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Effect of Intervention Program on Knowledge, Attitude and Self-Efficacy of Internship Nursing Students regarding Palliative Care of Elderly Patients

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Abstract: Background: The quality of palliative care services can be provided by the principles of the World Health Organization for elderly patients with a chronic illness or who have reached the end of life pathway. To achieve this, nurses must have good knowledge, supportive attitudes, high self-efficacy and aid in the implementation of adequate palliative care. **Aim of the study** was to evaluate the effect of intervention Program on knowledge, attitude and self-efficacy of internship nursing students regarding palliative care of elderly patients. **Methods & Materials:** This quasi-experimental study was conducted at Zagazig University hospitals at Sharkia Governorate. The study sample composed of 100 internship nursing students. Eleven sessions for small groups (20 students in each group) were held as part of the program's implementation in the current study. Four tools were used; Self - Administered questionnaire Sheet, Palliative Care Quiz for Nursing, Frommelt Attitude Toward the Care of the Dying Scale form B and Palliative Care Self Efficacy Scale. **Results:** The study findings showed statistically significant improvements in the internship nursing students knowledge, attitudes and self-efficacy toward elderly palliative care. Additionally, there was statistical significant positive correlations between the studied nursing students' total knowledge, attitudes and self-efficacy toward elderly palliative care. **Conclusion:** The applied educational intervention was effective in improvement of palliative care self-efficacy among internship nursing students. **Recommendations:** The developed program should be implemented on a wider scale in the study settings and in similar ones to confirm its positive effects and to reach more generalizable findings.

Keywords: Attitude, Elderly patient, Intervention program, Internship nursing students, Knowledge, palliative care and Self-efficacy

Introduction

Every country in the world is experiencing growth in both the size and the proportion of older persons in the population. By 2030, 1 in 6 people in the world will be aged 60 years or over. At this time the share of the population aged 60 years and over will increase from 1 billion in 2020 to 1.4 billion. By 2050, the world's population of people aged 60 years and older will double (2.1billion) (WHO, 2021).

Increasing life span means that more people have to face frailty due to the aging process, which increases the burden of chronic morbidity (such as cardiovascular disease, cancer, diabetes or dementia), as well as functional and cognitive impairments. Moreover, as the elderly suffer serious life-threatening chronic illnesses with a long dying phase, the need to establish a comprehensive geriatric approach to improve their quality of life and avoid any unnecessary suffering at the end of life is becoming increasingly important (Thi Thanh Vu et al., 2019).

Chronic illnesses and multi morbidity are associated with poor function, symptom burden, disability, and poor quality of life among affected older adults. Furthermore, the prevalence of neurocognitive disorders such as Alzheimer's disease and related dementias is expected to increase significantly in the coming decades. Palliative care is recognized as the standard of care for older adults with serious medical illness including those with multiple chronic conditions and a limited prognosis (Elhassan et al., 2023)

palliative care is "an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual" (Kayastha, 2020).

Palliative care is based on a multidisciplinary approach that aims to reduce disability and increase patient participation, including physical activity, education, nutrition, psychosocial support, and medical care for the patient. The palliative care team includes professionals from various disciplines such as nurses, physicians (palliative care specialists, medical oncologists, algologists), physiotherapists, nutritionists and dietitians, occupational therapists, pharmacists, social workers, and clergy. Nurses, as one of the important professions in this team, are the health professionals who have the most in contact with patients and their relatives (Menekli et al., 2021).

One of the concepts of palliative care is to transition patients from medical-based treatment to nursing-based care, thereby establishing the important role of nurses in palliative care . Nurses assume an extremely important role in palliative care, and their attitudes towards palliative care are the basis for developing palliative care services . Nursing education, which is an important approach for training nursing personnel, may produce educators, instructors and practitioners of end-of-life care in the future whose their attitudes towards palliative care will directly affect the quality of care provided (Peng et al., 2024).

In sum, nursing students' palliative care knowledge, attitudes to-wards death and caring for the dying and self-efficacy are indicators for the quality of palliative care implementation. A baseline assessment of these variables is valuable for knowing the status of palliative care education and further developing palliative care course (Zhou et al., 2020). Therefore, this study aimed to evaluate the effect of educational intervention on self-efficacy in providing palliative care to elderly patients among internship nursing students.

Aim of the Study

The current study aimed to evaluate the effect of intervention Program on knowledge, attitude and self-efficacy of internship nursing students regarding palliative care of elderly patients.

Research hypothesis

Internship nursing students' knowledge, attitudes and self-efficacy would be improved after elderly palliative care intervention program.

Methods

Study Design and Setting

A quasi-experimental study design was utilized to conduct the current study in Zagazig University hospitals at Sharkia Governorate, in Egypt.

Sample

The sample of this study included 100 internship nursing students.

Sample size calculation

Percent of fair knowledge level about palliative care in nurses was (5%%), improved after implementation of intervention program to be (18.3%), (**El Sayad & Shaala, 2021**) with confidence level 95% , power of study 80%. Expected 10% drop out in participants. Sample size calculated using open **EPI** is 100 participants.

Tool of data collection

Four tools were used for collection of data.

Tool I: Self - Administered questionnaire Sheet

This tool was used to assess internship nursing students' personal data as students' age, sex, place of residence, family income and crowding index .

Tool II: Palliative Care Quiz for Nursing (PCQN) (Ross et al., 1996)

This tool was developed by **Ross, McDonald and McGuiness, 1996**. It was used in Arabic form to assess knowledge and identify misconceptions about palliative care nursing. It consisted of 20-item true, false, and 'I don't know'. The test consists of four items about philosophy and principles, thirteen items about pain and symptom management, and three items about the psychosocial aspects of care. Total scores on the PCQN ranged from 0 to 20, as answers are coded as 1 for a correct answer, and 0 for an incorrect or 'I don't know' responses. A higher score corresponds with more knowledge. Correct responses were summed up to get a total knowledge scores for each participant. Total score for all questions reached 20 grades. The knowledge scores were classified into Satisfactory if the percent score was more than 70% and Unsatisfactory if the percent score was 70% or less.

Tool III: Frommelt Attitude Toward the Care of the Dying Scale form B (FATCOD-B) (Frommelt, 1991) :

This tool was developed by **Frommelt, 1991**. It was used in Arabic form to assess students' attitudes toward caring for dying patients. It is a 30-item tool using a 5-point Likert scale. The instrument includes 15 positively worded statements (items 1, 2, 4, 10, 12, 16, 18, 20, 21, 22, 23, 24, 25, 27, and 30) and 15 negatively worded statements (items 3, 5, 6, 7, 8, 9, 11, 13, 14, 15, 17, 19, 26, 28, and 29). There are six dimensions of the scale, as follow; Fear/Malaise (Items 1, 3, 5, 7, 8, 13, 14, 15, and 26), Care of the Family (Items 4,16, and 22), Communication (Items 2, 6, 11, 27, 28, and 30), Family as Caring (Items 12,18, and 20), Relationship (Items 9, 10, 17, 21, and 29) and Active Care (Items 19, 23, 24, and 25). **FATCOD-B** consists of 30 items on a 5-point Likert scale Ranging from 1 to 5, where 1 = "strongly disagree", 2 = "disagree", 3 = "uncertain", 4 = "agree", 5 = "strongly agree". Positive items are scored one (strongly disagree) to five (strongly agree). Scores are reversed for negative items. The total grade was ranged from 30 to 150 grades and **FATCOD-B** was considered positive if the percent score was more than 60% and negative if the percent score 60% or less. A higher score indicates a more positive attitude toward caring for this patient population while a lower score reflect a more negative attitude.

Tool IV: The Palliative Care Self Efficacy Scale (PCSES) (Phillips et al., 2011):

This tool was developed by **Phillips et al., 2011**. It was used to assess the perceived capacity to provide palliative care. The PCSES is a validated 12-item scale has two subscales designed to measure participant's perceived self-efficacy to handle psychosocial support (6 items, items 1–6) and symptom management of palliative care(6 items, items 7–12). The total number of questions is 12, each item is closed-ended with the choice of four interval levels of confidence for the participant. Participants are 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; or 4 = confident to perform independently". The total grade was ranged from 12 to 48 grades and PCSES was considered high if the percent score was 70% or more, moderate if the percent score was 50% to 70% and low if the percent score less than 50%. The higher scores indicate a higher perceived capacity toward palliative care.

Educational Program**Assessment phase:**

This phase involved the pre- educational program data collection for baseline assessment. Students were interviewed by the researcher who introduced herself and explained the aim of the study briefly seeking their agreement in the study, and reassured them that information obtained is strictly confidential and would not be used for any purposes other than research. The researcher read and explained each item of the study scales to the internship nursing students and then the students recorded their response to each item. The time consumed for filling the study tools ranged from 20 to 25 minutes. The data were preliminary analyzed to provide the basis for building-up the program according to identified needs.

Planning phase:

Based on the results obtained from the data analysis of the assessment phase, and in view of the relevant literature about self-efficacy in providing palliative care to elderly patients, the researcher developed the educational intervention for internship nursing students and sessions content according to their needs and the study objectives. Identified needs, requirements and deficiencies were translated into aim and objectives of intervention and set in the form of an illustrated booklet distributed to each of the studied students as a guide for all pertinent data related to intervention.

Implementation phase:

The intervention was implemented in the study setting in the form of 11 sessions delivered in small groups (20 students in each group). Small groups was intended to give more chance for discussions, and interactions. All students received the same content using the same teaching methods, media, discussions, and the same booklet. The length of each session was variable (30 to 45) minutes according to student's responses and active participation, as well as the time available, and the content of each session. The fieldwork was carried out within the period of six months, starting from the beginning of October 2023 up to the end of March 2024. First, the researcher met with the students in the orientation program for a week, then divided the students into five groups, each group containing 20 students. Each group was allocated one day per week from 12 pm to 2 pm. This included the phases of assessment, planning, implementation, and evaluation of the program.

Each session was started by a summary about what was given through the previous session and the objectives of the new one, taking into consideration the use of simple language to suit the level of understanding of the students. Motivation and reinforcement techniques as praise and recognition during the session were used to enhance active participation and foster learning. The sessions were aided by using pictures, posters, as well as the booklet.

Evaluation phase:

The evaluation of the effectiveness of the intervention (posttest) was done through following the study tool for all students to evaluate the degree of improvement in internship nursing student's knowledge, attitudes and self-efficacy in providing palliative care to elderly patients.

Ethical Considerations

The study proposal was approved by the Research Ethics Committee (REC) and the Postgraduate Committee of the Faculty of Nursing at Zagazig University in November 2022. The students received a verbal description of the objectives of the study, and non-participation or withdrawal rights at any time without giving any explanations. The students were informed that their involvement in this study was voluntary. They were also assured that any information taken from them would be confidential and used only for research purposes.

Statistical analysis

Data collected from the studied sample was revised, coded, and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies, percentages, and Mean SD. A correlation coefficient "Pearson correlation" is a numerical measure of some type of correlation, meaning a statistical relationship between two variables. A t test is a statistical test that is used to compare the means of two groups. Chi-square (χ^2) is a statistical test used to determine the relationship between categorical

variables. Linear regression is a statistical method used to model the relationship between a dependent variable and one or more independent variables. Significance of the results; Highly significant at p-value < 0.01, Statistically significant was considered at p-value < 0.05, Non-significant at p-value $\geq$ 0.05.

Results

Table (1): Demographic characteristics of the studied nursing internship students (n=100).

Items	N	%
Age (Year)		
19	26	26.0
20	74	74.0
$\bar{x}$ S.D 19.74 $\pm$ 0.44		
Sex		
Male	25	25.0
Female	75	75.0
Residence		
Rural	71	71.0
Urban	29	29.0
Educational level of the father		
Does not read & does not write	8	8.0
Read & write	18	18.0
Basic education	14	14.0
Intermediate education	32	32.0
University education or higher	28	28.0
Father's profession		
Not working	2	2.0
Worker	44	44.0
Employee	54	54.0
Educational level of the mother		
Does not read & does not write	12	12.0
Read & write	14	14.0
Basic education	8	8.0
Intermediate education	44	44.0
University education or higher	22	22.0
Mother's profession		
Not work	72	72.0
work	28	28.0
Family income		
Not enough	26	26.0
Enough	68	68.0
Sufficient and increases	6	6.0
Have a computer or smartphone		
Yes	100	100.0
No	0	0
Crowding Index		
<1	33	33
1 - 2	39	39
>2	28	28
$\bar{x}$ S.D 1.47 $\pm$ 0.16		

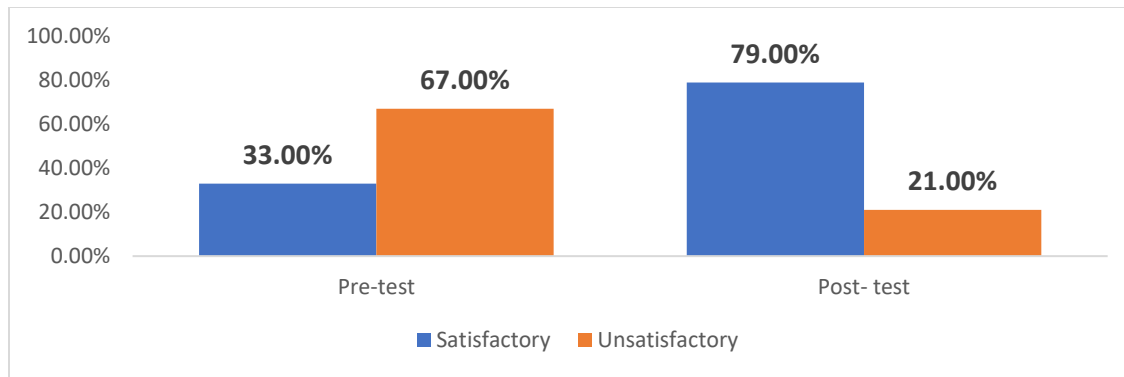


Figure (1): Total palliative care knowledge of the studied internship nursing students at pre and post intervention (n=100).

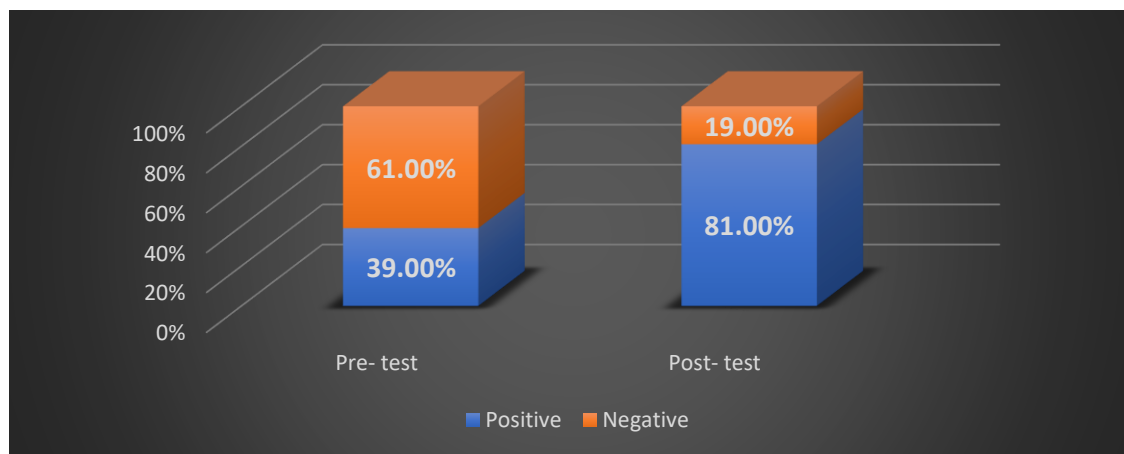


Figure (2): Total palliative care attitude toward the care of the dying of the studied internship nursing students at pre and post intervention (n=100).

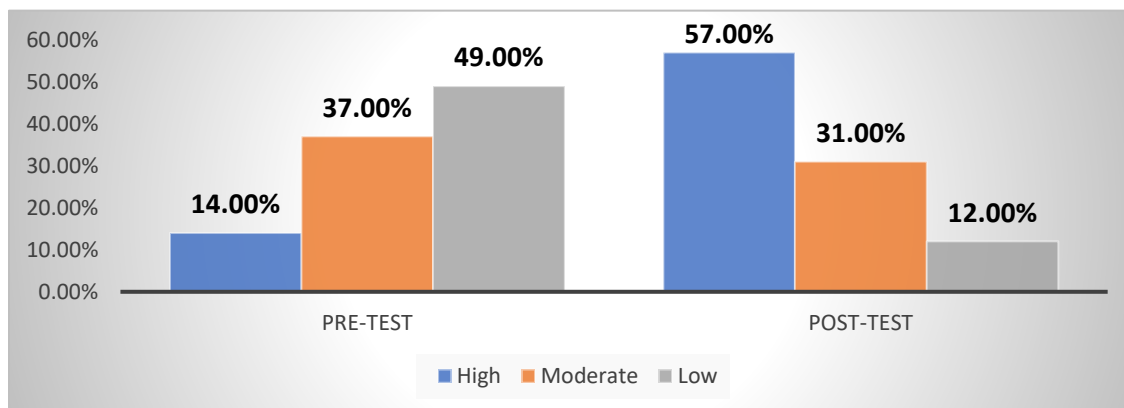


Figure (3): Total palliative care self-efficacy of the studied internship nursing students at pre and post intervention (n=100).

Table (2):Multiple Linear regression model for total knowledge post intervention.

	Unstandardized Coefficients	standardized Coefficients		
	<i>B</i>	<i>B</i>	<i>T</i>	<i>P. value</i>
Gender (Female)	-.287	.239	7.260	.000**
Family income (Enough)	.260	.214	6.500	.002**

Table (3):Multiple Linear regression model for Total attitude post intervention.

	Unstandardized Coefficients	standardized Coefficients		
	<i>B</i>	<i>B</i>	<i>T</i>	<i>P. value</i>
Gender (Female)	.301	.257	8.044	.000**
Family income (Enough)	.185	.127	3.765	.026*
Residence (Rural)	.174	.112	3.110	.029*
Total knowledge	0.654	0.417	7.990	.000**

Table (4):Multiple Linear regression model for Total self-efficacy post intervention.

	Unstandardized Coefficients	standardized Coefficients		
	<i>B</i>	<i>B</i>	<i>T</i>	<i>P. value</i>
Gender (Female)	.201	.146	3.086	.030*
Family income (Enough)	.187	.123	2.900	.021*
Total knowledge	.712	.615	8.991	.000**
Total attitude	.625	.547	7.029	.000**

Demographic characteristics of the studied internship nursing students (n=100).

Table 1 clarifies that 74.0% of the studied internship nursing students aged 20 years, with mean age 19.74 ± 0.44 years, with 75.0% of them are female. In addition, 71.0% of the studied internship nursing students are rural residents. Moreover, nearly 32.0% of the student's fathers have intermediate education and 54.0% of them are employee. Also, 44.0% of the student mothers have intermediate education and nearly 72.0% of their mothers are not worked. Regarding family income, 68.0% of the internship nursing students family have enough income. Additionally, 100.0% of them have a computer or smartphone. Concerning crowding index, 39% of them have from 1 to 2 person / room

Effects of the Palliative Care Intervention on internship nursing students Knowledge , Attitude and Self-Efficacy

Figure 1 illustrates that 67.00% of the studied internship nursing students had unsatisfactory knowledge about palliative care pre intervention. While, 79.00% of them had satisfactory knowledge about palliative care at the post intervention.

Figure 2 shows that 61.00% of the studied internship nursing students had negative attitude toward the care of the dying before the intervention. while, 81.00% of them had positive attitude toward the care of the dying post the intervention.

Figure 3 illustrates that 49.00% of the studied nursing internship students had low self-efficacy before the intervention. While, 57.00% of the students had high self-efficacy post the intervention.

Predictors of total knowledge, attitude, and self-efficacy post-intervention

Table 2 declares that family income was the only statistically significant positive predictor of the student's total knowledge about palliative care score. On the other hand, gender was the negative one. The model explains that 36% of knowledge scores as shown by the value of r- square. Meanwhile, **Table 3** states that gender, family income, residence and knowledge were statistically significant positive predictors of the student's total attitude toward the care of the dying score. The model explains that 57% of attitude scores as shown by the value of r- square. Moreover, The results of **table 4** indicates that gender, family income, knowledge and attitude were statistically significant positive predictors of the student's self-efficacy score. The model explains that 62% of self-efficacy scores as shown by the value of r- square.

Discussion

After the implementation of the intervention, there were statistically significant difference in total mean score of knowledge among the studied students pre and post educational intervention ($P < 0.001$). Before the educational intervention, total mean score of knowledge was 9.10 ± 2.04 which increased to 16.23 ± 3.9 at the post intervention, indicating statistically significant improvement. This might be attributed to the content of the intervention, which focused on improving student's knowledge about definition, purpose and principle of palliative care, enhancing knowledge about component and barrier to providing palliative care and general palliative care. In agreement with this, a study conducted by **Doumit et al. (2023)** in Lebanon highlighted that a significant increase in knowledge between the pre-and post-test scores. Likewise, a study conducted in Indonesia by **Haroen et al. (2023)** revealed that there were statistically significant increase in knowledge ($p < 0.001$) after the completion of the palliative care nursing course.

At post-intervention of the current study, the results revealed that a statistically significant difference in total score of attitude among the studied internship nursing students compared to pre intervention ($P < 0.001$). Before the intervention, total mean score of attitude was 105.4 ± 32.17 and increased to 117.65 ± 28.15 at the post intervention, indicating highly statistically significant improvement. This might be attributed to the nursing students received lectures and training on palliative care, and people who are knowledgeable about something tend to justify their related attitude through the acquired information.

In the same line with the study results, a study conducted in Ankara University, Turkey by **Birge and Bedük (2022)** revealed that there were statistically significant increase in attitudes towards the care of the dying person among the studied nursing students pre and post-training. The mean FATCOD scores was 106.93 ± 8.48 before training and increased to 110.60 ± 9.32 post the training. As well, a study conducted in India

by **Gupta et al. (2023)** showed that a statistically significant improvement in FATCOD-B scoring for attitudes towards care of dying 105.2 ± 9.9 which increased to 113 ± 9.8 after the intervention.

Meanwhile post-intervention, the present study results indicated that there were statistically significant difference in total score of self-efficacy among the studied internship nursing students pre and post the educational intervention ($P < 0.001$). Before the intervention, total mean score of self-efficacy was 27.24 ± 14.27 and increased to 40.46 ± 9.78 at the post intervention, indicating highly statistically significant improvement in all domains of self-efficacy ($P < 0.001$). This might be attributed to enhancing knowledge and attitudes towards palliative care during the intervention as when students were more knowledgeable and more oriented with palliative care and care of dying persons, this was reflected on their better self-efficacy.

Similarly, the study of **Dehghani et al. (2020)** conducted in Iran, concluded that the mean score on self-efficacy after training was 39.4 ± 6.9 as compared to 27.7 ± 7.9 before training with statistically significant differences ($P = 0.00$). Likewise, **Salmani et al. (2024)** in Iran, found that mean score of self-efficacy after the intervention was 37.56 ± 9.29 which was higher than before the intervention 24.52 ± 8.32 with statistically significant improvements in all scores of self-efficacy domains (psychosocial support & symptom management) post the intervention.

Considering the predictors among internship nursing students post-intervention; the study findings exposed that the family income as a statistically significant positive predictor of students' total scores of knowledge, attitude and self-efficacy. This result might be attributed to that enough family income may have provided a good environment for education, which ultimately led to an increase in the knowledge level of the individual. In the same vein, a large cross-sectional study conducted in India by **Ranga et al. (2023)** found that there was a significant correlation between the family income of the participants and their palliative care knowledge scores.

Based on our study findings, gender as being female was a statistically significant independent positive predictor of attitude toward the care of the dying and self-efficacy scores. On the other hand, being a female was a negative predictor of the total knowledge score. This result might be attributed to the fact that female students were more empathetic and emotionally delicate, whereas male students had a lower level of nursing professional identity. Also, this might be related to the small number of male students in the sample. Consistently, the study of **Esther et al. (2024)** in Rajiv Gandhi University of Health University, India revealed that female gender was important and a significant positive predictor for a more positive attitude towards palliative the care of the dying patients compared to male students.

Based on our study findings, rural residence was statistically significant independent positive predictor for attitude toward the care of the dying. This might be attributed to that most families in rural Egypt are extended families which includes grandparents with stronger family ties. The family forms a large part of the care team, and family caregivers often assist nurses in performing activities such as bathing, feeding, and even administering oral medications. Consequently, they developed more positive attitudes towards end-of-life care. This finding is supported by **Gelegjamts et al. (2020)** who conducted a study in Mongolia and revealed that housing type was found to be a predictor of attitudes towards the care of the dying as living in countryside or Gers, which are the traditional Mongolian housing, was a significant predictor of positive attitudes towards EOL care.

Also, the study identified that knowledge as a statistically significant independent positive predictor for students' attitude toward the care of the dying. This result might be attributed the more knowledge about palliative care, the more positive attitudes toward the care of the dying and self-efficacy. This result is strongly supported by previous findings of **Younis et al. (2022)** in Jordan and **Salameh et al. (2023)** in Palestine, who revealed that knowledge about palliative care was significantly positive predictor of attitudes towards the care of the dying as students with a higher level of knowledge are more likely to exhibit positive attitudes toward death and caring for dying patients than those who are not.

Moreover, the study findings identified that internship students' knowledge was a statistically significant positive predictor of their self-efficacy in providing palliative care to elderly patients. In the agreement of this

result, the study of **Kim et al. (2020)** in Mongolia revealed that the palliative care knowledge was a significant positive predictor of self-efficacy toward palliative care as higher levels of knowledge are linked to higher levels of self-efficacy in PC.

Finally, we found that attitude was a statistically significant independent positive predictor for self-efficacy score. This result is in line with a study conducted **Barnett et al. (2021)**, who found similar relationship between palliative care self-efficacy and attitudes toward care of the dying among nursing students. Moreover, a study conducted by **Lin et al. (2022)** in China revealed that attitude towards death was one of the main factors influencing nurses' self-efficacy.

Conclusion

The study findings was concluded that the study intervention led to statistically significant improvement in palliative care self-efficacy of internship nursing students. The student's knowledge, attitudes toward the care of the dying person and self-efficacy scores significantly improved after the intervention. Therefore, the implementation of the training program was shown to be effective in ameliorating internship nursing students knowledge and attitudes toward the care of the dying person which in turn were significant positive predictors of the student's self-efficacy.

Recommendation

- Palliative care should add to the nursing curriculum and must emphasize the different dimensions of palliative care knowledge , attitude and self-efficacy to properly prepare nursing students for their future roles.
- Palliative care concepts should be reinforced in the clinical area to fill in the gap between classroom and clinical learning and to ensure the continuous learning of the students as they progress in their nursing program.
- Further research studies are required for the palliative care field.
- The developed program should be implemented on a wider scale in the study settings and in similar ones to confirm its positive effects and to reach more generalizable findings.

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Declaration of Conflicting Interests

The Author(s) declare(s) that there is no conflict of interest.

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