



Knowledge, practices and nurses attitudes about end of life care at critical units: Suggested booklets

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Abstract

Background: Nurses in ICU play a significant role in providing end of life nursing care to patients complained from life-threatening illnesses and did not response positively to medical treatment by assessing their needs and providing comprehensive nursing care

Aim of the study: Evaluate Nurses knowledge, attitudes and practices about end of life care at critical units.

Design: Descriptive research design.

Methods: (65) ICU nurses included in the study assigned to the medical and general ICUs at Assuit University Hospital, Egypt.

Results: (61.5%) of the ICU nurse their knowledge about EOL nursing care is unsatisfactory. (58.6%) their level of practice was poor and their attitude toward EOL care was unfavorable by (72.3%).

Conclusions: the study concluded that ICU nurses did not have enough knowledge and practice about EOL care and they need a clear policy to improve their attitude toward applying it.

Recommendations: Educational programs and suggested booklets must be carried out for nurses in critical care units.

Keywords: Knowledge, practices, attitude, end, life, critical, and booklets

Introduction

Nurses in intensive care units (ICUs) have increased their responsibility from providing care to critical patients, preventing complications and also care for the dying one (especially old age patients). Dying patient defined as person who is ill with dramatic condition that is expected to end in dying and for which there is no management that can substantially alter the prognosis of them. End of life (EOL) care provided to patients in life threatening conditions (dying) especially geriatric patients (old age more than 60 years) suffer from many pathological, emotional, and spiritual problems and their families. EOL care aimed to reduce pain, suffering and other symptoms related to end of their lives ^[1].

Nurses in ICU must provide emotional nursing care to the critical patients, especially dying geriatric and their families. The EOL nursing care should be planned in accordance with the families' beliefs and desires ^[2]. ICU nurse should speak kindly with the dying patients, however, to be able to provide the needed care and support for them and their family. Nurse must recognize the patient's fears, and attitudes about death and how to help them to cope. Furthermore, families need clear explanation about how to ease the dying process anxiety and fear ^[3].

Recent literature proves the importance of providing high quality of EOL care to achieve a good death. For critical care nurses providing, a good death requires a high standard of knowledge that involves optimal symptom management and holistic care provided to both patient and family. Nurses who work in critical care units needs also high standard of evidence biased guide line to achieve EOL care in a curative environment ^[4].

The World Health Organization proves that only (14%) of those in need for EOL care throughout the world receive palliative care. Many of those patients are treated in Intensive Care Units (ICUs). Due to the great technology available in ICUs for life support, the coexistence of palliative care and intensive care is challenging. Therefore, current critical care should be balanced between palliation and critical curative conditions ^[5]. Dying patients in England and Wales (87.6%) will need palliative care. Patients at the end of life may experience difficult symptoms, such as pain, difficulty breathing, and confusion, the difficulty of identifying people who may be in the dying phase, and the sensitivity of involving family members in quality assessment at this time. Attitudes of critical care nurses play a key role in competence development because of their impact on nursing care quality. The assessment and

the improvement of nurses' attitudes toward care of dying patients are fundamental to achieve effective education results. Education of every healthcare professional should include programs aimed at improving specific competencies for continuous and global care to terminally ill patients in order to achieve the best possible quality of life even during their last days [6].

Critical care nurses provide a vital role in the delivery of EOL services to patients suffering from life-threatening illnesses by assessing their needs and providing services not just to the critically ill-patients, especially geriatric but also to the families. Crucially, there is only one opportunity to ensure good care after death, and it is not easy to coordinate everything that needs to happen. The guidance is therefore an important publication highlighting good practice and confirming a process by which everyone who is involved can ensure that the experience for those coping with the loss of someone important to them [7].

Significance of the study

Nurses in ICU have many challenges during providing EOL care this is because lack of adequate experience and knowledge about EOL care. Hospitals and ICUs did not provide ICU nurses with a clear policy and roles pulse the environmental constraints on EOL care is inadequate. Staff has many conflicts in deciding the best nursing action to apply for the dying patient. Because of all this reasons the current study was conducted to evaluate nurse's knowledge, performance level and attitude toward EOL care for critical ill geriatric patients.

Aim of the Study: the current study aimed primary to evaluate the knowledge, practices and nurse's attitudes about end of life care at critically units. The secondary aim is to provide the critical care units nurses with suggested booklet to improve their knowledge and performance about EOL care.

Research questions

1. What is critical care nurses' knowledge about EOL care?
2. What is the level of critical care nurse's performance about EOL care?
3. What is the nurses' attitude about EOL care?

Methods

Descriptive research design was applied in this study at the medical and general intensive care units, at Assiut University Hospital, Egypt at period from 15August, 2019 to 15 November, 2019. Sample of the study was convenient included 65 nurses whom working at previously listed ICUs were included in the study. Data was collected using pre-prepared sheet developed by the researcher included three tools. Tool one: Interview questionnaire was structured and developed after reviewing related literature [2, 4, 5-9], and consisted of two parts. Part one: Nurses' sociodemographic data as nurses (age, sex, educational level, years of experience and previous training sessions). Part two: Nurses' knowledge questionnaire: used to assess nurses' knowledge about ideal EOL nursing care for patients (especially geriatric) and its theoretical base. It consisted of (26) short questions (closed ended). Each correct answer

was given score (1) and the wrong answer was given zero. The total score of the questionnaire was (26). The total score was considered "satisfactory" if it equals or more than (65%) and "unsatisfactory" if it less than (65%). Tool two: Performance checklist used to assess nurses' level of practice regarding EOL care. The developed tool used after reviewing the related literatures [2, 4, 5-9] to evaluate nurses level of performance about EOL care of the dying elderly patients as A: Comfort measures it included 7 steps B; Regarding communication it included 4 steps and hygienic care included 8 steps.

Scoring system: each correctly done step had score (1), but zero score was given to the incorrect or not done step. The total score of performance was 19. The total score was classified as "poor" for total score <60%, "fair" for total score =60- <75%, and "good" for score >75%.

Tool three: Assessment of Nurses' attitudes toward EOL care using the FATCOD scale. This tool was adopted from the study of Folmelt Attitudes toward Care of the Dying Scale (Fatcod scale) [8]. Consists of 30-items using 5-point Likert scale. The FATCOD scale had 15 positive sentences are included in the following numbers (1, 2, 4, 10, 12, 16, 18, 20, 21, 22, 23, 24, 25, 27, and 30) and the 15 negative sentences are (3, 5, 6, 7, 8, 9, 11, 13, 14, 15, 17, 19, 26, 28, and 29). The scoring system of the FATCOD scale is: Strongly Disagree (SD), Disagree (D) Uncertain, (U), Agree (A) and Strongly Agree (SA). The positive sentences are scored from (1 to 5). (1 means Strongly Disagree) and (5 means Strongly Agree). The previously mentioned scores are reversed for the negative items (5 means Strongly Disagree) and (1 means Strongly Agree). The total scores ranges from 30 to 150. The positive attitude take score ≥ 50 from the total of [FATCOD] Scale. The negative attitude < 50%.

Suggest booklet: was designed to improve the knowledge and performance about EOL care was given to the nurses at the medical and general ICUs.

Ethical consideration

Administrative permission was obtained from the head of the ICU and hospital director to conduct the study. Written official permissions was taken from the head nurses. Oral informed agreement was obtained from each participant nurse. The researchers offer adequate information about aim of the study and significance. Participants assured the confidentiality of their responses.

Procedure

Validity and reliability: The validity of both tools (one and two) were done by five expert professors in critical care nursing and gerontological nursing. The reliability of the tools was done using Cronbach' alpha test it was (0.89%) for (Tool one), (tool two) and (tool three) were (0.88% and 0.87%) respectively.

To ensure the tools clarity, applicability, feasibility & relevance, a pilot study was carried out on 5 nurses and the necessary modifications were done. Preparation phase and implementation phase are the two phases of the present study. Preparation phase, included tools constructing, preparation and tools testing for its different data in addition

to the official permissions to carry out the study. The researchers started the implementation phase. Knowledge Assessment Questionnaires (tool one) was distributed to each nurse in their nurse's room. Each nurse who agreed to participate in the study received (tool one) for 20-30 minutes to submit it in their working shift. Nurses instructed to submit the tool in the presence of the researcher for any questions to be answered and clarification was done. Performance check list (tool two) was used to assess each nurse during their real time of practice at the morning and evening shifts in their ICUs. In relation to FATCOD scale (tool three) was distributed to the ICU nurses whom included in the study to submit. Each nurse received a period of 30 minutes to complete it to evaluate their attitude

toward applying EOL care. At the end of (after completing the submission of the three tools form all nurses whom included in the study) a suggest booklet was given to the ICU nurses to help them during the applying of EOL care for ICU patients and especially for the geriatric critical ill patients.

Results

Statistical package software SPSS version (23) used for data analysis in the study. Mean, standard deviation, Descriptive statistics including frequency, distribution, were used to describe different characteristics of the quantitative data. Mean percent score was calculated for both the knowledge and practice about EOL care among the studied nurses.

Table 1: Socio demographic characteristics of the studied ICU’s nurses sample (Number 65)

Variables	N = 65	%
Age		
18-25 Years	4	6.7
26-35 Years	37	56.7
36-45 Years	20	30.0
46-55 Years	4	6.7
Sex		
Female	65	100.0
Male	00.0	00.0
Education		
Diplomme	41	63.3
Technical institute	20	30.0
Baccalaureate degree	4	6.7
Years of experience		
Below 5 years	15	23.3
From 5 to10 years	22	33.3
From 11to15 years	13	20.0
More than 20 years	15	23.3
Previous training sessions related to care of dying		
Yes	00	00.0
No	65	100.0

Table (1): shows that age group from (26-35) years constituted (56.7%) of the studied sample, with mean age of (27.8±5.9) and all of them were female. Regarding education (63.3%) of them have diploma education. As

regard to experience years it was observed that (33.3%) of them have (5-10) years. It was noticed that all the studded ICUs nurses (100%) did not receive any previous training sessions about EOL care.

Table 2: Percentage distribution of the studied sample knowledge level about EOL care (Number 65)

	Knowledge	Incorrect		Correct	
		No	%	No	%
Q1	Palliative care is only appropriate in situations where there is evidence of a downward irreversible deterioration	48	73.3	17	26.7
Q2	Morphine is the standard used to compare the analgesic effect of other opioids	13	20.0	52	80.0
Q3	The extent of the disease determines the method of pain treatment	48	73.3	17	26.7
Q4	Adjuvant therapies are important in managing pain.	15	23.3	50	76.7
Q5	It is crucial for family members to remain at the bedside until death occurs.	45	70.0	20	30.0
Q6	During the last days of life, drowsiness associated with electrolyte imbalance may decrease the need for sedation.	17	26.7	48	73.3
Q7	Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain.	48	73.3	17	26.7
Q8	Individuals who are taking opioids should also follow a bowel regime (laxative treatment)	17	26.7	48	73.3
Q9	The provision of palliative care requires emotional detachment.	41	63.3	24	36.7
Q10	During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnea.	13	20.0	52	80.0
Q11	Men generally reconcile their grief more quickly than women.	41	63.3	24	36.7
Q12	The philosophy of palliative care is compatible with that of aggressive treatment.	20	30.0	45	70.0
Q13	The use of placebos is appropriate in the treatment of some types of pain.	35	53.8	30	46.2
Q14	In high doses, codeine causes more nausea and vomiting than morphine.	11	16.7	54	83.3

Q15	Hospice Care is related to holistic Nursing and Humanistic Care.	35	53.3	30	46.7
Q16	Pethidine is not an effective analgesic for the control of chronic pain.	17	26.7	48	73.3
Q17	The accumulation of losses makes burnout inevitable for those who work in palliative care.	45	70.0	20	30.0
Q8	Manifestations of chronic pain are different from those of acute pain.	24	36.7	41	63.3
Q19	The loss of a distant relationship is easier to resolve than the loss of one that is close or intimate.	54	83.3	11	16.7
Q20	Pain threshold is lowered by fatigue or anxiety.	26	40.0	39	60.0
Q21	Palliative care is a measure to provide conservative and supportive measures for dying patients and their families. A	17	26.7	48	73.3
Q22	Palliative care services include both terminal patients and family members. A	28	43.3	37	56.7
Q23	Nurses need to understand patients' views of life and death when providing palliative care. A	11	16.7	54	83.3
Q24	The main purpose of palliative care is to manage symptoms, reduce burden of pain, and improve quality of life. A	33	50.7	32	49.3
Q25	In deathbed stage, patients have the right to decide on his or her own schedule, such as meeting with friends, fulfill the wish, treatment,	11	16.7	54	83.3
Q26	If patients request to give up treatment and go home before death, it should be supported. A	35	53.3	30	46.7

Table (2): illustrates that (73.3%) of studied sample had incorrect knowledge about palliative care is only appropriate in situations where there is evidence of a downward irreversible deterioration, and Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain. While (80%) of them had correct

knowledge about morphine is the standard used to compare the analgesic effect of other opioids. Also (83.3%) of studied sample had correct knowledge about death bed stage, patients have the right to decide his or her own schedule, such as meeting with friends, fulfill the wish, and treatment.

Table 3: Percentage distribution of the studied sample according to Nurses Practice regarding EOL care (no =65)

Practice	Not done		Done	
	No	%	No	%
A- Comfort Measures performance chick list				
Sit quietly to provide a comforting presence	52	80.0	13	20.0
Reduce confusion by limiting distractions such as TV, radio or too many visitors.	50	76.7	15	23.3
Gently bring the person to reality with reminders about where they are, who you are and what time is it, etc.	41	63.3	24	36.7
Do not argue if the person's reality is different. Sometimes going along with someone who seems mildly confused allows the situation to pass without upset	48	73.3	17	26.7
Quietly listen to the person, who may need to express some thoughts, worries or feelings. Get close and talk gently.	54	83.3	11	16.7
Use touch to connect with someone who is unable to respond. Soft music may be relaxing. Assume the person can hear everything you say on some level.	41	63.3	24	36.7
Talk to someone about relaxation techniques for the person, yourself, and family members	45	70.0	20	30.0
Commonly use medication in practice for severe pain? Paracetamol/Ibuprofen Codeine, Morphine	43	66.1	22	33.9
B- Nurses' practice regards communication in EOL care.				
Talking with the patient	61	93.8	4	6.2
Informing about what activities are being performed	43	66.7	22	33.3
Use the nonverbal communication	37	56.7	28	43.3
Good communication	39	60.0	26	40.0
C-Nurses' practice regards hygienic care.				
Patient assessment	59	90.7	6	9.3
Skin washing & cleansing	48	73.3	17	26.7
Using of lotions & ointment	41	63.3	24	36.7
Using of artificial tears & ointments	48	73.3	17	26.7
Maintenance of a body temperature	65	100.0	0	0.0
Prevention of the pressure ulcers	43	66.7	22	33.3
Hair care	39	60.0	26	40.0

Table (3): Shows that (63.3%) of the studied samples did not do comfort measures practice as, gently bring person to reality with reminders about where they are, who you are and what time is it and use touch to connect with someone who is unable to respond. Soft music may be relaxing. Assume the person can hear everything you say on some level. Also this table illustrate that (93.3% and 66%) of the studied samples did not do practice talking with the patient,

informing about what activities are being performed. Followed by good communication and using the nonverbal communication in percentages of (60.0% and 56.7%) respectively. Regarding hygienic care, it was observed that only (40% and 26.7%) of the studied sample did not do practice as hair care and Skin washing & cleansing respectively.

Table 4: Percentage distribution of the studied sample according to Nurses attitudes regarding care of dying (FATCOD- scale) (n=65)

	Nurses attitude	Nurses Attitudes toward Care of dying patients				
		Strongly Disagree No (%)	Disagree No (%)	Uncertain No (%)	Agree No (%)	Strongly Agree No (%)
1	Giving nursing care to the dying person is a worthwhile learning experience	15 (23.00)	22 (33.8)	14 (21.5)	7 (10.7)	7 (10.7)
2	Death is not the worst thing that can happen to a person	10 (16.9)	26 (40)	15 (23.00)	7 (10.7)	7 (10.7)
3	I would be uncomfortable talking about impending death with the dying person.	5 (7.6)	4 (6.67)	4 (6.67)	26 (40)	26 (40)
4	Nursing care for the patient's family should continue throughout the period of grief and bereavement	20 (30)	24 (36.67)	6 (10.0)	15 (23.33)	0 (0.0)
5	I would not want to be assigned to care for a dying person	2 (3.33)	4 (6.67)	7 (10.7)	26 (40)	26 (40)
6	The nurse should not be the one to talk about death with the dying person.	4 (6.67)	4 (6.67)	7 (10.7)	22 (33.33)	28 (43.33)
7	The length of time required to give nursing care to a dying person would frustrate me.	2 (3.33)	4 (6.67)	6 (10.0)	22 (33.33)	31 (46.67)
8	I would be upset when the dying person I was caring for gave up hope of getting better	0 (0.0)	4 (6.67)	0 (0.0)	17 (26.67)	44 (66.67)
9	It is difficult to form a close relationship with the family of the dying person	0 (0.0)	9 (13.33)	4(6.67)	20 (30)	32 (50)
10	There are times when death is welcomed by the dying person.	6(10)	37(56.67)	13 (20)	9 (13.33)	0 (0.0)
11	When a patient asks, "Nurse am I dying?" I think it is best to change the subject to something cheerful.	4 (6.67)	4 (6.67)	6 (10)	20 (30)	31(46.67)
12	The family should be involved in the physical care of the dying person.	15(23.33)	30 (46.67)	0 (0.0)	20 (30)	0 (0.0)
13	I would hope the person I'm caring for dies when I am not present.	6 (10)	4 (6.67)	6 (10)	12 (16.67)	37 (56.67)
14	I am afraid to become friends with a dying person.	12 (20)	0 (0.0)	9 (13.33)	20 (30)	24 (36.67)
15	I would feel like running away when the person actually died.	20 (30)	4 (6.67)	11 (16.67)	18 (26.67)	12 (20)
16	Families need emotional support to accept the behavior changes of the dying person.	12 (20)	30 (43.33)	9 (13.33)	12 (20)	2 (3.33)
17	As a patient nears death, the nurse should withdraw from his/her involvement with the patient	4 (6.67)	0 (0.0)	4 (6.67)	11 (16.67)	46 (70)
18	Families should be concerned about helping their dying member make the best of his/her remaining life	9(13.33)	37(56.67)	6 (10)	9 (13.33)	4 (6.67)
19	The dying person should not be allowed to make decisions about his/her physical care.	6 (10)	6 (10)	4 (6.67)	24 (36.67)	24 (36.67)
20	Families should maintain as normal an environment as possible for their dying member	9 (13.33)	31(46.67)	10 (16.67)	9 (13.33)	6 (10)
21	It is beneficial for the dying person to verbalize his/her feelings.	12 (20)	26 (40)	12 (20)	9 (13.33)	5 (6.67)
22	Nursing Care should extend to the family of the dying person.	10 (16.67)	30 (43.33)	10 (16.67)	12 (20)	2 (3.33)
23	Nurses should permit dying persons to have flexible visiting schedules.	10 (16.67)	30 (43.33)	9 (13.33)	10 (16.67)	6 (10)
24	The dying person and his/her family should be the in-charge decision makers.	10 (16.67)	30 (43.33)	10 (16.67)	0 (0.0)	15 (23.33)
25	Addiction to pain relieving medication should not be a concern when dealing with a dying person	(0.0)	30 (43.33)	15 (23.33)	5 (7.7)	15 (23.33)
26	I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying	4 (6.67)	6 (10)	2(2.33)	23(36.67)	30 (43.33)
27	Dying persons should be given honest answers about their condition.	5 (16.67)	13 (43.33)	4 (13.33)	4 (13.33)	4 (13.33)
28	Educating families about death and dying is not a nursing responsibility	0 (0.0)	0(0.0)	0(0.0)	22 (33.33)	43 (66.67)
29	Family members who stay close to a dying person often interfere with the professionals job with the patient	1 (3.33)	4 (6.67)	0 (0.0)	20 (30)	40(60)
30	It is possible for nurses to help patients prepare for death.	4 (6.67)	15 (23.33)	0 (0.0)	13 (20)	33 (50)

Table (4): Illustrates that (43.33%) of the studied sample strongly agree that the nurse should not be the one to talk about death with the dying person and families need emotional support to accept the behavior changes of the dying person. And 80% of the studied sample would not want to give care to the dying person. Also (43.33%) of them strongly disagree in this items; the dying person and his/her family should be the in-charge decision makers, dying persons should be given honest answers about their condition and Families need emotional support to accept the

behavior changes of the dying person. The family should be involved in the physical care of the dying person. Also (33.33%) of them were disagreed to statement that giving nursing care to the dying person is a worthwhile learning experience.

Table (5): Shows Mean ±SD of score for studied sample as regard knowledge, practice and attitude toward end of life care it was (14.5±2.19, 5.2±2.12 and 66.87±6.27) respectively.

Table 5: Mean distribution of Nurses’ knowledge, practice and attitudes regarding end of life care (n=65)

	Max Score	Range	Mean±SD
1.Nurses’ knowledge	26	10-18	14.5±2.19
COMFORT MEASURES performance chick list :	7	0-5	1.9±1.24
Nurses' practice regards communication in end of life care.	4	0-3	1.23±0.9
Nurses' practice regards end of life period and hygienic care.	8	0-4	2.07±1.36
2.Nurses’ practice toward care in end of life	19	2-10	5.2±2.12
3.Nurses Attitudes toward Care of end of life	150	56-82	66.87±6.27

Table 6: Percentage distribution of nurses’ knowledge, practice and attitudes toward end of life care (no =65)

Variable	No (n=65)	%
Nurses’ knowledge		
Un satisfactory	40	61.5
Satisfactory	25	38.5
Nurses’ Practice		
Poor	38	58.6
Good	27	42.2
Nurses’ Attitude		
favorable Attitude	18	27.6
unfavorable Attitude	47	72.3

Table 7: Correlation between nurses’ knowledge, practice, attitudes regarding EOL care and their socio-demographic characteristics of study sample (no=65)

	Socio-demographic data	No	knowledge	Practice	Attitude
			Mean ± SD	Mean ± SD	Mean ± SD
	Age				
1	18-25 years	4	15±4.24	2.5±0.71	64.5±2.12
2	26-35 years	37	13.88±2.03	5.71±2.14	67.41±7.28
3	36-45 years	20	15±2.06	4.56±1.81	67.67±4.95
4	46-55 years		17±0	6.5±2.12	61±1.41
	P value		0.214	0.118	0.533
	Education				
1	Diploma	41	14.16±2.17	4.74±1.97	67.68±5.98
2	Technical institute	20	15.78±1.79	5.56±2.01	64.44±7.16
3	Baccalaureate degree	4	12±0	8±2.83	70±1.41
	P value		0.041*	0.095	0.351
	Experience year				
1	Less than 5 years	15	13.57±1.72	5.71±2.98	66.29±9.03
2	5-10 years	22	15.2±2.35	4.9±1.52	68.5±6.79
3	11-19 years	13	15.17±2.14	5.83±2.23	65.33±4.97
4	>20 years	15	13.86±2.34	4.57±1.99	66.43±3.41
	P value		0.343	0.647	0.788

Independent T- test, One way ANOVA test, * statistically significant difference at P value <0.05

Table (6): Illustrates that more than half of studied sample have unsatisfactory knowledge and poor practice about end of life care (61.5%) and (58.6%) respectively. And nurse’s attitude toward end of life care were found to be (72.3%) unfavorable Attitude.

Table (7): Illustrates a statistical significant difference

between nurses’ knowledge, and their education with P. value = (0.041*).

While there is no statistical significant difference between practice, attitudes regarding end of life care and their sociodemographic characteristics

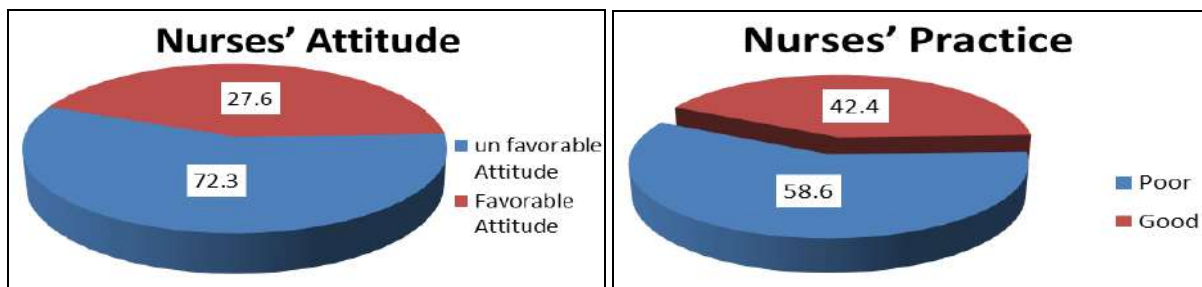


Fig 1: Distribution score of nurses’ practice and attitudes toward EOL care Sample (no=65)

Discussion

Caring for critically ill patients at the EOL phase and after death is enormously important for those who are dying, their families and others who are important to them. It is a highly individual experience that reflects cultural, religious as well as personal preferences and characteristics; Jo Wilson^[9] Nurses play an essential role in providing EOL care to terminally ill patients and their family members because they spend the longest time with patients and their proximity at' bedsides Smith *et al.*^[10] and Khraisat *et al.*^[11]

The present study shows that more than half of the studied sample their age ranged between twenty- six to thirty- five years with a mean age of (27.8±5.9), all of them were female. Regarding education about two third of studied sample had diploma education. These results agree with Salime *et al.*^[12] who founded that more than half of the study group subjects were less than thirty years old with a mean age of (27.8±5.9) and the majority of them were female and don't have training session as regard end of life care. As well, the most were diploma nurses Also, this result is similar to Hanan *et al.*^[13] who found that the majority of the studies subjects were females, less than thirty years old with mean age (24.21±4.38), more than half of the study samples were diploma nurse. Also, Gehan, *et al.*^[14] stated that about two third of nurses in Medical and Oncology ICUs less than thirty years and, more than one third of them had diploma education, concerning years of experience, more than one half had (5) years and more. Muhamad *et al.*,^[15] Stated that the majority of nursing students did not have an experience or training bout acaring for dying patients, and this agrees with this result. As regard years of experience, one third of them have from five to ten years of experience, and all of them have previous training sessions related to care of dying. And this result disagrees with Salime *et al.*^[16] who found the highest percentages of their study were having ten or more years of experience, and did not attend any training sessions related to end of life nursing care. As regard nurse's knowledge about EOL care for critically ill patients: this study illustrates that more than two third of studied sample had incorrect knowledge as regard end of life is only appropriate in situations where there is evidence of a downward irreversible deterioration, and drug addiction is a major problem when morphine is used on a long-term basis for the management of pain. While majority of them had correct knowledge as regard morphine is the standard used to compare the analgesic effect of other opioids.

This result in contrast to Kassa, *et al.*^[17] who found that more than two thirds know the definition of palliative care and agreed that palliative care is being given when patient's conditions are deteriorating. The majority of nurses responded that addiction is noticed as the major health problem when morphine is used in long-term. As regard total score of knowledge the present study showed that more than fifty percent of the studied sample was having an unsatisfactory knowledge level regarding end of life nursing care. This results is inline with. Hanan, *et al.*^[13] This might be due to lack of nurse's incentives to improve their knowledge, and lack of updates of nurses' knowledge, especially whom working at the ICU for several years. ICU nurses had increase the number of patients for each nurse they over-loaded and had more duties and having more

work hours. In addition to, the majority of the studied sample is diploma nurse and some of them did not have enough information about how to take care of the dying patient in the ICU and this area of patient care not taught in the nursing curriculum in the majority of colleges of nursing in Egypt.

This result in the same line with Samuel, *et al.*^[17] they found that good knowledge towards palliative care among nurses was found to be more than fifty percent. This finding is similar with Hanan, *et al.*^[13] who reported that more than fifty percent had poor knowledge. While this result was different with Won Ju^[18] who found that the majority of the studied sample was having an unsatisfactory knowledge level regarding EOL care and more than three quarter of them did end of life nursing care for critically ill patient without base of knowledge. Regarding total score of nurses' attitude toward EOL care, the current study found that more than fifty percent of studied sample had unfavorable attitude. This agrees with Sherien *et al.*^[19] found the majority of the total study sample had a negative attitude toward the care of dying patient.

The nursing attitude toward end of life care was illustrated to be more than thirty percent of the studied sample strongly agree that the nurse should not be the one to talk about death with the dying person and families need emotional support to accept the behavior changes of the dying person. And the majority of the studied sample would not want to give care for the dying person. More than one third of the studied sample strongly disagree in these items; the dying person and his/her family should be the in-charge decision makers. Dying persons should be giving honest answers about their condition families need emotional support to accept the behavior changes of the dying person. Family should be involved in the physical care of the dying person. Also, one third of them was disagreed to statement that state giving nursing care to the dying person is a worthwhile learning experience. This result disagrees with Sudore, *et al.*^[20] they mentioned that family should involve in end of life care increases the patients' quality of life.

Regarding Mean and standard deviation of studied sample as regard knowledge, practice and attitude toward EOL care was (14.5±2.19, 5.2±2.12, 66.87±6.27) respectively. This agrees with Amir, *et al.*^[21] who told that the total attitude score of nurses in this study was (74.98 ± 8.18). This study revealed there was no statistical significant difference between nurses' knowledge, practice, attitudes regarding end of life care and their sociodemographic characteristics except the relation between nurses' knowledge and their education P. value (0.041). This agrees with Amir, *et al.*^[21] who found that level of education had a significant association with a practice of nurses toward palliative care, Level of education also had a significant association with the attitude of nurses toward palliative care. The result of this study suggested that the majority of nurses had unfavorable attitude.

Also, this result in line with Muhamad, *et al.*^[15] found the relationship between the students' experience and attitudes of care of the dying person. This was in same line with Sarabia, *et al.*^[22] stating that the experience of nurses in caring of dying patients affects the attitudes. The academic level in this study is also indicated to have a relationship with the attitudes in caring for dying patients. This finding is

consistent with the study conducted in Addis Ababa Kassa, *et al.* [17]. As the education status of nurses' increase from diploma to the next above level, their knowledge towards EOL care also widened and improved due to an improvement in their professional skills.

Conclusions

The present study concluded that nurses had insufficient knowledge, practice, and an unfavorable attitude toward EOL care. There is no statistical significant difference between nurses' knowledge, practice, attitudes regarding EOL care and their sociodemographic characteristics except the relation between nurses' knowledge and their education had P. value [0.041]. The provision of additional education about EOL care is strongly recommended to improve the ICUs nurses knowledge about palliative care.

Recommendations

Based on the findings of the current study, the followings are recommended:

For nursing practice: Educational programs should be conducted for the nursing staff, both in the hospital, and intensive care settings about the end of life care.

For nursing education: The importance should be given to the end of life care for the undergraduate students during their courses and they should be motivated to gain more knowledge and to develop a positive attitude towards end of life care.

For nursing administration: The nurse administrator should plan and organize educational programs for nursing personnel about end of life care.

For nursing research: Further studies on the nurses' attitude, awareness and perception towards end of life care in different health care delivery systems.

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