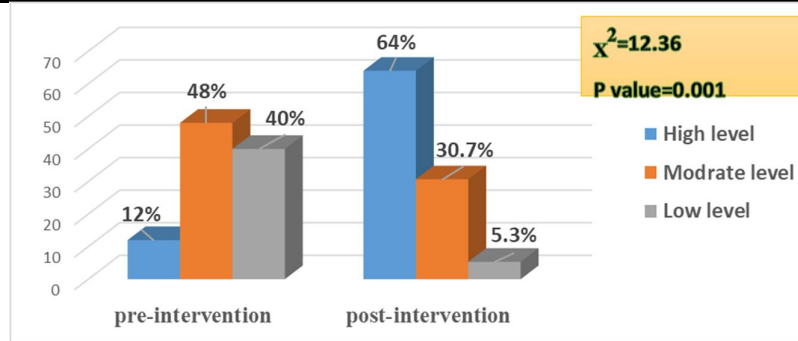


Fig (5): Percentage distribution of total self-efficacy score of studied nurses regarding palliative care before and after intervention at Minia Oncology Center, 2024. (n=75).

Fig (5) demonstrates that 64% of nurses had high levels of self-efficacy regarding palliative care following an intervention program, compared to 48% of nurses in the study group who have moderate levels of self-efficacy regarding palliative care pre-intervention.

Table 3: Correlation between study group of nurses’ total knowledge, attitude and self-efficacy scores at post-educational program regarding palliative care (n = 75):

Items	Knowledge	Attitude	Self-efficacy
Knowledge r. value (P. value)	1	0.352 (.000) **	1.293 (0.001) *
Attitude r. value (P. value)	0.352 (.000) **	1	0.247 (0.001)*
Self-efficacy r. value (P. value)	1.293 (.001) *	0.247 (0.001)*	1

** Correlation is significant at the 0.01 level (2- tailed). * Correlation is significant at the 0.05 level (2- tailed). NS: not statistically significant.

Table (3) shows that there is a positive correlation between total scores of knowledge, attitude and self-efficacy regarding palliative care of the study group of nurses after educational programs ($P \leq 0.000$ and 0.001).

Discussion

Nurses play an important role in palliative care as the quality of care received by palliative care patients depends on nurses’ knowledge and skills in symptom management and end-of-life care. **So the aim of the present study** is to evaluate the effect of palliative care program on nurses’ knowledge, attitude and self- efficacy toward care of cancer patients.

Concerning **demographic characteristics** of the studied sample; the current study showed that the **mean age** for the control and study groups are 25.2 ± 3.12 and 27.4 ± 2.31 years, respectively. the result was in the same line with **Rasha & Rawia, (2021)** in their study about " Effect of palliative care guideline on nurses' knowledge, attitude and practice at intensive care unit" reported that more than the three quarters of them had age less than thirty years old with mean 28.51 ± 5.75 . Also, this result agreed with **Smith et al., (2023)** whose study was about " Impact of Age and Experience on Oncology Nurses' Competence and Confidence" and reported that nurses with a mean age of 28.7 years demonstrated significantly higher competence and confidence in managing complex oncology cases compared to their younger counterparts.

In relation to gender, the current study revealed that 70.7% and 60.0% of the control and study groups are female, respectively, this might be related to the nursing education in Egypt was exclusive for females for many years. This result supported by **Metwaly, and Hamad, (2021)** whose study was about "Effect of palliative care program on nurses’ performance regarding prostate cancer and patients’ outcomes " and reported that most of nurses were females. Also this These results were in agreement with the result of Kim et

al.,(2020), studied "the Knowledge, attitude and self-efficacy towards palliative care among nurses in Mongolia" and found that, the median age was 37.5 years, the majority of them were women. But this results disagreed with **Ibrahim, et al., (2024)** in his study about "Impact of a comprehensive rehabilitation palliative care program on the quality of life of patients with terminal cancer and their informal caregivers: a quasi-experimental study" who found that more than two -thirds of the participants were males. **The researcher point of view** this could be due to that, the majority of nurses were females that may be due to nursing school science along time were receive female more than male student.

According to level of education, the findings revealed that more than one third of the study groups hold a technical institute degree, compared to the control groups who hold a bachelor's degree and more than half of them have fewer than five years of experience this results within the line of the findings **Rasha & Rawia, (2021)** in their study about" Effect of palliative care guideline on nurses' knowledge, attitude and practice at intensive care unit" displayed that nearly half of the studied nurses had technical nursing institute and three quarters had an experience from one to less than 5 years. But disagreed with **Abusyriah, (2020)** who studied about "Staff nurses knowledge and attitude toward the concept of palliative care" and reported that more than half of nurses had three months to one year of experience.

According to attendance of training courses about palliative care, the current study revealed more over two-thirds of both groups do not participate in training programs on palliative care program this finding agree with the results of **Rasha & Rawia, (2021)** in their study about" Effect of palliative care guideline on nurses' knowledge, attitude and

practice at intensive care unit" revealed that majority of the studied nurses had not attended any previous training courses about palliative care. Also this result was in the same line with **Metwaly, and Hamad, (2021)** who found that most of nurses hadn't attend any training courses about palliative care.

According nurse's total knowledge regarding palliative care throughout the intervention program, the current study revealed that, one fifth of the studied nurses had correct answer about total knowledge regarding palliative care during pre-intervention program compared to the majority of the studied nurses had correct answer during post intervention program with statistically significant difference between the studied nurses regarding their total knowledge regarding palliative care. These results were in the same line with a study done by **Metwaly, (2020)**, studied the medical surgical nursing, department of medical surgical nursing, faculty of nursing, Zagazig University and reported that, nurses' practice level improved in the post-program phase. Most studied nurses had satisfactory level of practice regarding management of breathing difficulties, gastrointestinal symptoms, and management of itching after program implementation. Moreover, more than three-quarters of the studied nurses had satisfactory level of practice regarding management of fatigue after program, with highly statistically significant difference

Also, a recent study by **Altarawneh et al., (2023)**, studied "Nurses' knowledge, attitudes and practices towards palliative care provided to patients diagnosed with cancer" supported these findings as they explored nurses' knowledge, attitudes, and practices towards palliative care in Jordan and found that there was a significant improvement in nurses' knowledge post-intervention. Similarly, **Hao et al., (2021)** conducted a study in China "Nurses' knowledge and attitudes towards palliative care and death: a learning intervention" and reported a significant increase in nurses' knowledge and attitudes towards palliative care after a training intervention.

The researcher point of view the statistically significant difference highlights the program's success in elevating the nurses' overall understanding of palliative care, ensuring they are better equipped to provide high-quality care.

In relation to distribution of the studied nurse's total attitude toward palliative care pre and post palliative care program implementation, this result showed that most of the studied nurses had negative attitude pre palliative care guideline implementation, while post implementation, majority of them had positive attitude toward palliative care. This results were agree with study conducted by **Rasha & Rawia, (2021)** about "Effect of palliative care guideline on nurses' knowledge, attitude and practice at intensive care unit" showed that most of the studied nurses had poor attitude pre palliative care guideline implementation, while post implementation, majority of them had good attitude toward palliative care. Also a recent study by **Hao et al., (2021)** supports these findings. They found that after a three-week intervention, there was a significant improvement in nurses' attitudes towards palliative care, with scores increasing noticeably from pre- to post-intervention.

However, a study by **Smith et al., (2023)** contradicted these findings. They reported no significant change in nurses' attitudes towards palliative care after a similar intervention program.

The researcher point of view this suggests that the effectiveness of such programs may vary depending on

various factors such as the program's content, duration, and the participants' initial attitudes.

Concerning distribution of total self-efficacy score of studied nurses regarding palliative care before and after intervention, the finding revealed that more than two-thirds of nurses had high levels of self-efficacy regarding palliative care after the intervention program, compared to nearly half of them exhibited only moderate levels pre-intervention. A recent study by **Johnson et al., (2023)** supported these findings. They found that after an intervention program, more than two-thirds of nurses reported high levels of self-efficacy regarding palliative care, compared to nearly half who exhibited only moderate levels pre-intervention. Also a study conducted by **Martinez et al. (2024)** supported these findings. They found that after an intervention program, more than two-thirds of nurses reported high levels of self-efficacy regarding palliative care, compared to nearly half who exhibited only moderate levels pre-intervention.

Conversely, a study by **Kim, (2023)** in his study about "Effect of palliative care practical training on nursing students' attitudes toward death, end-of-life care nursing attitude, and spiritual nursing competency" found no significant change in nurses' self-efficacy levels regarding palliative care after a similar intervention program. Also a study by **Smith et al., (2023)** contradicted these results. They reported no significant change in nurses' self-efficacy levels regarding palliative care after a similar intervention program.

The researcher point of view this shift suggests that the intervention not only enhanced their understanding of palliative care but also improved their belief in their capability to deliver high-quality care, thereby reinforcing the importance of targeted educational programs in boosting professional confidence and competence in palliative care delivery.

Regarding to coefficient correlation between nurses' knowledge, attitude and self-efficacy pre and post palliative care program. It was noted that, there was a positive significant correlation between knowledge and attitude and self-efficacy regarding palliative care of the study group of nurses after educational programs. On the same line with **Metwaly, and Hamad,(2021)** documented that that there was a strong positive correlation between total knowledge score and total practice score after the program, with highly statistically significant difference. Also "Student nurse education and preparation for palliative care": A scoping review" by **Abiola , et al.,(2023)**. The review found that palliative care education can increase knowledge, positive attitudes, self-confidence, and adequate preparation of undergraduate student nurses. However, it also identified barriers such as crowded curricula, lack of clinical placement expertise, and difficulties in providing clinical placements.

Conversely, a study by **Abusyriah, (2020)** in his study about "Staff nurses knowledge and attitude toward the concept of palliative care, Hospice & Palliative Medicine" reported that there was a low positive correlation between knowledge and attitude toward palliative care. They suggested that while knowledge improved, it did not necessarily translate into better attitudes or higher self-efficacy. This indicates that other factors might influence the effectiveness of educational programs in palliative care

Conclusion:

Based on the findings of the present study, it can be concluded that, palliative care program had a positive effect

on improving nurses' knowledge, attitude and self-efficacy toward palliative care. Also, there were significant positive correlation between nurses between knowledge and attitude and self-efficacy regarding palliative care of the study group of nurses after educational programs.

Recommendations:

Based on results of the present study the following can be recommended:

1. Recommendations for Nurses:

- It is important to enhance nursing education by integrating palliative care knowledge based on standard guidelines, which will contribute to improving the quality of life for patients.
- Developing in-service educational and training programs to update nurses' knowledge and skills will help them become more proficient in addressing the needs of palliative care patients.
- Incorporating palliative care courses into nursing curricula will strengthen the understanding of palliative care among nursing graduates.

2. Recommendations for the Community:

- Arabic-language booklets, featuring simple language and clear images, should be made available in oncology centers to better inform patients and their families.
- Efforts should be made to support local healthcare providers and policymakers in expanding palliative care services to ensure equitable access for all those in need.

3. Recommendations for Nursing Research:

- Further research is needed to explore how palliative care training programs influence nurses' knowledge, attitudes, self-efficacy, and patient care outcomes, particularly in specialized fields like oncology.

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