



Impact of palliative care education on nurses' knowledge and attitudes toward care of cancer patients

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Abstract

Background: Palliative care is a crucial component of comprehensive cancer care, focusing on improving patients' quality of life (QoL) by taking care of their emotional, physical, as well as psychosocial needs. Nurses, as primary caregivers, play a central role in delivering this care, especially for patients facing advanced stages of the disease. The aim of the current study was to evaluate the impact of a palliative care education on nurses' knowledge and attitudes toward the care of cancer patients.

Research design: Quasi-experimental research design.

Sample: The study's intervention and control groups were created from a convenience sample of 150 nurses who worked at Minia Oncology Center. Tool (I): A structured interview questionnaire, including Part one: demographic characteristics of the nurses and Part two: assessment of nurses' palliative care knowledge utilized 20-item Palliative Care Quiz for Nursing (PCQN). Tool (II): Nurses' attitudes toward palliative care were assessed utilizing 11-item tool, with 6 positive and 5 negative items.

Findings: There was a significant raising in nurses' knowledge, a positive shift in their attitudes toward end-of-life care. Additionally, significant positive correlations were found between nurses' knowledge as well as attitudes toward palliative care in the study group after the educational program.

Conclusion: The study concluded that the palliative care program positively impacted nurses' knowledge as well as attitudes toward palliative care.

Recommendations: The study recommends ongoing palliative care education for nurses, the inclusion of palliative care in nursing curricula, and providing accessible Arabic booklets in oncology centers it calls for expanding palliative care and studying its impact on nurses and patient outcomes.

Keywords: Attitude, cancer, knowledge, palliative care.

Introduction: Palliative care is an essential aspect of cancer treatment, focused on improving patients' QoL by taking care of their emotional, physical, as well as psychosocial needs. Particularly during advanced stages of the illness. Cancer patients often experience challenging symptoms like pain, fatigue, and emotional distress, which significantly impact their well-being. Nurses, as primary caregivers, are central to providing palliative care, ensuring symptom management, facilitating communication with patients and families, and delivering emotional support^[2].

Many nurses struggle to deliver effective palliative care due to gaps in their knowledge, attitudes, and confidence. These challenges are often intensified by insufficient training and limited exposure to palliative care procedure, especially in oncology settings. To meet the requirements of cancer patients, nurses require a strong foundation in palliative care, including expertise in pain as well as symptom

intervention, communication, and ethical decision-making. Additionally, fostering positive attitudes toward end-of-life care is vital for nurses to feel empowered and competent in addressing the intricate needs of patients with advanced cancer^[25].

Community health nurses fulfill various roles, such as caregiver, educator, advocate, manager, collaborator, leader, and researcher, to meet the needs of individuals, families, and communities. Similarly, palliative care clinical nurse specialists are essential in supporting cancer patients and their families. They assist in managing emotional and practical challenges, facilitate communication, provide vital information, and bring expertise in pain and symptom management. With their specialized skills, these nurses are outfitted to evaluate and address the complex requirements of patients requiring palliative care^[21]. Significance of the research.

Worldwide, above twenty-nine million personnel die each year from conditions needing palliative care, with approximately 20.4 million needing it in their final stages of life. Among those in need, 94% are adults, with 69% aged 60 and older and 25% between 15 and 59 years. Notably, 78% of individuals needing live palliative care in low as well as middle-income countries. Globally, palliative care is essential for 40-60% of all deaths. Most adults needing palliative care face chronic illnesses such as cancer, cardiovascular diseases, chronic respiratory conditions, AIDS, as well as diabetes [10].

The rising prevalence of chronic and severe illnesses worldwide has led to a decline in patients' quality of life, challenges with medication adherence, loss of productivity, increased financial strain, and a significant burden on caregivers. These issues have greatly intensified the global need for palliative care services [22].

In Egypt, palliative care and cancer pain management remain in their infancy, with only a few services available and numerous challenges, such as restricted access to medical opioids. Given that 78% of adults requiring hospice and live palliative care in low as well as middle-income nations, there is a pressing need to expand palliative care services across Egypt to address this critical gap [10-12].

Caring for palliative patients often places significant emotional and physical demands on nurses, making it a challenging task, especially when dealing with terminal or chronic illnesses. The complexities of palliative care can leave many nurses feeling ill-equipped to meet patient needs effectively. Without sufficient training and education in this field, nurses may develop negative attitudes, which can adversely impact the quality of care supplied and ultimately affect patient outcomes [25].

Aim of the Study

This study aimed to evaluate the impact of palliative care education on nurses' knowledge and attitude toward care of cancer patients.

Research hypothesis

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

H2- There will be a significant positive association between nurse's knowledge with their attitude regarding palliative care of cancer patient.

Subject and Methods

Research design

A quasi-experimental research design was utilized to complete the aim of the research.

Setting

The research was carried out at Minia Oncology Center, 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 150 nurses working at Minia Oncology Center was selected, with participant's record to either the study or control group. The study group received the palliative care program, while the control group did not.

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

Two tools were utilized in this research

Tool one: 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 utilized the 20-item PCQN by M. Ross (1996) [16], with three subscales: 1st was Philosophy & Principles (four items), 2nd was Psychosocial & Spiritual Care (three items), and 3rd was Pain/Symptom Management (thirteen items). Responses were "True," "False," or "Don't Know."

Scoring system

Nurses received a score of one for a correct response and zero for a wrong or unknown response. Total scores ranging from 0 to 20 were calculated for each item, and the knowledge score was then divided into:

- The nurses' satisfactory knowledge when equal or more than seventy percent.
- The nurses' unsatisfactory knowledge when less than seventy percent [6].

Tool two: Nurses' attitudes toward palliative care were assessed using an 11-item tool by Ayed *et al.* (2015) [4]. It included 6 positive and 5 negative items, scored on a five-point Likert scale, reverse-scoring for negative items.

Scoring system

A 5-item Likert scale, with 5 representing strongly agree and 1 representing strongly disagree, was used to measure attitude. Five of the items were worded negatively, whereas the first six were worded positively. Each option on the 11-item rating scale had a maximum value of 5, and the maximum attainable score was 55 (100%).

The overall attitude ratings were divided into two categories: Negative attitude when the score less than sixty percent and positive attitude when the score equal or more than sixty percent.

Validity & Reliability

The validity of the instruments was evaluated by a panel of five personal experts in community health nursing and nursing professors, the examined the tools for clarity, pertinence, thoroughness, comprehension, applicability, and ease of use. Based on their feedback, several modifications were made. The internal consistency of the interview questionnaire was evaluated using the Cronbach's alpha value, which yielded a reliability score of 0.79.

Ethical considerations: Prior to conducting the pilot as well as actual studies, official permission as well as consent were taken from the faculty's dean and the director of Minia Oncology Center. The thesis proposal was approved by faculty's ethical committee. Each assessment form was assigned a unique code to maintain privacy and confidentiality, and nurses' names were not included on the forms. Nurses were knowledgeable that they could withdraw from the research at any time, and their data would not be reused without their consent

Procedure of Data Collection: The research was carried out in 4 phases as: 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, with baseline data on knowledge and attitude collected via a questionnaire [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: 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 to evaluate attitudes toward palliative care. Completing each questionnaire took 15-20 minutes.

The evaluation phase included two assessments

- Pretest: The first phase was conducted before the teaching program, utilizing Tools one and two to evaluate the knowledge as well as attitudes of both the study and control groups.
- Posttest: The second phase was conducted three months later, using the same tools to evaluate the influence of the program on the study group only.

Statistical analysis

Data were collected then organized into tables, analyzed, and computerized using (version 28) of SPSS. Both inferential and descriptive statistics were employed to

present the study data. Descriptive statistics were used to express data in terms of numbers as well as percentages, while quantitative data were presented with means +SD. The chi-square test was employed to compare two groups in order to see whether there were any differences between them or to evaluate the relation between two qualitative factors. A p-value of less than 0.05 was deemed statistically significant. Results

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 as well as 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 as well as study groups are married. In relation to their 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. Finally, there were no significant variations between the control as well as study groups in terms of demographic traits.

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) 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.

Table (2) illustrates there are statistically significant variations 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.

Figure 3: 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.

Table (3) shows that there is a positive correlation between total scores of knowledge and attitude regarding palliative care of the study group of nurses after educational programs.

Discussion

Nurses are essential to palliative care because their expertise in symptom management and end-of-life care has a significant impact on the standard of care given to patients in this stage of life. Therefore, the aim of this study is to assess the impact of palliative care education on nurses' knowledge and attitudes toward the care of cancer patients.

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

Demographic traits	Control group		Study group		X ²	P-value
	No	%	No	%		
Age						
20-30	54	72.0	47	62.7	1.934	0.380
>30-40	14	18.7	16	21.3		
>40-50	7	9.3	12	16.0		
>50-60	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		

$p > 0.05$ indicates insignificance, while $p \leq 0.05$ indicates statistical significance. SD stands for Standard Deviation. The Chi-Square test was used to calculate the p-value.

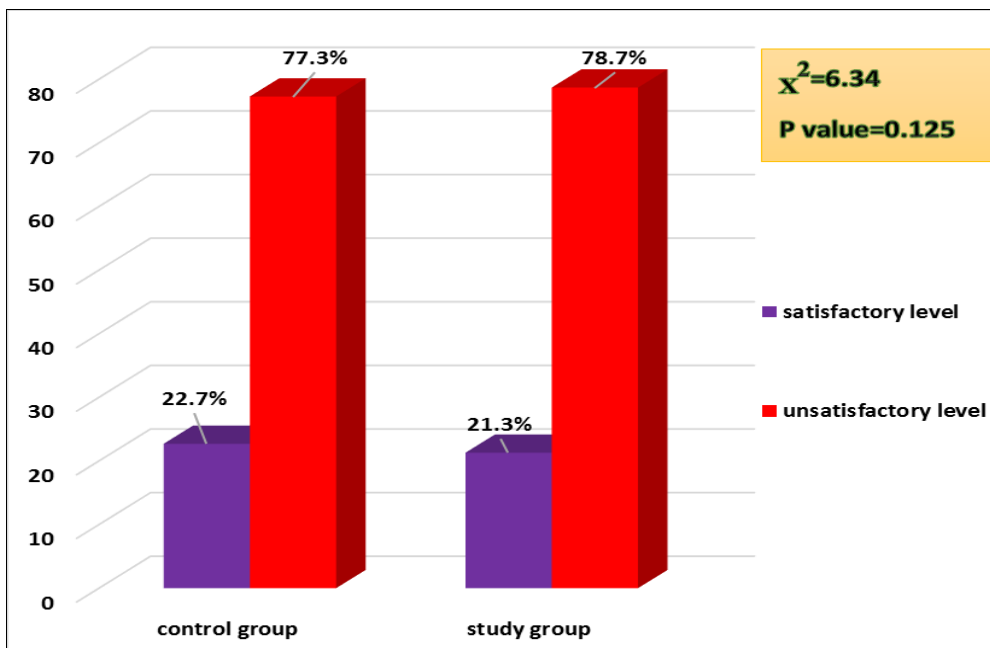


Fig 1: Percentage of total knowledge score for both groups of nurses regarding palliative care at Minia Oncology Center, 2024 (n=150).

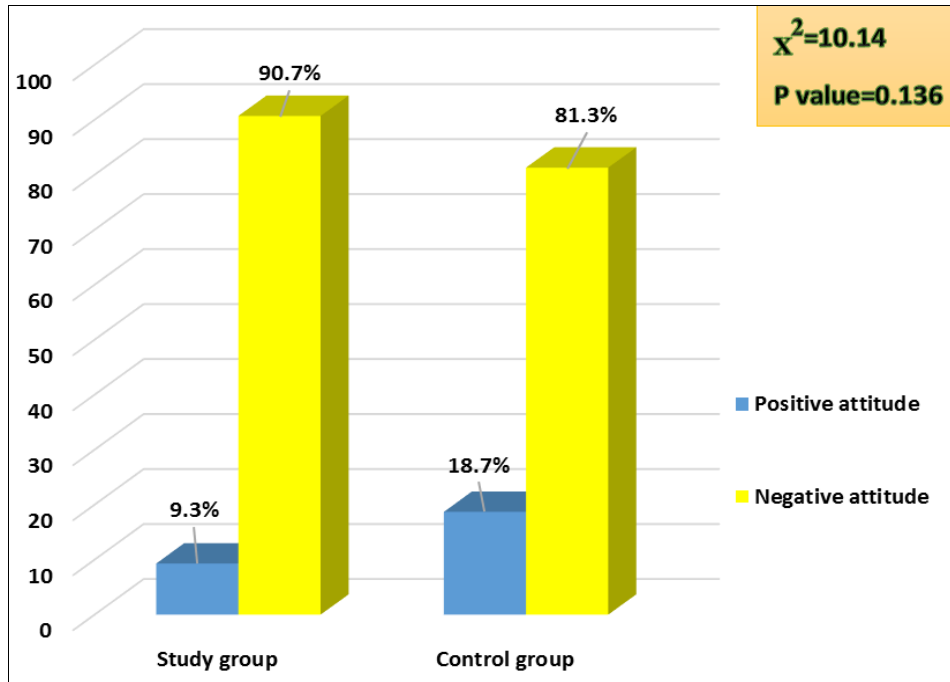


Fig 2: Percentage distribution among study and control group of nurses according to their total attitude score toward palliative care at Minia Oncology Center, 2024 (n=150)

Table 2: comparison of mean scores of nurses' knowledge of palliative care before as well as 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

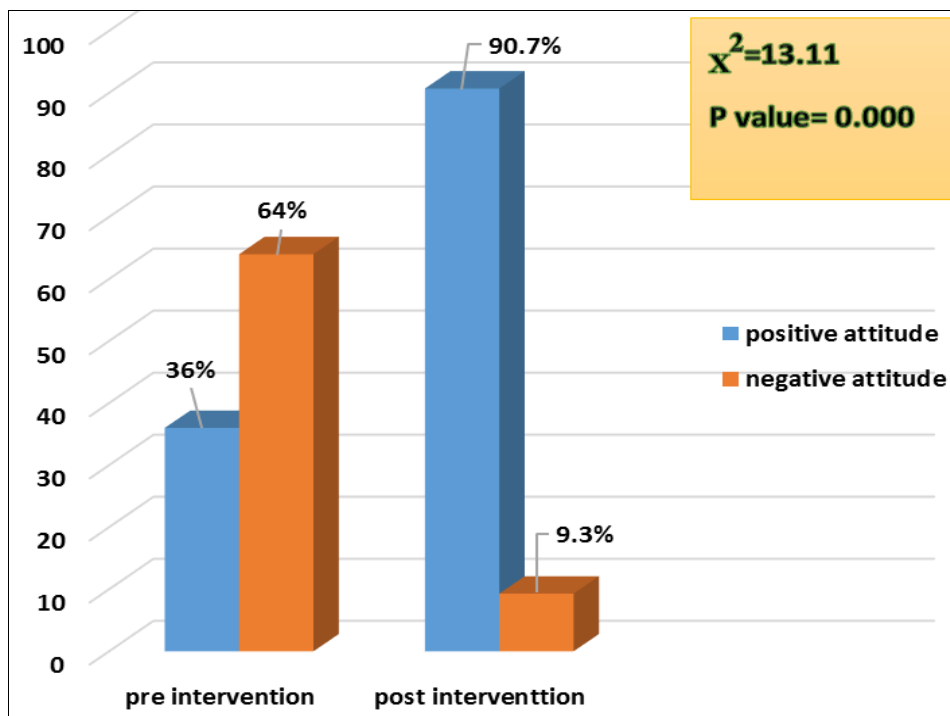


Fig 3: Percentage distribution of total attitude score of nurses regarding palliative care before as well as after intervention at Minia Oncology Center, 2024 (n=75).

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

Items	Knowledge	Attitude
Knowledge r. value (P. value)	1	0.352 (.000) **
Attitude r. value (P. value)	0.352 (.000) **	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.

Regarding the demographic traits of the participants, the current research found that the mean age for the control and study groups were 25.2 and 27.4 years, respectively. This aligns with the findings of Rasha & Rawia (2021) in their study on "Effect of Palliative Care Guidelines on Nurses' Knowledge, Attitude, as well as Practice in the Intensive Care Unit," which reported that over three-quarters of participants were under 30 years old, with a mean age of 28.51±5.75. Additionally, this result is consistent with Smith *et al.* (2023), whose study on "Impact of Age and Experience on Oncology Nurses' Competence and Confidence" found 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 colleagues [24].

Regarding gender, the current study found that 70.7% of the control group and 60.0% of the study group were female, which may be attributed to the fact that nursing education in Egypt has historically been predominantly female. This finding is backed by Metwaly & Hamad (2021) in their study on "Impact of Palliative Care Program on Nurses' Performance related Prostate Cancer as well as Patients' Outcomes," which said that highest number of the nurses were female. Additionally, this result aligns with Kim *et al.* (2020), who researched "The Knowledge, Attitude, as well as Self-Efficacy regard Palliative Care among Nurses" and found that the majority of participants were women, with a median age of 37.5 years. However, these findings opposite with those of Ibrahim *et al.* (2024), who in their study on "Effect of a Comprehensive Rehabilitation Palliative Care Program on the QoL of Patients with Terminal Cancer as well as Their Informal Caregivers" they mentioned that above than two-thirds of the sample were male [12].

The researcher point of view that might be the cause of this, the highest of nurses being female may be because nursing schools historically admitting more female students than male students over the years.

According to level of education, the findings showed that above one-third of the study group held a technical institute degree, whereas the control group had bachelor's degrees. Additionally, over half of the nurses in both groups had fewer than five years of experience. These results are consistent with those of Rasha & Rawia (2021) which found that nearly half of the nurses had a technical nursing institute degree, and three-quarters had between one and five years of experience. However, these results differ from Abusyriah (2020), who in his study on "Staff Nurses' Knowledge as well as Attitude regard the Concept of Palliative Care" justified that above fifty percent of the nurses had between three months and their experience one year [1].

Based on participation in palliative care education programs, the actual study found that over two-thirds of both the study and control groups had not participated in any palliative care training programs. This finding is consistent with the results of Rasha & Rawia (2021) which reported that the majority of the nurses had not attended any prior training on palliative care. Similarly, Metwaly & Hamad (2021) found that highest number of the nurses had not participated in any palliative care training courses [20].

Based on the nurse's overall understanding of palliative care during the intervention program, the actual study found that one-fifth of the nurses correctly answered questions about their overall knowledge of palliative care before the intervention, in contrast to the majority of nurses who provided correct answers after the intervention, with a statistically significant raising in their total knowledge. These results are consistent with those of Metwaly (2020), who carried out research at Zagazig University's Department of Medical Surgical Nursing. Following the training, the majority of nurses showed satisfactory levels of practice in addressing respiratory difficulties, gastrointestinal complaints, and itching, according to Metwaly, who also observed that nurses' practice levels had greatly improved. Additionally, following the program, over 75% of the nurses demonstrated a good degree of practice in managing fatigue, with highly statistically significant variations noted [19].

A recent study by Altarawneh *et al.* (2023) on "Nurses' Knowledge, Attitudes, as well as Practices regard Palliative Care Provided to Patients Diagnosed with Cancer" supported these findings, as it showed a significant improvement in nurses' knowledge post-intervention in Jordan. Similarly, Hao *et al.* (2021) conducted a study in China titled "Nurses' Knowledge as well as Attitudes regard Palliative Care and Death: A Learning Intervention," and reported a notable increase in both nurses' knowledge as well as attitudes regard palliative care after the training intervention [11].

The researcher point of view the statistically significant difference underscores the success of the program in enhancing the nurses' overall understanding of palliative care, ensuring that they are now better equipped to deliver high-quality care.

Regarding the distribution of the nurses' total attitude regard palliative care before as well as after the program implementation, the results showed that most nurses had a negative attitude prior to the palliative care guideline implementation. However, post-implementation, the majority of nurses exhibited a positive attitude toward palliative care. These findings align with the study conducted by Rasha & Rawia (2021) which reported that most nurses had a poor attitude before the guideline implementation, but after the intervention, the majority displayed a positive attitude. Furthermore, a recent study by Hao *et al.* (2021) supports these findings, showing that after a three-week intervention, there was a significant improvement in nurses' attitudes toward palliative care, with scores increasing substantially from pre- to post-intervention [11].

However, a study by Smith *et al.* (2023) contradicted these findings. They reported no a significant change in nurses' attitudes toward palliative care was observed, with a marked shift from a negative to a positive outlook following the

applying of the palliative care program ^[24].

The researcher point of view this suggests that effectiveness such programs may vary depending on various factors such as the program's content, duration, and the participants' initial attitudes.

Regarding the correlation between nurses' knowledge as well as attitude before and after the palliative care program, a positive and significant correlation was found between knowledge and attitude in the study group of nurses following the educational program. This aligns with the findings of Metwaly and Hamad (2021), they found a highly statistically significant variations and a substantial positive link between the program's overall knowledge scores and total practice scores. Similarly, a scoping review by Abiola *et al.* (2023), titled "Student Nurse Education as well as Preparation for Palliative Care" discovered that undergraduate student nurses' knowledge, preparation, positive attitudes, and self-confidence can all be improved by palliative care education. But the evaluation also pointed major obstacles include overburdened curricula, a lack of experience with clinical placements, and difficulties in offering clinical placements ^[7].

Conversely, a study by Abusyriah (2020) they reported a low positive correlation between knowledge and attitude toward palliative care. The study suggested that while knowledge improved, it did not necessarily result in better attitudes or higher self-efficacy. This implies that other factors may play a role in determining the effectiveness of educational programs in palliative care ^[1].

Conclusion

Based on the findings of this research, it can be summarized that palliative care education positively impacted nurses' knowledge as well as attitude regard palliative care. Additionally, a significant positive correlation was found between nurses' knowledge as well as attitude toward palliative care in the study group after the educational program.

Recommendations

This research's findings allow for the following recommendations to be made

Recommendations for Nurses

- It is important to enhance nursing education by integrating palliative care knowledge and practices based on standard guidelines, this will improve patients' quality of life by providing better care.
- 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.

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.

Recommendations for further Nursing Research

More studies are required to investigate how nurses' knowledge, attitudes, and patient outcomes—particularly in oncology—are affected by palliative care training.

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