

Effect of Palliative Care Training Package on Nurses' Performance regarding Gynecologic Cancer

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Abstract

Palliative care is currently crucial in nursing care, thus, continuing education in palliative care for practicing nurses is necessary for improving care with a life-limiting illness such as gynecologic cancer. **Aim** of the study was to investigate the effect of palliative care training package on nurses' performance regarding gynecologic cancer. **Sample:** A convenient sample of 43 nurses. **Research Design:** A quasi-experimental (pre-test and post-test) design. **Setting:** This study was conducted in the Gynecological Oncology Unit of the Maternity Hospital, the department of Gynecology, Outpatient Clinics of the Radiation Oncology and Nuclear Medicine Center at Ain Shams University. **Tools of data collection:** three tools were utilized including 1) a self-administered questionnaire that encompassed two parts demographic characteristics and assessment of nurses' knowledge regarding gynecologic cancer palliative care. 2) Nurses' attitude towards gynecologic cancer palliative care. 3) observational checklist for nurses' practice. **Results:** More than three-quarters of studied nurses had poor knowledge, the majority had a negative attitude and unsatisfactory practice regarding gynecologic cancer palliative care before the training package. However, after one month of the training package, nearly the majority of nurses had good knowledge, a positive attitude, and satisfactory practice. A statistically positive correlation between total knowledge, attitude, and practice scores regarding palliative care for gynecological cancer before and after training package ($P \leq 0.01$). **Conclusion:** The training package had a favorable effect on nurses' performance regarding gynecologic cancer palliative care. **Recommendation:** Continuous in-service training on palliative care for nurses is essential to improve performance in the care of women with gynecological cancer.

Keywords: Gynecologic Cancer, Nurses, Palliative Care, Performance, Training Package

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Introduction

Gynecologic cancer is the second leading cause of morbidity in women worldwide, after breast cancer globally. Despite intensive treatment, most women diagnosed with gynecologic cancer experience recurrence and die (Uslu-Sahan and Terzioglu, 2017). Gynecological cancers, which comprise cancers of the uterus, ovaries, fallopian tubes, cervix, vulva, and vagina, are among the main causes of cancer-related mortality globally, with varying distribution and frequency. About 10% of all malignancies diagnosed in women are caused by these cancers (Hailu et al., 2020).

Furthermore, gynecologic cancer constitutes a considerable portion of the cancer burden, particularly in developing countries, and are possibly the major cause of morbidity

and mortality among women in these countries. Diagnostics and treatment procedures for gynecological cancer may be insufficient, and symptoms-related cancer may adversely impact woman's and family's quality of life. In this regard, interest in palliative care, which provides a holistic approach to women with gynecologic cancer, has increased (Reb and Cope, 2019).

The prevalence of gynecologic cancers is rising in low-and middle-income countries, with frequently advanced and requiring intensive symptom management, highlighting the urgent need for palliative care. Not only does early integration of palliative care reduce depressive symptoms, and increase symptoms control, but early integration of palliative care

may also have the paradoxical effect of prolonging survival (Cain and Denny, 2018).

Landrum et al., (2015) reported that palliative care is a philosophy of care that aims to improve women's quality of life by effectively managing pain and other symptoms considering women's values, beliefs, and culture. Moreover, World Health Organization describes palliative care as "services designed to prevent and alleviate the suffering of women facing life-threatening illness, through earlier detection, correct assessment and management of pain and other problems, whether physical, psychosocial or spiritual" (World Health Organization, 2018).

Palliative care is becoming more widely acknowledged as an integral aspect of treating cancer, preventing unnecessary hospitalization, and health services utilization. Palliative care should begin early in the treatment of women with gynecologic malignancies and evolve as the disease progresses (Wadhwa et al., 2018). As cancer survival rates improve, more women are requesting high-quality palliative care (Park et al., 2019).

Recently, palliative care has been accepted as an appropriate treatment option to begin diagnosing any life-threatening illness including cancer, rather than starting within a few weeks or days of death (Abusyriah, 2020). The need for palliative care has increased as the focus of healthcare has shifted from cure to care, resulting in prolonging life (Alkhalailah, 2021).

Nurses play a crucial role in providing palliative care, but nurses, as well as other health care providers, need training and education about palliative care to achieve desired goals. The attitudes of nurses toward palliative care are influenced by experiences, knowledge, beliefs, and training (Leadbeater, 2018; Alshaikh et al., 2015).

In addition, nurses' attitude and knowledge of palliative care reflect the awareness and competence of nurses' performance to provide high-quality palliative care (Smets et al., 2018). Therefore, nurses must be highly skilled in palliative care through managing pain and symptoms, communicating about serious illnesses,

raising awareness of treatment options and matching goals with those alternatives, as well as supporting family caregivers (Schroeder and Lorenz, 2018).

Significance of the study:

Gynecological cancer is major diseases affecting women worldwide, with an annual incidence of 14.5 to 22.1 percent (Raphaelis et al., 2017). There were an estimated 1,085,948 women diagnosed with gynecological cancer over the world, nearly half of them dying from the disease (Uslu-Sahan and Terzioglu, 2017). There is no reliable estimate of gynecological cancer in Egypt. However, according to the Global Cancer Observatory (GLOBOCAN) 2020 database, the incidence and mortality rate of cancer per 100,000 women in Egypt over the last 5 years was estimated to be ovary cancer (13.54 percent), followed by corpus uteri (9.96 percent), cervix uteri (6.30 percent), vulva (1.13 percent), and vagina (0.13 percent) (International Agency for research on cancer, 2021). The overall number of women diagnosed with gynecologic cancer is rising, and the expected rise in cases will necessitate more services and resources for survival care (Beesley et al., 2018). An effective nurse-woman relationship requires aspects of attitude, interpersonal communication, and comprehensiveness of nursing care that go beyond clinical tasks and procedures (Feo et al., 2017). This necessitates nurses possessing a balanced combination of knowledge, skills, and positive attitude sensitively, meaningfully, and dynamically (Achora and Labrague, 2019). Recently, there has been a focus on integrating palliative care into oncology care, particularly in the early stages of cancer diagnosis (Ferrell et al., 2017).

On the contrary, lack of training and awareness of palliative care among health professionals is a major obstacle to improving care (Ragnhild and Tveit, 2018). Because of this, initiatives have been launched to recommend palliative care as a necessity for nursing care and training (Balicas, 2018). It is vital to integrate knowledge, skills, and favorable attitudes toward palliative care to deliver effective and high-quality palliative care (Sekse et al., 2018).

The typical care provided during cancer therapy focuses on procedures, side effects, and the treatment process rather than the symptoms and management that occur. So, a more comprehensive approach is needed to assist women to manage symptoms. The knowledge and skills of palliative care among nurses will certainly influence the quality of care provided to women with life-threatening diseases such as cancer. Furthermore, to the best of our knowledge, in Egypt and recent literature, the performance of nurses concerning palliative care for caring women with gynecologic cancer has not previously been examined. Hence, the current study was carried out.

Aim of the study:

The present study aimed to investigate the effect of palliative care training package on nurses' performance regarding gynecologic cancer. This aim was achieved through:

- Assessing nurses' knowledge, attitude, and observed practice regarding palliative care for women with gynecologic cancer.
- Designing and implementing palliative care training package according to actual nurses' training needs.
- Evaluating the effect of palliative care training package on nurses' knowledge, attitude, and observed practice.

Research Hypotheses:

H1. Nurses who have received a palliative care training package regarding gynecologic cancer will exhibit higher knowledge significantly than before the training package.

H2. Nurses who have received a palliative care training package regarding gynecologic cancer will exhibit a positive attitude significantly than before the training package.

H3. Nurses who have received a palliative care training package regarding gynecologic cancer will exhibit improved observed practice significantly than before the training package.

Operational definitions:

Performance: It means knowledge, attitude, and practice of the nurses regarding palliative care for women with gynecologic cancer.

Training package: Is considered as a well-prepared educational means for providing nurses with theoretical, cognitive, psychomotor, technical, and interpersonal skills related to comprehensive palliative care for women with gynecologic cancer.

Subject and Methods

Research design

A quasi-experimental (pre-test and post-test) research design was utilized to achieve the aim of the study. In the absence of randomization, the quasi-experimental design is mostly used to evaluate the impact of interventions (**Barnighausen et al., 2017**).

Setting:

This study was conducted in the Gynecological Oncology Unit of the Maternity Hospital, as well as the department of Gynecology, Outpatient Clinics of the Radiation Oncology and Nuclear Medicine Center at Ain Shams University.

Sample:

A convenient sample of 43 nurses represented the available nurses working in the two previously mentioned settings at the time of data collection

Tools of data collection:

Three tools were used by the researchers to collect the data of the current study.

Tool I: A Self-administered questionnaire:

This questionnaire was designed by the researchers after reviewing the relevant literature (**Aboshaiqah, 2019; Harden et al., 2017; Ayed et al., 2015**). It was written in the Arabic language in the form of closed-ended questions, it encompassed two major parts as the following:

Part 1: Demographic characteristics of the studied nurses included age, level of education, years of experience, and previous training in gynecologic cancer palliative care.

Part 2: Assessment of nurses' knowledge regarding gynecologic cancer palliative care before and after one month of the training package, consisted of (3) sections:

Section (1): General knowledge about gynecologic cancer, consisted of (8) multiple-choice items (definition of gynecologic cancer, types, risk factors, signs and symptoms, diagnosis, complications, different methods of treatment, and adverse effects of treatments).

Section (2): Nurses' knowledge about palliative care, consisted of (7) multiple-choice items (definition of palliative care, philosophy, principles of palliative care, appropriate time of palliative care, palliative care team, misconceptions about palliative care, and role of nurses in palliative care).

Section (3): Nurses' knowledge regarding gynecologic cancer palliative care, consisted of (10) multiple-choice items (non-pharmacological and pharmacological methods of pain relief related to gynecologic cancer, methods of relieving physical symptoms "constipation, nausea, vomiting, anorexia, and fatigue" as well as methods of relieving psychological symptoms "anxiety, fear, loss of body image").

Scoring system: Each item was given a score of (3) for a completely correct answer, a score of (2) for an incompletely correct answer, while a score of (1) when the answer was "I don't know". The total score for each section was obtained by summing the scores of its items. The total score of knowledge was calculated by the addition of the total score of all sections. Total knowledge score ranges from 25 to 75, the mean and standard deviation was calculated, with a higher score implies higher knowledge level. In addition, the nurses' total knowledge score was converted into percent and graded as the following: poor when the total score was < 60% (equal 1-44 score), average when the total score was $60 < 75\%$ (equal 45-56 score), and good when the total score was $75 \leq 100\%$ (equal 57-75 score).

Tool II: Nurses' attitude towards gynecologic cancer palliative care:

This tool was developed by the researchers based on literature review (Parveen et al., 2020; Farmani et al., 2018; Das and Haseena, 2015), to assess nurses' attitude towards palliative care before and after one month of the training package. It is composed of 13 positively and negatively worded items.

Scoring system: Each item was measured on a three-point Likert scale; (3) for agree, (2) for neutral, and (1) for disagree. For negative items the score was reversed. The total attitude score was calculated by summing up all items ranging from 13 to 39. The total level of attitude was categorized as a negative attitude <60% of the total score (equal 1-23 score), and a positive attitude $\geq 60\%$ of the total score (equal 24-39 score).

Tool III: An observational checklist for nurses' practice:

This tool was developed by the researchers after reviewed literature (Anyanwu and Agbedia, 2020; Roy and Ramchandran, 2020; Zeru et al., 2020a), and was applied by researchers to assess nurses' practice during the care of women with gynecologic cancer before and one month after the training package. It consisted of eight procedures observational checklists concerning appropriate assessment for women with gynecological cancer (15 steps), verbal and nonverbal communication during palliative care provided (8 steps), providing non-pharmacological pain management for women with gynecological cancer (9 steps), managing physical symptoms "constipation, nausea, vomiting, anorexia, and fatigue" (30 steps), psychosocial support offered during palliative care (8 steps), applying ethical standards during palliative care (6 steps), providing education about prescribed and pharmacological treatment (7 steps), and managing psychological symptoms "anxiety, fear, loss of body image" (15 steps).

Scoring system: Each step was scored as (2) for done, and (1) for not done. Then summing up the scores of the steps in each procedure and the overall scores of eight procedures gave practice scores. The total scores range from 98 to 196. The total level of practice was categorized as unsatisfactory practice < 75 % of total practice score (equal 1-146 score), and satisfactory practice $\geq 75\%$ of total practice score (equal 147 -196 score).

Validity and reliability:

The designed tools and booklet were checked for content validity by a panel of two experts in obstetric and woman health nursing, two experts in the field of community health

nursing, and one expert in obstetric and gynecologic medicine. Required modifications have been made following experts' judgment regarding clarity of sentences, comprehensiveness, and appropriateness of the contents. The experts agreed with the contents of the package but suggested minor wording adjustments to make the information clearer and more accurate.

Reliability of the tools was tested by using Cronbach's alpha, the internal consistency of nurses' knowledge was 0.91, nurses' attitude towards gynecologic cancer palliative care was 0.78, and an observational checklist for nurses' practices was 0.89, which is acceptable.

Ethical considerations:

The researchers taken into consideration common ethical principles in research at all stages of the study; the aim and nature of the study were clarified by the researchers to all nurses included in the study, then verbal informed consent was obtained from each nurse, ensuring strict confidentiality of any information obtained. Nurses were informed that participation is voluntary and the right to refuse or withdraw at any time, as well as each nurse, was informed no harm could be anticipated from the study. Also, the anonymity of the nurses was maintained.

Pilot study

A pilot study was conducted on 10% of the total sample (four nurses) to assess the clarity, objectivity, applicability, and feasibility of the study tools. As well as to estimate the time required to complete each tool and detect any potential obstacles that researchers may encounter and interfere with data collection. No modifications were done, and nurses participating in the pilot study were included in the main study sample.

Fieldwork

The study was carried out from the beginning of September 2020 and completed at the end of April 2021 for eight months. Official approvals were taken from the Dean of Faculty of Nursing to the Director of the above-mentioned settings. The researchers visited the study settings twice-weekly (Saturday and Monday) from 9 am to 1 pm. The study was

implemented through assessment, planning, implementation, and evaluation phases.

Assessment phase: At the beginning of the interview, the researchers greeted and introduced themselves to each eligible nurse individually, provided the nurse with thorough information about the study (aim, significance, nature, and phases) to gain confidence and cooperation, and then took verbal informed consent to participate in the study. Nurses were given Tools I and II to fill out to collect data about demographic characteristics and assess the level of nurses' knowledge and attitude regarding gynecologic cancer palliative care. The researchers used the observation checklists (Tool III) to determine nurses' practice in caring for women with gynecologic cancer. Approximately the time required to complete the tools was about 45- 50 minutes; Tool (I) took 15 minutes, Tool (II) took 10 minutes, and Tool (III) took 25 minutes. The average number of nurses interviewed each day was 4-5 nurses.

Planning phase: Based on the baseline data from studied nurses obtained before implementing the training package and using the relevant current literature. The training package was constructed by the researchers to improve the studied nurses' knowledge, attitude, and practice related to palliative care necessary for women with gynecological cancer. Choosing the appropriate teaching methods in the form of (interactive lecture, small-group discussion, demonstration, and re-demonstration) and choosing the appropriate teaching media in the form of (designed illustrated booklet, PowerPoint presentations, and training videos for practical skills).

Implementation phase: The training package was covered by 12 sessions, 4 sessions for the theoretical part, and 8 sessions for practice. The sessions were given to ten groups of the studied nurses, each of which consisted of (4-5) nurses. Each session was implemented for each group separately according to the working conditions and the physical and mental readiness of the nurses. The duration of each theoretical session ranged from 30-40 minutes, and the duration of each practical session ranged from 45-60 minutes, including discussion periods based on feedback and achievement.

At the beginning of the first session, an orientation of the training package covering the aim, contents, and schedule of the training was presented. The Arabic language was used to suit the nurses' level of understanding. A summary and feedback from previous sessions, as well as the objectives of the new one, were delivered at the start of each session.

The theoretical part of the training package covered nurses' knowledge about gynecologic cancer, the definition of gynecologic cancer, types, risk factors, signs and symptoms, diagnosis, complications, different methods of treatment, and adverse effects of treatments. Also, definition of palliative care, philosophy, principles of palliative care, appropriate time of palliative care, palliative care team, misconceptions about palliative care, role of nurses in palliative care, non-pharmacological and pharmacological methods of pain relief related to gynecologic cancer, methods of relieving physical and psychological symptoms.

The practical part of the training package, covered (8) procedures observational checklists concerning appropriate assessment for gynecological cancer women, verbal and nonverbal communication during palliative care provided, providing non-pharmacological pain management for women with gynecological cancer, managing physical symptoms "constipation, nausea, vomiting, anorexia, and fatigue", psychosocial support offered during palliative care, applying ethical standards during palliative care, providing education about prescribed and pharmacological treatment, and managing psychological symptoms "anxiety, fear, and loss of body image".

The training package, which included the theoretical and practical contents of the sessions, was distributed to the participating nurses in the form of a designed illustrated booklet on the first day of the training. Nurses were motivated and encouraged to cooperate and actively participate in the study throughout its different phases.

Evaluation phase: After one month of the training package, the same format of Tool I part 2, Tool II, and Tool III were used to evaluate the effect of the training package on nurses' knowledge, attitude, and practice.

A comparison was made between the results of both before and after the training package implementation.

Statistical Design:

Data analysis was performed using the Statistical Package for Social Sciences (SPSS version 26.0). Descriptive statistics (frequency, percentage, mean and standard deviation), inferential statistics (Chi-square, Fisher's exact test, and paired t-test). The correlation coefficient was calculated between study variables. Notably, a P-value of 0.05 was considered a statistically significant difference, as well a P-value of 0.001, was considered a highly significant difference.

Limitations of the study:

There were three limitations to this study; First, sometimes interviews with nurses and sessions were postponed due to the nurses' workload. Second, interruptions by other members of the staff whilst conducting sessions required longer time and more effort. Finally, the scarcity of published local scientific literature relating to the chosen area of research.

Results:

Table (1) shows that 62.8% of the studied nurses were between the ages of 25 and 30, with a mean age of 27.51 ± 4.40 years. Regarding the level of education, 58.1% had a diploma in the technical institute of nursing, while 18.6% had a diploma in secondary nursing. More than half 55.8% of studied nurses had $5 < 10$ years of experience, whereas 14.0% had less than 5 years with a mean \pm SD was 9.81 ± 5.14 years. All nurses didn't receive training in palliative care.

Table (2) indicates that there was a highly statistically significant difference in mean scores of nurses' knowledge regarding gynecologic cancer palliative care before and after one month of the training package ($P \leq 0.001$). There was increased mean knowledge scores after one month of the training package compared to before related to gynecologic cancer 19.63 ± 1.36 versus 12.44 ± 2.21 , palliative care 15.97 ± 1.41 versus 7.78 ± 1.52 , gynecologic cancer palliative care 26.84 ± 2.11 versus 11.46 ± 2.31 and mean total

knowledge score 62.39 ± 3.27 versus 31.72 ± 5.48 respectively.

Figure (1) illustrates that before the training package 76.7% of studied nurses had poor knowledge, and 4.7 % of studied nurses had good knowledge regarding palliative care for gynecological cancer. Whereas, after one month of the training package, 83.7% of the nurses had good knowledge regarding palliative care for gynecological cancer.

Table (3) displays that there was a statistically significant difference in all items of nurses' attitudes towards gynecologic cancer palliative care before and after one month of the training package ($P \leq 0.05$ and $P \leq 0.001$).

Figure (2) shows that 88.4% of the studied nurses had a negative attitude towards gynecologic cancer palliative care, while 11.6% had a positive attitude before the training package. Meanwhile, after one month of the training package, the positive attitude changed to 81.4% of studied nurses, while 18.6% had a negative attitude.

Table (4) clarifies that 25.6 %, 34.9 %, 20.9 %, 18.6 %, 32.6 %, 37.2 %, 11.6 %, and 7.0 % of the studied nurses had satisfactory practice before training package. On the other hand, after one month of the training package, 76.7%, 72.1%, 60.5%, 69.8 %, 58.1 %, 86.0 %, 74.4 %, and 67.4 % of the studied nurses had satisfactory practice regarding appropriate assessment for women with gynecological cancer, verbal and nonverbal communication during palliative care provided, providing non-pharmacological pain management for women with gynecological cancer, managing physical symptoms (constipation, nausea and vomiting, anorexia, and fatigue), psychosocial support offered during palliative care, applying ethical standards during palliative care, applying ethical standards during palliative care, and managing psychological symptoms (anxiety, fear, loss of body image) respectively. There was a statistically significant difference before and after one month of the training package concerning all observed practices of nurses regarding gynecologic oncology palliative care.

Figure (3) illustrates that before the training package, 14.0% and 86.0% of the studied nurses had satisfactory and unsatisfactory practices relating to palliative

care for women with gynecologic cancer respectively. While after one month of the training package, 79.1% and 20.9% of the studied nurses had satisfactory and unsatisfactory practice concerning palliative care for women with gynecologic cancer respectively.

Table (5) denotes that a statistically positive correlation between total knowledge, attitude, and practice scores regarding palliative care for gynecological cancer before and after one month of the training package ($P \leq 0.01$).

Table (6) displays a statistically positive correlation between total attitude and practice scores regarding palliative care for gynecological cancer before and after one month of the training package ($P \leq 0.01$).

Table (7) presents a statistically positive correlation between studied nurses' total knowledge, attitude, practice scores regarding palliative care for gynecological cancer and demographic characteristics in terms of age, level of education, and years of experience before and after one month of training package at p-value = 0.05 and 0.01 levels.

Table (1): Distribution of the Studied Nurses' According to Demographic Characteristics (n=43)

Demographic characteristics	No.	%
Age (years)		
20 < 25	11	25.6
25 < 30	27	62.8
≥ 30	5	11.6
Mean ± SD	27.51 ± 4.40	
Level of education		
Diploma secondary nursing	8	18.6
Diploma technical institute of nursing	25	58.1
Bachelor's degree in nursing	10	23.3
Years of experience		
< 5	6	14.0
5 < 10	24	55.8
≥ 10	13	30.2
Mean ± SD	9.81 ± 5.14	
Training about palliative care		
No	43	100.0

Table (2): Comparison of Mean Knowledge Scores of the Studied Nurses' Regarding Gynecologic Cancer Palliative Care Before and After One Month of Training Package (n=43)

Phases Knowledge about	Before training package n=43	After one month of training package n=43	Paired t test	P-value
	Mean ± SD	Mean ± SD		
Gynecologic cancer	12.44 ± 2.21	19.63 ± 1.36	22.730	0.000**
Palliative care	7.78 ± 1.52	15.97 ± 1.41	23.356	0.000**
Gynecologic cancer palliative care	11.46 ± 2.31	26.84 ± 2.11	33.249	0.000**
Total	31.72 ± 5.48	62.39 ± 3.27	30.427	0.000**

**A highly statistically significant difference ($P \leq 0.001$)

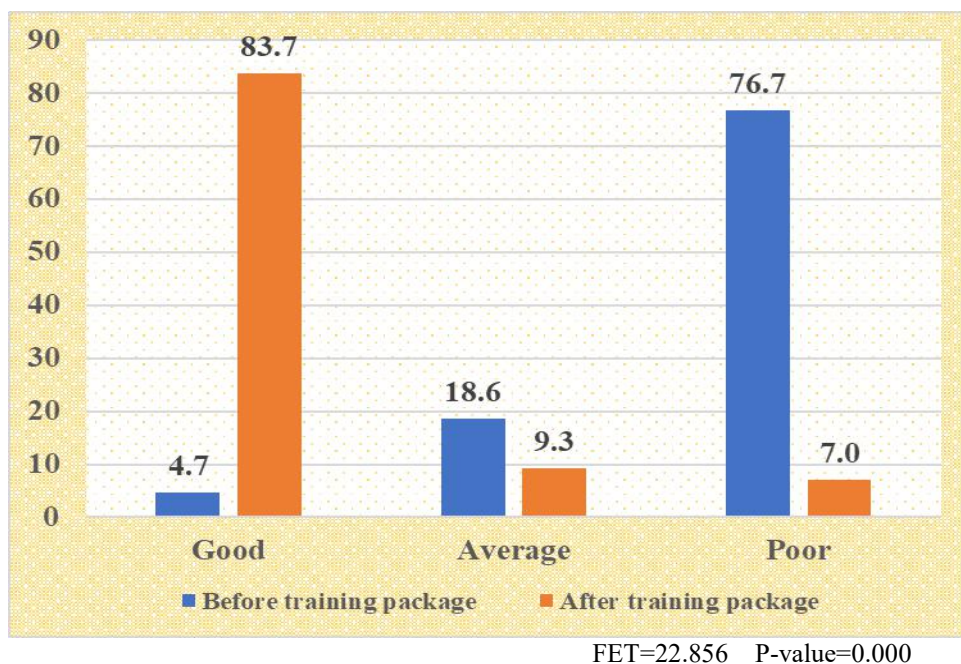


Figure (1): Distribution of Studied Nurses' Total Knowledge Levels about Palliative Care for Gynecological Cancer Before and After One Month of Training Package (n=43)

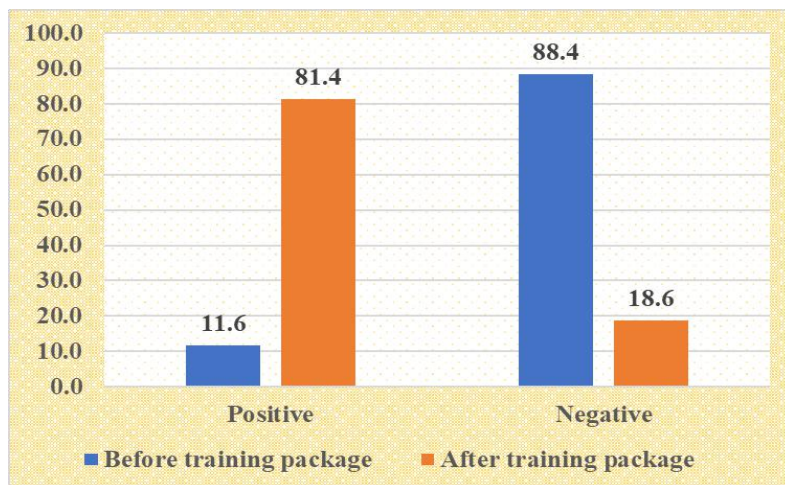
Table (3): Percentage Distribution of the Studied Nurses' Attitude Towards Gynecologic Cancer Palliative Care Before and After One Month of Training Package (n=43)

Phases Attitude items about palliative care	Before training package n=43			After one month of training package n=43			X ² / FET	P-value
	Agree	Neutral	Disagree	Agree	Neutral	Disagree		
	%	%	%	%	%	%		
Necessary for women with gynecologic cancer.	4.7	11.6	83.7	81.4	18.6	0.0	66.125 [€]	0.000**
Appropriate only in cases where there is a clear deterioration regression.	23.3	32.6	44.1	34.9	48.8	16.3	7.938	0.019*
Should consider the spiritual requirements and cultural values of women with gynecologic cancer.	20.9	51.2	27.9	86.1	11.6	2.3	32.443 [€]	0.000**
Effective in pain and symptoms management.	34.9	53.5	11.6	79.0	14.0	7.0	17.833 [€]	0.000**
Should be provided simultaneously with anti-cancer treatment.	16.3	25.6	58.1	69.8	30.2	0.0	39.464 [€]	0.000**
Recommended for women with gynecological cancers at the first visit.	0.0	30.2	69.8	67.4	18.6	14.0	46.190 [€]	0.000**
Improve survival of gynecological cancer women.	25.6	41.8	32.6	76.7	23.3	0.0	27.286 [€]	0.000**
Early palliative care can dramatically improve quality of life for women with gynecological cancer.	34.9	46.5	18.6	88.3	7.0	4.7	26.146 [€]	0.000**
Providing palliative care to women with gynecologic cancer is a worthwhile educational experience.	37.2	55.8	7.0	83.7	16.3	0.0	20.015 [€]	0.000**
Disclosure enables women with gynecological cancer to better collaborate with nurses in palliative care.	46.5	39.5	14.0	74.4	18.6	7.0	7.128 [€]	0.028*
Gynecological cancer women should be informed of poor prognosis.	11.6	37.2	51.2	65.1	20.9	14.0	27.133	0.000**
Help women with gynecological cancer and family to be the decision-makers.	18.6	58.1	23.3	72.1	27.9	0.0	28.132 [€]	0.000**
Addiction to pain relieving medications should not be a nursing concern when dealing with a woman with gynecological cancer.	2.3	81.4	16.3	60.5	37.2	2.3	31.551 [€]	0.000**

*A statistically significant difference (P ≤ 0.05)

**A highly statistically significant difference (P ≤ 0.001)

€ FET= Fisher Exact Test



$X^2=23.124$ P-value=0.000

Figure (2): Distribution of the Studied Nurses Levels of Total Attitude Towards Gynecologic Cancer Palliative Care Before and After One Month of Training Package (n=43)

Table (4): Percentage Distribution of the Studied Nurses’ Observed Practices Regarding Gynecologic Cancer Palliative Care Before and After One Month of Training Package (n=43)

Phases Observed practice items	Before training package n=43		After one month of training package n=43		X ² / FET	P-value
	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory		
	%	%	%	%		
- Appropriate assessment for women with gynecological cancer.	25.6	74.4	76.7	23.3	18.615	0.000**
- Verbal and nonverbal communication during palliative care provided.	34.9	65.1	72.1	27.9	11.913	0.001**
- Providing non-pharmacological pain management for women with gynecological cancer.	20.9	79.1	60.5	39.5	12.334	0.000**
- Managing physical symptoms (constipation, nausea and vomiting, anorexia, and fatigue).	18.6	81.4	69.8	30.2	22.820	0.000**
- Psychosocial support is offered during palliative care.	32.6	67.4	58.1	41.9	5.677	0.017*
- Applying ethical standards during palliative care.	37.2	62.8	86.0	14.0	25.487	0.000**
- Providing education about prescribed and pharmacological treatment.	11.6	88.4	74.4	25.6	34.580	0.000**
- Managing psychological symptoms (anxiety, fear, loss of body image).	7.0	93.0	67.4	32.6	33.644 [€]	0.000**

*A statistically significant difference (P ≤ 0.05)

**A highly statistically significant difference (P ≤ 0.001)

€ FET= Fisher Exact Test

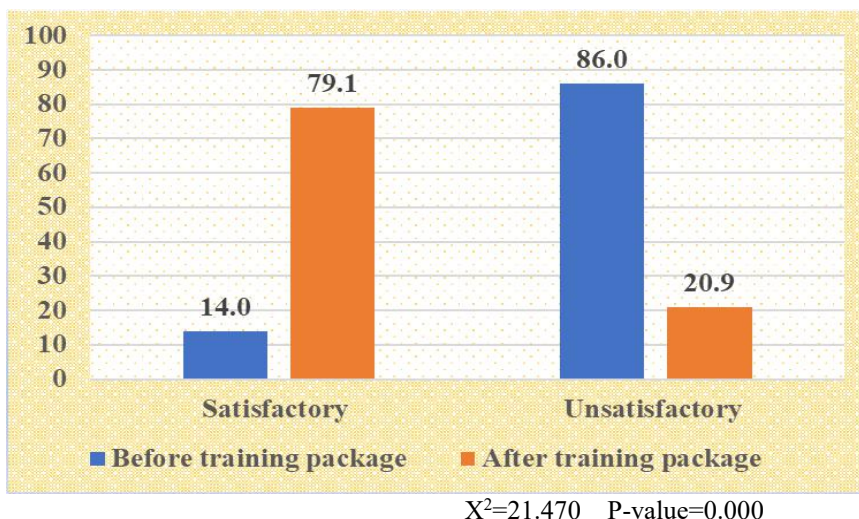


Figure (3): Distribution of The Studied Nurses’ Levels of Total Observed Practices Regarding Palliative Care for Women with Gynecologic Cancer Before and After One Month of Training Package (n=43)

Table (5): Correlation between Studied Nurses’ Total knowledge, Attitude, and Observed Practice Scores Regarding Palliative Care for Gynecological Cancer Before and After One Month of Training Package (n=43)

Variable	Total knowledge scores			
	Before training package n=43		After one month of training package n=43	
	r	P value	r	P-value
Total attitude score	0.579	0.000**	0.625	0.000**
Total practice score	0.682	0.000**	0.740	0.000**

**Correlation is highly significant at the 0.01 level

Table (6): Correlation between Studied Nurses’ Total Attitude and Practice Scores Regarding Palliative Care for Gynecological Cancer Before and After One Month of Training Package (n=43)

Variable	Total attitude scores			
	Before training package n=43		After one month of training package n=43	
	r	P-value	r	P-value
Total practice score	0.675	0.000**	0.663	0.000**

**Correlation is highly significant at the 0.01 level

Table (7): Correlation between Studied Nurses' Total Knowledge, Attitude, Practice Scores Regarding Gynecologic Cancer Palliative Care and Demographic Characteristics Before and After One Month of Training Package (n=43)

Total Nurses' scores of	Phases	Age		Level of education		Years of experience	
		r	P-value	r	P-value	r	P-value
Knowledge	Before training package n=43	0.346	0.023*	0.322	0.035*	0.379	0.012*
	After one month of training package n=43	0.475	0.001**	0.453	0.001**	0.324	0.034*
Attitude	Before training package n=43	0.359	0.018*	0.472	0.001**	0.518	0.000**
	After one month of training package n=43	0.582	0.000**	0.388	0.010*	0.529	0.000**
Observed practices	Before training package n=43	0.489	0.001**	0.339	0.026*	0.573	0.000**
	After one month of training package n=43	0.466	0.002*	0.423	0.005*	0.590	0.000**

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Discussion:

Palliative care is one of the most significant building blocks in fighting cancer and improving quality of life, and nurses need to perform well in terms of palliative care. Inadequate knowledge, unsatisfactory practice, and negative attitude towards palliative care among nurses are the prevalent barriers to quality palliative care (World Health Organization, 2019). The most crucial factors that influence the successful delivery of palliative care are the knowledge, attitudes, experiences, and beliefs of the health care professionals, particularly nurses (Gopal and Archana, 2016). Therefore, this study was carried out to investigate the effect of palliative care training package on nurses' performance regarding gynecologic cancer.

As regards demographic characteristics, the results of the current study showed that less than two-thirds of the studied nurses were between the ages of 25 and 30, with a mean age

of 27.51 ± 4.40 years. More than half of them had a diploma in the Technical Institute of Nursing and were in the category of $5 < 10$ years of experience with a mean of 9.81 ± 5.14 years. None of the nurses in the study received any training in gynecologic cancer palliative care.

These results are nearly similar with Parveen et al., (2020) found that 61% belonged to the age group of 25-35 years' age group, while 85.1 % of the respondents had a nursing diploma, 14.3% had a bachelor's degree in nursing. Also, Nepal et al., (2021) reported that the mean age of the participants was 25 ± 5.42 years and none of the participants received in-service training or education related to palliative care. On contrary, Metwaly and Hamad, (2019) noticed that that 66.7% of the studied nurses were over 30 years old, with mean \pm SD 38.8 ± 12.4 years, and 46.7% of them were diploma nurses, 66.7% had more than 5 years of experience, with a mean \pm SD of 15.22 ± 11.8 years. Additionally, 80% of

the nurses did not receive any training courses about palliative care.

On investigating the studied nurses' knowledge regarding gynecologic cancer palliative care, the finding of the current study revealed that most of the studied nurses had poor knowledge regarding palliative care for gynecological cancer before the training package. This could be due to the fact that gynecologic cancer palliative care is a relatively new trend. Besides, the nursing curriculum in this field is still lacking, which has an impact on the level of nurses' knowledge.

This finding is comparable to previous studies by **Temamen et al., (2018)** found that 53.6% of nurses had poor knowledge of palliative care services and 46.4% had good knowledge. **Ramadan et al., (2017)** revealed that roughly two-thirds of the nurses have insufficient knowledge about palliative care. According to **Ayed et al., (2015)**, 45.8% of the nurses had poor knowledge level of palliative care, 33.3% had fair knowledge, and just 20.8% had good knowledge. Also, **Alshaikh et al., (2015)** showed nurses have poor knowledge of palliative care, particularly in pain and symptoms management. Conversely, **Zeru et al., (2020b)** stated that 62.8% of nurses had good knowledge of palliative care.

However, after one month of receiving the training package, there was a significant improvement in nurses' knowledge about gynecologic cancer, palliative care, and gynecologic cancer palliative care. This improvement could be attributed to the studied nurses who were interested in the presented topic and understood the value and significance of gynecologic cancer palliative care. This signaled the importance of training. This finding is congruent with **Menekli et al., (2021)** portrayed that there was a statistically significant difference between the mean scores of nurses' knowledge about palliative care before and after educational intervention, which was 8.9 ± 1.1 before and 17.5 ± 1.9 after educational intervention ($p < 0.001$). The finding of **Balicas, (2018)** depicted a highly significant difference in nurses' knowledge of palliative care after a brief palliative nursing education compared to before ($t = -12.044$, P -value < 0.001).

As well **Harden et al., (2017)** displayed a statistically significant increase in the total mean nurses' knowledge scores post-intervention compared with pre-intervention ($P = 0.000$). **Saylor et al., (2016)** further corroborated the evidence that after a palliative care education, nurses' knowledge and skills in palliative care improved significantly.

Nurses' attitude influences caring behaviors, which vary along a continuum. According to a study, nurses' attitudes were bimodal, with positive or negative attitudes (**Achora and Labrague, 2019**).

Concerning nurses' attitude towards gynecologic cancer palliative care, the results of the present study illustrated that most of the studied nurses had a negative attitude towards gynecologic cancer palliative care before the training package. This may be attributed to the fact that a lack of nurses' knowledge about palliative care, considered as an obstacle for a positive attitude towards the care of women with gynecological cancer.

This finding contradicts other studies; **Getie et al., (2021)** mentioned that 83% of the study respondents have a positive attitude regarding palliative care. **Bibi et al., (2020)** indicated that 75.2% of the nurses had positive attitudes towards palliative care. **Zeru et al., (2020b)** found that 56.3% of nurses had a positive attitude towards palliative care. **Zewdu et al., (2017)** revealed that 76% of study participants had a favorable attitude towards palliative care. **Youssef et al., (2015)** confirmed that 44.2% had a favorable attitude towards palliative care. This discrepancy may be due to the difference in the study settings in which previous studies were in a high-income country where nurses may have varied access to palliative care training. On the other hand, the majority of the nurses in the study had a positive attitude towards gynecologic cancer palliative care after receiving the training package. This could be related to the effectiveness of the contents of the palliative care training package as nurses' knowledge level increased, and attitudes became more positive.

Numerous factors influence the successful practice of palliative care. These include healthcare professionals' knowledge, attitude,

beliefs, and previous experiences (**Anyanwu and Agbedia, 2020**).

In this respect, the findings of the present study showed that before the training package, the majority of the studied nurses had unsatisfactory practice about appropriate assessment for women with gynecological cancer, verbal and nonverbal communication during palliative care provided, providing non-pharmacological pain management for women with gynecological cancer, managing physical symptoms (constipation, nausea and vomiting, anorexia, and fatigue), psychosocial support offered during palliative care, applying ethical standards during palliative care, applying ethical standards during palliative care, and managing psychological symptoms (anxiety, fear, loss of body image). This may be owing to that all studied nurses did not receive any training courses about gynecologic cancer palliative care.

Consistently with the present study, **Farmani et al., (2018)** showed only 6.3% of the nurses had good practice towards palliative care. **Temamen et al., (2018)** noticed that 65.8% of the nurses had poor palliative care practices. **Sorifa and Mosphea (2015)**, revealed that palliative care practice was observed to be adequate in 48%, moderately adequate in 43%, and practice inadequately in only 9% of the participants. **Das and Haseena, (2015)** showed that nurses had poor practice towards palliative care services. These findings are also supported by **Paknejadi et al., (2019)** pointed out that nurses with a low knowledge level of palliative care are incapable of identifying women's needs, successfully communicating with them, and sufficiently addressing physical, emotional, social, and spiritual concerns. In contrast, **Anyanwu and Agbedia, (2020)** revealed that 52.7% of the respondents had a satisfactory practice of palliative care.

Meanwhile, after one month of the training package, there has been a significant improvement concerning the actual observed practice of the studied nurses about palliative care of women with gynecologic cancer. This may be attributed to the training package regarding palliative care gynecological cancer

was effective intervention in improving nurses' knowledge, which in turn improved practice.

These findings are in accordance with **Anderson et al. (2017)** found that nurses who received palliative care training improved palliative care skills. Furthermore, after the training, nurses' capacity to assess and identify women's needs related to palliative care, as well as competence in designing nursing care plans for women requiring palliative care, improved dramatically. In addition, several studies by **Khraisat et al., (2017)**, **Al-Shahri, (2016)**, and **Bassah et al., (2016)** highlighted the relevance of palliative care education in improving nursing practice.

The current study revealed that there was a statistically positive correlation between the total scores of knowledge, attitude, and practice regarding palliative care for gynecological cancer before and after one month of the training package. This may be because the training package is a valuable way to improve not only nurses' knowledge but also attitude and practice in providing palliative care for women with gynecological cancer. This finding is congruent with **Abusyriah (2020)** asserted that there was a low positive correlation between knowledge and attitude towards palliative care ($r= 0.1645$, p -value 0.003). In addition, studies done by **Kim et al., (2020)** as well as **Achora and Labrague, (2019)** have shown that there is a significant correlation between nurses' knowledge and attitude. In-service palliative care training gave nurses a positive attitude toward palliative care.

Similar results have been reported by **Metwaly and Hamad, (2019)** proved that there was a strong positive correlation between overall knowledge and practice scores after program, with a highly statistically significant difference. **Zewdu et al., (2017)** and **Sorifa and Mosphea, (2015)** illustrated that there was a substantial positive correlation between staff nurses' knowledge and practice, the practice of nurses increases with the increase of knowledge.

On the contrary **Hassan et al., (2016)** demonstrated that there was no statistically significant relationship between the level of practices and knowledge regarding palliative care for cancer among nurses.

Moreover, there was a statistically positive correlation between total attitude and practice scores regarding palliative care for gynecological cancer before and after one month of the training package. This means improved practice with an increased positive attitude. This is in the same line with **Shen et al., (2019)** found a positive association between the nurses' attitude and practice towards palliative care. **Rongmuang et al., (2018)** denoted that a positive attitude towards palliative care was positively correlated with appropriate palliative care practice ($r = 0.272$, $p < 0.001$).

Interestingly, the results of the present study reflected a statistically positive correlation between studied nurses' total knowledge, attitude, practice scores regarding palliative care for gynecological cancer, as well as demographic characteristics in terms of age, level of education, and years of experience before and after one month of the training package. This could be because nurses with more years of experience, higher levels of education, and more years of experience had good knowledge, a positive attitude, and satisfactory practice.

These findings are consistent with prior findings; **Anyanwu and Agbedia, (2020)** indicated a significant weak positive association between nurses' educational level and knowledge of palliative care ($P = 0.003$). There was also a significant association between the nurses' years of experience and attitude to palliative care ($P < 0.001$). **Gedamu et al., (2019)** reported that there was a significant correlation between nurses' knowledge and attitude towards palliative care, level of education, and years of experience. **Farmani et al., (2018)** found a significant association between nurses' attitude towards palliative care and level of education.

Also, **Soubam et al., (2018)** found that nurses with adequate knowledge of palliative care had a higher mean age than those with inadequate knowledge. **Bilal (2018)** displayed a significant relationship between knowledge and socio-demographic data including age, experience years, and qualification ($p=0.004$). It implies that when the nurses' experience and

qualification increase, favorable knowledge also improves. **Temamen et al., (2018)** revealed that nurses' age and years of experience are significantly associated with overall palliative care practices. Conversely, **Uslu-Sahan and Terzioglu, (2017)** stated that there were no significant differences in nurses' knowledge regarding palliative care, age, educational level, and years of experience in a gynecological oncology unit.

Finally, the current study pointed out that after receiving the training package, there was a significant improvement in the nurses' knowledge, attitude, and observed practice about palliative care for gynecologic cancer.

Conclusion:

The findings of the current study revealed the positive effect of the training package in improving nurses' performance (knowledge, attitude and observed practice) concerning gynecologic cancer palliative care. There was a statistically positive correlation between nurses' knowledge, attitude and observed practice regarding gynecologic cancer palliative care before and after one month of the training package. Therefore, the aim of the study was achieved, and the research hypotheses were supported.

Recommendations:

The following recommendations are proposed based on the results of the current study:

- Continuous in-service training on palliative care for nurses is essential to improve performance in the care of women with gynecological cancer.
- Designing and disseminating simplified and comprehensive educational booklets about gynecologic cancer palliative care for nurses to be utilized as a reference guide in clinical practice.

*Further recommendations and studies:

- Investigating the effect of an educational program about palliative care for women with gynecologic cancer on quality of life.

- Replication of the study with a large probability sample to generalize the results.
- Emphasizing the importance of integrating palliative care for life-threatening diseases such as cancer into the nursing curriculum and education as well as standard oncology care.

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