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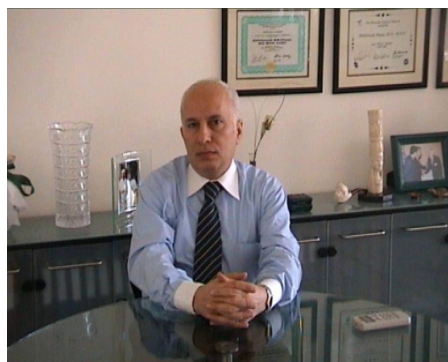
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FROM THE EDITOR



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The editorial team and the production team would like to wish all our readers and colleagues a happy New Year and a successful 2015. This issue presents several papers on different issues related to nursing area in the region.

A review paper looked at the use of patient-based pain education to reduce barriers to cancer pain management. Many cancer patients with pain report that they are undertreated, despite the utilization of best international guidelines for treating cancer pain. Barriers to cancer pain management are thought to have a contributory role in the under treatment of pain.

The authors found that all of the articles reviewed indicated that pain education can reduce barriers to cancer pain management. The author concluded that pain education programs are an effective approach in the treatment of patient-related barriers to cancer pain management. It is strongly recommended to integrate PEP within treatment course of cancer pain. Further, it is reinforced that all institutions dealing with cancer patients hold specialized health care professionals who are able to administer PEPs.

A randomized control study was done between the 1st of March 2012 and the end of April 2013 at King Hussein Medical Center was carried to assess the value of short-term decadron therapy on prevention of post operative nausea and vomiting following caesarean section. During this period a total of 100 full term women scheduled for elective caesarean section under spinal anaesthesia. 50 women were given 8 mg decadron injection and another 50 women were considered as control group. There was no significant difference among both groups with respect to age, weight, parity, duration of anaesthesia and surgery. In the decadron group, nausea and vomiting were absent in 62% of patients, while only nausea and vomiting were absent in 22% of patients in control group. The authors concluded that Dexamethasone significantly decreased the total incidence of nausea and vomiting in patients underwent caesarean section under spinal anesthesia compared with control group. Also dexamethasone injection is simple to administer and provide safe and very effective antiemetic protection

A paper from Jordan looked at methods to improve sleep in Jordanian Intensive care unit patient. Sleep is essential for well-being and recovery from illness. The critically ill are in significant need of sleep but at increased risk of sleep loss and disruption. Sleep is considered to be physically and psychologically restorative and essential for healing and recovery from illness. Studies used different tools to assess sleep process quality (fragmentation, sleep stage changes, wake after sleep onset, EEG sleep patterns), quantity (total sleep time and time

spent in each sleep stage) and distribution over the 24-h cycle in ICU's patients. The most used methods were polysomnography (PSG), nursing observations, and Subjective measures of sleep include questionnaires incorporating visual analogue and Likert scales, for example the Richards Campbell Sleep Questionnaire (RCSQ), the Sleep in the Intensive Care Unit Questionnaire (SICQ) and the Verran/Snyder Halpern (VSH) Sleep Scale.

A study from Saudi Arabia explored nurses' knowledge about palliative care in an intensive care unit in Saudi Arabia. In Saudi Arabia, approximately 23,000 persons are diagnosed with cancer every year. According to the World Health Organization (WHO), palliative care is a holistic activity that involves physical, psychosocial and spiritual human needs to enhance quality of life for patients and their families. Eight individual qualitative semi-structured interviews were conducted. Interviews were audiotaped and transcribed verbatim. The palliative care concept was not familiar for most ICU nurses but it was applied in their daily work. Most nurses provided physical care at the end of life to keep the body intact. Some nurses highlighted that dying patients did not feel pain to be treated and did not have emotions to be supported. The authors concluded that nurses had insufficient knowledge of palliative care and how to apply it in ICU setting. The provision of additional education in palliative care is recommended in order to improve the knowledge of palliative care among nurses.

A review paper on Compassion is presented from Amman. Compassion is a type of meditation therapy which has been used recently. Compassion has many definitions, one of these definitions is the feeling that emerges in witnessing another's suffering and that motivates a following desire to help. Hofmann, Grossman, and Hinton describe compassion as a path leading to greater awareness, aimed to focus awareness upon alleviation of the suffering of all sensitive beings. Moreover, compassion is thought to have arisen as the affective element of a caregiving system, designed to help raise vulnerable progeny to the age of viability.

DECADRON THERAPY ON PREVENTION OF POST OPERATIVE NAUSEA AND VOMITING FOLLOWING CAESAREAN SECTION

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Abstract

Objective: To assess the value of short-term decadron (Dexamethasone) therapy on prevention of post operative nausea and vomiting following caesarean section.

Design and method: A randomized control study was done between the 1st of March 2012 and the end of April 2013 at King Hussein Medical Center. During this period a total of 100 full term women scheduled for elective caesarean section under spinal anaesthesia were included in the study. 50 women were given 8 mg decadron injection and another 50 women were considered as control group. The total incidence of nausea and vomiting was calculated.

Results: During the study period, 100 women enrolled. There was no significant difference among both groups with respect to age, weight, parity, duration of anaesthesia and surgery. In the decadron group, nausea and vomiting were absent in 62% of patients, while only nausea and vomiting were absent in 22% of patients in the control group. Also 16% had nausea and vomiting in the first post operative period in the decadron group, while 44% had nausea and vomiting in the first post operative period in the control group.

Conclusion: Dexamethasone significantly decreased the total incidence of nausea and vomiting in patients who underwent caesarean section under spinal anesthesia compared with the control group. Also dexamethasone injection is simple to administer and provides a safe and very effective antiemetic protection.

Key words: Dexamethasone, nausea and vomiting, caesarean section.

Background

Nausea and vomiting are among the most unpleasant experiences associated with cesarean section and one of the most common reasons for poor patient satisfaction rating in the postoperative period(1). Nausea and vomiting is seen in almost 50-80% of the patients undergoing cesarean section (CS) under regional anaesthesia when no prophylactic antiemetic is given(2). PONV can cause more hospital stay and admissions following day surgery, therefore increasing medical costs. Many different factors like psychogenic factors, surgical procedure itself, traction of the visceral peritoneum, uncorrected hypotension, administration of opioid drugs and uterotonic agents can lead to nausea and vomiting(3).

Dexamethasone is a corticosteroid with antiemetic and high anti-inflammatory effects. Use of dexamethasone in combination with the other drugs has been reported to increase the antiemetic or analgesic efficacy, and minimal side effects have been reported when it is used as a single agent(4). Recently various studies have been conducted to evaluate the efficacy of steroids in managing PONV(5). Optimum dose was found to be 10mg of dexamethasone, and the same dose was found to be highly effective when given immediately before induction rather than at the end of anaesthesia(6).

Dexamethasone (Decadron) is a potent synthetic member of the glucocorticoid class of steroid drugs that has anti-inflammatory and immunosuppressant effects, while having minimal mineralocorticoid effect. Dexamethasone has an established role in decreasing postoperative nausea and vomiting (PONV)(7).

The purpose of this study is to assess the value of short-term decadron therapy on prevention of post operative nausea and vomiting following caesarean section under regional anaesthesia.

Patients and Methods

A randomized control study was conducted between the 1st of March 2012 and the end of April 2013 at King Hussein Medical Center. King Hussein Medical Center is one of the main referral hospitals in Jordan. It serves a population of about one million, and the maternity care unit receives about 700-800 deliveries monthly. The study was approved by the ethics committee and informed written consent from all participants was obtained.

During the study period, we enrolled 100 full term women weighing 55-80 kg, between the ages 16 to 40 years, scheduled for elective caesarean section under spinal anaesthesia. 50 women were given 8 mg decadron injection one hour prior to caesarean section and another 50 women were considered as the control group. No premedication was given in all patients and lactated Ringer's solution 500 ml was given i.v before surgery.

The patients were evaluated for possible adverse effects such as nausea and vomiting. Assessment for PONV was continued every 4 hours until the first 24 hours. Nausea was defined as a subjectively unpleasant sensation associated with awareness of the urge to vomit; vomiting was the forceful expulsion of gastric

contents from the mouth. Nausea and vomiting were evaluated on a 4-point ordinal scale (0=none, 1=nausea, 2=vomiting, 3=nausea and vomiting). The total incidence of nausea and vomiting was calculated. Chi square and P value were calculated.

Patients excluded from the study were those with gastrointestinal disease or administration of antiemetic medication in the previous 24 hours, and patients who had obstetric complications or evidence of fetal compromise.

Results

During the study period, 100 women were enrolled in the study. There was no significant difference among both groups with respect to age, weight, parity, duration of anaesthesia and surgery as seen in Table 1.

Neonatal outcome was similar in the two groups and all the neonates had Apgar scores > 8 at one and five minutes.

Table 2 compared between two groups regarding the incidence of nausea and vomiting. In the decadron group, nausea and vomiting were absent in 62% of patients, 10% (5 patients) had nausea, 12% (6 patients) had vomiting, while 16% (8 patients) had nausea and vomiting in the first post operative period. In the control group, only nausea and vomiting were absent in 22% of patients, 16% (8 patients) had nausea, 18% (9 patients) had vomiting, while 44% (22 patients) had nausea and vomiting in the first post operative period.

Table 1: Patients' characteristics for two groups

Characteristics	Decadron group (N=50)	Control group (N=50)
Age (yr)	29(16-38)	28(17-39)
Weight (kg)	66 (52-70)	68 (54-72)
Parity	3 (1-5)	3 (1-5)
Operative time (min)	36 (29-43)	35 (28-42)
Anaesthesia duration (min)	54 (42-66)	56 (45-67)

Table 2: Comparison of Nausea and Vomiting incidence in the 2 groups

Patients	(0) None	(1) Nausea	(2) Vomiting	(3) Nausea & Vomiting
Decadron group	31(62%)	5(10%)	6(12%)	8(16%)
Control Group	11(22%)	8(16%)	9(18%)	22(44%)
χ^2	18	2	3	12
P Value	0.005	0.001	0.003	0.005

Discussion

Nausea and vomiting are common side effects in parturients undergoing caesarean delivery performed under spinal anaesthesia and can be very unpleasant to the patients. The reported incidence of nausea and vomiting during caesarean performed under regional anaesthesia varies from 50% to 80% when no prophylactic antiemetic is given. Therefore, use of prophylactic antiemetics in parturients undergoing caesarean delivery is recommended by some authors(8).

Nausea and vomiting during regional anesthesia for cesarean section still remains a significant problem not only for the patient, but also for the surgeon and the anesthesiologist as well. The etiology of intraoperative nausea and vomiting is complex; it may be attributed to surgical stimulation, hypotension, vagal stimulation and uterotonic drugs. Patient demographic data and anesthetic technique also can play a role(9).

Dexamethasone is used for preventing and treating post operative nausea and vomiting. The mechanism of action of dexamethasone is not fully elucidated. There are 2 theories: prostaglandin antagonism and release of endorphins. Dexamethasone was shown in a systematic review to be better than placebo in preventing postoperative vomiting (relative benefit 1.50; 95% CI 1.07 to 2.09; $p < 0.01$)(10).

The result of this study demonstrates that administration of intramuscular decadron injection one hour prior to caesarean section can reduce the incidence of nausea and vomiting among patients under spinal anaesthesia. The mechanism for the antiemetic effect of dexamethasone remains unknown. As Bisgaard et al(11) concluded that preoperative dexamethasone (8 mg) reduced pain, fatigue, nausea and vomiting, and duration of convalescence in patients undergoing non complicated LC, when compared with placebo, and is recommended for routine use. Also Cardoso et al(12) in their study found that dexamethasone reduced the cumulative incidence of nausea and vomiting after caesarean section under spinal anaesthesia.

But Voigt et al(13) in their study recommended a prophylactic medication with tropisetron 2 mg and metoclopramide 20 mg for patients during caesarean section. These agents are safe, reasonably priced, and highly efficient in preventing nausea and vomiting. While Fujii(14) said that overall, these pharmacological and non-pharmacological therapy reduces emetic episodes in parturients undergoing regional anesthesia for cesarean delivery. The clinician must weigh the benefits of using pharmacological and non-pharmacological techniques for nausea, retching, and vomiting in parturients undergoing caesarean delivery performed under regional anesthesia.

Conclusion

Dexamethasone significantly decreased the total incidence of nausea and vomiting in patients who underwent caesarean section under spinal anesthesia compared with the control group. Also dexamethasone injection is simple to administer and provides safe and very effective antiemetic protection over the whole 24- hour period. Further, studies are needed to prove the safety of dexamethasone in parturients undergoing caesarean section.

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NURSES' KNOWLEDGE ABOUT PALLIATIVE CARE IN AN INTENSIVE CARE UNIT IN SAUDI ARABIA

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Abstract

Background: Most patients die in hospital settings either in intensive care unit (ICU), emergency department (ED) or other departments. In Saudi Arabia, approximately 23,000 persons are diagnosed with cancer every year. According to the World Health Organization (WHO), palliative care is a holistic activity that involves physical, psychosocial and spiritual human needs to enhance quality of life for patients and their families. Palliative care is an essential aspect to be applied for patients with chronic diseases to improve their quality of life. Earlier studies have shown that physicians, nurses and nurse assistants who work in long-term care settings lack the knowledge to enforce palliative care principles due to lack of education. According to the WHO, health care professionals should be educated and trained to apply palliative care.

Aim: The aim of this study was to explore nurses' knowledge about palliative care in an intensive care unit in Saudi Arabia.

Method: Eight individual qualitative semi-structured interviews were conducted. Interviews were audiotaped and transcribed verbatim. Manifest content analysis was used to analyze the data.

Results: The palliative care concept was not familiar for most ICU nurses but it was applied in their daily work. Most nurses provided physical care at the end of life to keep the body intact. Some nurses highlighted that dying patients did not feel pain to be treated and did not have emotions to be supported.

Conclusions: Nurses had insufficient knowledge of palliative care and how to apply it in ICU setting. The provision of additional education in palliative care is recommended in order to improve the knowledge of palliative care among nurses.

Key words: Palliative care, Intensive care unit, Knowledge, End of life, Kingdom of Saudi Arabia

Introduction

According to the WHO, palliative care is a holistic activity that involves physical, psychosocial and spiritual human needs to enhance quality of life for patients and their families. It focuses on issues with life-threatening diseases, and it reduces suffering of pain and other symptoms in order to meet patients and their families' needs. It focuses on patients who experienced long-term advanced diseases and need specific care by comforting patients who are not responding to the curative treatment (1, 2, 3).

Palliative care can be either general care or specialised care. General or basic palliative care means the care that is delivered by all health care workers either in hospital settings, outpatient clinics or primary care centers to patients with life-long diseases. Health care professionals should be educated and trained to apply palliative care (2, 4, 5, 6, 7). The most common reasons for consulting palliative care specialised personnel are emotional support, depression, anger, management of several symptoms, control of pain and end of life care (8).

Palliative care in KSA started in 1992 at the King Faisal Specialist Hospital (KFSH) in capital city Riyadh. In addition, KFSH has a program for home health care services, consultation services, out-patient clinics and intensive management wards. KFSH established in 2002, a two-year postgraduate palliative training program (9, 10).

In 1998, palliative care was developed in Jeddah to meet the needs for patients with cancer. Likewise, in 2004, a new unit was established in National Guard Health affairs (NGHA) in Riyadh with two beds in order to improve the oncology department. Today, there are above 15 cancer centers in KSA that have palliative care units. In 2010 more than 500 patients received these unit services. Although, KSA may have the best palliative care services among the Middle East countries, there is a lack of provision of this care due to the low number of specialists, geographic location with a few patients with access to palliative care services and deficiency of opioids in the units (10).

Critical care or intensive care units are parts of hospital settings that apply continuum care for patients who have life-threatening or unstable medical conditions such as breathing problems, complications from surgery, infections and accidents (11).

In the United States, a fifth of all deaths occur in the ICU (12). In addition, the patients who experienced ICU admission are at high risk of developing psychological symptoms such as stress, depression, anxiety and pain which affects patients' quality of life (13). Most issues that are noted in the ICU include poor support for relatives of dying patients, not involving them in

treatment decisions and poor communication (1). Nurses' knowledge is a difficult term to define because nursing science depends on other sciences such as biological science and social science (14). Nurses need evidence based knowledge to perform the care. Nurses gain their knowledge through different sources, for example, through academic sources, personal experiences and practices. The academic source of knowledge includes theories and research which represent the scientific side of nursing (15). Carper classifies nursing knowledge in four types, which are empirical knowledge, personal knowledge, esthetics knowledge and ethical knowledge. Empiric knowledge is the scientific knowledge that can be obtained from observations and tests. Personal knowledge is based on individuals' thoughts. Esthetics knowledge is related to the art of creativity and values. Ethical knowledge is the knowledge that is used to distinguish between right and wrong actions (16).

Carper's work was criticized by Schultz and Meleis (17). As a result of this critique, nursing knowledge was identified as clinical, conceptual and empirical knowledge. Clinical knowledge results from combining personal and empirical knowledge while providing care and solving patient problems. Conceptual knowledge is a reflective knowledge that defines concepts and examines the relationship between the concepts within a theory. Empirical knowledge is the use of tests, experiments and study phenomena, to measure the effectiveness of action in the practices (15).

According to Ganem, Shaikh, Abo Alia, Al-Zayir & Alsirafi, patients with cancer are not the only ones who need palliative care. There are other conditions rather than cancer to be treated with palliative care such as sickle cell diseases, peripheral arterial diseases, end stage renal diseases and acute liver diseases (18). It is important to identify nurses' knowledge, thoughts and experiences about palliative care, and to highlight the importance of applying palliative care in the ICU. The aim of the study was to explore nurses' knowledge about palliative care in an intensive care unit in Saudi Arabia.

Method

A qualitative method is a systematic process that is used to explore social and human problems. Qualitative researchers study the natural setting of things in order to make a science of phenomena by several means such as case studies, interviews, experiences and life stories (19). Using a qualitative design helped to gain deep understanding about nurses' knowledge regarding palliative care in an intensive care unit.

Sample and setting

Eight nurses from the Eastern region in Saudi Arabia, who worked in an ICU teaching hospital, were interviewed. The eligible participants were chosen by the ICU supervisor based on the inclusion criteria of the study. All interviews were conducted in 2013 by the

first and second author. Each author conducted four interviews in separated rooms. The interviews took place in the ICU department in one day during participants' duty time. The participants were two males and six females who worked in medical, surgical and pediatric ICU. The participants' experiences were between seven months and 25 years. Some participants had diploma while others had bachelor degrees in nursing. All participants were coded in order to protect their confidentiality. The inclusion criteria for this study were nurses working in the intensive care unit who could speak the English language.

Data collection

An interview is a face to face conversation between the researchers and the participants (19). Semi structured interviews were conducted, with open ended questions to gain rich information from the participants. According to Polit and Beck a topic guide is necessary to have when conducting semi structured interviews, and the purpose of using this guide is to cover research area with all participants. Open-ended questions were used to guide interview processes and follow up questions were asked based on participants' responses (19).

The interview guideline questions were obtained from two sources; from valid questionnaires to measure nurses' knowledge about palliative care and through intensive reading of studies about applying palliative care in an ICU (20).

The ICU supervisor arranged a suitable place and time for contacting interviews. Each interview started with greeting, smiling and thanking the participants in order to build a comfortable environment that allowed the participants to talk freely. The study was briefly explained to the participants prior to obtaining the verbal agreement. The recording process started after obtaining participants' verbal agreements. All interviews were audio recorded and stored by the authors' cell-phones which were locked by passwords to maintain participants' privacy. The interviews lasted between 15-20 minutes. The first question was "What is palliative care for you?" Some participants could not recognize the palliative care term and two other concepts, end of life and dying were used instead.

Pilot study

The interview questions' sufficiency in answering the aim of the study was evaluated after two interviews, and no new questions were added to the interview guideline questions. These four pilot studies were included in the study. A pilot study is a scale to evaluate the possibility of using, changing and improving the research method (19).

Data analysis

According to Polit & Beck a transcription means to convert the oral data to written transcript (19). The

transcription was done by adding the nods, silence periods and phone rings. According to Kvale & Brinkmann the interview transcription is the first step in data analysis for qualitative research (21). The recorded data was transcribed verbatim in word documents. During the transcription process the participants were coded from P1 to P8 to protect their identities.

The qualitative content analysis is a method used to interpret written data, and it can be either latent or manifest based on the depth of the interpretation. In this study, the manifest content analysis was used which maintains the level of interpretation and to present participants' thoughts without changes (22).

The transcript data was read several times and discussed in order to highlight the important meaning units that were related to the aim of study. Finally, the narrative text was divided into meaning units which were constructed by coding. The similar codings were placed under categories and theme.

Ethical Considerations

Ethical principles are essential guidelines for researchers to protect the human rights for the participants. The ethical principles in a qualitative research are autonomy (independence), beneficence (doing well), non-beneficence (preventing harm) and justice (fairness) (19, 23). Verbal information about the study was given to all participants before the interview.

According to Benner and Ketefian, it is important to obtain informed consent prior to starting the interviews. Participants' names were not disclosed for confidentiality purposes. Participants were informed that it was an optional participation. Participants' autonomy was met by giving them the right to refuse to answer any question or to withdraw from the study without consequences (24). The participants' thoughts were respected by presenting their own words without changes during transcription and analysing the data.

Results

Eight nurses were interviewed for this study, two males and six females who all worked in the intensive care unit. The findings are presented below. The five themes are; nurses' knowledge about palliative care, nurses' thoughts and experiences during end of life care, nurses' thoughts about the nursing roles in the ICU, nurses' experiences about communication in the ICU and nurses' thoughts regarding team work in the ICU.

Nurses' knowledge about palliative care

Source of knowledge

Four nurses studied palliative care during their education but it was not in a specific course, and two of them admitted that the palliative care knowledge was mainly

gained from clinical experiences. The palliative care concept was not recognized by some nurses, but it was applied in nurses' daily work. The need of studying and improving palliative care was highlighted by some nurses.

"I got that one from the experience". (P2)

"We are mostly doing palliative care subconsciously, and we use palliative care but we did not use the concept". (P7)

"All of us would like to know more about palliative care". (P5)

Nurses' experiences about supportive care

The nurses personally defined palliative care as supportive care that can be given to patients and their families holistically. The supportive care included providing a peaceful death, supporting patients and their families emotionally, providing a comfortable environment, administering pain medications, relieving patients' symptoms, allowing families to visit their patients any time and giving same quality of care for all patients.

"Emotionally the parents will be there but in the night we will be like parents. We will act as parents because we will be here". (P2)

"Palliative care is ... supportive care...how we support patient, how to support the family". (P7)

Furthermore, one nurse said that palliative care is to provide comfort and support care for patients by their families:

"Family coming here for visiting, as well as what we are doing, they should...comfort him or her or showing us their support to her". (P4)

On the other hand, one nurse believed that the physical care for patients with brain death was the only one to be given.

"Nothing, that's only a matter of time... the brains died already". (P3)

Nurses' thoughts and experiences during end of life care

Nurses' thoughts about applying palliative care in the ICU

There was no specific palliative care unit in the ICU, but it was applied for most of the ICU patients as mentioned by some nurses, mainly the pediatric ICU nurses.

One nurse supported this statement and added that doctors, co-nurses and nurses applied palliative care services in the ICU. These services were applied for patients who were not for resuscitation, terminally ill, patients with chronic conditions and ventilator dependent patients. One nurse believed that palliative care should be applied for all terminal ill patients and it should be practiced by all health care professionals:

"... We don't have any palliative teamwe are the ones doing... Some patients they are chronic patients ... I think they need palliative care ... also the patients who already DNR". (P7)

Physical care at the end of life

Most nurses agreed that the end of life care is the physical care that focuses on keeping the body intact through positioning, bathing, changing clothes and linen, mouth care, suctioning, nasogastric tube feeding, back care and giving medications:

"We are giving complete nursing care to that patient as to any other patient" (P2)

One nurse said that health care workers did not provide unnecessary treatment such as intubation and medication. While another nurse admitted that patient's life was expanded by giving medications that kept the body alive:

"Like if there is no intubation, the doctor will not intubate any more, like no chemical support or drugs to given like atropine" (P8)

"It will give her more time, few hours" (P3)

Pain management at the end of life

Four nurses believed that dying patients feel pain, while two nurses disagreed. Pain assessment methods vary from one nurse to another. Some nurses were guided by changes in vital signs such as tachycardia and high blood pressure while other nurses observed the discomfort measure that caused pain. Except one nurse who linked the pain assessment with patients' abilities to talk. The first nurses' response regarding pain focused on physical pain which can be treated by identifying the cause of it.

"The physical pain is depended on the cause of pain, and I treat the cause of pain" (P7)

"I think they do not have pain" (P3)

"When they are intubated and how they express to us... they have pain or whatever.. Patients, they cannot talk" (P5)

One nurse emphasized that dying patients have pain and should be treated with respect as human beings:

"Respect him as a human ... being. You should also take care of him or her even though she is dying... still, yes she has pain" (P4)

Emotional and spiritual care at the end of life

Applying psychological support in ICU was decided based on patients' conditions. Two nurses pointed out those dying patients felt psychological pain.

One of them mentioned that keeping patients in a comfortable position and assuring that patients are relaxed, are measures to relieve emotional pain. The other nurse explained that giving patients hope was an emotional support which allowed patients to live their lives as normal persons.

Some nurses admitted that psychological support cannot be given for intubated patients, while others mentioned that psychological care is not applicable for dying patients because those patients did not have feelings or emotions:

"You can give full hope to them" (P6)

"For the psychological condition there is nothing to be done ... he cannot feel what is happening"(P3)

A pediatric nurse stated that psychological support was given to families rather than patients because pediatric patients may not have emotions. Nurses in pediatric ICU allowed parents to visit patients at any time and to touch their babies:

"Emotionally, I am not sure ... They can touch the baby... so they can express their love to the child" (P2)

Spiritual care took place at the end of life care. Some nurses indicated that praying and listening to the Quran helped in comforting patients and assisted families to accept patients' conditions:

"We have this digital Quran that can be played 24 hours The patients can pray even when they intubated" (P6)

Nurses' thoughts about the nursing roles in the ICU

Nurses could not explain patients' conditions to relatives, and this inability was referred to the hospital policy and protocol which emphasized that doctors were the one who explained patients' conditions rather than nurses. As a result, nurses had limited roles in giving detailed information of patients' conditions. As well, nurses were not able to take decisions regarding the patient's

treatment plan. Medications administration for all conditions required doctors' orders which means that nurses were not allowed to administer any medication without an order. Although, nurses are limited, one nurse mentioned that they were able to discuss patients' conditions with doctors:

"The protocol here is that the nurses are not allowed to disclose any information regarding the patient. It is the sole responsibility of the doctor" (P8)

"The relatives ask more and more in details and in depth, we are not allowed to do so" (P1)

"I will interfere ... final decision will be to the physician. He will decide" (P3)

Nurses' roles were described as the process of carrying out doctors' orders even though nurses knew the effectiveness of management:

"It will not change ... this will not be my decision. It will be the physician's and the consultant's decision". (P3)

Nurses experiences about communication in the ICU

All nurses stated that either doctors or nurses answered relatives' questions. Nurses were required to answer simple questions about patients' conditions, but the major ones were referred to the doctors. There was an exception with critical and dying patients. In these conditions, the direct contact would be between the doctors and relatives where nurses had no role in this process. As well as delivering bad news, it was not the nurses' duty but nurses were present while delivering the news for documentation purpose. Further, nurses listen to patients and their families while verbalizing their feelings. Relatives' questions were answered in a nice way and simple words were used in order to comfort, support and assure the relatives. The main challenge that nurses faced while communicating with patients and their relatives was speaking and understanding Arabic language, but one nurse referred the effectiveness of communication based on the situations and family acceptance of patients' conditions:

"Whatever is the answerable we do answer to the patients and the relatives but for the major parts ... we will refer to the doctor". (P1)

"I will support the parents, I will try to explain ... in simple words, I will try to comfort them". (P7)

"The language barriers, I cannot speak Arabic well ... So we ask help from doctor to talk with patients". (P5)

Nurses' thoughts regarding team work in the ICU

Two nurses defined team work in the ICU as the cooperation between nurses during break period and busy time. On the other hand, one nurse mentioned that the team work in the ICU is a collaboration between nurses, physicians, and respiratory therapists.

The discussion about patients' conditions took place within the ICU team where each member had the opportunity to present his or her point of view, but the final decision is for the doctors. ICU team members are nurses, physicians, respiratory therapists and interns:

"I will tell him my point of view. RT will tell his point view. The charge nurse also will tell her point view, but the final will be physician and the consultant to interfere". (P3)

"We are helping each other ... especially if there are some days that are very busy". (P4)

Discussion

A qualitative research design was used to explore nurses' knowledge about palliative care in the ICU. According to Polit and Beck a qualitative method is a scientific research method that allows researchers to collect and analyze information that is relevant to the research topic (19). Using an interview approach in a qualitative design helped in being part of participants' experiences. The answers in the quantitative research are concrete which limit the ability of participants to express themselves, while the semi-structure interview in the qualitative research gives the participants the opportunity to share their experiences and thoughts. A qualitative method was seen as suitable to be used in this study rather than a quantitative method (25).

The participants worked in the medical, the surgical, and the pediatric ICU departments. The selection of participants had two impacts on the study, positive and negative. The positive impact for random selections was the variation of participants' answers that led to different perspectives within the same department. On the other hand, participants' autonomy might be harmed by this selection because they may not be able to refuse the supervisor's request that could have a negative impact of the selection.

In the present study, some nurses mentioned that they gained their knowledge about palliative care mainly from their experiences and thoughts which is supported by the basic classification of nursing knowledge (14, 16). The general review about nurses' knowledge in this study varied from one nurse to another. Some nurses had knowledge regarding palliative care application in the ICU while other nurses lack this knowledge in certain areas such as providing emotional support for unconscious patients.

The palliative care concept was not familiar for most nurses, but its content was applied in the ICU. Nurses' interest to get more information about palliative care was observed in order to provide high quality of care for patients and their families.

Most nurses provide physical care for dying patients as any other patients but not the emotional support or managing the pain. Conscious patients were treated holistically while dying patients were treated based on physical basis. One nurse said that unnecessary management was not applied according to the department policy and another one from the same department confirmed giving unnecessary treatment at the end of life.

Nurses act as advocates for their patients and this requires education (26). The interviewed nurses missed the advocate part in their work as giving unnecessary treatment for dying patients although nurses knew its effectiveness.

Nurses communicate with patients, families and other health care professionals. The communication in this study, as highlighted by the interviewed nurses, was between nurses and families through answering questions and listening to their feelings.

Dealing with nursing as a unique professional may lead to several benefits such as to empower nurses to make decisions, act independently, be involved in the treatment plan and to take part in teamwork.

Conclusion

This study shows that nurses lack some knowledge about applying palliative care within the ICU setting in KSA. The main lack was noticed in applying emotional care and pain management for dying patients. On the other hand, nurses showed good physical care and spiritual support for those patients. Nurses had limited roles in the ICU due to department policies which was presented as their inability in administering medications, making decisions and communicating with families. Nurses faced challenges in communicating with patients and their families due to language barriers.

Future Studies

There is a need for large-scale studies regarding nurse's knowledge about palliative care in the ICU by using both qualitative and quantitative methods. These studies should focus on team approach and educational interventions. There is also a lack of studies that describe families' perceptions and experiences about end of life care in ICU.

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THE USE OF PATIENT-BASED PAIN EDUCATION TO REDUCE BARRIERS TO CANCER PAIN MANAGEMENT: A LITERATURE REVIEW

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Literature Review

Pain is one of the most distressing symptoms affecting patients with cancer at different stages of the disease. Nevertheless, it is estimated that one of two cancer patients with pain do not receive effective management for their pain, despite international guidelines that aim to treat cancer pain including the World Health Organization (WHO) and the National Cancer Institute (NCI) guidelines.[1-3].

Barriers to cancer pain management include patient related barriers, health care professional barriers, and system barriers; usually lead to the undertreatment of pain.[4]. Patient related barriers include misconceptions about analgesics and their side effects, nonadherence to treatment regimens, and poor pain communication with health care providers[5]. As a definitive approach to reduce patient related barriers to cancer related management Pain education program (PEP) has evolved. PEP includes comprehensive information regarding pain and pain treatment including the definition and causes of pain, pain treatment approaches and their side-effects, myths and misconceptions about pain management, consequences of mal-adherence to prescribed treatment, the use of nonpharmacologic pain treatment, and pain assessment.[6]. Thus, this review aims to evaluate whether pain education programs can reduce patient barriers to pain management in adult cancer patients or not.

Abstract

Introduction: The treatment of cancer pain is considered as a complicated process. Many cancer patients with pain report that they are undertreated, despite the utilization of best international guidelines for treating cancer pain. Barriers to cancer pain management are thought to have a contributory role in the undertreatment of pain. Educational programs have focused on treating barriers to pain management in patients with cancer.

Purpose: to evaluate the efficacy of pain education programs in reducing barriers to cancer pain management. **Methodology:** using the key words pain education program, cancer patients, barriers, and pain management; an electronic search was conducted on the databases Pubmed, Google, and Science Direct. The end result of the search led to selection of ten articles to build the evidence for use in clinical practice.

Findings: all of the articles used in this review indicated that pain education can reduce barriers to cancer pain management.

Conclusion and Recommendations: Pain education programs are an effective approach in the treatment of patient-related barriers to cancer pain management. It is strongly recommended to integrate PEP within the treatment course of cancer pain. Further, it is reinforced that all institutions dealing with cancer patients hold specialized health care professionals who are able to administer PEPs.

Key words: pain education program, cancer patients, barriers, pain management

PICO

PICO Question

What is the effect of a pain education program on barriers to pain management in adult patients with cancer?

People\Patient	Intervention	Comparison	Outcome
Adult Patients with Cancer	Pain Education Program	Usual Care	Reduction in Barriers to Pain Management

Methodology

Electronic literature search using the key words: pain education program, cancer patients, barriers, and pain management was done seeking articles published between the years 2008 and 2013 on the databases Pubmed, Google, and Science Direct. A total of 109 articles have been retrieved. After selection based on the abstract and contents of the articles, ten articles were selected to build the evidence for evaluating the effect of pain education programs on barriers to cancer pain management as a general term or on specific aspects of those barriers. Nine of these articles are randomized controlled trials which are level two of evidence. The remaining article is a quasi-experimental article that is classified as level three of evidence.

Findings

A randomized, controlled study; that included 176 subjects, assessed the effect of representational intervention on decreasing barriers to pain management in patients with cancer. The study is determined as level two of evidence. The representational program adopts that a change (can be inferred to be a reduction in barriers to cancer pain management) is facilitated when individuals are given the opportunity to monitor and comment on their own ideas, whereas this can be achieved by education. The subjects in the representational programs reported less barriers score than those in the control group[7]. In another randomized controlled study (level two evidence), Ward and colleagues evaluated the efficacy of a tailored educational intervention in reducing attitudinal barriers held by patients with cancer. After the intervention, the group received educational intervention has shown significantly lower attitudinal barriers scores compared to the two other groups[8]. In Turkey, a randomized controlled design (level two of evidence) was used to investigate the effect of pain education program on pain intensity, pain treatment satisfaction, and barriers in patients with cancer. The study concluded that PEP results in decreased barriers scores in patients with cancer.[5] Aiming to test the effect of an educational program combined with system change interventions on reducing barriers to pain and fatigue management, a quasi-experimental study (level three of evidence) was conducted. In this study, the intervention was found to be effective in reducing barriers to pain management in patients with cancer[9]. Even short educational interventions were found to reduce barriers to cancer pain management as evidenced by a randomized controlled study (level two of evidence) conducted by Smith and colleagues[10].

Al-Atiyyat (2008) has summarized the barriers cancer patients have toward pain management. Among these barriers, is the belief that "good" patients do not complain about pain, which consequently leads to underreporting of their pain. Improving patient's communication of pain through educational sessions in cancer patients holds the premises of overcoming

patient's negative misconceptions about analgesics, increasing adherence to pain medications, and achieving effective pain management in those patients[11,12]. In order to investigate the effectiveness of tailored education and coaching intervention on pain outcomes, a randomized controlled study (level two of evidence) that included 258 patients was conducted. Among these outcomes is pain communication self-efficacy that is found to improve significantly after receiving the intervention[4]. In order to enhance patient communication of cancer pain to physicians, an experimental study was conducted. The intervention group received Tailored Education Coaching (TEC) intervention that helps patients learn pain management and communication skills. After the intervention, patients in the TEC group were more able to discuss their pain concerns with their physicians than those in the control group[13].

Lack of knowledge about pain and pain treatment leads to negative attitudes toward complying with pain treatment.[14]. Therefore, improving patient's knowledge about pain will enhance the outcome of pain management. In a randomized controlled study that is determined as level two of evidence, 120 patients were randomized to PEP and control groups. The knowledge of pain improved significantly after receiving PEP[15].

Adherence to analgesic use serves as an indicator to which degree patients are holding barriers to pain management. Oldenmenger and her colleagues conducted a randomized controlled study that is level two of evidence. The aim of the study was to assess the effect of Pain Education Program and Pain Consultation (PEP-PC) on pain levels, pain interference, and adherence to analgesic use. The PEP-PC was found to improve adherence to analgesic use[5].

A study conducted by Lovell and colleagues evaluated the effect of an intervention that affords booklet and videos about pain and pain management on improving pain outcomes in patients with cancer. Using a randomized, controlled design, which is determined as level two of evidence, the intervention resulted in decreased pain intensity and in the reduction of the addiction subscale score of the barriers questionnaire[16].

Appraisal of the Evidence

Strengths of the Evidence

Among the strength points of this evidence is that most of the articles included are level two of evidence, with the exception of one article that is level three of evidence. Another strength point is that all of the references used in the evidence were conducted within the years 2008 till 2013. The references in this evidence were selected from international journals, without the need to revise internet websites, posing additional strength for the evidence.

Limitations of the Evidence

Two of the articles had low sample sizes of 40 and 42 patients; however, the sample size in the other studies enhances the generalizability of the evidence. One of the limitations of this evidence is that the barriers questionnaire used along all of the articles was not the same version which may affect the consistency of the findings in this evidence.

Summary of the Evidence

Among the ten articles considered to be used in this paper, six articles focused on assessing the effectiveness of educational interventions on reducing barriers to cancer pain management. The articles have found that education can be an effective approach to reduce barriers to pain management in patients with cancer. One of the articles evaluated the efficacy of PEP in improving cancer patient's knowledge about pain, and found that PEP is an effective approach to improve patient's knowledge about pain. Two of the articles assessed the effect of PEP on cancer patient's pain communication. PEP was found to improve pain communication efficacy in patients with cancer. Another study proved that PEP improves patients' adherence to analgesic use. One of the articles has investigated the advantage of the use of self-administered PEP via booklet and/or videotapes in the treatment of patient barriers to cancer pain management; the intervention was effective in reducing some of the barriers related to the fear of addiction.

Conclusion

Barriers to pain management are the leading cause of under treatment of pain in patients with cancer. Based on the findings of this evidence, it can be concluded that pain education programs are an effective approach in the treatment of patient-related barriers to cancer pain management. It is strongly recommended to integrate PEP within treatment schedules planned for patients with cancer. Focusing on the barriers each patient holds will be more efficient than to provide them with information that is already known to him/her. It is important to provide all health care institutions with professionals who are able to administer PEPs.

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IMPROVING SLEEP IN JORDANIAN INTENSIVE CARE UNIT PATIENTS

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Introduction

Sleep is essential for well-being and recovery from illness. The critically ill are in significant need of sleep but at increased risk of sleep loss and disruption (Elliot et al., 2011). Sleep is considered to be physically and psychologically restorative and essential for healing and recovery from illness (Elliot et al., 2011).

Sleep disturbance is one of the common factors associated with hospitalized patients (Friese et al., 2007; Hardin, 2009). In particular, sleep disturbance often occurs in patients in a critical care unit [(Feeley and Gardner, 2006), reviewed in (Tembo and Parker, 2009)].

Many previous studies tried to determine the possible factors that cause sleep disturbances in ICU's patients, and study the category factors as intrinsic and extrinsic; other classifications are patient-related factors (e.g., disease severity) and environmental factors (e.g., light, noise, and medications) (Drouot et al., 2008).

In general, possible causes lead to discomfort as stated by Elliot et al., including sleep disturbances, are noisy environment, illness symptoms, treatment- itself or devices used in care such as artificial airway and intravascular catheters and medications.

Studies used different tools to assess sleep process quality (fragmentation, sleep stage changes, wake after sleep onset, EEG sleep patterns), quantity (total sleep time and time spent in each sleep stage) and distribution over the 24-hour cycle in ICU patients. The most used methods were polysomnography (PSG), nursing observations, and Subjective measures of sleep including questionnaires incorporating visual analogue and Likert scales, for example the Richards Campbell Sleep Questionnaire (RCSQ), the Sleep in the Intensive Care Unit Questionnaire (SICQ) and the Verran/Snyder Halpern (VSH) Sleep Scale (Snyder-Halpern and Verran, 1987). Full PSG remains the gold standard for sleep scoring but practical considerations have generated interest in alternative methods (Drouot et al., 2008).

Problem statement

Given the current evidence of sleep disruption in ICU patients and epidemiological evidence of the long-term adverse health consequences of poor sleep, there is a need to perform well designed interventional studies. Few studies have attempted to improve sleep for ICU patients (Elliot et al., 2012). An urgent need for modifying ICU's organizational and behavioral environment to make ICU more comfortable and suitable for clients' sleep suggested comparative studies to evaluate these complex interventions are needed. Despite the significance of the problem, few previous studies used experimental study design or included an intervention to overcome sleep disturbances among ICU patients; beside that no previous study in Jordan was found related to this topic. This study is a randomized control trial designed to evaluate the effects of modifying some possible causes of sleep deprivation among ICU patients, of their sleep.

Sleep in adults comprises one consolidated period of 6-8 hours of total sleep time (TST) in each 24 hour period occurring at night. The Sleep Efficiency Index (SEI), an alternative method of representing the quantity of sleep, is the fraction of time spent asleep during the duration of sleep monitoring (or the TST divided by the total time in bed after all lights are turned off to time of awakening). The expected SEI for a healthy adult is approximately 80-85% (Ohayon et al., 2004). Sleep duration declines with advancing age (that is from an expected TST of 7.5 h and SEI of 80% at 25 years to 5-6 h and 77% at 85 years) (Ohayon et al., 2004).

Study purpose

The aim of this study is to examine the effectiveness of modifying ICU's light, noise, and daily nursing care time on improving patient's Sleep Total Time (STT), and Sleep Efficacy (SE) in Jordanian university hospitals in comparison with usual ICU environments and nursing care.

Study Hypothesis

Modifying ICU's light, noise and daily nursing care time will improve ICU's patients' sleep as measured by Sleep Efficiency (SE) and Total Sleep Time (TST).

Significance

As previously mentioned, sleep has significant effects on health, promoting healing, and preventing deterioration specially for critically ill patients; also sleep disturbances increase morbidity and mortality (Elissen & Hopstock, 2011). Many studies have determined the impact of sleep disturbances on patient's health, for example one literature review suggested that the adverse health effects of poor sleep are understood and have short and long-term sequences including poor cognition, susceptibility to infection and even cancer and cardiovascular disease (Ferrie et al., 2007; Gallicchio & Kalesan, 2009). It is also clear that acute brain dysfunction, specifically delirium, has been implicated in sleep disruption in ICU patients, however, until the exact mechanism is identified it is impossible to differentiate whether sleep disruption leads to brain dysfunction or vice versa (Cochen et al., 2005; Roche Campo et al., 2010). Another study confirmed the previous data and assure that Sleep deprivation may cause impaired immune function, ventilatory compromise, psychosis and delirium (de Almeida, 2009).

As sleep importance for patients in general and for ICU patients specifically was proved, an intervention is needed to prevent significant consequences on health and healing process and to prevent prolonged hospitalization period. While the possible factors affect patient's sleep in ICU are clear now, few interventional studies have been done. One study in France by Drouot et al in 2008 that tried to modify factors involved in sleep disruption such as noise, continuous nursing care, and continuous light exposure showed very promising results that improved patients' sleep significantly.

Literature Review

There are two main sleep states, rapid eye movement sleep (REM), which comprises approximately 25% of TST, and non-rapid eye movement sleep (non-REM) (75% of TST) (Ohayon et al., 2004). REM sleep declines slightly with aging from 25% in early adulthood to 16-18% at 85 years. The proportion of non-REM sleep does not decline with age but the proportion of light sleep, particularly stage 2 sleep, increases and slow wave sleep decreases (Ohayon et al., 2004). There are four stages of non-REM sleep: stages 1 and 2 or light sleep; stages 3 and 4 or slow wave sleep (SWS). These represent increasing depths of sleep and are usually completed in sequence in order to enter REM sleep (Kryger et al., 2005). The consolidated sleep period consists of four to six sleep cycles - stages 1-4 followed by REM sleep - which lasts 60-90 minutes. Time spent awake during the sleep period is less than 5% of TST. Arousals (emergence into lighter stages of sleep on the electroencephalograph (EEG)) are also a feature of sleep; an adult population norm (measured in the sleep investigation laboratory) is 10-22 arousals per hour (Bonnet and Arand, 2007).

Factors that Affect Sleep in ICU Patients

Evidence has suggested that sleep disruption is most likely due to a combination of intrinsic and external factors which impact differently across patients according to each particular circumstance (Tembo & parker, 2009). Noise from equipment such as alarms from the monitors, ventilators and other equipment, together with staff related noise and ringing telephones were commonly reported causes of sleep disruption in ICU (Kass, 2008; Coyer et al., 2007). Change of sleep habits, use of sedatives and other medications, and disease severity may be a major factor in sleep fragmentation. Significantly greater numbers of arousals and awakenings per hour were found in patients with higher severity scores and in patients who died (Parthasarathy, 2003). However, sleep may be affected also by many other factors, such as pain, discomfort, anxiety, mood disorders, nursing care, and mechanical ventilation. The exact role of mechanical ventilation in sleep fragmentation in ICU patients remains poorly understood, despite that sleep fragmentation due to poor patient-ventilator interaction may contribute to the occurrence of brain dysfunction seen in mechanically ventilated patients. Recent studies suggest that the ventilatory mode and its settings, as well as patient-ventilator interactions, may influence the degree of fragmentation and the quality of sleep (Bosma et al., 2007; Cabello et al., 2006).

Sleep Disturbances and Delirium

Delirium and poor sleep quality are common and often co-exist in hospitalized patients. A possible link between these disorders has been hypothesized but whether this link is a cause-and-effect relationship or simply an association resulting from shared mechanisms is yet to be determined (Watson & Fanfulla 2012). A possible explanation of this relationship is neurotransmitter imbalance hypotheses, with dopamine and acetylcholine felt to be the most important neurotransmitters involved. An imbalance of these same neurotransmitters also occurs in association with sleep deprivation (Gabor & Cooper, 2001). During delirium the levels of acetylcholine are generally thought to be low and those of dopamine high, though a few reports tend to hypothesize the opposite imbalance (high acetylcholine and low dopamine) (Trzepacz, 2000). The importance of dopamine on the development of delirium, in particular, seems to be supported by the therapeutic effect of haloperidol, a powerful dopamine blocker.

In addition to acetylcholine and dopamine, there is evidence that other neurotransmitters such as tryptophan can play a significant role in delirium. Tryptophan, a serotonin precursor, was reduced in a population of cardiac surgery patients with delirium (Van Der Mast et al., 2006). Importantly, it appears that an abnormal tryptophan metabolism can modulate the type of delirium: hyperactive or hypoactive (Lewis & Barnett, 2007). Tryptophan, moreover, is tightly connected to melatonin, a hormone involved in the regulation of

circadian rhythm, which has also been linked to delirium. Tryptophan is a direct precursor of melatonin; melatonin is secreted by the pineal gland and metabolized by the liver to 6-hydroxymelatonin and then conjugated with sulphuric acid to 6-sulphatoxymelatonin (excreted in the urine and sometimes used in clinical trials to assess melatonin secretion).

Other possible mechanisms believed to contribute to the occurrence of delirium are acute inflammation and ischemia. The anatomical pathway thought to be involved in delirium includes brain areas such as the thalamus, the prefrontal, posterior parietal and fusiform cortex and the basal ganglia (Van Der Mast et al., 2006). Hence, in theory, ischemia in one of these areas can lead to delirium. Systemic inflammation has also been implicated in the pathogenesis of delirium. It has been observed that delirious patients after hip replacement surgery had higher serum levels of C-reactive protein (Beloosesky et al., 2004). Other inflammatory cytokines, such as interleukin (IL)-6 and IL-8 are associated with, and can possibly induce, delirium either directly or through a neurotransmitter imbalance (Van Gool et al., 2010).

Methodology

Study Design

This is a Randomized Controlled Trial study, with one experimental group who will receive a delayed daily nursing care and interventions until 6:00am, with no interruption of sleep by any non urgent procedures such as (daily ECG, blood sampling, daily X-rays, linens change...etc), and minimizing exposure to lights and noises by turning unneeded lights off, using eye covers and preventing nursing discussions beside patient's beds; the control group will receive daily usual care with no manipulations in their environment.

Intervention

The modification of ICU's environment for the experimental group consists of light reduction by dimming the light in patient's rooms, and/or above their bed, and offering the patient an eye mask, decreasing noise by liberalizing the unneeded device's alarms (e.g. ventilators, monitors, and pumps alarms) to the lowest possible level, minimizing conversation near the patient's bedside, delaying daily nursing care to 6:00am, keeping the time from 10:00pm until 6:00am free of sleep interruption as much as possible, taking into consideration that it will not affect the needed patient's care negatively, delay needed care, or threaten the patient's life.

Sample and sampling

The sample will be selected by convenience sampling from all intensive care units except pediatric and neonatal units; to control intrinsic factors the selected

sample will be divided into two groups by computer program (random assignment), one experimental and another control group.

Including Criteria: All adult patients (above 18 years), Male and female, who are conscious, oriented, and agree to participate in the study will be included.

Excluding Criteria: All patients less than 18 old, with confirmed brain death by neurology consultant, or fully sedated (who is receiving fentanyl more than 150mcg/h, medazolam more than 3mg/h, or 25mcg/h of propofol and/or narcotic drips of more than 10 mg/h for morphine) will be excluded.

Power Analysis

A pilot study will be done to determine the needed sample size, although a previous similar study review indicated that sample size of 50-100 in each group will be suitable.

Settings

ICU (Medical/Surgical), CCU, GIMU, IMCU of all university hospitals in Jordan.

Data collection procedure : by using polysomnogram, which is the most reliable tool for assessing sleep in critically ill patients (Parthasarathy and Tobin, 2004; Pandharipande and Ely, 2006; Drouot et al., 2008), all selected patients, both groups (experimental and control), will be connected to the device all the night (from 10pm to 6am) on their beds; sleep labs technicians will analyze sleep's waves to determine Total Sleep Time (TST), and Sleep Efficacy for each client.

Ethical Consideration

After the study obtains the IRB committee approval, each patient will sign a consent form before participating in the study; if patient cannot sign, he/she will provide agreement verbally; if patient is unconscious or on mechanical ventilator, the next of kin will sign instead. The goal and possible benefits of the study were discussed with patients; all questions about the study asked by patients were answered; all participants were informed that they have the choice to withdraw from the study whenever they want without any consequences or change in care level provided for them.

Measurement:

Data analysis plan

Independent researchers not involved in data collection will analyze data. After data is entered into the Statistical Package for Social Science (SPSS 17.0), descriptive statistics such as percentages and frequency counts will be used to summarise data.

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COMPASSION IN MENTAL HEALTH

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Introduction

Compassion is a type of meditation therapy which has been used recently. As a new topic, at least for me, this has encouraged me to learn about this topic and gave me the idea for my paper. Compassion has many definitions, one of these definitions is the feeling that emerges in witnessing another's suffering and that motivates a following desire to help (Goetz, Keltner, & Thomas, 2010). Hofmann, Grossman, and Hinton (2011) describe compassion as a path leading to greater awareness, aimed to focus awareness upon alleviation of the suffering of all sensitive beings. Moreover, compassion is thought to have arisen as the affective element of a caregiving system, designed to help raise vulnerable progeny to the age of viability (Goetz, Keltner, & Thomas, 2010).

Regarding compassion history, self-compassion has been discussed in Eastern philosophy (Buddhism in particular) for centuries (Allen & Leary, 2010). One of the key principles emphasized within many schools of Buddhism is learning to be compassionate which is supposed to help individuals develop their ability to recognize and motivate themselves towards meaningful change. In addition, compassion within Buddhism is seen as a way of helping individuals to practice their minds, which can drive to a general improvement in well-being and eventual enlightenment (Pauley & McPherson, 2010).

Although self-compassion has been discussed in Eastern philosophy (Buddhism in particular) for centuries, it appeared recently only with Neff's publication in 2003 (Allen & Leary, 2010). Neff (2009) reported that self-compassion is a relatively new construct in the field of personality and social psychology. Furthermore, self-compassion has been conceptualized in three primary features by Neff; self-kindness, common humanity, and mindfulness (Allen & Leary, 2010).

Compassion could be from others, for others, and for self (Gilbert, McEwan, Matos, & Rivis, 2011). It aims to promote an attitude of loving kindness, emotional positivity, welfare, and friendliness to oneself and others (Leiberg, Klimecki, & Singer, 2011). So the purpose of this paper is to examine the effect and influence of compassion on mental health.

Literature Review

The literature suggests that loving-kindness meditation and compassion meditation are associated with an increase in positive affect and a decrease in negative affect (Hofmann, Grossman, & Hinton, 2011). Also, when connected with psychotherapy, such as cognitive behavioral therapy, loving-kindness meditation and compassion meditation may provide potentially beneficial strategies for targeting a variety of different psychological problems that include interpersonal approaches, such as social anxiety, marital conflict, anger, and coping with the strains of long-term care giving (Hofmann, Grossman, & Hinton, 2011).

Leiberg, Klimecki, and Singer (2011) conducted their study to examine the effect of compassion training on pro-social behavior (a pervasive aspect of human life which means cooperate with others and help them when they are in need). The researchers demonstrated that compassion training which aimed to foster friendly, charitable behaviors towards others produced a significant increase in pro-social behavior. In addition, compassion training increased the positive mood, compassionate feelings and decreased the negative mood.

Desbordes et al. (2012) conducted their study in Atlanta, to investigate how 8 weeks of training in meditation programs (Mindful Attention Training (MAT), Cognitively Based Compassion Training (CBCT) affects amygdala responses to emotional stimuli in people, when in a non-meditative state. The researchers found that there was a longitudinal decrease in right amygdala activation in the Mindful attention group in response to positive images

and in response to images of all valences overall. While in the CBCT group, the researchers found a trend increase in right amygdala response to negative images, which was significantly associated with a decrease in depression score.

Ozyesdi and Akbag (2013) conducted their study to examine the predictive power of self-compassion on depression, anxiety and stress on a Turkish sample. The researchers concluded that self-compassion plays a role as predictive factor of depression, anxiety and stress in a Turkish study sample.

Compassion has two main qualities: kindness and action (Pauley & McPherson, 2010). Also, the researchers demonstrated that compassion for people is meaningful in relation to their experiences and useful in helping with their depression or anxiety. However, being self-compassionate would be difficult either because the concept itself felt challenging to provoke, or that experience of psychological disorder had a negative impact on the ability to be self-compassionate.

From another angle, self-criticism is significantly linked to fear of compassion for self and receiving compassion from others. This confirms clinical impressions, that self-critical people actually have a fear of being kind and emotional to themselves (Gilbert, McEwan, Matos, & Rivas, 2011).

Laithwaite et al. (2009) in their study aimed to evaluate the effectiveness of a recovery group intervention based on compassionate mind training, for individuals with psychosis. The researchers found a significant improvement on the social comparison, depression and self-esteem and general psychopathology. They concluded that there is an indication of the effectiveness of a group intervention, based on the principles of compassionate focused therapy for individuals with psychosis (Laithwaite et al., 2009).

Fredrickson, Cohn, Coffey, Pek, and Finkel (2008) in their longitudinal study gave six 60-minute weekly group sessions (with home practice) with a computer disc based loving-kindness meditation (compassion directed to self, then others, then strangers). The researchers found that the training group sessions heighten positive emotions, mindfulness, sensation of the life purpose and social support, and decreased sickness symptoms.

Interestingly, there is a difference between compassion and love. Goetz, Keltner, and Thomas (2010) demonstrated that love is based on emotion, the appreciation of positive attributes of the other, and the impulse to be physically and psychologically relative. While compassion responds quickly and appropriately to signs of suffering and is not necessarily accompanied or preceded by love.

A healthy physician employs multiple strategies to manage the stress of being involved in emotionally demanding patient and family situations (Gallagher, 2013). Some of these strategies suggested by Gallagher (2013) are practice mindfulness, stop to look out a window, make connections with patients, family members, or colleagues. Furthermore, reward yourself after completing tasks or resolving situations, deliberately shed your role when you leave work, use community resources and other professionals' help when needed, know your limits, learn from your experiences, do what relieves stress, practice reflective writing or keep a diary, learn and practice mindfulness meditation and have a special place you like to visit as a "getaway".

In Islamic education, depending on the knowledge of man's mental health is a matter that is relatively attached with knowledge and insight, nurtures both body and soul and satisfies man's mental needs (Hamidi, Bagherzadeh, & Gafarzadeh, 2010).

The aim of the Islamic approach is to bring happiness to human beings, to develop their faculties and talents and to create a balance between man's desires and needs so that there is no extremism. Islam as a divine religion places so much emphasis on humanity, and not on man's class, race or family, which is a universal standard that goes beyond all places and times (Hamidi, Bagherzadeh, & Gafarzadeh, 2010).

Discussion

Compassion meditation practice elucidates an exercise that uses the imagination or actual experience of the emotional state as a matter of attention and mindful attentiveness. The exercises should not be seen as just mechanical repetitions of images or terms. Rather, by mindfully investigating what occurs when one attempts to generate compassion, it is presumed that insight is gained into the nature of these emotions themselves, as well as one's personal relation to them. By turning to this focus of practice in a nice, open, patient, tolerant manner, develops a shift in these affective states toward greater compassion (Hofmann, Grossman, & Hinton, 2011).

The compassion training involves sitting in an upright position and promoting warm, favorable feelings consecutively to oneself, a loved person, an equal person, a person who has difficulties, and all others by imagining each while silently repeating sentences like "may you be happy" or "may you be safe" and direct these positive emotional attitudes towards the visualized persons (Leiberg, Klimecki, & Singer, 2011).

Pace et al. (2009) demonstrated that the compassion program is composed of six weeks; week one, developing basic concentration and mental stability. Participants are taught basic attention meditation

practice by using the breath as the object of focus. Week two, brings introduction of mindfulness practice. Participants are instructed in the techniques of non-judgmental observation of the processes of thought and bodily sensation. Week three, brings use of concentrative and mindfulness techniques to explore universal human desires for happiness and wishes to avoid suffering as a preface toward the practice of developing compassion for the self. Week four, provides continuing meditation on the thought that self-shares with all people a desire for happiness and a wish to avert suffering, as well as a fight to obtain these goals. Participants are educated to expand upon this awareness to examine the contingent and changeable nature of the distinctions between “friends” and “enemies”, with the goal of generating a felt sense that instinctive emotional responses to others do not reflect reality. Week five, focuses on meditative reflection on the disadvantages of selfishness, a self-centered attitude and the advantages of considering the welfare of others. Participants planned through meditative techniques which aimed to generate compassionate emotions and cognitions for those emotionally close to them. In week six, meditation was aimed at attempting to generate compassionate emotions not just for friends, but also for others and people participants do not like. Instructions are given for how to go on with this practice at home, following completion of the sessions.

Advantages

Compassion Meditation (CM) exercises are believed to increase attention, enhance positive emotions, and decrease negative emotional states. Also, observing or imaging another person's emotional state activates parts of the neurocircuitry, especially the insula (Hofmann, Grossman, & Hinton, 2011). Neuroendocrine studies suggest that CM exercises decrease stress-induced immune and behavioral responses (Pace et al., 2009). Moreover, neuroimaging investigations comparing expert and novice meditators indicate that CM exercises enhance the emotional and somatosensory brain representations of other people's emotions (Lutz et al., 2008). CM techniques invert thoughts, emotions, and behaviors that are not beneficial to one and others and to switch them into thoughts, emotions, and behaviors that are more beneficial to one and others (Desbordes et al., 2012).

CM with cognitive behavioral therapy, can be a useful strategy for targeting many psychological problems, including social anxiety, marital conflict, anger, and interpersonal stress (Hofmann, Grossman, & Hinton, 2011).

Gilbert, McEwan, Matos, and Ravis (2011) found that compassion is a powerful panacea to a variety of mental health difficulties including depression and anxiety. Also, mental trainer has demonstrated that some meditative practices foster an increased ability to be attentive and have emotional balance and control over thoughts and

behaviors. They also can lead to better stress reduction (Halifax, 2011).

The potential benefits of increasing individuals' self-compassion as stated in previous research would enhance psychological wellbeing and decrease the depression, anxiety and stress levels (Ozyesdl & Akbag, 2013). Self-compassion was found to have a positive outcome for the well-being of individuals with psychosis (Laithwaite et al., 2009).

Also, self-compassionate individuals are able to face their own painful thoughts without avoiding or exaggerating them (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). Interestingly, self-compassion can be conceptualized as a coping mechanism that encourages well-being and positive psychological functioning (Allen & Leary, 2010).

Disadvantages

Pace et al. (2009) found that the participants who were more engaged in the program may have been more likely exposed to the downstream emphasis on training in compassion which occurred in later sessions and that might have been disproportionately associated with responses to the Social Stress. Furthermore, in response to another's misery or need, compassion can be expensive, and personal distress may serve as an indicator that one cannot afford to help and instead should focus on oneself (Goetz, Keltner, & Thomas, 2010).

For some people, compassion gives rise to avoidance or even fear reactions. Since positive emotions are associated with interpersonal closeness, then one can anticipate that aversive backgrounds, particularly those associated with abuse and neglect, might lead to fears of positive emotions (Gilbert, 2010). Moreover, individuals from insecure backgrounds who are uncertain of the availability and support of others and are apt to either hang on anxiously to attachment figures without feeling soothed or avoid and withdraw from others (Gilbert, McEwan, Matos, & Ravis, 2011).

Compassionate actions may be suppressed if people perceive the recipient of compassion to have committed a moral injustice and compassion can be inhibited by certain types of self-interest (Gilbert, McEwan, Matos, & Ravis, 2011).

Compassion can also be reduced due to emotional state, for example, in traumatized individuals (Gilbert, McEwan, Matos, & Ravis, 2011).

Summary

Compassion meditative therapy is still controversial; it is a forced concept which draws individuals to it, but also challenges them in ways which often require

compassionate support. The author believes that compassion is effective, although it is a new therapy, with some consideration to patient's differences.

In Jordan, there were no studies to discuss this topic. In my opinion, we need further studies to examine compassion meditation among psychiatric patients in Jordan. Then, according to the results, we could develop programs and workshops to train practitioners for this purpose.

Recommendations

In compassion meditation interventions, participants must receive detailed instructions pertaining to the meditative technique that they are to practice in class and then at home for the following weeks (Desbordes et al. 2012). The intervention programs must be examined or tested in cultural context in order to explain the protective power of self-compassion in a clear manner (Ozyesdl & Akbag, 2013). In addition, therapy may be further advanced by improving ways of accessing and facilitating the development of different forms of interpersonal safeness and compassion and addressing the fears of compassion (Gilbert, 2010).

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BREAST CANCER, BREAST SELF-EXAMINATION KNOWLEDGE AMONG FEMALE HIGH SCHOOL STUDENTS IN RIYADH CITY

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Abstract

Breast cancer (BC) is the most prevalent form of cancer in the Kingdom of Saudi Arabia, accounting for 11% of all female cancers. It is considered to be a progressive disease with a poor prognosis if detected late. The low level of knowledge and practice of breast self-examination is an important method of prevention. The study was aimed at assessing the knowledge of breast cancer and practice of Breast Self-Examination (BSE) among female secondary school students in Riyadh city.

Material & Methods : A cross-sectional descriptive correlation design was used in this study. A representative probability sample was recruited (Sample Size = 917 Students). A self-administered questionnaire was prepared by the researcher. It consists of four parts. Data was analyzed using the SPSS software package (version 16) for data entry and analysis.

Results: The results of the study indicated that none of the secondary school students had an excellent knowledge regarding breast cancer; 98.8% of the participants had a fair level of knowledge about breast cancer. The mass media was the most common source of information about breast cancer. The majority of participants did not perform breast self-examination 80.8%; only 3.4% perform (BSE) on monthly basis. There

was a statistically significant relation between level of breast cancer knowledge and secondary school type, nationality, family history of breast cancer and secondary school levels but there was no significant relation between knowledge of breast cancer and age groups, marital status and family income level. Logistic regression analysis revealed that a negative family history of breast cancer was a significant predictor for lower scores on the level of knowledge of breast cancer. However, age group, family history of breast cancer were significant predictors of performance of breast self-examination.

Conclusions : This study revealed that most of the female secondary school students in Riyadh, Saudi Arabia had very low knowledge about breast cancer. We recommended developing a health educational program about breast cancer for students, teachers and the community, to raise awareness.

Key words : Breast cancer, Knowledge & Practice, Secondary school.

Introduction

Breast cancer is the most common cancer among Arab women. Breast cancer incidence rates in Arab women have increased during the last 24 years, and women are now being diagnosed with breast cancer at more advanced stages of the disease(1). In 2008, the Saudi Ministry of Health reported that BC among females constituted the highest percentage of cancers, 26.9% of total number of malignant tumors in Riyadh and 31.9% in Jeddah (2).

Young breast cancer patients have a lower rate of survival than older breast cancer patients due to being diagnosed at an advanced stage, but if discovered early breast cancer can usually be cured, however, early detection through screening is the only way to reduce mortality (3). The women who are in the process of transitioning from adolescence to adulthood offer a unique, critical window of opportunity for change in (or impact on) health behavior.

Students in secondary schools, mainly teenagers, are considered a vulnerable group passing through a critical period of physiological and mental development that requires special health care. The adolescent period is a time of rapid change that provides teaching opportunities for shaping health behaviors into adulthood. Teaching breast self-care may encourage positive behaviors such as performing breast self-examination and seeking regular professional breast examinations (5,6,7). Health behaviors such as BSE can help empower women to take some control and responsibility over their health promotion (4). For younger women, BSE education and adherence to clinical breast examination and mammography screening later in life provides for early detection.

Educating young women about early diagnostic methods of breast cancer is critically important to increase their breast cancer awareness. Acquiring the behavior and practice of BSE at an early age will also increase the probability of continuing it later (8,9).

Regular performance of BSE does not mean that breast cancer is necessarily self-detected. BSE increases body awareness, so that there is heightened awareness of changes that may be detected during BSE or at some other time. Although the American Cancer Society, 2007 recommended that women beginning in their 20s should be told about the benefits and limitations of BSE, this procedure is not considered the best method for early detection but the best option for interval screening among women of all ages(8,10). The poor knowledge and wrong beliefs about breast cancer prevention among teenagers are responsible for a negative perception of the curability of a cancer detected early and of the efficacy of the screening tests.

Many studies have shown that nurses have positive influence on women's breast cancer knowledge and BSE practice (11). Women who were advised about BSE by health care providers demonstrated greater knowledge, and confidence and were likely to practice it routinely . Although there were a lot of studies about knowledge of breast cancer and practice of BSE in female university students (3,14,15), there were few studies about the knowledge of breast cancer and practice of BSE in the age group of 15-20 years (5,12). The role of the nurse ,therefore, is to empower women by providing information, advice and support. Breast cancer awareness includes knowledge of breast cancer risk factors, signs, symptoms, and screening methods(12,13).

The objective of this study was to assess the knowledge of breast cancer and Practice of Breast Self-Examination (BSE) among female high school students in Riyadh city.

Material & Methods

Study design: Cross-sectional descriptive correlation design was used in this study.

Settings : The study was conducted at secondary girls' schools, both governmental and private in Riyadh city.

Study subjects : A representative probability sample of secondary school girls, both Governmental and private in Riyadh city was recruited for conducting this study. The total number of the study subjects was 917 female students.

Sample criteria :

1- Inclusion criteria : Female secondary school students in Riyadh city.

2- Exclusion criteria: Those who were absent or couldn't complete the questionnaire for any reason.

Tools for data collection :

A self-administered questionnaire prepared by the researcher after the review of literature was used. It consists of four parts as following;

Part I :

1- Socio-demographic characteristics such as age, secondary school type, marital statusetc.

2- Personal and family history for breast cancer: It is composed of 4 questions; the answers are ?Yes, No, or I don't know.

Part II:

Knowledge of students about breast cancer composed of 5 questions :

1- General knowledge about breast cancer: It is composed of 4 questions; the answers are ?Yes, No, or I don't know.

2- Knowledge about the risk factors of breast cancer was assessed by 11 questions, the answers were ?Yes,

No, or I don't know?. This part assesses the presence of breast cancer risk factors with reference to guidelines of the American Cancer Society (2008)(40).

- 3- Knowledge about the signs & symptoms of breast cancer, it consists of 7 questions, the answers are ?Yes, No, or I don't know..
- 4- Knowledge about the methods of early detection of breast cancer, it consists of 5 questions, the answers are ?Yes, No, or I don't know.
- 5- Knowledge about the methods of breast cancer treatment, it consists of 5 questions, the answers are ?Yes, No, or I don't know.

Part III:

Knowledge about breast self-examination practice, it is composed of 4 questions; the students were asked whether they performed breast self-examination and if they answered ?yes, they were asked some skills performed during their examination.

Part IV:

About source of information about breast cancer.

Ethical Consideration :

Permission was obtained from the Director of School Education affiliating with the Ministry of Education after asking for permission to carry out this study in 12 schools throughout the academic year (2013/2014). The students who were given information about the study and who accepted to participate in the study were included. They were informed about the aim and potential benefits of the study and their consent was taken and their confidentiality was ensured.

Statistical analysis :

Data was analyzed using the SPSS software package (version 16) for data entry and analysis. Descriptive statistics with cross -tabulations were performed. The Chi-squared test, was used to examine the association between variables. Linear regression models were used to assess the relation between the demographic variables and level of knowledge.

Scores on knowledge level were predicted from the following variables (7 predictors): school type (coded 1 = private, 2 = governmental), age groups (coded 1 = 15-16 yrs., 2 = 17-18 yrs., 3 = 19-20 yrs., 4 = more than 20 yrs.), nationality (coded 1 = Saudi, 2 = non-Saudi), marital status (coded 1 = single, 2= married), secondary level (coded 1 = first, 2 = second, 3 = third), family income (coded 1 = good, 2 = medium, 3 = poor), family history (coded 1 = yes, 2 = No). The total N was 917. The significance level used was being with $p < 0.05$.

For the total knowledge of breast cancer, the total score was 38. A score of 0- 25 was considered a fair level of knowledge; 26-29 was considered a good level of

knowledge, 30-33 was considered a very good level of knowledge, while 34-38 was considered an excellent level of knowledge. A score of 1 was assigned to each correct answer while zero was assigned to incorrect answer.

Results

Out of the 1000 questionnaires administered to the respondents, 917 were fully completed giving a response rate of (91.7%). Table 1 (next page) shows the sociodemographic characteristics of the participants. Most participants, 491 (53.5%), were aged between 17 and 18 years old. A majority of female secondary school participants were from governmental secondary schools, (67.1%). A greater percentage of secondary school participants were Saudi citizens, (81.7%), while (18.3%) were non-Saudi participants. A majority of female secondary school participants were single, (98%). Little more than one half of the participants, (58.9%) considered their financial status as medium between (5000-8000 SR).

The personal and family history related to breast cancer was summarized in four questions. The first question was about any previous problems in the breast; the majority of participants did not complain of any breast problems. Only (8%) participants complained of a breast problem. The second question was about the history of breast surgery; the majority of the participants, had no breast surgery. The third question was about family history of breast cancer; the majority of participants have a negative family history of breast cancer and only (6%) participants had a positive family history of breast cancer. The fourth question was about having a family history of other kinds of cancers; (79%) had negative family history of other types of cancers. while (12%) had positive family history of other types of cancers.

Regarding general knowledge about breast cancer nearly half of the samples (53.3%) answered not all breast tumors are cancer while more than half of samples they did not know of Metastasis (57%) and the causes of breast cancer (52.2%), and if it can be prevented completely (43.3%).

Regarding the risk factors of breast cancer, the most widely known risk factors for breast cancer was exposure to radiation (41.9%), smoking (49.4%), but most of them didn't know the association between breast cancer and late menopause (70.9%), late age at first pregnancy (more than 30 years) (69.7%) early menarche (less than 12 years.) (51%) , use of OCP (58.5%) woman who do not breast feed 48.6% and eating fatty food 48.4%, increasing age (47.5%) , obesity (44.3%).

Regarding knowledge about the signs and symptoms of breast cancer, when they were asked about the symptoms the samples answered correctly, the presence of a mass in the breast (66.6%), sense of mass under

Table 1: Distribution of the female students according to their Socio-demographic Characteristics

Parameter	Category	No	%
Total		917	100
Age	15-16 years	328	35.8
	17-18 years	491	53.5
	19-20 years	84	9.2
Secondary School Type	Private	302	32.9
	Governmental	615	67.1
Nationality	Saudi	749	81.7
	Non-Saudi	168	18.3
Marital Status	Single	899	98.0
	Married	18	2.0
Secondary school levels	First	268	29.2
	Second	290	31.6
	Third	359	39.1
Family income	Good	31	3.4
	Medium	540	58.9
	Poor	346	37.7

Table 2: Distribution of the female students according to their total degree of Knowledge about Breast Cancer

Variable	(n = 917)	
	No	%
Excellent	0	0
Very Good	3	0.3
Good	8	0.9
Fair	906	98.8

the armpit (48.4%), pain in the breast area (64%) are the warning signs of breast cancer, while more than half of the sample did not know the warning signs of breast cancer such as bloody discharge(50%), wrinkling in the skin of the breast(57%) and inverted nipples (71.4%).

Concerning the screening methods for detection of breast cancer, more than two thirds of the sample mentioned that blood test (64%), breast exam by the doctor (78.3%), and breast self-examination (70.4%) are the methods used for early detection of breast cancer, while one third of the participants have information about mammography (38.5%) and magnetic resonance imaging of the breast (38.3%).

Regarding the line of treatment of breast cancer, more than half of the samples (52.1%) mentioned that surgical treatment is only the method of treatment and less than half of sample (48.4%) mentioned chemotherapy is the treatment while more than two -thirds did not know that radiotherapy (64.3%) hormonal therapy(67.3%), and immunotherapy(67.4%) are methods of treatment of breast cancer.

Regarding the knowledge of breast self-examination practice, Table 3, the majority of samples (86%) don't know how to do BSE . Only (2.3%) participants were doing breast self-examination on a regular basis and (16.9%) performing it on a non-regular basis, while (80.8%) did not perform breast self-examination. (3.4%) participants were doing breast self-examination once

Table 3: Distribution of the female students according to their Knowledge about Breast Self-Examination Practice

Item/Questions	Categories	(n = 917)	
		No	%
<i>Do you know how to do the breast self-examination?</i>	Yes	127	13.8
	No	790	86.2
<i>Do you do breast self-examination?</i>	No	741	80.8
	Yes, regularly	21	2.3
	Yes, but non regularly	155	16.9
<i>How many times do you perform BSE?</i>	Every day	4	2.3
	Every month	6	3.4
	Every week	89	50.6
	Every year	73	41.5
	I don't know	4	2.3
<i>When do you perform breast self-examination?</i>	Premenstrual	58	33.0
	During the menstrual cycle	8	4.5
	After one week of the menstrual cycle	9	5.1
	On any day	96	54.5
	I don't know	5	2.8

Table 4: Results of Chi-square test significance for variables with degree of knowledge with breast cancer

Variables	χ^2	P
School type (private, governmental)	10.04	.007
Age groups (15-16, 17-18, 19-20, more than 20 years)	7.44	.282
Nationality (Saudi, non-Saudi)	40.82	.001
Marital Status (single, married)	.223	.895
Secondary Level (first, second, third)	21.10	.001
Family Income (good, medium, poor)	7.77	.100
Family History of Breast Cancer	45.0	.001

per month. A small percentage of the students had knowledge about appropriate time for BSE (5.1%).

The association between demographic variables and degree of knowledge of breast cancer for female students

A chi-square test was used to test the association of breast cancer knowledge level with secondary school type, age group, nationality, marital status, secondary school levels, and family income Table 4. The variable

of secondary school type (private school) ($\chi^2=10.04$, $P=.007$) was significantly associated with level of knowledge of breast cancer. The variable of nationality (Saudi) ($\chi^2=40.82$, $P=.001$) was significantly associated with level of knowledge of breast cancer. The variable of secondary school level (first) ($\chi^2=21.10$, $P=.001$) was significantly associated with level of knowledge of breast cancer. The variable of family history of breast cancer ($\chi^2=45$, $P=.001$) was significantly associated with level of knowledge of breast cancer. The variable of family

Table 5: Linear Regression Model of Demographic Variables and Level of Knowledge

Variables	B	SE	P
Secondary School type (private, governmental)	.010	.461	.787
Age groups (15-16, 17-18, 19-20, more than 20 years)	.066	.339	.106
Nationality (Saudi, non-Saudi)	-.001	.496	.971
Marital Status (single, married)	-.037	1.406	.285
Secondary school Levels (first, second, third)	.060	.294	.165
Family Income (good, medium, poor)	-.041	.363	.239
Family history of breast cancer (Yes, No)	-.079	.765	.017
N= 917: p < .001: significant values in bold			

Table 6 :Binary Logistic Regression Model for Performance of Breast Self-Exam with Demographic Variables

Variables	B	SE	P	Exp(B)
School type (private, governmental)	-.324	.221	.144	.724
Age groups (15-16, 17-18, 19-20, more than 20 years)	.326	.165	.049	1.385
Nationality (Saudi, non-Saudi)	.063	.234	.786	1.066
Marital Status (single, married)	-.180	.630	.775	.835
Secondary Level (first, second, third)	-.098	.140	.484	.906
Family Income (good, medium, poor)	.154	.179	.387	1.167
Family history of breast cancer (Yes, No)	.745	.450	.098	2.107
N= 917: Cox & Snell's R ² = 0.053, Nagelkerke's R ² = 0.084, p < .001: significant values in bold				

history of breast cancer ($\chi^2=45$, $P=.001$) was significantly associated with level of knowledge of breast cancer. The variable of family income ($\chi^2=8.3$, $P=.016$) was significantly associated with breast self-examination practice. Logistic regression analysis revealed that one of seven predictors was significantly predictive of level of knowledge scores; this was family history of breast cancer, ($\beta = -0.079$, $p < 0.05$); the negative of family history indicated that higher scores on family history (e.g., no history of breast cancer) predicted lower scores on the level of knowledge Table 5.

One of seven predictors were significantly predictive of performance of self-examination scores; these included age groups; ($B = 0.33$, $p < 0.05$) the higher scores on age group (e.g., 20 yrs. or more) predicted higher scores on the performance of breast self-exam (e.g., Yes I perform breast self-exam) Table 6.

Discussion

A study conducted in Saudi Arabia by Ibrahim et al estimated that the future burden of breast cancer in Saudi Arabia is expected to increase by approximately 350% by 2025(13) .

The results of the study show that students had low knowledge score in relation to breast self-examination; this reflects the needs for targeting educational programs for female secondary schools. This finding was consistent with several studies in Saudi Arabia and in Malaysia (16,17)

Concerning the risk factors about breast cancer, the present study showed that most of the students had low knowledge of breast cancer risk factors. The most widely known risk factors by the students was smoking 49.4% followed by repeated exposure to radiation on the breast (41.9%). This finding is similar to that reported in Saudi Arabia (18) but most subjects didn't know the association between breast cancer and age, using oral contraceptive pills, avoiding breast feeding, obesity and increased

fatty food intake, previous history in the family. However some studies have shown that the incidence of breast cancer is said to be slightly higher in persons that have a first degree relative with a history of breast cancer, persons that have early menarche and late menopause, those that use oral contraceptives, persons who do not breast feed and those women having their first birth after age 35 or in nulliparous women, the incidence is also increased with increasing age of the patient, smoking, obesity, physical inactivity, radiation exposure, intake of alcohol and high fat diet (16,19,20, 21). These breast cancer risk factors can be changed with health education. So health care professionals can play an important role in educating students, to enhance their awareness of breast cancer risk factors and influence their behavior. Slightly more than half of the samples (52.2%) did not know the cause of breast cancer. Similar results have been reported in previous studies (19,22).

Regarding to the symptoms of breast cancer, most of the respondents in this study did not know other warning signs of breast cancer such as bloody discharge from nipple (49.6%), dimpling or wrinkling in the skin of the breast (57%) and inverted nipple (71.4%). This observation was also reported in other studies (21,23). This reflects their lack of knowledge regarding early symptoms of the disease, which is very important from the point of view of better prognosis.

Concerning the screening methods for detecting the disease, the participants in this study did not know about the use of mammography and magnetic resonance imaging (MRI) as a screening tool for early detection of breast cancer. This finding has also been documented in previous studies (14,19,24,25)MRI(16). Health education about the benefits of mammography screening for detection of breast cancer should be encouraged. Therefore maternity nurses she have great influence on female students to develop positive perceptions of breast cancer and motivation to practice screening methods for early detection of the disease.

Regarding treatment, the respondents knowledge about the treatment options of breast cancer showed that some of the respondents were aware of treatment modalities of breast cancer the majority of the respondent 52.1%, 48.4% knew that surgery and chemotherapy respectively are the treatment options of breast cancer. This result is similar to a study done by (Tiengo J.2011, Ibrahim N .2009)(21,26).

Regarding knowledge of practice of breast self-examination, in this study about 2.3% of the students who heard about BSE reported having performed it. From this only 3.4% performed BSE monthly and the majority of the students performed BSE irregularly (16.9%). Students knowledge about BSE might have affected their monthly BSE performance. However, only

a small number of students who had knowledge about the BSE procedure were performing BSE monthly. This may be due to insufficiency of education programs organized to increase breast health awareness. In this study, the findings regarding regular BSE are different from a previous study done in Turkey which showed that 20% of the students reported that they performed BSE irregularly and only 6.7% of those who practice BSE performed it regularly every month(27). The study done in Kuwait revealed that only 14.0% perform BSE irregularly and only 7.1 % of participants perform BSE monthly(19). In other studies the percentage of monthly BSE performance has been found to be 3.4% among teenagers(28). This observation was also reported in other studies (19,29).

A significant association was seen between family history of breast cancer and overall level of breast cancer knowledge. This finding was relatively consistent with findings in previous research studies (24,30), while two studies showed a relation between family history of breast cancer and regular BSE performance (27,29). Another three studies revealed no relation between family history of breast cancer and BSE performance (18,31,32). This finding was consistent with conclusions drawn in earlier studies, which found known breast cancer family history influenced women's attitudes about breast cancer and their willingness to engage in breast cancer screening behaviors (33). A negative family history was found to be a significant lower predictor on the level of breast cancer knowledge. But this result is in contraindication with the findings of some other studies that have found a positive family history of breast cancer tends to show better awareness and functions and affected women do more regular breast screening compared with the other women (34,35).

Family income in this result was not significantly associated with level of breast cancer, however family income was significantly associated with BSE practice. In similar studies by (Alsaif A ,2004 ; Dundar E ,2006)(31,36) showed no significant association between family income with level of breast cancer knowledge and BSE practice, unlike the findings of the present study with findings of a previous study by (Dandash K,2007) which found a significant

relation between family income with level of breast cancer knowledge and BSE practice (18).

Linear regression analysis reveals age group was significantly predictive of performance of self-examination. The findings of this study are consistent with those of other studies, as many studies have found age was the most important predictor for BSE practice (37,38,39). The findings of the present study are contrary to the findings of some studies which found that marital status, level of education, positive family history of breast cancer, menarche and menopausal status were predictors for BSE performance (34,37,38).

Conclusion

It is concluded that most of the female secondary school students in Riyadh, Saudi Arabia had very low knowledge about breast cancer. Recommendations are suggested to raise students' level of knowledge toward breast cancer and practice of breast self-examination among female students through the following activities; Developing a health education programme that should be built into school curricula, regarding breast cancer and BSE practice starting from their secondary school. Developing educational programmes for teachers. School health unit, mass media and Ministry of Health should plan to raise awareness about breast cancer in the community.

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CME Quiz

Case presentation

Ahmed is a 62-year-old married man who has been a heavy smoker for 40 years. He presents with hemoptysis.

A chest X-ray shows an apical opacity in his right lung. A CT guided biopsy indicates that Ahmed has adenocarcinoma of the lung (stage III B) which is deemed not surgically resectable. Ahmed is treated with a course of palliative radiotherapy.

Ten months later, he presents with the following symptoms:

Increasing shortness of breath with associated anxiety.
 (One month before presentation he was able to walk his dog 100 metres.
 One week ago he was dyspnoeic on walking to the toilet. Now he is dyspnoeic at rest.)
 Increasing general malaise
 Intermittent confusion at night (reported by patient and family)
 Infrequent productive cough
 Anxiety

Physical examination findings.

A thin, frail and anxious man. Afebrile. PR 90/min. Regular. BP 140/85. Respiratory rate 34/min.
 Accessory muscles of respiration are being used.
 Expiration L>R, with generalised poor air entry.

Almost no air entry on right side of thorax
 No bronchospasm, few scattered coarse inspiratory crepitations
 Mini-mental state examination 28/30

No reversible cause for Ahmed's dyspnoea is found.
 List three possible pharmacological treatments for managing Harry's dyspnoea. Include their route of administration

Question 1:

List three possible pharmacological treatments for managing Ahmed's dyspnoea. Include their route of administration.

Question 2

Ahmedis commenced on morphine for his dyspnoea. His is also given corticosteroids and a loop diuretic for the lymphangitis carcinomatosis.
 Salbutamol nebules, theophylline and panadeine forte are all ceased.

If Ahmed's cough was irritating, what else could be administered by nebuliser?

Question 3

List three non-pharmacological treatments that could help Ahmed's dyspnoea.

Question 4

As well as dyspnoea, Ahmed complains of a constant, burning pain in his right arm, with associated numbness and tingling. On examination he has a partial sensory deficit and signs of sympathetic dysfunction.

What type of pain does Ahmed have?

Answer 1

Oxygen — intranasally

Benzodiazepines — orally or sublingually

Morphine — orally, subcutaneously or nebulised

Answer 2

Although there is very limited evidence for this, a local anaesthetic given by nebuliser may help an irritating cough. e.g. bupivacaine 0.25%, 5 ml 4 hourly via nebuliser over 15-20 minutes, or lignocaine 1%, 5 ml 4 hourly via nebuliser over 15-20 minutes.

The way in which this class of drugs act to reduce coughing is not known. Bupivacaine is preferred by patients because lignocaine can leave a bad taste in a patient's mouth.

Bronchospasm is an occasional side effect of local anaesthetics given via nebuliser, so the first dose must be given in an appropriate setting.

It is also important for patients to have a drink before doses and to fast for up to 2 hours after, because the local anaesthetic may cause them to lose their gag reflex and/or develop pharyngeal numbness. Remember that opioids also have an antitussive action.

Reference: Woodruff, R. Palliative Medicine. Symptomatic and supportive care for patients with advanced cancer and AIDS. 3rd edition, Oxford University Press, 1999.

Answer 3

Fan or open window

Calm, reassuring environment.

Relaxation techniques.

Answer 4

Neuropathic pain

The following drug classes are the most commonly used types of drugs for neuropathic pain.

1. Anticonvulsants
2. Antidepressants
3. Corticosteroids

