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Nurses' Knowledge and Practices about Palliative Care among Cancer Patient in a University Hospital - Egypt

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Abstract
Background: Comprehensive cancer care requires the integration of palliative care practices and principles across the trajectory of the cancer experience and may be the sole focus of care for those patients with advanced incurable disease. As the incidence of cancer increases worldwide and the burden of cancer rises, especially in low and middle resource countries, the need for palliative care is greater than ever before and this care is most effectively provided by a multidisciplinary team. Because nurses have integral roles on that team by; identifying symptoms, providing care coordination, and assuring clear communication, so assessing nurses' knowledge and performance of palliative care is important. **Aim of the study:** to assess the nurses' knowledge and practices of palliative care among cancer patients. **Sample:** A sample of convenience including thirty male and female nurses who are working in the Intensive Care Unit**. Research Design:** A descriptive/exploratory research design was utilized in the current study. **Setting:** This study was conducted at the National Cancer Institute, Cairo University. **Tools:** Two tools were developed by the researcher and utilized to collect data pertinent to the study; A structured knowledge assessment questionnaire, and performance observational checklist. Included nurses were interviewed to fill out the knowledge assessment questionnaire then each nurse was observed in three different occasions using nurses' observational checklist. **Results:** About half of the studied sample were at the age group of 18-25, with a mean age of 26.53 $\pm$ SD= 6.29, married, graduated from technical nursing institute. Around one third of the studied sample had years of experience ranged from 5 to <10 years. Concerning knowledge, and practice the current study revealed that the studied nurses had unsatisfactory knowledge as well as practice level, with mean scores of 57.7% of 26.53 $\pm$ SD= 613.28, and 51.09 $\pm$ SD =9.17 respectively. There is positive correlation between years of experience and age ($r = 0.893$,at $p < 0.000$); years of experience and total practices scores (0.437, at $p< 0.016$); general knowledge scores and physical symptoms ($r= 0.389$, at p0.033); physical symptoms and psychological symptoms and total knowledge scores($r = 0.683$ at $p< 0.000$;$r=0.949$,at $p<0.000$); psychological symptoms and total knowledge scores($r=0.788$,at $p<0.000$) respectively. **Conclusion:** There is need for continuing education for upgrading nurse' knowledge about palliative care. **Recommendations:** enrichment of all nurses at any educational institute about knowledge and practices related to palliative care according to the standard guidelines will be helpful to achieve quality of life. Also replication of this study on larger probability sample at the different geographical location at Egypt is highly recommended.
Keywords: Palliative care – Cancer patients – nurses' knowledge – nurses' practice.

1. Introduction

Cancer is a global and international problem. It is the second leading cause of death worldwide after heart and vascular disease. It accounted for 8.2 million deaths in the year 2012. Among the most frequent causes of death are liver, stomach, colorectal and breast cancers. Unfortunately, annual cancer cases are expected to rise from 14 million in 2012 to 22 million within the next two decades (Globocan, 2012). The diagnosis of cancer and its treatment can have a devastating impact on the quality of a patient's life, as well as on the lives of families and other care givers. Patients face new fears, uncertainties and may have to undergo unpleasant and debilitating treatments. Therefore, patients and their families need access to support from the time that cancer is first suspected, through all stages of treatment to recovery or, in some cases, to death and into bereavement (Ellershaw & Wilkinson, 2003).

Patients with advanced cancer experience a range of complex problems that cannot always be dealt with effectively by generalist services. Therefore, they require a range of services to ensure that their physical, psychological, social and spiritual needs are met effectively and to enable them to live and die in the place of their choice. Thus, hospices and specialist palliative care services should be accessible and available (Welsh Assembly Government, 2001).

Palliative care is the active holistic care of patients with advanced, progressive illness. Management of pain and other symptoms and provision of psychological, social and spiritual support is paramount. The goal of palliative care is achievement of the best quality of life for patients and their families. Many aspects of palliative care are also applicable earlier in the course of the illness in conjunction with other treatments (WHO., 2002). Palliative care goes beyond the traditional medical model to focus on psychosocial issues, spiritual matters,

medical decision-making,(National Consensus Project for Quality Palliative Care, 2004) and on the relief of suffering in all its dimensions throughout a person's illness(Smith et al., 2012). Because of its focus on the whole person, more experts are advocating that a palliative approach to care could and should be integrated into care for all people with chronic, life-limiting conditions (including cancer)

The rationale for integrating palliative care into chronic disease management is the recognition that people with chronic diseases often have a long illness trajectory and, during that time, may have different palliative care needs. As their disease progresses, they may experience a complex range of social and emotional needs including isolation, decreased independence and burden on family members. Most people with chronic illnesses other than cancer often reach the terminal phase of their life without having been offered many of the physical and social resources available through palliative care (Fitzsimons et al., 2007). In cancer.net, 2013 revealed that several health care professionals may participate in your palliative care, including: Oncologist, Social worker, A chaplain, A dietitian, Grief and bereavement coordinator, Physical and occupational therapists, Nurses(cancer.net, 2013).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 (Skar, 2010).

After physicians, the nurses are the most valuable palliative care team members who address the physical, functional, social, and spiritual dimensions of care (Egan, & Abbott, 2002). Therefore, the aim of the present study is to assess nurses' knowledge and practice regarding palliative care at the National Cancer Institute, Cairo University.

2. Subjects and Method

2.1. Aim of the study: to assess nurses' knowledge and practice regarding palliative care at The National Cancer Institute, Cairo University

2.2. Research design: A descriptive exploratory research design was utilized in the current study.

2.3. Research questions: To fulfill the aim of this study, the following four research questions were formulated:
Q1- What is the level of knowledge about palliative care among nurses working in the National Cancer Institute, Cairo University?

Q2- What is level of nurses' practice of palliative care at the National Cancer Institute, Cairo University?

2.4. Setting: This study was conducted at intensive care units at National Cancer Institute, Cairo University Hospitals.

2.5. Sample: A convenient sample consisting of 30 nurses representing all the nurses staff concerned with care for cancer patients in intensive care unit (ICU) at the National Cancer Institute, Cairo University.

2.6. Tools of data collection: Two tools were utilized to collect data pertinent to the current study. They were developed by the researcher (Nurses knowledge assessment questionnaire about palliative care and Nursing practices of palliative care observational check list).

2.6.1. Nurses knowledge assessment questionnaire about palliative care consists of four main sections: the first section is concerned with certain characteristics, such as; gender, age, qualification, marital status, department of working and years of experience. The second section involves questions about knowledge related to physical symptoms requiring palliative care. The third section involves questions about knowledge related to psychological symptoms requiring palliative care.

2.6.2. Nursing practices of palliative care observational check list was developed by the researchers. It covers data related to assessment, pharmacological management, non pharmacological management, provided teaching, and follow up for each symptom. It is divided into two main sections: the first section is concerned with nurses practice regarding physical symptoms (pain, severe diarrhea, constipation, fatigue and anorexia).The second section is concerned with Nurses practice regarding psychological symptoms (anxiety, insomnia, depression).

3. Tools validity and reliability: Tools developed by the investigators (tool I & 2) were examined by a panel of five experts in the field of in the medical surgical, critical care and emergency nursing specialties to determine whether the included items are clear and suitable to achieve the aim of the study.

4. Pilot study: A pilot study was done on four nurses to test feasibility, objectivity, and applicability of the study tools and to estimate the needed time to complete each tool. Needed modifications were done in the data collection tools and subjects included in the pilot study were excluded from the main study sample.

5. Protection of human rights: The current study was approved by human research, and ethical committees at the faculty of nursing – Cairo University. An official permission to conduct the proposed study was obtained from the ethical committee also an official permission was obtained from hospital directors. Written consents were obtained from nursing staff to be included in the study, after explanation of the nature and purpose of the study. Each nurse was free to either participate or not in the current study and had the right to withdraw from the study at any time without any rational. Also, nurses were informed that obtained data will not be included in any further researches without second consent. Confidentiality and anonymity of each subject were assured through coding of all data and all information taken was protected and didn't affect their annual appraisal.

6. Procedure: The current study was carried out on two phases: designation phase and implementation phase. As regards preparation phase, it was concerned with constructing, preparing and testing of different data collection tools, in addition to managerial arrangement to carry out the study. Once official permissions were granted, the researchers started the implementation phase. Nurses who agreed to participate in the study were interviewed individually by the researcher to explain the nature and purpose of the study. Written consents were obtained and the study subjects were approached individually. Once official permissions were obtained to carry out the study, the researcher met the involved nurses on individual daily bases and interviewed each nurse for 10 – 15 minutes to answer any questions about the study and submit Knowledge Assessment Questionnaires (Appendix A) during their working shift to be completed in the presence of the researcher to clarify and answer any questions. Filling out The Knowledge Assessment Questionnaires took about 20-30 minutes, then the researcher checked each questionnaire items to be sure that no missing data were present. Observation of nurses during their practices was done during the morning and afternoon shifts in the intensive care unit. The researcher observed each nurse three times using nursing practices of palliative care observational check list.

7. Results

7.1. Table (1) shows that, around half of the studied sample were at the age group of 18-25 with a mean age of 26.53± SD= 6.29 , male, married, and graduated from Technical Nursing Institutes in percentage of (56.7%, 53.3%, 53.5% and 63.3%) respectively. Around one third (33.35%) of the studied sample had years of experience ranged from 5 to <10 years, and the majority (86.7%) of the studied sample didn't receive a training program about palliative care.

7.2. Table (2) shows that more than half (53.3%) of the studied sample had satisfactory total knowledge scores about palliative care with a mean scores of 57.7 ± SD = 13.28; more than two thirds (6303%) had unsatisfactory general knowledge level, with a mean scores of 5.53 ± SD = 1.678; more than half (53.3%) had unsatisfactory knowledge about physical symptoms requiring palliative care, with a mean scores of 15.56 ± SD = 3.56 and more than one third (40%) had satisfactory knowledge about psychological symptoms requiring palliative care, with a mean scores of 9.44± SD =1.423.

7.3. Table (3) shows that more than half (56.7%) of the studied sample had unsatisfactory mean scores of practicing palliative care in the first assessment, this proportion increased to be (73.3%) in the second assessment, and (76.6%) in the last assessment time, with means of 52.23 ± SD = 10.070; 50.985 ± SD = 9.14; and 50.058 ± SD = 10.82 respectively.

7.4. Table (4) shows that females had higher total mean knowledge scores as compared to males with means of 60.46±8.95, 55.28±16.06 respectively. No significant statistical differences were found in mean knowledge scores in relation to gender**.**

7.5. Table (5) Shows that males had higher mean total practices scores, as well as in different assessment times as compared to females with means ± SD of 56.23±7.51, 45.21±7.28 ; 55±10.35, 44.40±8.52; 55.70±7.36, 45.59±8.06; 57.98±6.87, 45.65±9.18 respectively. There was a significant statistical difference between male and females in relation to mean practices scores in the three different assessment times.

7.6. Table (6) Displays that the mean knowledge scores did not differ significantly in relation to educational levels, marital status, years of experience and attendance of training courses (F=0.081, 1.410, 1.438 and 2.040) respectively.

7.7. Table (7) Displays that the mean practices scores did not differ significantly in relation to educational levels, marital status and attendance of training courses(F= 1.940, 1.178, 0.804) respectively .However, a significance statistical difference was found in mean practices scores in relation years of experience (F = 5.413) at $p \leq 0.05$) respectively.

7.8. Table (8) Reveals no significant statistical difference in the mean total and subtotal physical and psychological mean practices scores in different assessment times . However there was a significant statistical difference in the mean practices scores regarding fatigue(physical symptom) and anxiety (psychological symptom) F=3.218 at p $\leq$0.045; and F= 3.456 at p $\leq$0.036 respectively.

7.9. Table (9) Displays that there is positive correlation was found between years of experience and age (r = 0.893,at p 0.000); years of experience and total practices scores(0.437 at p 0.016); general knowledge scores and physical symptoms (r= 0.389 at p0.033); physical symptoms and psychological symptoms and total knowledge scores(r=0.683 at p 0.000;r=0.949at p0.000); psychological symptoms and total knowledge scores(r=0.788at p0.000) respectively.

8. Discussion

The current study revealed that, the majority of the studied sample was younger adult. This finding is in agreement with that of Al Qadire, (2013) who conducted a study in Jordan to measure students' nurses' knowledge about palliative care, and that of Karkada1, et al. (2011) who conducted a study on awareness of palliative care among diploma nursing students, who had approximately similar findings to the current study. However, this finding is contradicted by El-Nagar (2013), Rosemann, et al., (2006), and Van Den Heuvel (2006) who found that the majority of the studied patients were older adults. As well, David & Banerjee, (2010) conducted a study about effectiveness of palliative care booklet in enhancing nurses' knowledge, and revealed that the majority of the studied nurses in the middle age adults.

Concerning gender, the current study revealed the dominance of males. This could be due to having the majority of nurses who work in NCI graduated from the Technical Nursing Institute (TNI) affiliated to the NCI where the ratio of male: female student was 5:1. This finding is in agreement with that of Al Qadire, (2013) who revealed that the majority of the studied nurses were males. However, this finding is contradicted by Brueckner, et al., (2009), El-Nagar (2013), Prem, et al., (2012), and Karkada1, et al.(2011) who carried out a studies about palliative care and revealed the dominance of females.

As regards to years of experience, the current study revealed that around half of the studied sample had more than ten years of experience in working with cancer patients. This finding is in concordance with that of Rosemann, et al., (2006) who found that the mean years of experience was more than thirteen years. As well, El-Nagar (2013), revealed that more than one quarter of the studied sample had a period ranging from five to ten years of experience. However, David & Banerjee, (2010), and Prem, et al., (2012) showed another picture where they found the majority of studied nurses had years of experience ranging from less than two - five years in working at oncology department. These findings "from the researcher point of view" could reflect the importance of continuing education and encourage nurses to update their knowledge and practices, especially where the majority of the studied sample is young adults who have the ability to acquire knowledge and change their behaviors. This can be achieved through submission of up to date knowledge, which may help in improving their practices regarding management of symptoms resulting from cancer and its treatment modalities, thus enhancing patients' quality of life.

According to qualification, the current study revealed that all of participant nurses are bedsides, and having diploma nursing degree. Having most of bedside nurses who work in governmental hospitals diploma nurses "from the researcher's point of view "could be due to preference of bachelor degree nurses to work at private hospitals and travel abroad, and when working in the governmental hospitals, bachelor degree nurses work as a head nurses not as bedside nurse. Findings of the present study are in agreement with that of David and Banerjee, (2010) who found that the majority of the nurses work as general practitioners. However, El-Nagar (2013) provided a contradicting finding where he found most of the studied nurses had bachelor degree.

The current study revealed that the majority of the studied sample did not receive training programs about palliative care. Approximately the same finding was indicated by David & Banerjee, (2010) who found that majority of nurses did not receive training programs about palliative care. This "from the researcher point of view" could be due to limited attention to nurses' continuing education or training programs especially about end of life care. This could direct the attention toward introducing the concept of palliative care in nursing curriculums to provide them with the needed knowledge and competency to provide high quality end-of-life care for the terminally ill patients, then carrying out continuing education programs about palliative care to ensure the best knowledge and practice.

The first research question states: what is the level of knowledge about palliative care among nurses working in the National Cancer Institute, Cairo University?. In this regards, the current study revealed that the majority of the studied sample had unsatisfactory general knowledge; and unsatisfactory knowledge about physical symptoms requiring palliative care. However, they had satisfactory knowledge about psychological symptoms. Because nurses play significant roles in the care of the dying critically ill, as well as the terminally ill patients, lack of their knowledge about palliative care is considered as obstacle to deliver palliative care. This is

of special concern especially where few studies were conducted to explore the role of the nurse regarding the five aspects of palliative care which are the philosophy, pain, dyspnea, psychiatric problems, and gastro-intestinal problems.

The ability of the nurse to deliver effective palliative care "from the researcher's point of view" depends on their ability to diagnose the symptoms and the needs of the patient. However, the majority of the studied sample had unsatisfactory general knowledge regarding what is palliative care, its principles and timing, and a minority of nurses had information about places that introduce palliative care, and goals of palliative care for different symptoms. As well, nurses in the current study didn't knows that palliative care is required for patients in all disease stages "starting from the time of diagnosis", including those undergoing treatment for curable illnesses; those living with chronic diseases; and those who are at the end of life. On the same line with findings of the current study was that of Karkada1, et al. (2011) who revealed that the minority of studied nurses were aware of the term palliative care.

In attempt to identify areas of knowledge deficit among the majority of the studied sample who had unsatisfactory knowledge level about physical symptoms, it was found to be in relation to assessment of symptoms, side effects of pharmacological management, and non pharmacological management. However, the majority who had satisfactory knowledge about psychological symptoms knew definitions, causes and some general measures of management such as active listening and touch. Findings of the present study are in agreement with several studies conducted by many authors such as Prem, et al., (2012) who found that the overall level of knowledge about palliative care was poor, while nurses had greater knowledge about psychiatric problems. As well, Al Qadire, (2013) found low knowledge level regarding essence, philosophy, and principles of palliative care. Another study conducted by Margaret et al. (2000) who studied nurse's knowledge about palliative care in Australia and reported that the majority of nurses had inadequate nursing education, and have limited content on end of life care (ELC) thus, inadequate knowledge.

As well, Shea, et al. (2010) conducted a study about assessment of advanced practice palliative care nursing competencies among nurse practitioner students and revealed students' limited knowledge about palliative care. Most students exclusively linked palliative care to end-of-life care, and believed that the management they provide should have the goal of prolonging life over maintaining quality of life. As well, Pfister, et al. (2013) conducted a study on German nursing home professionals' knowledge and specific self-efficacy related to palliative care and revealed low knowledge about palliative care. As well,, Nakazawa, Miyashita, & Morita, (2009) conducted a study in Japan to measure the efficacy of palliative care educational programs among general physicians and nurses and revealed that the majority of nurses were not aware of the physical symptoms that require palliative care.

In addition, Vejlgaard & Addington-Hall (2005) conducted a study about attitudes of doctors and nurses toward palliative and terminal care in Denmark and found little education about the principles and practice of palliative care. As well, White, et al., (2013) conducted a study about palliative nurses' perceptions of practices and challenges, and revealed that palliative nurses view end-of-life and palliative nursing competencies based on the needs of patients and families rather than a ranked list of important skills. However, contradicting findings to the current study were revealed by Wen-Yu Hu, et al., (2003) who evaluated the philosophy, principles and practical knowledge about palliative care and revealed that the majority of studied sample had knowledge about the philosophy, and principles of palliative care, however, a minority had knowledge about clinical management of symptoms such as management of pain, and dyspnea.

Concerning the second research question, it states, what is level of nurses' practice of palliative care at the National Cancer Institute, Cairo University?. The current study demonstrates that, the majority of the studied sample had unsatisfactory performance level. Assessment of nurses' performance was done regarding physical symptoms such as pain, dyspnea, tiredness / cancer-related fatigue, anorexia, severe constipation, severe diarrhea, and psychological symptoms such as anxiety, depression and insomnia / sleep disorders. As regards to pain, nurses didn't assess pain using numerical or visual scales. Only on admission, they assessed the anatomical location of pain, its intensity, and asked about the previous pain medications. A minority of nurses informed patients about medications' side effects and reassessed patients' pain in response to given medications by only asking patients if the pain relieved or not. As well, the majority of nurses performed non pharmacological pain management such as applying hot and /or cold applications, advising patients to massage the affected area, and change their position.

The current study findings are in agreement with that of Hemming & Maher (2011) who conducted a study about understanding and managing pain in palliative care and found that it was not possible to control pain in all patients. They revealed that, sometimes inadequate pain relief was due to ineffective management which may include inaccurate pain assessment, or simply not acknowledging the pain. As well, Bernardi, et al., (2007) conducted a survey study to assess knowledge and attitudes of Italian oncology nurses about cancer pain management. It showed that more than half of nurses underestimated the patients' pain and they did not treat it in the correct way. The same authors found that nurses who had higher mean knowledge scores were those who

attended courses about pain management.

Consequently, Herr et al.,(2010) conducted a study about the current state of evidence-based practices in pain assessment using a valid pain assessment scale (a numeric rating scale (NRS), at admission. The study revealed that pain assessment was completed within 48 hours of admission. Reassessment of pain intensity within 24 hours of the initial pain, and follow up was done for a minority of patients who reported moderate to severe pain. A minority of nurses monitored analgesic-induced side effects; initiation of bowel regimen for patients receiving opioids and documentation of both non pharmacological therapies and written pain management plans.

As well, Baker, et al., (2013) conducted a study about satisfaction with pain treatment in older cancer patients, and revealed that there is a need for pain education to address misunderstandings and concerns in managing cancer pain. The same authors added that, beliefs about cancer pain may be modified by education on pain management for clinicians, and nurses because providers should be aware of the psychosocial factors that may influence patients' pain management. Special emphasis should be on using a multidimensional approach to cancer pain management to achieve optimal quality of life for all cancer patients.

Concerning care of patients with breathlessness, the current study revealed that, nurses obtained the highest practices score. The majority of nurses assessed the respiration (rate, rhythm, depth), presence of sputum and the type of cough (productive or dry), oxygen saturation using pulse oximetry. In addition nurses provided oxygen therapy as doctor order but didn't provide nose care, device care; or teach patients how to do breathing and coughing exercise; and they gave medications as doctors' order. However, there was a lack of consideration to non pharmacological aspects of caring for breathlessness such considering the psychological issues through patients' reassurance, aeration of the room through opening windows, or using fans. In this regards, Galbraith,et al.,(2010) conducted a randomized, controlled, crossover study about the use of a handheld fan to improve chronic dyspnea, and found a reduction in breathlessness when the fan was directed to the face.

Consequently, Thomas, et al., (2011) conducted a study about breathlessness in cancer patients: implications, management and challenges, and revealed that non pharmacologic interventions can possibly modify the perception of dyspnea via several mechanisms so a handheld fan can improve dyspnea and its' inexpensive, convenient and are without undesirable side effects. As well as Bausewein et al., (2008) conducted a study about Non-pharmacological interventions for breathlessness in advanced stages of malignant and non-malignant diseases and revealed a strong evidence to chest wall vibrations in the improvement of dyspnea, however, breathing training had a moderate strength of evidence. As well, Rojanasak ,et al., (2012) conducted a study about dyspnea management in palliative home care in Malaysia and revealed that symptoms such as weakness, tiredness, or pain were most prevalent in all subgroups and a key success in dyspnea assessment and management by the home care team is continuous education for staff, simplified symptom assessment tools using a numerical rating scale, excellent access to morphine and oxygen therapy availability and to improve dyspnea management outcome.

In addition, Del Fabbro ,et al. ,(2006) conducted a study about symptom control in palliative care: Dyspnea and delirium, and revealed that anxiety-reducing techniques are used for breaking the breathlessness-anxiety cycle. Combined non pharmacologic managements improved breathlessness, performance status, and emotional states. Patients who participated in pulmonary rehabilitation programs developed their own self-coping skills, self-acquired expertise, and experienced improved quality of life. Nowadays, non pharmacologic interventions are increased in evidence on benefit of dyspnea management and these interventions made patients and families feel better and have much more of a sense of self-control. To improve dyspnea management outcome, palliative care team should combine pharmacologic management and non pharmacologic management.

Care of nutritional status is one of the most challenging problems for nurses, their patients, and patient's families. It requires identification and management of factors predisposing to malnutrition such as anorexia-cachexia, and weight loss. However, the current study revealed that nurses carried out incomplete nutritional assessment through monitoring only daily food intake and they neglected the other aspects of nutritional assessment such as obtaining full dietary history, anthropometric measurement, revising objective/ biochemical data, identification of risk factors that negatively affect nutritional status in addition to cancer, and performing physical assessment to for detecting manifestations of malnutrition in proper diet and incomplete health education about fluid intake and pharmacologic treatment.

Concerning anorexia- cachexia, it is a complex, not well understood and seen in many solid tumors in late-stage disease. Both anorexia and cachexia are caused by wasting syndromes and are best managed with patients' and family's' education, as well as a possible trial of appetite stimulants such as megestrol or dexamethasone. For appropriate pharmacologic treatment, it is helpful to identify the origin cause of anorexia in each patient. A study conducted by Del Ferraro, et al. (2012) about management of anorexia-cachexia in late-stage lung cancer patients revealed that palliative care strategies for prevention, assessment, and management is very important and early assessment for nutritional imbalances must be done regularly with reevaluation for intervention effectiveness and should continue throughout the illness trajectory. The same authors indicated that

palliative care and hospice nurses play a critical role in early assessment, education, and prevention to support nutritional needs for patients and their families.

As regards to fatigue, it is the most common symptom in cancer patients, but little is known about its specific treatment. According to the Hospice and Palliative Nurses Association (2013), fatigue treatment interventions fall into one of three categories: reduction of causative factors; pharmacological and non pharmacological management. In the current study nurses didn't assess or determine the severity of a patients' fatigue or note factors that worsen or relieve fatigue, such as both physical and psychological stresses. Concerning physical factors, they represent direct consequences of the disease process, such as anemia, hepatic or renal failure, chronic pain, in addition, treatments such as cancer therapy, and / or anti-hypertensive, however, psychological causes of fatigue include anxiety and depression to report and manage underlying cause. As well, nurses didn't apply non pharmacological treatment such as exercise, and the only carried out interventions were giving medication according to doctors' order.

Therefore, attention to the emotional and psychosocial needs of cancer patients is important. As cancer survivors live longer, reduction of psychological distress has been recognized as being an important part of improved quality of life. The most frequent psychological symptoms experienced by cancer patients are depression and anxiety (Spiegel & Giese-Davis, 2003; Carlsen et al., 2005; and Hegel et al., 2006). This is in addition to other problems such as mood disturbance, fear of recurrence, concerns about body image, and changes in one's role within the family and other relationships (Iom and Nrc, 2006). So one of the most important issues in providing supportive care to cancer patients is to meet patients' individual needs and provide the needed type of psychological therapy**.**

Facing an incurable disease "from the researcher's point of view" means living with existential pains, feelings of meaninglessness, loneliness, reduced self-respect, and loss of the sense of control. Being a professional, nursing care is a unique experience. It is different from most of the nursing care in the other wards. The existential context demanded nurses to create a close and trusting relationship with dying person and the whole family. Fortunately, the current study revealed that nurses had a satisfactory level in psychological symptoms management through using empathy, acceptance, non verbal body language that convey acceptance, encourage patients' expression of feeling, and advising patients to do breathing exercises. In this regards Sand and Strang (2006) conducted a study on existential loneliness in a palliative home care, and emphasize that respect, empathy and provisional care with mutual togetherness and belonging may decrease the perception of existential loneliness for dying persons and their families. Nurses used touch in situations characterized by anxiety and physical pain. These actions are expected to reduce bodily suffering since symptoms affect both the mind and soul.

The current study revealed no significant statistical relationship was between years of experience and total knowledge scores, however, there was a relation between years of experience and total practices scores. This may indicate that nurses carryout certain aspects of without knowing. It also may indicate that practice is the best way for a quiring knowledge. However, this finding is contradicted with that of Proctor, et al. ,(2000) who conducted a study on nurses' knowledge of palliative care in Australia and revealed that nurses with some oncology or palliative care experience scored significantly higher than others. Nurses with more work experience as measured by working years also attained significantly higher scores.

Result of the current study clarified that gender didn't play a role in the knowledge of the studied sample, where the mean total knowledge scores did not differ significantly among male and females. Concerning other demographic factors, no significant statistical differences were found between total knowledge scores and education, marital status, years of experience and training programs. These findings are in agreement with that of Prem, et al., (2012) who found no significant statistical correlations between palliative care total knowledge scores and age, present work experience, and total work experience. As well, the current study clarified no significant statistical relationship between the total knowledge scores and the total practice scores. This finding is not in agreement with that of Huijera1, et al., (2008) who conducted a study on perspectives on palliative care: Knowledge, attitudes, and practices of medical and nursing specialties, and reported that knowledge scores were statistically associated with practice scores and degree. Practice scores were positively associated with continuing education in palliative care, exposure to terminally ill patients, and knowledge and attitude scores.

Comparison of knowledge scores in relation to gender in the current study revealed that, females had higher knowledge scores than males. Concerning age, it was not significantly associated with knowledge scores. This finding is contradicted with that of Karkada1, et al.(2011) who revealed a significant association between the age of the nurses and their knowledge about palliative care. As well, Prem, et al., (2012) found that female nurses had slightly higher knowledge scores than male nurses.

Concerning practice scores, the current study revealed that the male's practices scores were higher than females' practices scores. This finding indicates that nurses may have knowledge but didn't know how to apply or use this knowledge in practices, so observation and guidance play critical roles in improving nurses skills in practices As well, results of the current study revealed no significant relationship between education, marital

status and attending training programs, However, there was a significant statistical difference between years of experience and total mean practices scores. This finding is contradicted with that of Huijer, et al., (2009) who conducted a study about knowledge, attitude and practices of medical and nursing specialists and concluded a positive association between practice scores and continuing education. That is why the same authors suggested that formal education in palliative care could enhance the competency of the nurse in providing holistic care to the terminally ill patients. As well, they emphasized that the competency of nurses working in oncology hospitals or in other health care setups for terminally ill patients can be enhanced through specialized formal education or continuing education on palliative care.

9. Conclusion

Based on the findings of this study, it can be concluded that, nurses in intensive care unit at the National Cancer Institute had unsatisfactory knowledge and practice regarding palliative care which is considered as an important aspect of improving cancer patients' quality of life. The majority of the involved nurses conducted incomplete symptom assessment, nursing management and blindly followed doctors' orders. However, a minority assessed and provided the required nursing management.

10. Recommendations: Based upon findings of the current study, the followings are recommended:

- Updating knowledge and performance of ICU nurses through carrying out continuing educational programs about palliative care.
- Strict observation of nurses' performance/ utilization of palliative care and guidance for correction of poor practices.
- Availability of all facilities required to provide palliative care such as special place; MDT teams; policy and continuing courses.
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Notes: List of tables and figures:

Table (1): Frequency Distribution of the Studied Sample as regards to Socio- demographic Characteristics (N =30).

Variable	N	%
Age		
18-	17	56.7
25-	5	16.7
30 & More	8	26.7
X ± SD	26.53 ± 6.29	
Gender		
Male	16	53.3
Female	14	46.7
Marital status		
Single	13	43.3
Married	16	53.5
Divorced	1	3.3
Level of education		
Baccalaureate	2	6.7
Technical institute	19	63.3
Diploma	9	30
Years of experience		
Less than 5 years	9	30
5-	10	33.3
11-	5	16.7
>15	6	20
X ± SD	8.83± 6.29	
Received training program		
Yes	4	13.3
No	26	86.7

Table (2): Frequency Distribution of the Studied Sample as regards to Knowledge about Palliative Care (N=30).

	Unsatisfactory (< 60%)		Satisfactory (> 60%)		Total	
	N	%	N	%	N	%
A-General information about palliative	19	63.3	11	36.7	30	100
X±SD	5.53 ± 1.678		8.82 ± 0.75		6.73 ± 3.132	
B- Physical symptoms requiring palliative care	16	53.3	14	46.7	30	100
X ± SD	15.56 ± 3.558		2.93 ± 2.055		19.0 ± 4.734	
C- Psychological symptoms requiring palliative care	40	40	60	60	30	100
X ± SD	5.17 ± 1.466		9.44 ±1.423		7.73 ± 2.558	
D- Total knowledge scores	14	46.7	16	53.3	30	100
X ± SD	46.92 ± 11.480		67.13 ± 4.854		57.70 ± 13.283	

Table (3): Frequency Distribution of the Studied Sample as regards to Practice of Palliative Care (N=30).

Time of assessment	Unsatisfactory (< 60%)		Satisfactory (> 60%)		Total	
	N	%	N	%	N	%
A- First assessment	17	56.7	13	43.3	30	100
X + SD	45.012±7.420		61.672±1.148		52.231±10.070	
B-Second assessment	22	73.3	8	26.7	30	100
X ± SD	47.035±7.269		61.847±1.940		50.985±9.141	
C- Third assessment	23	76.7	7	23.3	30	100
X ± SD	46.313±9.522		62.360±1.643		50.058±10.816	
X Total Practices scores	47.312±7.707		61.486±1.568		51.092±9.179	

Table (4): Comparison of Mean Knowledge Scores in Relation to Gender (N =30).

Variables	Male X ± SD	Female X ± SD	T	P
Subtotal mean scores of general information about palliative care	6.94±2.29	6.50±1.99	0.554	<0.584 NS
Subtotal mean scores of physical Symptoms requiring palliative care	18 ± 5.60	20.14±3.32	1.249	<0.222 NS
Subtotal mean scores of psychological symptoms requiring palliative care	7.12±2.77	8.42±2.17	1.416	<0.168 NS
Total knowledge scores	55.28±16.06	60.46±8.95	1.070	<0.294 NS

NS: No significant statistical difference

Table (5): Comparison of Mean Practices Scores in Different Assessment Times in Relation to Gender (N =30).

	Male X ± SD	Female X ± SD	t	P
First assessment	57.98±6.87	45.65±9.18	4.199	***<0.000
Second assessment	55.70±7.36	45.59±8.06	3.591	***<0.001
Third assessment	55±10.35	44.40±8.52	3.029	***<0.005
Total practice scores	56.23±7.51	45.21±7.28	4.061	***<0.000

*** High significant statistical difference

Table (6): One Way Analysis of Variance (ANOVA) for Comparison of Total Mean Knowledge Scores in Relation to Socio-demographic Characteristics (N = 30).

Demographic variable	Knowledge score		
	M±SD	F	P
Education			
Baccalaureate	61.20±10.97	0.081	<0.923 NS
Technical Institute	57.71±14.55		
Diploma	56.89±12		
Total	57.70±13.28		
Marital status			
Single	62.20±9.21	1.41	<0.262 NS
Married	54.52±15.52		
Divorced	50.000		
Total	57.70±13.28		
Years of nursing experience			
Less than 5 years	50.19±16.79	1.44	<0.254 NS
5-	60.51±11.30		
10-	61.37±12.10		
15 or more	61.20±8.90		
Total	57.70±13.28		
Attendance of training course			
Yes	66.379±8.505	2.04	<0.164 NS
No	56.366±13.494		

NS: No significant statistical difference

Table (7): One Way Analysis of Variance (ANOVA) for Comparison Total Practices Scores in Their Socio-demographic Characteristics (N = 30).

Demographic variable	Practices score		
	M±SD	F	P
Education			
Baccalaureate	58..55±0.00	1.940	<0.163 NS
Technical Institute	52.34±9.53		
Diploma	46.79±7.91		
Total	51.09±9.17		
Marital status			
Single	48.58±9.207	1.178	<0.323 NS
Married	52.57±17.18		
Divorced	60.000		
Total	51.09±9.17		
Years of nursing experience			
Less than 5 years	55.68±8.76	5.413	*< 0.005
5-	54.66±7.26		
10-	41.10±4.71		
15 or more	46.57±8.05		
Total	51.09±9.17		
Attendance of training course			
Yes	47.24±9.02	0.804	<0.377 NS
No	51.68±9.23		

NS: No significant statistical difference
*: significant statistical difference

Table (8):Frequency Distribution of the Studied Sample as Regards to Mean Practices Scores of Palliative Care in Different Assessment Times(N=30).

A-Physical Symptoms	Mean Practices Scores				
	First assessment	Second assessment	Third assessment	F	P
1-Pain	5.800±2.591	6.066±1.818	5.433±2.207	0.611	< 0.545 NS
2-Dyspnea	10.433±0.858	10.233±1.406	10.333±0.884	0.257	<0.774 NS
3-Anorexia	5.000±1.761	5.533±1.696	5.200±1.864	0.691	<0.504 NS
4-Severe diarrhea	4.466±1.655	4.300±1.725	4.000±1.640	0.599	<0.552 NS
5-Severe constipation	8.200±2.107	7.500±1.907	7.633±2.355	0.912	<0.405 NS
6-Fatigue	4.633±0.964	5.266±0.868	4.833±1.116	3.218	*0.045
Total mean scores	38.533±6.468	38.900±5.665	37.433±7.252	0.414	<0.662 NS
B-Psychological Symptoms	First assessment	Second assessment	Third assessment	F	P
1-Anxiety	7.766±1.675	6.433±2.223	6.933±2.016	3.456	*0.036
2-Depression	5.666±2.523	5.200±1.954	5.733±2.116	0.518	<0.597 NS
3- Insomnia	8.100±2.397	8.100±2.202	7.466±2.569	0.700	<0.500 NS
Total mean scores	21.533±5.538	19.733±4.989	20.133±5.519	0.935	<0.397 NS

NS: No significant statistical difference
*: significant statistical difference

Table (9): Correlation between Total, Subtotal Knowledge and Practices Scores in Relation to Selected Variables (N =30).

Variables		Age	Years of experience	General knowledge scores	Subtotal physical symptoms scores	Subtotal psychological symptoms scores	Total knowledge scores
Years of experience	r p	0.893** 0.000					
General knowledge	r p	0.272 0.147 NS	0.297 0.111 NS				
physical symptoms scores	r p	0.106 0.576 NS	0.266 0.155 NS	0.389* 0.033			
psychological symptoms scores	r p	0.330 0.075 NS	0.349 0.059 NS	0.132 0.487 NS	0.683** 0.000		
Total knowledge scores	r p	0.100 0.599 NS	0.197 0.296 NS	0.560** 0.001	0.949** 0.000	0.788** 0.000	
Total practices scores	r p	0.297 0.111 NS	0.437* 0.016	0.099 0.602 NS	0.147 0.437 NS	0.047 0.805 NS	0.079 0.679 NS

** High significant statistical difference
NS : No significant statistical difference

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