

Effect of Self Learning Package on Critical Care Nurses' Performance Regarding Care of End of Life Patient

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ABSTRACT

Introduction: Cerebrovascular Background: Critical care nurses are expertly trained to care for critically ill patients; however, many critical care nurses feel inadequately prepared to provide end of life care to patients in the intensive care unit. The nurses attribute this to lack of support and training on end-of-life care. The study aim was to assess effect of self-learning package (SLP) on critical care nurses' performance regarding care for end of life patient. **Methods, Design:** To achieve this aim a quasi-experimental design was utilized. **Subjects and setting:** A convenient sample of 60 nurses was selected from surgical, medical and neurological ICU of Ain-Shams university hospitals. **Study results:** Regarding demographic characteristics. This study revealed that, 58.3% of the studied subjects were less than 30 years, 83.3% were female, 75.0% were diploma nurses, 46.7% of them had ten or more years of experience, and 81.7% had no training related to end of life care. Regarding knowledge and practice 15.0% & 23.3% respectively of the study subjects had satisfactory knowledge and practice related to care for end of life patient in pre phase, 80.0% & 81.7 % respectively in post implementation of self-learning package and 60.0% & 45% had a satisfactory knowledge and practice in follow up phase. While regarding attitude, positive attitude was 5%, 80% and 55% respectively in pre, post and follow up phases **Conclusion:** The current study concluded that there was highly statistically significant increase of total score of nurses' knowledge, practice and total score of nurse's attitude pre/post, pre/follow up and post/ follow up phases of SLP implementation. there was statistically significant positive effect for SLP on nurses' knowledge, practice and attitude. **Recommendations;** conduction of further researches in end of life care to enrich, improve, & update nurse's knowledge, practice and attitude. Periodic in-services education program regarding end of life care and self-learning package to be performed for patients are recommended.

Key words: end of life care, self-learning package, nurses' performance

Introduction:

Critical care nurses (CCN) are well qualified to care for critically ill patients; yet, several critical care nurses are inadequately prepared to give end of life care to patients in the intensive care units due to lack of support

and training on end of life care (Alvaro, 2014 and Magnaye et al. 2013).

Critical care nurse has an essential and important contribution to make in the provision and improvement of end of life (EOL) care throughout their different roles. Due to the reality that EOL care is raising as

a widespread area of knowledge in the intensive care unit (ICU), these contributions may be provided during direct practice, research, education, administration and policy (Awad., Yossef., Hussien., and Zaghlah, 2012; Nagamatsu, Natori, Yanai and Horiuchi, 2014))

End of life care is the term used to describe the support and medical care given during the time surrounding death. Such care does not happen just in the moments before breathing finally stops and a heart ceases to beat. The patient is often living, and dying, with one or more chronic illnesses and needs a lot of care for days, weeks, and sometimes even months (National institutes of health, 2014).

The care of dying patients is a challenge for nurses that enclose raised a particular attention in the recent years. Nurses are often exposed to the care of dying. This experience often giving rise to anxiety and undesired attitudes that reflect on the quality of patient's care (Roman, Sorribes and Ezquerro, 2012).

Nurses can make a difference for EOL individuals with advanced disease by communicating with health care providers, advocating for patients, providing support to families, facilitating decision making, and ensuring optimum pain and symptom management (Broglio, & Bookbinder, 2014 and Boules, 2014).

Self-Learning package (SLP) isa learner initiate process. It involves identification of learning needs, formulation of objectives, choice of resources, accomplishment of strategies, and assessment of learning outcomes regarding to reward of SLP, the self-learning package offers elasticity and accessibility to suit nurse's schedules, it also promotes additional participation in ongoing education as nurses gain knowledge to define their own learning needs and search for resources (Bertino, 2011).

Significance of the study:

More than half of all deaths occur in emergency hospitals are anticipated, and high percentage of patients who die had at least one admission to an emergency hospital in the year before death. Overall mortality rates in patients admitted to adult ICUs average 10% to 29% (World Health Organization, 2015).

The nurses receive inadequate information and support and unable to contribute in the provision of care for end of life patient to the degree that they would desire, therefore, assessing and improving of the knowledge, attitude and practices of critical care nurses regarding end of life nursing care is necessary. So, this study carried out to determine the effect of self-learning package on critical care nurses' performance regarding the care for end of life patient and finally, the study may create an interest and motivation for conduction of further studies into this area.

Aim of the study:

The present study aims to:

Assess the effect of self-learning package on critical care nurses' performance regarding the care for end of life patient.

Research hypothesis:

Self- learning package will affect positively the critical care nurses' knowledge, practice and attitude regarding the care for of end of life patient.

Subjects and methods:

Study Design: A quasi-experimental research design was utilized to meet the aim of this study.

Setting of the study:

The study was conducted in critical care units including Medical Care Units (MCU), Surgical Care Units (SCU), and Neurological Care Units (NCU) at Ain-Shams University Hospitals.

Subjects:

A convenience sample of sixty nurses of both sexes, different ages, and different levels of qualification were recruited from the previously mentioned settings, 27 nurses from medical ICU, 21 nurses from Surgical ICU and 12 from neurological ICU.

Tools for data collection:

Three tools were used to collect data:

I. Self-administered Critical Care Nurses' knowledge questionnaire.

It was used to assess critical care nurses' knowledge regarding care for end of life patient (pre, post & follow up). This tool written in simple Arabic language, it was developed by the researcher after reviewing the related literature from Truog, Campbell & Curtis (2008) and Wallace, et al, (2009).

It included two parts:

The first part included the demographic characteristics of nurses (age, gender, qualification, place of work, previous training program and years of experience).

The second part included assessment of critical care nurses' knowledge about care for end of life patient e.g. (Knowledge about end of life care, nursing interventions for dying patient e.g. hygienic care, promoting comfort...etc.).

▪ The Scoring system

The nurses' questionnaire sheet consisted of 38 questions related to end of life care in the form of complete (6), true & false (18) and multiple choice questions (14). One mark was given for each correct answer, and Zero for the incorrect answer in true & false and multiple choice questions. As regard the complete questions two marks were given for each correct complete answer, one mark for the correct incomplete answer and zero for incorrect answer. The total score of questionnaire sheet was 44 marks.

Evaluation was considered as follows:

- Satisfactory score for knowledge \geq 75%
- Unsatisfactory score for knowledge $<$ 75%

II. End of life Patient Nursing Care Observational Checklist

It was used to assess critical care nurses' practice regarding the nursing care for end of life patient at pre, post and follow up phases. It included two parts, the first part of this tool was standardized end of life care plan checklist it was used to measure the nurses' ability to make patient assessment, nursing diagnoses, assess signs and symptoms of end of life, assess pain, assess Edmonton symptom and end of life symptom control. It was adopted from Bruera et al. (2011). The second part measured end of life care domains and was developed by the researcher after reviewing the related literature (Lemone, 2013; Beckstrand, Callister, & Kirchoff, 2011; Gysels & Higginson, 2011 and Gavrin, 2007).

The Scoring system:

End of life Patient Nursing Care Observational Checklist part (1) consisted of 6 items (patient assessment, nursing diagnoses, assess signs and symptoms of end

of life, assess and manage pain, assess Edmonton symptom and end of life symptom control) the scoring was 2 marks for done response and zero for not done, total marks for this part was 12. Part (2) consisted of seven parts:

- Hygienic care (6 marks),
- communications with patient (3 marks)
- obstacles & helpful behaviors to give end of life care (4 marks),
- ethical consideration (3 marks),
- Comfortable care (4 marks),
- Care after death (5 marks),
- Family support after the patient dying (3 marks). Each point of this items was given one score for the done point and zero for non-done point the score for part 2 was 28.

The total score for the observational checklist is 40 marks (100%).

Evaluation was as follow:

- Satisfactory for nurses' practice \geq 80%.
- Unsatisfactory for nurses' practice $<$ 80%.

III. Nurses' Attitude scale regarding the Care of dying:

It was adopted from Fromrnelt, (1991). It is a 30-item tool using a five-point Likert scale to indicate respondents' attitudes toward caring for dying patients. The instrument consists of an equal number of positively and negatively worded statements with response options of strongly disagree, disagree, uncertain, agree, and strongly agree.

The Scoring system:

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. The levels of nurses' attitude classified as follow: Positive attitude \geq 65%, Fair attitude = 50% to less than 65% and Negative attitude = $<$ 50% of the total score of Frommelt Attitude Toward Care of the Dying (FATCOD) Scale.

Content validity: It was carried out by a panel of nine expertise who reviewed the instrument and the learning package for clarity, relevance, comprehensiveness, understanding, and easiness for administration was established, minor modifications were required. Experts group consisting of nine members, (2) Lecturer, (3) Assistant Professors and (4) Professors of Medical Surgical Nursing at Ain-Shams and Helwan University.

Reliability of the tools: Alpha Cronbach test were used to measure the internal consistency of the tools (reliability of the tool used). These showed high reliability scores for the following tools: Nurses' questionnaire = 0.96, Observational checklist part 2 = 0.92, Nurses' attitude = 0.94.

Pilot study: It was carried out on 10% of the total study nurses. This was done to test clarity, arrangement of items and the applicability of the tools. Modifications based on the result of pilot study were made; some statements were omitted, added or rephrased. Nurses who shared in the pilot study were excluded from the main study sample. Finally, the final forms were developed.

Ethical Considerations: Prior to the conduction of the study, approval was obtained from the Scientific Research Ethical Committee of Ain Shams University. As well, a written consent from participants who

were assured that anonymity and confidentiality would be guaranteed and that, they have the right to withdraw from the study at any time without giving any reason. The aim of the study was explained for the nurses' prior data collection. The researcher assured that the data collected and information will be treated confidentially by using serial number for every nurse.

Field work: It included four phases: 1) assessment 2) Planning phase, 3) Implementation phase, 4) Evaluation phase.

1- Assessment: it was carried out before implementing SLP. During this phase, using the three tools, end of life knowledge questionnaire, observational checklist and attitude Likert scale. The researcher collected socio-demographic data of the nurses under study and assessed nurses' knowledge regarding end of life nursing care, and observational checklist was filled during the nurses work with end of life patients, then the attitude Likert scale. This assessment was used to assess needs of nurses under the study.

2- Planning the self-learning package:

The self-learning package was developed in Arabic language based on nurse's needs assessment from the results of the data analysis of the pretest after reviewing of the related literature. It included knowledge and skills regarding the care for end of life patient in critical care units. This package was tested by an exam for each unit and model answers at the end of the unit. The designed SLP included nursing guidelines regarding care for end of life patient as Knowledge regarding end of life care, personal hygiene, comfort measures, obstacles and barriers in end of life care, communication, ethical consideration, care after patient death, family support after patient death and CD about the care in critical care units. Educational principles were reviewed for the development of the self-learning package. It was evaluated by

experts in the field of critical care units at Ain- Shams-University Hospital.

3-Implementation of the self-learning package: Data collection of this study was accomplished through 10 months, in the period from beginning of the April 2014 to Jan 2015, during morning and afternoon shifts, four days/week. The questionnaire sheet was carried out to assess knowledge of the nurses regarding care for end of life patient, while the observational checklist was carried out to assess practice of the nurse regarding care for end of life patient that was filled in by the researcher by direct observation and the attitude sheet was filled by the nurses to assess attitude of nurses regarding care of dying. The assessment was done on the first four weeks for all the study sample (60), they were divided into 10 groups, it was carried out at the previously mentioned study settings for each group separately through filling the questionnaire and attitude sheet in a session of 30 min, and observational checklist was filled during their work with end of life patients, the assessment was carried out before implementing SLP. An introductory session about the SLP was done according to nurses' available time within 25 minutes to every unit separately to explain the aim and clarify how to use it and the nurses were given the Arabic self-learning package. The time allowed to study the package is one month for all nurses. After one month the post assessments of knowledge, attitude and practice were applied and a follow up test were performed after three months. Contacts with the nurses were done through the interviewing in the ICU and telephone to explain some difficult points of the SLP which encountered the nurses during the time of the study.

4-Evaluation of the self-learning package: This phase includes evaluating the effect of self-learning package on the nurses' performance by comparing the results pre/post self-learning package and after three months in the follow up test, using the same

questionnaire, attitude sheet and same observational checklist.

Administrative Design: To carry out the study, the necessary approvals were obtained from the Director and Nursing Director of Ain Shams University Hospital. Official letters were issued to them from the Faculty of Nursing explaining the aim of the study to obtain permission for collection of data. Written consent was taken from nurses who agreed to participate in the research process. Permission was taken from the administrative personnel and the head nurses/supervisors of CCU and medical departments. After the permission was granted to precede with study, the head nurse of the CCU was oriented about the objective of the study, to ensure maximum cooperation from the nurses in the study group.

Statistical design: The collected data were organized, categorized, tabulated and statistically analyzed using the Statistical Package for Social Science (SPSS), version 15, to evaluate the change for nurses under the study (pre and post Self Learning Module and after three months. Data were presented in tables and charts using numbers and percentages.

Results:

Table (1): shows that, 58.3% of the study group subjects were less than thirty years old with mean age of (27.8±5.9) and 83.3% were female. As well, 75.0% were diploma nurses, 45.00% working in medical ICU and 91.7% are staff nurse. Also 46.7% of them were having ten or more years of experience, and 81.7% of them did not attend any training sessions related to end of life nursing care.

Table (2) shows that, there was highly statistically significant improvement between total score of nurses' level of knowledge pre/post implementation of self-learning package (15% & 80%) respectively, and pre/follow up phase (15% and 60%)

respectively, at $p < 0.001$. Also, there was a statistically significant difference between total score of nurses' level of knowledge post/follow up phase (80% & 60%) respectively at $p < 0.05$.

Table (3): this table was concerned with practice regarding patient assessment, nursing diagnoses, assess signs and symptoms of end of life, assess pain, assess Edmonton symptom, end of life symptom control reveals that, there were a highly statistically significant improvement in all items of practice and there was a highly statistically significant improvement between total score of nurses' level of practice pre/post implementation of self-learning package (92.2 at $p < 0.01$), and between total score of nurses' level of practice pre/follow up phase (35.4 at $p < 0.05$). On other hand, there were a highly statistically significant decline between total score of nurses' level of practice in post/follow up phase (35.1 at $p < 0.05$).

As regard the nurses' level of practice part 2: it was showed from Table (4) that, hygienic care, obstacles & barriers in end of life care, ethical consideration, comfortable measures, care after death and family support, there was highly statistically significant improvement between score of nurses' level of satisfactory practice throughout the three implementation phases regarding all practice items ($p < 0.001$), while regarding total practice, the results shows that the percentage of satisfactory practice was 23.3% pre, 81.7%, post and 45% at follow up, and there was highly statistically significant improvement between total score of nurses' level of practice pre/post implementation of self-learning package, and pre/follow up phase at ($p < 0.001$). Also, there was a statistically significant difference between total score of nurses' level of knowledge post/follow up phase at ($p < 0.05$).

Figure (1): shows that 100% of the study subjects had unsatisfactory practice level regarding end of life patient pain

assessment in pre phase, while 95% of the study subjects had a satisfactory practice level post implementation of SLP and 60.0% of study subjects had unsatisfactory practice level in the follow up phase.

Figure (2): this figure shows the nurses' practice regarding Edmonton symptoms assessment in care for end of life patient, the results revealed that 100 % of the study subjects had unsatisfactory practice level in pre phase, while 95 % of study subjects had satisfactory practice level post implementation of SLP regarding and 90% of the study subjects had unsatisfactory practice level in follow up phase.

Table (5):shows that, there were a significant positive differences between total score of nurses' attitude throughout the three phases of self-learning package implementation regarding total score of nurses' attitude pre, post and follow up (5.0% 80.0% 55.0%) respectively.

Table (6):shows that, there were no statistically significant correlations between total score of nurse's knowledge pre & post

implementation of SLP and total score of nurse's practice at ($p > 0.05$). But there was a statistically significant direct correlation between total score of nurse's knowledge and total score of nurse's practice regarding care for end of life patient in the follow up phase at $p < 0.05$.

Table (7):shows that, there were a highly statistically significant positive correlation between total score of nurse's knowledge and total score of nurse's attitude regarding care for end of life patient in the post & follow up phase at $p < 0.01$. Also, statistically significant positive correlation between total score of nurse's knowledge in the pre & follow up phases of SLP implementation and total score of nurse's attitude at $p < 0.05$.

Table (8):shows that, there was a statistically significant correlation between total score of nurse's practice and total score of nurse's attitude regarding care for end of life patient in the pre phase at $p < 0.05$ and a highly statistically significant correlation between them in the post & follow up phases of SLP implementation at $p < 0.01$.

Table (1): Percentage Distribution of Demographic Data of Nurses under the Study (N=60):

Variables	N (N = 60)	%
Age		
20-< 30 years	35	58.3%
30-< 40 years	21	35.0%
40 or more years	4	6.7%
Mean = 27.8		SD = 5.9
Gender		
Male	10	16.7%
Female	50	83.3%
Educational level		
Diploma	45	75.0%
Technical institute of nursing	5	8.3%
Bachelor in nursing	10	16.7%
Job title		
Head nurse	5	8.3%
Staff nurse	55	91.7%
Working intensive care Unit (ICU)		
Surgical ICU	21	35.0%
Medical ICU	27	45.0%
Neurological ICU	12	20.0%
Years of experience in critical care		
1-<5	18	30.0%
5-<10	14	23.3%
10 or more	28	46.7%
Mean = 9.3		SD = 2.4
Previous training related to end of life nursing care		
Yes	11	18.3%
No	49	81.7%

Table (2): Comparison between score of nurse's level of knowledge regarding care for end of life patient's through the study phases (No=60):

Knowledge Items	Pre		Post		follow Up		X ² test					
	No	%	No	%	No	%	X ² 1	P	X ² 2	P	X ² 3	P
End of life care definition, causes and signs & symptoms	9	15.0%	39	65.0%	21	35.0%	31.3	<0.01**	5.3	<0.05*	10.8	<0.01**
Nursing care for end of life patient:												
- Hygienic care	12	20.0%	41	68.3%	30	50.0%	28.4	<0.01**	11.9	<0.01**	4.2	<0.05*
- Promoting Comfort	8	13.3%	52	86.7%	37	61.7%	64.5	<0.01**	29.9	<0.01**	9.8	<0.01**
- Ethical consideration	11	18.3%	47	78.3%	36	60.0%	43.2	<0.01**	21.9	<0.01**	4.7	<0.05*
- Communication, Care after death and Family support	13	21.7%	45	75.0%	37	61.7%	34.2	<0.01**	19.7	<0.01**	2.5	>0.05*
Total	9	15.0%	48	80.0%	36	60.0%	50.8	<0.01**	25.9	<0.01**	5.7	<0.05*

Not significant P> 0.05

* Significant P < 0.05

** Highly significant P < 0.001

X²1 = pre/post X²2 = pre /follow up

X²3 = post /follow up

Effect of Learning Package on Critical Care Nurses' Performance Regarding Care of End of Life Patient

Table (3): Comparison between the practice Scores of Nurses Regarding Care for End of Life patient part (1) through phases of study (No=60):

Practice Item	Pre		Post		Follow up		T test						
	Mean	SD	Mean	SD	Mean	SD	T1		T2		T3		
							T1	P	T2	P	T3	P	
Patient assessment	1.4	0.7	6.8	1.3	4.3	1.4	27.1	<0.01**	17.5	<0.01**	9.8	<0.01**	
Nursing diagnoses	0.9	0.6	4.3	0.7	2.1	1.0	30.9	<0.01**	11.2	<0.01**	15.9	<0.01**	
Assess signs and symptoms of end of life	0.0	0.0	0.8	0.4	0.4	0.4	0.5	16.2	<0.01**	6.5	<0.01**	5.3	<0.01**
Assess and manage Pain	0.0	0.0	1.0	0.2	0.4	0.5	33.5	<0.01**	6.3	<0.01**	8.0	<0.01**	
Assess Edmonton symptom	0.0	0.0	9.0	0.8	4.5	1.6	83.8	<0.01**	21.2	<0.01**	20.5	<0.01**	
End of life Symptom control	0.0	0.0	5.4	0.7	2.5	1.3	60.4	<0.01**	15.0	<0.01**	14.9	<0.01**	
Total	2.2	1.0	28.9	2.2	15.1	2.8	92.2	<0.01**	35.4	<0.01**	35.1	<0.01**	

Not significant P> 0.05 * Significant P < 0.05 ** Highly significant P < 0.001
 T1= pre /post T2 = pre /follow up T 3 = post /follow up

Table (4): Comparison between score of nurse’s level of practice regarding care for end of life patients part (2) through phases of study (No=60):

Practice Items	Pre		Post		follow up		X2 test					
	Satisfactory		Satisfactory		Satisfactory		X ² 1		X ² 2		X ² 3	
	No	%	No	%	No	%	X2	P	X2	P	X2	P
Hygienic care	19	31.7%	48	80.0%	32	53.3%	28.4	<0.01**	5.8	<0.05*	9.6	<0.01**
Communication	18	30.0%	52	86.7%	28	46.7%	39.6	<0.01**	3.5	>0.05	21.6	<0.01**
Obstacles & barriers in EOL care	21	35.0%	51	85.0%	34	56.7%	31.3	<0.01**	5.7	<0.05*	11.7	<0.01**
Ethical consideration	13	21.7%	52	86.7%	39	65.0%	51.1	<0.01**	22.9	<0.01**	7.7	<0.01**
Comfortable measures	11	18.3%	46	76.7%	27	45.0%	40.9	<0.01**	9.9	<0.01**	12.6	<0.01**
care after death	16	26.7%	53	88.3%	30	50.0%	46.7	<0.01**	6.9	<0.01**	20.7	<0.01**
Family support	18	30.0%	47	78.3%	29	48.3%	28.2	<0.01**	4.2	<0.05*	11.6	<0.01**
Total	14	23.3%	49	81.7%	27	45.0%	40.9	<0.01**	6.3	<0.05*	17.4	<0.01**

Not significant P> 0.05 * Significant P < 0.05 ** Highly significant P < 0.001
 X²1= pre /post X²2 = pre /follow up X² 3 = post /follow up

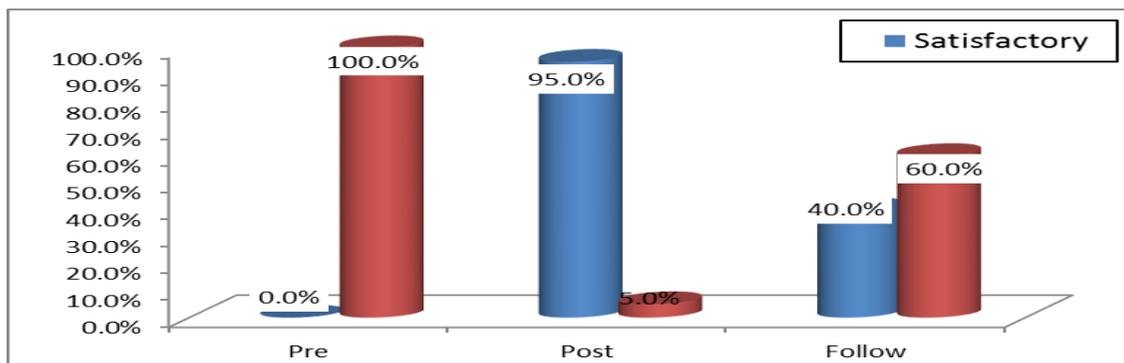


Figure (1): Percentage Distribution of the Nurses Total Practice Scores regarding pain assessment through the three phases of study (No=60):

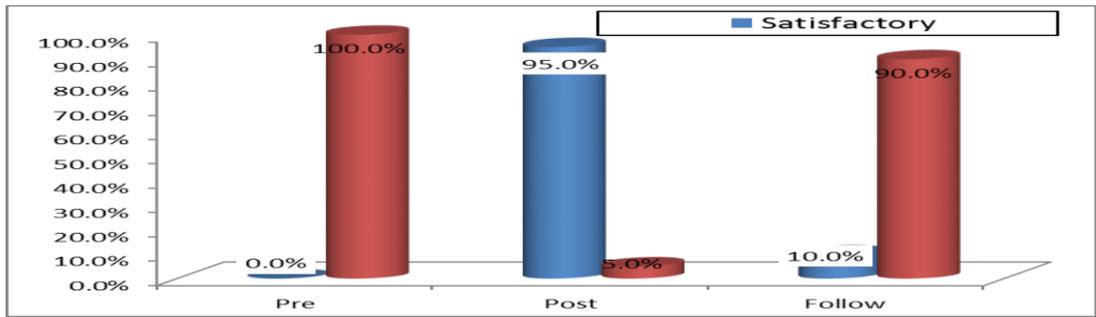


Figure (2): Percentage Distribution of the nurse's Total Practice Scores regarding Edmonton symptoms assessment through phases of study (No=60)

Table (5): Percentage Distribution and Mean ± SD of Total Attitude Score Levels of Nurses through phases of study (No=60):

Attitude phases	Positive		Fair		Negative		Mean	SD	Range
	No	%	No	%	No	%			
Pre	3	5.0%	7	11.7%	50	83.3%	62.0	7.8	47 - 83
Post	48	80.0%	8	13.3%	4	6.7%	118.4	8.6	73 - 139
Follow	33	55.0%	22	36.7%	5	8.3%	86.2	10.4	60 - 109

Table (6): Correlation between total score of nurses' knowledge and practice through phases of the study (No=60):

Practice	Knowledge				R
	X ² test			Sig	
	X ²	P	Sig		
Pre phase	0.6	>0.05	NS	0.21	
Post phase	0.4	>0.05	NS	0.19	
Follow up phase	4.1	<0.05	S	0.38	

Not significant P> 0.05 Significant P < 0.05

Table (7): Correlation between total score of nurses' knowledge and attitude through phases of the study (No=60):

Knowledge phases	Attitude						X2 test			R
	Negative		Fair		Positive		X2	P	Sig	
	No	%	No	%	No	%				
Pre										
Satisfactory	5	8.3%	2	3.3%	2	3.3%	8.3	<0.05	S	0.41
Unsatisfactory	45	75.0%	5	8.3%	1	1.7%				
Post										
Satisfactory	1	1.7%	2	3.3%	45	75.0%	28.4	<0.01	Hs	0.57
Unsatisfactory	3	5.0%	6	10.0%	3	5.0%				
Follow										
Satisfactory	7	11.7%	8	13.3%	27	45.0%	15	<0.01	Hs	0.49
Unsatisfactory	41	68.3%	14	23.3%	6	10.0%				

Not significant P> 0.05 Significant P < 0.05 Highly significant P < 0.001

Effect of Learning Package on Critical Care Nurses' Performance Regarding Care of End of Life Patient

Table (8): Correlation between total score of nurse’s practice and attitude through phases of the study (No=60):

practice	Attitude						X2 test			R
	Negative		Fair		Positive		X2	P	Sig	
	No	%	No	%	No	%				
Pre										
Unsatisfactory	43	71.7%	3	5.0%	0	0.0%	16.7	<0.05	HS	0.32
Satisfactory	7	11.7%	4	6.7%	3	5.0%				
Post										
Unsatisfactory	3	5.0%	4	6.7%	4	6.7%	17.1	<0.01	HS	0.45
Satisfactory	1	1.7%	4	6.7%	44	73.3%				
Follow										
Unsatisfactory	4	6.7%	16	26.7%	7	11.7%	16.9	<0.01	HS	0.43
Satisfactory	1	1.7%	6	10.0%	26	43.3%				

Not significant P> 0.05

Significant P < 0.05

Highly significant P < 0.001

Discussion:

The education of health professionals in end of life care has been limited or non-existing in nursing and in medicine. Competent and compassionate end of life care is the responsibility of all health professionals. Attention should be given towards palliative care by the National health policy makers and must be incorporated in nursing education curriculum especially in undergraduate nursing studies.

This study aims to assess the effect of self-learning package on critical care nurses' performance regarding the care for end of life patient. Discussing the findings of this study is categorized under five main parts as follow: the first part displays demographic characteristics of the nurses under study, the second part focuses on; effect of self-learning package on nurses' knowledge regarding care for EOL patient. The third part deals with; the effect of self-learning package on nurses' practice regarding care for EOL patient. The fourth part deals with; the effect of self-learning package on nurses' attitude regarding care for EOL patient. The fifth part deals with relations between nurses' knowledge, practice & attitude about care for EOL patient and their demographic characteristics at pre/post and follows up

implementation phases of self-learning package.

Part I: Demographic Characteristics of the Nurses under study

The present study findings documented that, more than half of the study group subjects were less than thirty years old and the majority of them were females. As well, three quarters were diploma nurses, about half of them were working in medical ICU and the majority of them were staff nurses. Also about half of them were having ten or more years of experience, and did not attended any training sessions related to end of life nursing care.

This result was in line with, Ayed et al. (2015) who studied on The Nurses' Knowledge and Attitudes towards the Palliative Care revealed that the majority of respondents were within the age 20 - 30 years, more than one third of them were diploma nurse, one quarter working at ICU and more than half indicating more than 5 years of nursing experience. Also, Jafaril, et al, (2015) stated that all study subjects reported that they did not obtain sufficient education regarding care for dying patients during the undergraduate nursing education.

Part II: Effect of self-learning package on Critically Care Nurses Knowledge about Care for End of Life Patient:

The findings of this study revealed that, the minority of the study nurses had a satisfactory level of knowledge about Care for end of life patient before implementation of self-learning package, which improved in the post phase after implementation of self-learning package. However, the knowledge score was slightly decreased in follow up phase. This finding reflects that, self-learning package had good effect in improving nurses' knowledge and this could be attributed to the clarity of the package materials, the use of simple language, and instructional media, nurses' interest and their need to acquire knowledge.

This study finding showed also that, there were highly statistically significant differences between total score of nurses' level of knowledge pre/post implementation of self-learning package, as well, pre/ follow up phase of implementation. While, there was only a statistically significant difference between total score of knowledge post/follow up phase of the SLP implementation. These findings are congruent with,

This finding was supported with, Subramanian and Chinna, (2013) who revealed that although efforts are being made to improve nurses knowledge on end of life care, practicing nurses still lack of knowledge in providing end of life care and the study findings shows poor perception on end of life care, death and dying.

Also, Prem et al. (2012) concluded that, overall level of knowledge about palliative care was poor in a study of Nurses' Knowledge about Palliative Care: A Quantitative Cross-sectional Survey.

Part III: As regards to effect of self-learning package on Critically Care Nurses Practice about Care for End of Life Patient:

As regard, nurses' practice about Care for End of Life Patient, the present study showed that, less than one quarter of the nurses under study had a satisfactory practice level regarding care for end of life patient before the implementation of SLP, but there was an enhancement in the post phase in which, there were highly statistically significant differences between pre/post phases, and post/follow up phase of implementation. This may be due to the positive effect of self-learning package on nurse's practice

On the same line with this study Joy, (2015) who reported that there's a critical need for in-service education on end-of-life content for practicing nurses and integration of such content in all curricula for future nurses.

The current study discovered that, the studied nurses neglect some items of observational checklist in care for end of life patient as assess signs and symptoms of end of life ,assess pain, assess Edmonton symptom and end of life symptom control in the pre phase, which was enhanced in the post phase and follow up phase after implementation of self-learning package. This might be due to lack of teaching courses for nurses about end of life nursing care, overlapping of effort and burn out syndrome among critical care nurses in intensive care units, so nurses were inadequately prepared to done end of life care in the pre phase.

This result is settled with Weston, (2012), who reported that, there are many factors can affect and nursing practice as lack in confidence, lack in knowledge and skills, were due to nurses' shortage.

Also, greater part of study nurses neglected pain assessment, this result could be due to the nurses' unawareness of the pain

assessment. This result in the same opinion with Ersek, Kraybill & Hansberry, (2014) who established that nurses not have information about pain assessment and how to relief it. Also, revealed that pain often goes unobserved and untreated for end of life patient.

Part IV: Effect of self-learning package on Critically Care Nurses attitude toward care of dying:

The results of this study revealed that, most of the study subjects had negative attitude toward the care of dying patient pre the implementation of SLP, While this percentage improved post the implementation of SLP. In addition, the results of this study revealed that, more than half of total study subjects had positive attitude toward the care of dying after 3 months from implementation of SLP (follow up phase).

In accordance with the current study findings, Alvorá, (2014) in a study concluded that learning critical care nurses on end of life care positively and significantly affects their attitudes towards care of the dying. Mainly nurses not prepared adequately in nursing school to care for the dying patient.

Part V: Relations between nurses' knowledge, practice and attitude about care for end of life patient and their demographic characteristics at pre/post implementation phases of SLP and after follow up phase.

The finding of this study showed that, there was no statistically significant correlation between total score of nurses' knowledge pre-phase and total score of nurses' practice post-phase. This result supported by Anila and Haseena, (2013) who stated that, there is a weak positive correlation between knowledge and attitude of staff nurses on palliative care. The finding is inconsistent with the findings of another study on knowledge and attitude towards

The finding of this study showed that, nurses had satisfactory level of knowledge post phase not necessarily had satisfactory level of practice, while there was no statistically significant correlation between total score of nurses' knowledge and total score of nurses' practice post phase of implementation of SLP, this could be related to the absence of enough time for the application of information and also lack of access to the work environment in terms of the existence of mechanisms to implement it , also the autonomy in performance has a significant factor in that too. This result is supported by Said (2013), who stated that the effective professional education requires close and more appropriate connection between theory and practice.

As regard correlation between total score of nurse's knowledge and attitude, the finding of this study showed that, there was a highly statistically significant positive correlation between total score of nurse's knowledge and attitude regarding care for end of life patient in post & follow up phase. Also, statistically significant positive correlation between total score of nurse's knowledge pre & follow up phases of SLP implementation and total score of nurse's attitude. This result supported by Dunn, (2016) who stated that developing continuing education programs that teach effective coping strategies that aim to prevent death anxiety may benefit nurses who have had little experience with dying patients and their families.

As regarding the relationship between the total score of practice and total score of attitude for nurses under the study the result revealed that, there was a highly statistically significant correlation between total score of nurse's practice and attitude regarding care for end of life patient in pre, post & follow up phases of SLP implementation.

Agree with this result Carper, (2011) who reported that the more skilled that nurses, the more knowledge and

understanding will be gained and the care provided to individuals will be enhanced.

Conclusion

Based on the results of the current study, it can be concluded that:

Implementation of Self-Learning package (SLP) had a positive effect on nurses' knowledge, practice and attitude, supporting the research hypothesis, as there was statistically significant improvement between pre-, post and follow up phases in relation to care for end of life patient.

Recommendations

On the light of the current study findings the following recommendations are suggested.

- Establish in-service training programs for continuous updating nurses' knowledge about end of life nursing care and improve their practice to gain positive attitude toward care for dying patients and their families.
- Critical care units in hospitals should be supplied by end of life & palliative care articles, Arabic illustrated books about all dimensions of this care.
- Hospitals must expand protocols and rules to inform nurses how to learn and acquire skills regarding end of life care.

Additional studies should be carried out in different settings, on a larger sample to allow generalization of the SLP regarding end of life care.

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