

Impact of Palliative Care Educational Program on Nursing Students' Knowledge and Attitudes toward Care of Dying Patients

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Abstract: Background:-The need for palliative care is fast increasing as the population ages increase, particularly amongst those who with non-cancer diagnoses and with the numbers of people aged 85 or over. **The aim of this study:** -This study aimed to evaluate the effect of palliative care educational program on nursing students' knowledge and attitudes toward care of dying patients. **Material and methods:**-Quasi experimental design was utilized. A representative sample of 40% from nursing students who enrolled in second, third and fourth year study at the faculty of nursing. **Tools of data collection:**Data of the study was collected through utilizing the following two tools: **Tool (I):** Structured Interview Questionnaire: It was consisted of two parts: Part (1): Socio-demographic characteristics of the students. Part (2): Knowledge Questionnaire Sheet about palliative care. **Tool (II):** Frommelt's attitude toward care of the dying (FATCOD) scale. **Results:** -It was observed that there was no significant difference between total Frommelt's attitude score (negative, fair and positive) among second, third and fourth undergraduate students during the pre and post observations, while the significant difference was present only during follow up observational period $p=0.00$. Also, there was significant difference between total knowledge and total Frommelt's attitude among 4th year students in relation to post and follow up observations ($p=0.002$). The difference was present clearly in knowledge comparing with the attitude. **Conclusion and recommendations:** -, the current study revealed that the majority of second and third year students had no previous experience in caring of dying. Also, there was significant difference between total knowledge and total Frommelt's attitude among 4th year students in relation to post and follow up observations. Palliative care must be an integral part of the nursing curriculum and encourage students strongly to have a correct principle of care of dying patients to develop positive attitudes toward palliative terminal care.

Keywords: Palliative care, knowledge, attitudes, dying patients.

INTRODUCTION

Palliative care (PC) is considered as one of the most important aspect for patients' care at the end stage of life. It provides the patients' with comfort and decreases the period of suffering from illness. So world today concerns its interests toward practice of palliative care for patients with end stage of life to alleviate the symptoms of disease and ensure about peace death⁽¹⁾.

The World Health Organization (2014) defined the palliative care as "an approach which improves the patients' quality of life and their families that facing life-threatening problems through prevention and relief of suffering by early detection, pain management and assessment of physical, psychosocial and spiritual problems"⁽²⁾.

So, the palliative care contains integrated multidisciplinary collaboration between the patients, their families, health professionals and the public toward a continuum of care confirming on physical, mental, social, spiritual and emotional dimensions of care for life-limiting or life-threatening conditions⁽¹⁾. In the USA, the National Hospice and Palliative Care Organization (NHCPO) defined palliative care as "It is a treatment that enhances comfort and provide better quality for an individual's life during the last phase of life"⁽³⁾. The goal of palliative care is not to cure, but to provide comfort and reach the highest possible quality of life for individuals suffering from severe

diseases⁽⁴⁾. Although palliative care is considered a new medical specialty as introduced in 2007, the number of programs and specialists have increased considerably in the last decade⁽⁵⁾.

In Egypt, palliative care and cancer pain control are considered at an early stage of development. There are many obstacles face palliative care such as restricted opioid accessibility and availability for medical use⁽⁶⁾. In general palliative care is still misapprehended among health professionals, cancer patients and the public because its aim doesn't communicate clearly in the clinical area, which is providing better quality of life, while combating cancer⁽⁷⁾. It is important to integrate pain and palliative care into the health units, where healthcare providers have adequate knowledge of pain assessment and management of palliative care⁽⁸⁾.

Palliative care is traditionally associated with a range of principles of care including the view of dying as a natural process, while at the same time affirming life and of acting neither to hasten nor postpone death. Now a palliative care is applied in the course of illness in a combination with other treatments at early stage, that are aimed to prolong the life, such as chemotherapy or radiation therapy, as in terminal care⁽⁹⁾. It is not restricted to cancer or even to the late stages of illness; but also can be applied to any life-threatening diseases. So, the palliative care is not a substitute to other care, but is an integral and essential component of total

patient care and it is not limited to a certain setting but takes place in different environments of palliative care and at any situation^(4,5). There is confusion between palliative care and end of life care, where the first refers specifically to care provided in the last phase of life which often defined as approximately the last year⁽¹⁰⁾. But end of life care sometimes refers to the last weeks or even days of life and can include care into bereavement⁽¹¹⁾.

Education and training of palliative care influences not only the level of care provided but also the level of team participation of the healthcare professionals, where the knowledge of nurses influences the quality of care provided to these patients⁽¹²⁾. The trainers and trainees face a challenging process toward training of palliative care, where as a real-life scenario can never be simulated in an educational environment^(13,14). Nursing schools have not adequately inserted palliative care into the curriculum to increase awareness of (PC) contents and skills. Sadhu et al., (2010) asserted that students are lacking in knowledge on (PC). Students cannot be expected to be experts in any way due to lack of experience in the clinical area; however the schools and hospitals are holding students and new graduates accountable for this material and expect an adequate competency level despite lack of training and teaching on the subject. Implementation of palliative care experiences within the nursing curriculum is essential for better preparing to students toward care of dying individuals⁽¹⁵⁾.

Palliative care clinical nurse specialists play an important role in providing the palliative care to patients, where they spend more time with patients and their families, helping them come to terms with an array of complex emotional and practical problems, facilitating communication, giving information and advice about treatments and also offering expertise in controlling pain and other distressing symptoms⁽¹⁶⁾. These nurses are equipped with specialist skills to assess the complex palliative care needs of patients referred to the service^(17, 18).

In the majority of teaching universities and palliative medicine considered a palliative care as a part of its teaching program⁽¹⁹⁾. However, most programs in medicine teaching universities worldwide include adult palliative care. Despite dynamic development of the palliative care, there are difficulties in nursing staff recruitment and significant deficits in the knowledge about palliative care and care of dying. These difficulties arise as a result of a lack of palliative care training among nursing students because the undergraduate nursing curricula are negligent palliative care (PC) issues⁽²⁰⁾.

Significance of the study:

Because the nursing schools give limited emphasis for palliative care in the educational curriculum plan, in clinical areas and the incidence of death patients increase each year with no developing to palliative care, it is necessary to conduct our study to evaluate the effect of palliative care educational program on nursing students about their knowledge and attitude toward care of dying.

Aim:

The aim of the study was to evaluate the effect of palliative care educational program on nursing students' knowledge and attitudes toward care of dying patients.

MATERIAL AND METHODS

Design: quasi experimental design was utilized in this study

Research hypothesis:

The researcher expects that the nursing students who receive educational program about palliative care will exhibit improvement of their knowledge and attitudes toward care of dying patients.

Setting:

The study was conducted at the Faculty of Nursing in Tanta University.

Subjects:

A representative sample of 40% from nursing students who enrolled in second, third and fourth year study. The study sample were selected randomly and consisted of 173 students from second year, 110 students from third year and 110 students from fourth year.

Inclusion criteria:

- Students who enrolled in second, third and fourth year
- Students who are willing to participate in the study.

Tools of data collection:

Data of the study was collected through utilizing the following two tools:

Tool (I): Structured Interview Questionnaire:- It was consisted of two parts as follow:

Part (1): Socio-demographic characteristics of the students:-which include age, sex, previous education on death and dying, previous experience in caring of dying, previous death experience and current experience in the care of terminally ill.

Part (2): Knowledge Questionnaire Sheet about Palliative Care: it was developed by the researchers based on literature review (Kassa et al., BMC Palliative Care 2014)⁽²¹⁾. It included (17) questions to measure the undergraduate students' knowledge regarding care of a dying patients.

Scoring system of these questionnaires:

Score +1 for a correct answer, zero for an incorrect answer was considered. The total score of questionnaires were less than 50% was graded as poor, 50% to less than 75% score was graded as average, and more than 75% score was graded as good score.

Tool (II): Frommelt's Attitude toward Care of the Dying (FATCOD) Scale:

It developed by the Frommelt 1991⁽¹⁸⁾. This scale measured the undergraduate students' attitudes toward a care of dying patients. It was consisted of 30 items using as 7 items related to students' attitude toward care of dying, 10 items related to students' attitude toward death, 6 items related to students' attitude toward families and 7 items related to students' attitude toward relationship.

Scoring system of the (FATCOD) scale:

Five points Likert scale to indicate respondents' attitudes toward caring for dying patients. The instrument consists of an equal number of positive and negative worded statements with response options of strongly disagree, disagree, uncertain, agree, and strongly agree. Positive items are scored one (strongly disagree) to five (strongly agree). Scores are reversed for negative items. Possible scores can range from 30–150. A higher score indicates a more positive attitude toward caring for dying patient and vice versa. The levels of students' attitude classified as follow;

1. Positive attitude $\geq 65\%$ of the total score of Frommelt's attitude toward Care of the Dying (FATCOD) Scale.
2. Fair attitude was 50% to less than 65% of the total score of Frommelt's attitude toward care of the dying (FATCOD) scale.
3. Negative attitude was $< 50\%$ of the total score of Frommelt's attitude toward care of the dying (FATCOD) Scale.

Method for data collection:

Content validity:

Both tools were handed to 5 experts from medical surgical nursing departments at different Universities to assess its clarity and based on their recommendations the necessary modifications were done.

Tools reliability:

The reliability of the tool was 0.744 by using Cronbach's Alpha test. It was done by the researcher.

Procedure:

- Prior to data collection an official permission was obtained from the dean of nursing college at Tanta University. This was intended to explain the purpose of the study and to facilitate data collection. The researchers explained study purpose and procedures to all participants.
- Privacy and confidentiality was maintained.

RESULTS

- **Tool I** of the study was developed by the researchers after review of relevant literatures ⁽²¹⁾, while **Tool II** was adopted by the researchers.
- A pilot study was carried out on 30 students to test the feasibility and applicability of the developed tools; accordingly, needed modification was done. The pilot study was excluded from the study sample.
- Socio-demographic sheet was administered for each student to fill the personal data as age, sex...etc.
- A pre-knowledge test questionnaires was handed to all students (n=393) to test their knowledge about palliative care.
- Also, the students' attitudes toward care of dying patients was assessed using **Frommelt's attitude scale**, which utilized by the researchers to measure the students' attitudes regarding care of dying patients.
- The students were divided into three groups by years; each year's group divided into subgroups, the number of the students in each subgroup was not more than twenty. The training program sessions were held three times/week for 3 weeks to each year's group. Each session lasted about 45-60 minutes. The contents of program sessions were as follow: definition of palliative care and its supported services, goal for providing palliative care, difference between palliative care and hospice care, importance of palliative care for patient and relatives, types of settings producing this care and who receive and provides palliative care.
- The researchers utilized the following instructional media and materials as follow: power point presentation, video tape film, hand out for theoretical content (in class).
- To assess the impact of palliative care training program on nursing students' knowledge, the same knowledge test questionnaires was handed to students immediately after implementation of the program and one month later (follow up). As well as the researchers utilized the same Frommelt's attitude test to measure students' attitudes regarding care of dying patients immediately after implementation of the program and one month later. Data collection period consumed about 2 months.

Table (1): Distribution of the studied students according to their sociodemographic data:

Sociodemographic characteristics		2 nd year (n=173)		3 rd year (n=110)		4 th year (n=110)	
		N	%	N	%	N	%
Age (years)	18-20 years	84	48.6	2	1.8	0	0
	20-22years	88	50.9	107	97.3	90	81.8
	More than 22 years	1	0.6	1	0.9	20	18.2
Sex	Male	36	20.8	25	22.7	41	37.3
	Female	137	79.2	85	77.3	69	62.7
Previous education on death and dying	No	122	70.5	80	72.7	69	62.7
	Yes	51	29.5	30	27.3	41	37.3
Previous experience in caring of dying	No	149	86.1	93	84.5	77	70
	Yes	24	13.9	17	15.5	33	30
Previous death experience	No	118	68.2	78	70.9	69	62.7
	Yes	55	31.8	32	29.1	41	37.3
Current experience in the terminally ill	No	129	74.6	81	73.6	76	69.1
	Yes	44	25.4	29	26.4	34	30.9

Table (1) illustrates the distribution of the studied students according to their sociodemographic data. It was observed

that regarding age more than half of the study (50.9% of the second year students,(97.3%) of the third years students, and

(81.8%) of the fourth year students were aged from 20-22years. Regarding sex nearly two thirds (62.7%) of the fourth year students, more than three quarters of the second and third year students (79.2%, 77.3% respectively) were females. In relation to previous education on death and dying nearly two thirds (62.7%) of the fourth years students, nearly three quarters of the second and third year students (70.5%,72.7% respectively) had no previous education on death and dying. Regarding previous experience in caring of dying more than two thirds (70%) of fourth years students, majority of the second and third years

students(86.1%,84.5% respectively) had no previous experience in caring of dying. In relation to previous death experience nearly two thirds (62.7%) of fourth years students, more than two thirds of the second year students and third year students (68.2%,70.9% respectively) had no previous death experience. In relation to current experience in the terminally ill more than two thirds (69.1%) of the fourth years students, nearly three quarters of the second year students and third years students(74.6,73.6% respectively) had no current experience in the terminally ill.

Table (2): Mean scores of students' Frommelt's attitude toward care of the dying scale for 2nd year undergraduate students (n=173).

Items	Mean ± SD Range			F	P
	Pre	Post	Follow up		
1. Students' attitude toward care of dying.	28.38±3.402 35-18	28.08±4.194 35-11	27.83±3.214 35-23	0.993	0.371
2. Students' attitude toward death	27.79±3.752 47-20	27.60±4.455 42-14	30.06±3.795 37-22	20.101	0.000*
3. Students' attitude toward families	16.88±2.312 23-12	16.80±2.337 22-6	16.12±3.679 22-6	3.805	0.023*
4. Students' attitude toward relationship	4.88±1.979 10-2	4.76±2.076 10-2	5.40±2.154 10-2	4.687	0.010*
5. Students' attitude toward patients' rights	15.12±2.207 21-5	15.16±2.474 24-9	14.77±2.847 19-9	1.193	0.304

Significant at level P < 0.05

Table (2) shows the mean scores of students' Frommelt's attitude toward care of the dying scale for 2nd year undergraduate students (n=173). It was observed that there was a significant difference between pre, post, and follow up

of the 2nd year undergraduate students mean score regarding students' attitude toward death, families and relationship P=0.000,0.023,0.010 respectively.

Table (3): Mean scores of students' Frommelt's Attitude toward Care of the Dying Scale for 3rd year undergraduate students (n=110).

Items	Mean ± SD Range			F	P
	Pre	Post	Follow up		
1. Students' attitude toward care of dying.	27.67±3.589 35-15	28.78±3.439 35-18	27.04±3.234 35-18	7.323	0.001*
2. Students' attitude toward death	27.66±4.263 44-19	28.00±3.798 37-16	29.05±3.199 35-23	4.058	0.018*
3. Students' attitude toward families	16.30±2.402 22-10	15.92±2.401 26-11	15.38±2.209 20-12	4.277	0.015*
4. Students' attitude toward relationship	4.91±2.466 10-2	4.44±2.253 10-2	4.73±2.158 10-2	1.186	0.307
5. Students' attitude toward patients' rights	15.43±2.252 21-7	15.53±2.478 22-9	16.23±2.437 21-12	3.655	0.027*

Significant at level P < 0.05

Table (3) shows the mean scores of students' Frommelt's attitude toward care of the dying scale for 3rd year undergraduate students. It was observed that there was a significant difference between pre, post, and follow up of

the 3rd year undergraduate students mean score regarding students' attitude toward care of dying, death, families and patients' rights P=.0001,0.018, 0.015, 0.027 respectively.

Table (4): Mean scores of students' Frommelt's Attitude Toward Care of the Dying Scale for 4th year undergraduate students (n=110).

Items	Mean ± SD Range			F	P
	Pre	Post	Follow up		
1. Students' attitude toward care of dying.	27.15±3.151 35-19	27.18±2.956 35-18	26.30±3.372 35-20	2.763	0.065
2. Students' attitude toward death	28.80±3.935 39-18	28.39±3.942 39-18	28.48±3.654 39-17	0.343	0.710
3. Students' attitude toward families	16.45±2.688 23-9	16.16±2.621 22-8	15.65±2.186 23-12	2.867	0.058
4. Students' attitude toward relationship	4.36±1.952 10-2	4.42±2.052 10-2	4.15±1.900 10-2	0.591	0.554
5. Students' attitude toward patients' rights	15.79±2.176 21-10	15.49±2.097 21-9	15.69±2.196 23-11	0.552	0.576

Significant at level P < 0.05

Table (4) shows the mean scores of students' Frommelt's attitude toward care of the dying scale for 4th year undergraduate students. It was observed that there was no significant difference between pre, post, and follow up of

the 4th year undergraduate students mean score regarding students 'attitude toward care of dying, death, families, relationship and patients' rights.

Table (5): Comparison between the studied students according to pre, post and follow up total From melt's attitude throughout period of study.

Total Frommelt Attitude		2 nd year (n=173)		3 rd year (n=110)		4 th year (n=110)		Total (n=393)		χ^2	P
		N	%	N	%	N	%	N	%		
Pre	Negative	56	32.4	44	40	37	33.6	137	34.9	4.466	0.347
	Fair	111	64.2	60	54.5	71	64.5	242	61.6		
	Positive	6	3.5	6	5.5	2	1.8	14	3.6		
Post	Negative	61	35.3	32	29.1	39	35.5	132	33.6	1.742	0.783
	Fair	106	61.3	73	66.4	68	61.8	247	61.6		
	Positive	6	3.5	5	4.5	3	2.7	14	3.6		
Follow Up	Negative	39	22.5	43	39.1	54	49.1	136	34.6	30.004	0.00*
	Fair	134	77.5	63	57.3	54	49.1	251	63.9		
	Positive	0	0	4	3.6	2	1.8	6	1.5		

Significant at level P< 0.05

Table (5) explains comparison between the studied students according to pre, post and follow up total Frommelt's attitude throughout period of study. It was observed that there was no significant difference between total Frommelt's

attitude score (negative, fair and positive) among second, third and fourth undergraduate students during the pre and post observations, while the significant difference was present only during follow up observational period p=0.00.

Table (6): Comparison between the studied students according to pre, post and follow up total knowledge score throughout period of study.

Total knowledge Scores		2 nd year (n=173)		3 rd year (n=110)		4 th year (n=110)		Total (n=393)		χ^2	P
		N	%	N	%	N	%	N	%		
Pre	Poor	100	57.8	72	65.5	60	54.5	232	59.1	16.778	0.002*
	average	33	19.1	18	16.4	36	32.8	87	22.1		
	Good	40	23.1	20	18.2	14	12.7	74	18.8		
Post	Poor	37	21.4	29	26.4	40	36.4	106	26.9	24.575	0.00*
	average	85	49.1	41	37.3	42	38.2	168	42.7		
	Good	51	29.5	40	36.4	28	25.5	119	30.2		
Follow Up	Poor	42	24.27	41	37.3	53	48.2	136	36.6	16.708	0.002*
	average	87	50.28	39	35.5	40	36.4	166	42.2		
	Good	44	25.43	30	27.2	17	15.4	91	23.1		

Significant at level P< 0.05

Table (6) illustrates comparison between the studied students according to pre, post and follows up total knowledge score throughout the period of study. There was a significant difference between total knowledge score

(poor, average and good) among second, third and fourth undergraduate students during the pre, post and follow up observational periods.

Table (7): Correlation between total's attitude and socio-demographic data throughout period of study:

Sociodemographic data		2 nd year (n=173)			3 rd year (n=110)			4 th year (n=110)		
		pre	post	Follow Up	Pre	Post	Follow Up	Pre	post	Follow Up
Age	R	0.091	-0.054	-0.112	-0.095	0.006	-0.037	0.091	0.032	-0.157
	P	0.234	0.482	0.141	0.323	0.947	0.698	0.342	0.740	0.102
Previous education on death and dying	R	0.087	0.031	-0.032	0.124	-0.072	-0.040	-0.067	-0.041	-0.074
	P	0.255	0.686	0.671	0.198	0.455	0.681	0.485	0.671	0.445
Previous experience in caring of dying	R	0.108	-0.013	0.168 ⁺	0.201 ⁺	-0.079	0.081	0.007	-0.027	-0.073
	P	0.159	0.861	0.027*	0.036*	0.414	0.402	0.946	0.780	0.449
Previous death experience	R	0.110	0.024	0.075	0.107	0.009	0.065	0.092	-0.042	0.084
	P	0.149	0.753	0.325	0.267	0.927	0.499	0.338	0.667	0.385
Current experience in the terminally ill	R	0.168 ⁺	-0.084	0.117	0.124	-0.106	-0.004	-0.114	-0.030	-0.005
	P	0.027*	0.269	0.127	0.198	0.272	0.968	0.236	0.757	0.962

Significant at level P< 0.05

Table (7) shows that correlation between total Frommelt's attitude and socio-demographic data throughout period of

study. It was observed that there was significant positive correlation between total Frommelt's attitude and previous

Om Ebrahim Ali Elmelegy et al, International Journal of Nursing Didactics, 6 (12) December, experience in caring of dying during follow up of the 2nd year students and pre intervention period of the 3rd year students P = (0.027,0.036 respectively.) Also there was significant

positive correlation between current experience in the terminally ill and total frommelt's attitude in and pre intervention period of the 2rd year students.

Table (8):Correlation between total knowledge score and sociodemographic data throughout period of study:

Sociodemographic data		2 nd year (n=173)			3 rd year (n=110)			4 th year (n=110)		
		pre	Post	Follow up	Pre	post	Follow Up	Pre	Post	Follow up
Age	R	0.224**	-0.083	0.018	0.176	0.030	0.102	0.252**	0.227*	-0.097
	P	0.003*	0.276	0.813	0.066	0.759	0.288	0.008*	0.017*	0.312
Previous education on death and dying	R	0.178*	-0.056	-0.035	0.184	0.009	0.065	0.112	0.215*	0.039
	P	0.019*	0.461	0.643	0.054	0.923	0.499	0.244	0.024*	0.689
Previous experience in caring of dying	R	0.226**	-0.075	0.012	0.060	0.112	0.167	0.221*	0.233*	-0.134
	P	0.003*	0.329	0.878	0.536	0.242	0.081	0.020*	0.014*	0.162
Previous death experience	R	0.154*	-0.065	-0.027	0.222*	-0.016	0.038	0.073	0.015	0.034
	P	0.044*	0.394	0.720	0.020*	0.870	0.692	0.450	0.880	0.728
Current experience in the terminally ill	R	0.204**	0.081	-0.012	0.175	0.046	0.134	0.047	0.037	-0.083
	P	0.007*	0.290	0.874	0.067	0.636	0.162	0.624	0.699	0.387

Significant at level P< 0.05

Table (8) shows the correlation between total knowledge score and sociodemographic data throughout the period of study. It was observed that there was significant positive correlation between total knowledge score and age, previous education on death and dying, previous experience in caring of dying, previous death experience and current experience in the terminally ill in the pre intervention of the 2rd year students. Among the third years undergraduate students there was significant positive correlation between total

knowledge score and previous death experience in the pre intervention. In relation to 4th year students that there was significant positive correlation between total knowledge score and age, and previous experience in caring of dying death and dying in the pre and post intervention of the 4th year students. Previous education on death and dying in the same group there was significant positive correlation between total knowledge score and previous education on death and dying post intervention of the 4th year students.

Table (9): Relationship between total knowledge score and total From melt's attitude among 2nd year students.

Total Frommelt's Attitude		Total knowledge score						Total		χ^2 P
		Poor		Average		Good		N	%	
		N	%	N	%	N	%			
Pre	Negative	25	14.5	30	17.3	1	0.6	56	32.4	4.367 0.359
	Fair	43	24.9	61	35.3	7	4.05	111	64.2	
	Positive	1	0.6	4	2.3	1	0.6	6	3.5	
	Total	69	39.9	95	54.9	9	5.2	173	100	
post	Negative	12	6.9	30	17.3	19	11	61	35.3	3.512 0.476
	Fair	25	14.5	50	28.9	31	17.9	106	61.3	
	Positive	0	0	5	2.9	1	0.6	6	3.5	
	Total	37	21.4	85	49.1	51	29.5	173	100	
Follow up	Negative	19	17.3	13	11.8	7	6.4	39	22.5	6.668 0.036*
	Fair	81	73.6	20	18.2	33	30	134	77.5	
	Total	100	90.9	33	30	40	36.4	173	100	

Significant at level P< 0.05

Table (9) shows the relationship between total knowledge score and total Frommelt's attitude among 2nd year students. It was observed that there was significant difference between total knowledge and total Frommelt's

attitude among 2nd year students during the follow up observation, while the difference was not significant during pre and post observations periods.

Table (10): Relationship between total knowledge score and total Frommelt's attitude among 3rd year students.

Total Frommelt's Attitude		Total knowledge score						Total		χ^2 P
		Poor		Average		Good		N	%	
		N	%	N	%	N	%			
Pre	Negative	22	20	17	15.5	5	4.5	44	40	0.604 0.963
	Fair	29	26.4	24	21.8	7	6.4	60	54.5	
	Positive	2	1.8	3	2.7	1	0.9	6	5.5	
	Total	53	48.2	44	40	13	11.8	110	100	
Post	Negative	7	6.4	15	13.6	10	9.1	32	29.1	4.143 0.387
	Fair	22	20	24	21.8	27	24.5	73	66.4	
	Positive	0	0	2	1.8	3	2.7	5	4.5	
	Total	29	26.4	41	37.3	40	36.4	110	100	
Follow Up	Negative	22	20	9	8.2	12	10.9	43	39.1	29.007 0.000*
	Fair	50	45.5	9	8.2	4	3.6	63	57.3	
	Positive	0	0	0	0	4	3.6	4	3.6	
	Total	72	65.5	18	16.4	20	18.2	110	100	

Significant at level P< 0.05

Table (10) illustrates the relationship between total knowledge score and total Frommelt’s attitude among 3rd year students. It was observed that there was significant difference between total knowledge and total

Frommelt’s attitude among 3rd year students during the follow up observation, while the difference was not significant during pre and post observations.

Table (11): Relationship between total knowledge score and total Frommelt’s attitude among 4th year students.

Total Frommelt’s Attitude		Total knowledge score						Total		χ ² P
		Poor		Average		Good		N	%	
		N	%	N	%	N	%			
Pre	Negative	24	21.8	8	7.3	5	4.5	37	33.6	17.477 0.002*
	Fair	36	32.7	28	25.5	7	6.4	71	64.5	
	Positive	0	0	0	0	2	1.8	2	1.8	
Total		60	54.5	36	32.7	14	12.7	110	100	
Post	Negative	20	18.2	12	10.9	7	6.4	39	35.5	4.357 0.360
	Fair	30	27.3	19	17.3	19	17.3	68	61.8	
	Positive	1	0.9	0	0	2	1.8	3	2.7	
Total		51	46.4	31	28.2	28	25.5	110	100	
Follow Up	Negative	29	26.4	16	14.5	9	8.2	54	49.1	5.022 0.285
	Fair	24	21.8	22	20	8	7.3	54	49.1	
	Positive	0	0	2	1.8	0	0	2	1.8	
Total		53	48.2	40	17.3	17	15.5	110	100	

Significant at level P< 0.05

Table (11): illustrates the relationship between total knowledge score and total From melt’s attitude among 4th year students. It was observed that there was significant difference between total knowledge and total Frommelt’s attitude among 4th year students during the pre management observation, while the difference was not significant during post follow up observations.

Statistical analysis:

The analysis was performed using statistical software SPSS version 18. For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, a comparison between one group before and after intervention was done by using Chi-square test (χ²). For a comparison between more than two means, the F-value of ANOVA was calculated. Significance was adopted at P<0.05 for interpretation of results of tests of significance. Correlation was done by using Spearman correlation test.

DISCUSSION

Nurses play a central role in palliative and end-of-life care. Nursing roles include developing plans of care, providing leadership for staff, and guidance and support for patients and families. However, researchers have found that not all nurses feel comfortable, or are knowledgeable about the care needed for a dying patient (21). One of the important factors influencing a successful delivery of palliative healthcare is the health care professionals’ knowledge, attitudes, beliefs, and experiences, which determine not only their procedure but also their behavior during evaluation and treatment of patients(22). So this study is aimed to evaluate effect of educational program on nursing students to improve their knowledge and attitude toward palliative care.

Regarding age more than half of the study (50.9% of the second year students, (97.3%) of the third years students, and (81.8%) of the fourth years students were aged 20-22 years. This is because the most common age for join to university in Egypt is from 19-20 years. In relation to sex nearly two thirds (62.7%) of the fourth year students, more than three quarters of the second year students and third year

students (79.2%,77.3% respectively) were females, this results may be present due to the faculty of nursing was accepted female students only in the past. Recently it permits of male students enrolled in it.

In relation to previous education on death and dying nearly two thirds (62.7%) of the fourth year students, nearly three quarters of the second year students and third year students (70.5%, 72.7% respectively) had no previous education on death and dying. Regarding previous experience in caring of dying more than two thirds (70%) of the fourth year students, majority of the second year students and third years students(86.1%, 84.5% respectively) had no previous experience in caring of dying. In relation to previous death experience nearly two thirds (62.7%) of the fourth years students, more than two thirds of the second year students and third years students (68.2%,70.9% respectively) had no previous death experience. In relation to current experience in the terminally ill more than two thirds (69.1%) of the fourth years students, nearly three quarters of the second year students and third years students (74.6,73.6% respectively) had no current experience in the terminally ill. These results necessitate the need for educational interventions these results agree also with *Jafari et al., (2015)*(22), who emphasize on the importance of education about end-of-life care. The study suggests that educational programs about death and caring for dying patients should be added to undergraduate nursing curricula.

The difference was significant between pre, post, and follow up of the 2nd year undergraduate students mean score regarding students' attitude toward death, students 'attitude toward families and students' attitude toward relationship. Also, the mean scores of students’ Frommelt’s Attitude toward care of the Dying Scale for 3rd year undergraduate students. It was observed that there is a significant difference between pre, post, and follow up of the 3rd year undergraduate students mean score regarding students 'attitude toward care of dying, students 'attitude toward death, students 'attitude toward families, and students 'attitude toward patients' rights. This result agree with *Jafari et al.,(2015)*(22), who found that students showed moderately

negative to neutral attitudes toward caring for dying patients. Education has improved students' attitude significantly (mean score of FATCOD before study were 3.5 ± 0.43 and after intervention were 4.7 ± 0.33) ($P < 0.001$). In another study carried out by *Cevik and Kav (2013)*⁽²³⁾. About The attitudes of Turkish nurses toward death and caring for dying patients are less positive than the reported attitudes of nurses in other studies. Although the majority of nurses stated that they had received education on end of life, most of them were not comfortable talking about death.

The mean scores of students' Frommelt's Attitude toward care of the dying scale for 4th year undergraduate students. It was observed that there was no significant difference between pre, post and follow up of the 4th year undergraduate students mean score regarding students' attitude toward care of dying, students' attitude toward death, students' attitude toward families, students' attitude toward relationship and students' attitude toward patients' rights. This result may be due to the long period of experience in practical settings compared to the second and third year's undergraduate students. This result disagree with *Henoch et al., (2014)*⁽²⁴⁾, who found that earlier years of experience doesn't influence the attitude toward care of dying patients.

There was significant difference between poor, average and good knowledge among the second, third and fourth undergraduate students during there, post and follow up observations. While there was no significant difference between negative, positive and fair attitude among the second, third and fourth undergraduate students during the pre and post observations while the significant difference was present only during follow up observations. So the difference is present clearly in knowledge comparing with the attitude this may be due to easy change in student knowledge comparing with attitude this result agree with *Muttoet al., (2010)*⁽²⁵⁾, who stated that changing in attitude need long time and repeated stimulus without reinforcement.

The current study showed that there was no significant correlation between total Frommelt's attitude with age and previous education on death and dying. This finding was in agreement with the findings of *Ali and Ayoub, (2010)*⁽²⁶⁾, who found that there is no statistically significant relationship between nurse's age ($P=0.240$), and total scores of FATCOD scale attitude measuring tools. The experience appears to be an important key. These were some factors that were significantly associated with 2nd year nursing students' attitude in this study might be due to the fact that in Egypt, the trainings are given most of the time for staff in governmental hospitals and the nursing students working in the medical ward had rather than outpatient department because the chronic illnesses patients are mostly admitted to the medical ward and, thus, nurses who worked in the medical ward had daily contact with those patients, and may have developed positive attitude towards PC.

The current study reveals that, there was significant positive correlation between total Frommelt's attitude and previous experience in caring of dying during follow up of the 2nd year students and pre intervention of the 3rd year students.

Also there was significant positive correlation between current experience in the terminally ill and total Frommelt's attitude in pre intervention of the 2rd year students. This result was in the consistency of the study done by *Grubb and Arthur, (2016)*⁽²⁷⁾, who stated that the attitude scores were higher for students reporting having experience of preparing the body of a patient who had died and for those who had experienced caring for a dying patient or cared for a dying relative or friend. In the present study, there was significant positive correlation between total knowledge score and age, previous education on death and dying, previous experience in caring of dying, previous death experience and current experience in the terminally ill in the pre intervention of the 2rd year students. This might be due to their curriculum contained some items related to palliative care and their contacts with patient during the clinical practice. This finding contradicts with *Grant et al., (2011)*⁽²⁸⁾, who reported the negative association of age, gender, work experience, experience of caring terminally ill patients, and duration of training with nurses' knowledge might be due to palliative care is a novice discipline in Ethiopia.

Among the third years undergraduate students there was significant positive correlation between total knowledge score and previous death experience in the pre intervention. In relation to 4th year student that there was significant positive correlation between total knowledge score and age, and previous experience in caring of dying, death and dying in the pre and post intervention of the 4th year student group. Previous education on death and dying in the same group there was significant positive correlation between total knowledge score and previous education on death and dying post intervention of the 4th year student group. This in the line with *Ayed et al., (2015)*⁽²⁹⁾, who found that there was a positive relationship between experience, qualification and training on palliative care and knowledge of nurses ($p=0.004, 0.020, \text{ and } 0.015$) respectively. It means when the nurses' experience and qualification increase or if the nurses had training course on palliative care their favorable knowledge also improves.

The attitude becomes more positive as a result of increasing of the knowledge of the palliative care after attending the intervention program. In measuring the effectiveness of the program, many continuing educational programs use a comparison of the participants' pre-test and post-test scores as an indicator for program effectiveness. The present study has shown that the intervention program of the students could improve their total attitude scores by increasing the knowledge. The current study showed that there was significant difference between total knowledge and total Frommelt's attitude among 2nd year and 3rd year students during the follow up observation while the difference was not significant during pre and post observations. This is accordance with by *Budkaew and Chumworathayi (2013)*⁽³⁰⁾, demonstrated that there was positive correlation between level of knowledge and attitudes toward palliative terminal cancer care. Attitude scores were statistically correlated to knowledge scores ($p=0.036$). It means when the nurses knowledge improve their favorable attitude also improves.

On pre intervention, the result of our study revealed that there was significant difference between total knowledge and total Frommelt's attitude among 4th year students in relation to post and follow up observations ($p = 0.002$). This result may be return to that the 4th year students passed the most courses which included in their curriculums as this is the last year in their study. This finding was resemble to study in Taiwan by *Shih et al., (2010)* ⁽³¹⁾, who showed that junior doctors were strongly encouraged to have correct principles of palliative care and develop positive attitudes toward palliative terminal care by educating in medical program.

CONCLUSION

Post implementing palliative care educational program on nursing students' knowledge and attitudes toward care of the dying patients, the current study revealed that the majority of second and third year students had no previous experience in caring of dying. Also, there was significant difference between total knowledge and total Frommelt's attitude among 4th year students in relation to post and follow up observations ($p = 0.002$).The difference was present clearly in knowledge comparing with the attitude.

RECOMMENDATIONS

Based on findings of this study, the researchers recommended that;

1. Palliative care must be an integral part of the nursing curriculum and encourage students strongly to have a correct principle of care of dying patients to develop positive attitudes toward palliative terminal care.
2. Educational program to nursing students for improving their knowledge and attitudes toward palliative care.
3. A simple illustrated booklet should be given to all undergraduate nurses students about the palliative care for patients associated with diseases need it.

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