

AMERICAN UNIVERSITY OF BEIRUT

NURSES' KNOWLEDGE AND ATTITUDES REGARDING
PAIN MANAGEMENT AT AUBMC

by
MAYA YEHYA AL-SAYED ABDUL RAHMAN

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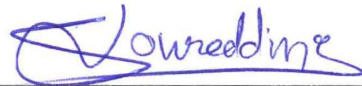
Approved by:

Dr. Huda Abu-Saad Huijer, PhD, RN, FEANS, FAAN,
Professor, Director
Hariri School of Nursing



First Reader

Dr. Samar Nouredine, PhD, RN, FAHA,
Associate professor
Hariri School of Nursing



Second Reader

Date of project presentation: June 6, 2012

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AN ABSTRACT OF THE PROJECT OF

Maya Yehya Al-Sayed Abdul Rahman for Master of Science
Major: Nursing

Title: Nurses' Knowledge and Attitudes Regarding Pain Management at AUBMC

Pain is considered one of the most undesirable experiences in life, which if undertreated, is associated with negative physiological, psychological and financial outcomes. Nurses play a fundamental role in assessing and managing pain. Thus, the need to assess nurses' knowledge and attitudes regarding pain is integral for optimal pain management and better patient outcomes. Lack of knowledge and misconceptions about pain is one of the factors that contribute to the inadequate management of pain among nurses. The aim of the study was to examine nurses' knowledge and attitudes regarding pain.

A descriptive cross sectional design was used. An electronic survey method, survey monkey, was used to collect data. The participants included all registered nurses who work full time at the American University of Beirut Medical Center (AUBMC). Eighty eight out of 460 nurses participated in the study (response rate 20%). The majority of the sample was females (71.3%), between twenty and thirty years of age (63.6%), with Bachelor of Science in Nursing (58%), with one third having four or less years of experience and another third five to ten years. One third of the sample worked in critical care areas.

The average knowledge mean score was 56.15% (SD=14.70), which reflects suboptimal knowledge regarding pain among nurses. Incorrect scores were evident in the areas related to equianalgesic dosing, opioid ceiling uses of different pain medication, respiratory depression with the use of opioids, in addition to improper pain assessment. Knowledge was significantly and positively correlated with age and the level of education.

In conclusion, the results of this study showed deficiencies in knowledge and unfavorable attitudes towards pain in its different areas related to pain assessment and management. The findings will help in developing educational programs for nurses about pain assessment and management in the future. The findings suggest the need of better integration of content about pain in undergraduate and graduate nursing curricula.

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CHAPTER I

INTRODUCTION

Pain is considered one of the most undesirable experiences in life. All people will experience pain at a certain point of their life with varying intensity and duration. Similarly, most nurses will be managing pain at a certain point of their career, if not regularly. Despite the fact that pain has been considered for many years as the fifth vital sign, it is still being undermanaged in clinical settings (Apfelbaum, Chen, Mehta, & Gan, 2003; Chung & Lui, 2003; Dix, Sandhar, Murdoch, & MacIntyre, 2004; Kim, Schwartz-Barcott, Tracy, Fortin, & Sjostrom, 2005; Polomano, Dunwoody, Krenzischek, & Rathmell, 2008; Richards & Hubbert, 2007; Schafheutle, Cantrill, & Noyce, 2001; Tanabe & Buschmann, 2000; Watt-Watson, Stevens, Garfinkel, Streiner, & Gallop, 2001; Whelan, Jin, & Meltzer, 2004). Polomano et al. (2008) have shown that untreated pain was found to be associated with negative physiological, emotional, and financial outcomes.

Several factors contribute to the inadequate management of pain among nurses namely lack of knowledge and misconceptions (Coulling, 2005; McCaffery, Ferrell, & Pasero, 2000) and nurses' attitudes and beliefs about pain and pain management (Bell & Duffy, 2009). Several studies showed that lack of knowledge about pain among nurses has contributed to ineffective pain management (Schafheutle et al., 2001; Tanabe & Buschmann, 2000; Watt-Watson et al., 2001). Clinical observations confirm the fundamental role of nurses as first line caregivers in implementing pain management (Musclow, Sawhney, & Watt-Watson, 2002). Thus, the need to assess nurses' knowledge

and attitudes regarding pain is integral for optimal patient satisfaction with pain management and better outcomes.

At the American University of Beirut Medical Center (AUBMC) a pain service team has been newly established. In an attempt to promote optimal pain management outcomes through this service, the team including the chairperson of the anesthesiology department and the pain nurse in collaboration with the medical director are setting plans to improve patients' satisfaction with pain management. One of these plans is to implement an educational program for nurses about pain. The proposed study will provide a baseline for developing and implementing such an educational program about pain management for seasoned and new nurses and will address their learning needs. Moreover, this study has been proposed especially since there is little data about nurses' knowledge of pain at AUBMC in particular, and in Lebanon in general.

The aim of this study was to assess nurses' knowledge and attitudes regarding pain management at AUBMC and to use the results as a baseline for future studies in the setting. The following specific research questions were examined:

- 1) What is the level of nurses' knowledge and attitudes related to pain management at AUBMC?
- 2) Do demographics, educational factors and years of experience correlate with nurses' knowledge and attitudes regarding pain management?
- 3) Do critical care nurses have better knowledge of pain management compared to nurses on other units?

CHAPTER II

LITERATURE REVIEW

For decades pain has been considered a concern to healthcare providers. Several studies have evaluated the knowledge and attitudes of nurses regarding pain as these are considered to be barriers to proper pain management (Manworren, 2000; Matthews & Malcolm, 2007; Naser, Sinwan, & Bee, 2005; Wang & Tsai, 2010; Wilson, 2007).

McCaffery and Robinson (2002) examined the knowledge and attitudes about pain of 3282 nurses in the USA. The results reflected lack of knowledge in pain management as more than half of the nurses did not pass the exam (80% was the passing score). The questions that were most often answered incorrectly were pertaining to pharmacology and addiction.

Mathews and Malcolm (2007) examined the knowledge and attitudes of two groups of nurses; group one completed a knowledge and competency training program in pain management within an orthopedic center and group two attended a pain conference without completing this training program. The questionnaire used was the Nurses' Knowledge and Attitudes Survey Regarding Pain developed by Ferrell and McCaffery (1987). The survey revealed no significant difference in the total correct answers between both groups, but there was a critical knowledge deficit regarding nonpharmacological methods of managing pain and opioid use in chronic pain situations. However, Group one had a superior correct response rate ($p=0.001$) in the vignettes that are built on daily nursing practice compared to group two.

Another study was conducted to determine registered nurses' pain management knowledge using the Nurses' Knowledge and Attitude Survey developed by McCaffery and Ferrell (1987). The results have shown that the knowledge of inpatient nurses and those who used the Patient Controlled Analgesia (PCA) on their patients was significantly higher ($P < 0.001$) compared to outpatient nurses. The results have also shown that Intensive Care Unit nurses attained better overall scores compared to nurses in other units. No significant difference was found based on years of experience, age, job title and educational levels (Naser et al., 2005).

Watt-Watson et al. (2001) studied the relationship between nurses' pain knowledge and pain management outcomes in postoperative cardiac patients. Data were collected from cardiac patients on the third day following coronary artery bypass graft (CABG) and were linked to their assigned nurses. The Toronto Pain Management Inventory (TPMI) was used to measure pain knowledge of nurses. No significant relation was shown between nurses' knowledge scores and patient pain ratings. There was an evident critical knowledge deficit and misbeliefs about pain management among cardiac nurses.

A cross-sectional study was conducted in Taiwan on intensive care unit nurses' about pain management using the Nurses' Knowledge and Attitudes Survey-Taiwanese version. The mean response rate for the knowledge scale was 53.4%, which indicated poor knowledge of pain management (Wang & Tsai, 2010).

Tanabe and Buschmann (2000) examined the emergency nurses' knowledge about pain and identified barriers to pain management perceived by those nurses using the Emergency Department Nurses' Knowledge of Pain Assessment and Intervention

Strategies. The results showed significant knowledge deficit of different pain management topics, mainly in pharmacology.

Another study has been conducted in the United Kingdom to examine the effect of post registration education and clinical experience on nurses' knowledge about pain. Two groups of nurses were assessed using 20 true/false statements taken from the pain survey revised by McCaffery's (1986) Pain Knowledge and Attitude Survey and revised by Hamilton and Edgar (1992). One group included oncology nurses (specialists) and the other group included district nurses (general). The results showed the specialist nurses to have superior knowledge about pain compared to the general nurses; however, the scores were not related to years of experience (Wilson, 2007).

A survey at a large children's medical center was conducted among pediatric nurses to assess their knowledge and attitudes towards pain. The results showed deficiencies in knowledge about pain in terms of assessment, pharmacological and nonpharmacological interventions. Only 60% of the questions were answered correctly. Nurses with a master's degree attained significantly higher scores (75%) than the BSN prepared nurses. Hematology/oncology, intensive care unit and emergency room nurses also scored significantly higher than nurses from other units (Manworren, 2000).

In another study conducted by Al-Shaer, Hill, & Anderson (2011) on nurses' knowledge about pain assessment and management, knowledge scores were found to be above average. However, nurses were found to still lack knowledge regarding

pharmacologic interventions. This study also used the Nurses' Knowledge and Attitudes Survey Regarding Pain (Ferrell & McCaffery, 1987). No statistical difference in knowledge scores were found by shift worked, work status, age category, and total years of experience, nor between nurses prepared at the baccalaureate or diploma/associate level on pharmacologic and non-pharmacologic items.

Ampomah (2009) compared the knowledge, attitudes and beliefs about pain management of West African born nurses with their United States born counterparts working in the United States. Both West African born and United States born nurses (50.7% West African vs. 60.1% United States) showed inadequate knowledge regarding pain management. There were significant correlations between levels of nursing education and knowledge of administering analgesia for postoperative pain ($r = .224, p = .05$); and between years of nursing practice and knowledge of opioids and patients with history of substance abuse ($r = -.330, p = .01$).

The above review of the literature has shown knowledge and attitudes of nurses regarding pain were assessed using a number of instruments. The main components of these instruments are: knowledge of pain assessment, pharmacologic treatment, nonpharmacologic treatment and attitudes about pain.

Self-administered questionnaires were the main methods used in studies assessing nurses' knowledge about pain, such as the Toronto Pain Management Inventory (TPMI) (Watt-Watson et al., 2001), Emergency Department Nurses' Knowledge of Pain assessment and Intervention Strategies (Tanabe & Buschmann, 2000) and Nurses' Knowledge and

Attitude Survey (Al-Shaer, Hill, & Anderson, 2011; Manworren, 2001; McCaffery & Robinson, 2002; Naser et al., 2005; Schafheutle et al., 2001; Wang & Tsai, 2010; Watt-Watson et al., 2001; Wilson, 2007).

The TPMI included 23 questions each rated on a visual analogue scale 0-100mm to examine knowledge of nurses about pain. The questionnaire included questions about analgesia, patient's experience of and responses to pain, and professional issues. The face and content validity and the test-retest reliability (ICC=0.81) of the questionnaire were established (Watt-Watson et al., 2001). The Emergency Department Nurses' Knowledge of Pain assessment and Intervention Strategies consists of 52 true/false items that assess knowledge and is used specifically for emergency nurses. It measures four domains: pain assessment techniques, definition of the term addiction, tolerance, physical dependence, and threshold, side effects and actions of analgesics and treatment done in the emergency department and the role of the nurse in pain management. Content validity was established (CVI=1) with a poor test-retest reliability and internal consistency of Cronbach's alpha 0.50. The Nurses' Knowledge and Attitude on Pain Management Survey developed by Ferrell and McCaffery (1987) assesses different types of pain management namely the American Pain Society, the World Health Organization, and the Agency for Health Care Policy and Research. The test-retest ($r=0.80$), internal consistency (Cronbach's alpha=0.70) construct and content validity have been established by the authors. The tool has been used in many studies in different countries and among nurses of different specialties. It examines pain assessment, pharmacologic and non-pharmacologic interventions and includes three

types of close-ended questions (true/false, multiple choice questions and vignettes). Based on the above, it was found to be most suitable for use in this study.

In conclusion, research has shown lack of knowledge about pain management among nurses of varying degrees in various countries, which is related mainly to the nurses' area of practice. Most of the studies did not show any correlation between experience or age and knowledge about pain management. Two studies showed significant correlation between nursing educational level and pharmacological knowledge about pain. In general, knowledge deficit has been noticed in pharmacologic treatment in addition to nonpharmacologic treatment and pain assessment.

CHAPTER III

METHODOLOGY

A. Study Design

A descriptive cross sectional study design using survey methodology was used to investigate pain management knowledge and attitudes of nurses at the American University of Beirut Medical center (AUBMC). This design is most appropriate for answering the study research question. Self-report is the most appropriate method to collect data about knowledge and attitude.

B. Sample

All registered nurses working full time at AUBMC, of various age groups, educational level and years of experience were included in this study. The overall number of registered nurses at AUMBC was around 460.

C. Instrument

The Nurses' Knowledge and Attitudes Survey Regarding Pain developed by Ferrell and McCaffery (1987) was used for this study. This is a very well-known validated tool that has been last revised in 2008 (available through the City of Hope Pain Resource Center, <http://prc.coh.org>). This survey assesses different types of pain knowledge (acute and chronic). The content of the tool resulted from existing standards of pain management like the American Pain Society, the World Health Organization, and the Agency for Health

Care Policy and Research. The test-retest ($r=0.80$), internal consistency (Cronbach's $\alpha=0.70$) construct and content validity have been established by the authors and have been used by many studies on various nurses in different specialties. This tool assesses knowledge and is used in evaluating continuing education courses. It is written in a very simple language and it is easy to administer. Ferrell and McCaffery (2008) allow replication of their work with local remarks and/or modifications. The questionnaire includes 38 close-ended questions with one correct answer each; 22 true or false questions, 14 multiple-choice questions, and two vignettes on pharmacological and nonpharmacological interventions and attitudes on pain management.

For the current study, the content validity of the tool was evaluated by a panel of seven experts from AUBMC, including four anesthesiologists in the field of pain, a pain nurse, an Advanced Practice Nurse (APN) in pediatrics and two faculty members at the Hariri School of Nursing (HSON), one of whom is an expert in the field of pain. Lynn (1986) advocates the use of a minimum of three experts but no more than 10. The panel of experts was asked to rate each of the 38 questions for cultural appropriateness and conceptual relevance on a 4-point Likert scale: (1=completely inappropriate/irrelevant, 2=somewhat inappropriate/irrelevant, 3=somewhat appropriate/relevant, 4=completely appropriate/relevant) (see appendix A). According to the experts' suggestions the names of the medications mentioned in items 9, 18, and 30 were changed to medications used in Lebanon that are of the same drug group and of equal potency, and the word U.S. in item 32 was changed to Lebanon for cultural appropriateness. More than four experts deemed item 33 irrelevant as it questions the likelihood of patients who already have alcohol and/or

drug abuse problem to develop pain. Because the question is culturally irrelevant and because we do not have local data about it, it was deleted (See appendix B).

The original English version was used in this study, as English language is a requirement at AUBMC for all nurses. A demographic tool has been developed for this study and it included: age, gender, level of education, number of years of experience in nursing and work location.

D. Procedure and Ethical Considerations

Institutional review board (IRB) and AUBMC hospital administration approval were obtained. A meeting with the Director of Nursing (DoN) was planned to explain the significance of the study and to get approval to email the questionnaire to AUBMC registered nurses (RNs). The DoN granted the approval to forward the email to all RNs. A link to the questionnaire “Nurses’ Knowledge and Attitude Survey” with a cover letter was sent to all nurses at AUBMC via e-mail using an electronic survey tool called “Survey Monkey”. This tool preserves anonymity and confidentiality of the participants. The cover letter explained the purpose of the study and informed the nurses that participation is voluntary and that they can skip any question. They were also informed that the results will be accessible only to the researcher and will be reported only in a group format, thus maintaining confidentiality of their answers. Nurses were given a period of one month to complete and return the questionnaire. Two reminder emails were sent to all participants during the data collection period in an attempt to get an optimal sample size. The total number of participants was 79 after the first reminder and increased to a total of 92 after the second reminder.

E. Data Analysis

Data analysis was carried out using SPSS (version 19). Descriptive statistics including frequencies and percentages were used to describe the sample demographics and survey items. The Knowledge and Attitude Survey Regarding Pain was analyzed using means, standard deviations of the percentage of correct answers of participants, plus the percentage of participants who answered correctly individual items as recommended by Ferrell and McCaffery (2008). The first research question was tested by calculating the overall score in terms of the percent of questions answered correctly for each Registered Nurse (RN). An independent sample t-test was done to compare men and women on nurses' overall scores. Age, level of education and nursing experience were correlated with nurses' overall scores using ANOVA (research question 2). Critical care nurses were compared to nurses in other units on their knowledge and attitudes about pain using independent t-test (research question 3).

CHAPTER IV

RESULTS

The survey was sent to 460 registered nurses (RNs); ninety two RNs participated in the study, resulting in 20% response rate. However, only 88 surveys out of the 92 had usable data; four were totally empty. Table 1 shows the demographic distribution of the study sample. The majority of the nurses was females (71.3%), between twenty and thirty years of age (63.6%) and with Bachelor of Science in Nursing (58%). With respect to the years of experience, the sample was almost equally split among three categories; slightly more nurses had four or less years of experience (35.2%) compared to the other two categories namely those with five to ten years of experience (31.8%) and those with more than 10 years of experience (33%).

Almost one third of the respondents (34.1%) were from critical care areas, which included the respiratory care unit (RCU), the coronary care unit (CCU), the post anesthesia care unit (PACU), the operating room (OR), the emergency department (ED) and the hemodialysis unit. Fourteen percent of the respondents were from the medical-surgical units. Oncology nurses constituted 13.4% of the sample. They were divided respectively into 7.3% adult oncology nurses and 6.1% pediatric oncology nurses. Among the pediatric units, there were nine participants (11%). The rest of the nurses were from different departments including the outpatient department, private clinics, the CPDC (Clinical and Professional Development Center) and the nursing administration. Some of the participants misinterpreted the question related to the work location by writing the name of the hospital

as their primary work location or their title as Registered Nurses. These responses were classified under others.

Table 1: Demographic Characteristics of the Sample of Registered Nurses (N=88)

Variables	Frequency	Percent
Gender		
• Female	62	71.3
• Male	25	28.7
Age		
• 20-30	56	63.6
• 31-40	22	25.0
• >40	10	11.4
Education		
• BSN	51	58.0
• Masters	25	28.4
• BT/TS	8	9.1
• Diploma	4	4.5
Nursing Experience		
• >10 years	29	33.0
• 5-10years	28	31.8
• 1-4years	19	21.6
• <1year	12	13.6
Work Location		
• Critical Care	28	34.1
• Medical/Surgical	12	14.6
• Pediatrics	9	11.0
• Oncology	11	13.4
• Others	22	26.8

A. Knowledge and Attitude Scores

Table 2 displays the number and the percent of nurses who scored correctly on the questionnaire. The aim of displaying this table was to obtain an overall idea of the performance of nurses. Thus, the scores received by the nurses were arranged according to the letter grading system (A, B, C, D, E and F) as shown in table 2. For example, (2.3%) of the nurses received a score between 90% and 100%. The majority of the respondents (89.6%) received the letter grades of D (30.7%), E (25%) and F (33.9%). Only 6.8% of the participants received letter grade C and 3.4% of the respondents received >80% as an overall score.

Table 2: Distribution of the Overall Scores for the Knowledge and Attitudes Regarding Pain Survey (N=88)

Grade	The range of percentage referring to each letter of the grading system	Frequency of nurses who scored correctly	Percent of nurses who scored correctly according to the grading system
A	90-100	2	2.3
B	80-89	1	1.1
C	70-79	6	6.8
D	60-69	27	30.7
E	50-59	22	25.0
F	<50	30	33.9

Table 3 presents the number of participants who scored correctly on each true/false question. More than half of the participants answered incorrectly on nine of the true and false questions. Incorrect scores were evident in the areas related to equianalgesic dosing

(only 38.6% answered this item correctly), opioid ceiling (40.9%), uses of different pain medication (33.0%) and respiratory depression with the use of opioids (52.3%). Lack of proper pain assessment is evident in various questions. For instance, only 44.3% of the participants answered correctly that vital signs are not reliable indicators for pain intensity, 40.9 % of them approved that patients who can be distracted from pain usually do not have severe pain and 36.4 % agreed that patients may sleep in spite of severe pain.

Table 3: Correct answers to the True/False questions (N=88)

Item	Correct Answer	Frequency	Percent
-After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient’s response.	T	85	96.6
-Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.	T	82	93.2
-Patients should be encouraged to endure as much pain as possible before using an opioid.	F	80	90.9
-Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent.	T	79	89.8
Patients’ spiritual beliefs may lead them to think pain and suffering are necessary.	T	79	89.8
-Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent’s assessment of the child’s pain intensity	F	75	85.2
-Elderly patients cannot tolerate opioids for pain relief.	F	63	71.6

-Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.	F	63	71.6
-Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.	F	58	65.9
-Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.	T	58	65.9
-Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	F	57	64.8
-The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.	F	50	56.8
-Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	T	46	52.3
-Opioids should not be used in patients with a history of substance abuse.	F	41	46.6
-Vital signs are always reliable indicators of the intensity of a patient's pain.	F	49	44.3
-Patients who can be distracted from pain usually do not have severe pain.	F	36	40.9
-Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).	F	36	40.9
-Research shows that promethazine (Phenergan) and hydroxyzine (Atarax) are reliable potentiators of opioid analgesics.	F	35	39.8
-Demerol 10mg is equal to MO 1mg IV	T	34	38.6
-Patients may sleep in spite of severe pain	T	32	36.4
-Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	F	29	33.0
-If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.	F	28	31.8

Table 4 shows the percent of participants who answered correctly the multiple choice questions. Similarly to the finding in table 3, lack of knowledge is noted in the areas of equianalgesic dosing (only 42.1% answered this item correctly), respiratory depression (23.7%), and management of cancer pain (32.9%) as well as physical dependence manifestations (19.7%).

Table 4: Correct answers to the Multiple Choice Question (N=88)

Item with the correct choice	Frequency	Percent
-The patient is the most accurate judge of the intensity of pain.	68	89.5
-The peak effect for morphine given IV is 15 min.	67	88.2
-Patients in pain should be individually assessed to determine cultural influences.	66	86.8
-The drug of choice for the treatment of prolonged moderate to severe pain for cancer patients is morphine.	63	82.9
-A patient with pain would request increased doses of pain medication if he's experiencing increased pain.	65	85.5
-The recommended route of opioid severe pain of sudden onset is IV.	58	76.3
-Analgesics for post-operative pain should initially be given around the clock on a fixed schedule.	49	64.5
-Ibuprofen (Advil), Morphine (Morstel) and Gabapentin (Neurontin) are useful for treatment of cancer pain.	45	59.2
-The peak effect for morphine given PO is 1-2hrs.	37	48.7
-10mg of IV doses of morphine would be equivalent to 30 mg of oral morphine given q 4 hours.	32	42.1
-The recommended route of opioid analgesics for patients with persistent cancer-related pain is po.	25	32.9
-The likelihood of the patient developing clinically significant respiratory with chronic use of opioids is less than 1%.	18	23.7
-Physical dependence is manifested by sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.	15	19.7

See appendix B for complete listing of multiple choice questions

Table 5 shows the percent of participants who answered correctly the vignette questions. As noted in the table, 60% of the nurses got correctly the pain score given by the patient Andrew who had an abdominal surgery and was smiling talking and joking while reporting his pain score of 8/10. However, 80% of the nurses rated correctly the pain score of patient B who also had an abdominal surgery, but was lying in bed and grimacing upon movement and reporting a pain score of 8/10. Nevertheless, there are evidently low scores related to the pharmacological interventions to both patients A and B whose pain score is 8/10.

Table 5: Correct answers to patient vignettes (N=88)

Item with the correct choice	Frequency	Percent
Patient A: Andrew is 25 years is in his first day following abdominal surgery, smiling, talking and joking. He rates his pain as 8.		
A. His pain on the scale is 8	41	60.3
B. He received 2mg IV of morphine. Upon reassessment his pain ranged from 6 to 8 with no side effects. The upper range of morphine IV of the physician's order (3mg) will be chosen.	9	13.2
Patient B: Robert is 25 years is in his first day following abdominal surgery is lying quietly in bed and grimaces as he turns in bed. He rates his pain as 8.		
A. His pain on the scale is 8	55	80.9
B. He received 2mg IV of morphine. Upon reassessment his pain ranged from 6 to 8 with no side effects. The upper range of morphine IV of the physician's order (3mg) will be chosen.	19	27.9

Bivariate analyses have shown no significant difference by gender with respect to the knowledge and attitudes pain scores (See table 6). The only significant difference was

shown by age and level of education in the knowledge and attitudes scores ($P=0.036$ and $P=0.045$, respectively), as shown in tables 7 and 8. Nurses aged 31-40 years had the highest knowledge and attitude scores, and those younger than 31 had the lowest scores. When comparing nurses by the years of experience, the results showed higher scores in those with more years of experience, yet the difference did not reach statistical significance ($P=0.08$) as shown in table 9.

Table 6. Gender differences in knowledge and attitude about pain scores (N=88)

Variable	Male (n=25)		Female (n=62)		t(85)	P value
	Mean	SD	Mean	SD		
Gender	56.10	12.28	56.66	15.30	.16	.872

Table 7. Age and pain knowledge/attitude about pain management (N=88)

Variable	20-30year (n=56)		31-40year (n= 22)		>40year (n=10)		F	P value
	Mean	SD	Mean	SD	Mean	SD		
Age	53.61	13.72	63.10	16.70	55.12	11.67	3.46	.036

Table 8. Education and knowledge/attitude about pain management (N=88)

Variable	Up to BSN (n=51)		MSN (n= 25)		t	P value
	Mean	SD	Mean	SD		
Level of education	54.17	15.44	61.12	11.53	-2.04	.045

Table 9. Years of experience and knowledge/attitude about pain scores (N=88)

Variable	1-4 years (n=31)		5-10 years (n=28)		>10years (n=29)		F	P value
	Mean	SD	Mean	SD	Mean	SD		
Nursing experience	52.77	13.25	54.85	14.40	61.01	15.68	2.60	.080

An independent t-test has been done to compare the knowledge and attitudes of critical care nurses about pain compared to those working in other units. The results have shown no significant difference between the two groups (P=0.826). (See table 10)

Table 10. Critical units compared to other units in knowledge and attitude about pain scores (N=88)

Variable	Critical (n=28)		Others (n=54)		t(80)	P value
	Mean	SD	Mean	SD		
Work location	56.80	9.90	56.10	15.14	.07	.826

CHAPTER V

DISCUSSION

Proper knowledge about and attitudes towards pain with respect to the assessment and management are the foundation of optimal nursing interventions and effective pain management. The findings of this study add to the richness of studies cited in the literature. The overall mean score of nurses in this study was 56.15%, which is considered low compared to other studies (Mathew, 2007; Coulling 2005; McCaffery & Robinson 2002; Wang & Tsai, 2010). The passing score of the tool as set by McCaffery and Ferrell (2002) is 80%. McCaffery and Ferrell (2002) speculate that a score less than 80% may compromise the nurse's ability to care for a patient with pain and a score of 70% or more indicates an adequate level of knowledge and application. In this study, a 96.6% of the nurses scored below 80 and 88% of them scored below 70 indicating suboptimal knowledge and attitudes of our nurses towards pain.

The nursing experience and age revealed no significant difference in the nurses' level of knowledge regarding pain management. However, comparing nurses by the level of education showed significantly higher knowledge regarding pain in those with graduate degrees compared to those with basic nursing education. Thus, the difference by age may be explained by the higher educational attainment and years of experience, as 40.9% of the group who were 31 to 40 years old had Masters degree and 86.4% had more than 10 years of experience. The lack of knowledge is suggestive of lack of emphasis on the topic in nursing schools as well as in the educational requirements and training of nursing staff at the hospital.

Inappropriateness is obvious in the knowledge of pharmacology of pain medications related to dosages, side effects and duration of action. Most of the questions related to pharmacology were answered incorrectly. These findings are consistent with other studies concerning deficits in nurses' knowledge and attitudes towards pain management (Al Shaer, 2011; McCaffery & Robison, 2002; Coulling, 2005; Mathews, 2007). This might reflect the nurses' belief that the pharmacologic information is in the scope of physicians' practice only (Tanabe, 2000).

No significant differences were found between level of knowledge of critical care nurses and nurses working on open units which are contrary to other studies where specialist nurses showed a significantly better knowledge compared to general nurses (Wilson, 2007; Manworren, 2000; Naser et al., 2005). Lack of emphasis on pain management in nursing education may have contributed to these results among specialist and generalist nurses. Alternatively, 26.8% of the sample was included in the other category, which included nurses from outpatient department, but also others did not indicate their unit of practice; some may be working in critical care areas, which could have influenced the results. Studies have shown that respiratory depression is uncommon in patients who are on chronic use of opioids (McCaffery & Robinson, 2002; Tse & Chan, 2004), yet only 23.7% of the nurses were aware of this. Out of clinical experience, it is very obvious that nurses are afraid to cause the patient to go into respiratory depression when using opioids. Cashman and Dolin (2004) have shown that the incidence of developing respiratory depression with opioids given through parenteral or epidural routes is less than 1%. It has been also shown that patients on a chronic use of opioids will develop tolerance towards most of its side effects, including respiratory depression (Mehta & Langford,

2006). The fear of respiratory depression is likely to prevent nurses from providing adequate pain management to patients.

Only 32.9% of the nurses answered correctly the question on the recommended route of opioid in patients with persistent cancer-related pain. The recommended route for such patients is oral since it is the most convenient, less invasive and is considered the most cost-effective way of giving the opioid analgesics (Fallon & O'Neil, 1997). This knowledge deficit may be genuine, or it may reflect the practice of using oral opioids in Lebanon, which is rather recent.

Knowing that self-report is the best reliable indicator of pain intensity, the results revealed that 89.5% of the nurses believe that the patient is the most accurate judge of the pain intensity. However, when answering the case scenarios, nurses were more likely to believe the pain score reported by the grimacing patient (80.9%) compared to the smiling patient (60.3%) who reported the same pain score. Moreover, nurses still rely on vital signs as indicators of the intensity of pain as 44.3% of the nurses answered this question correctly. McCaffery and Ferrell (1997) emphasize however the importance of relying on the patient's self-report as the gold standard of pain assessment. Schafheutle et al (2001) stated that the most significant barrier to proper pain management is the reliance of nurses on their own judgment during pain assessment.

The purpose of the vignettes at the end of the survey is to investigate the nurses' competency in pain assessment and in administering opioids analgesia. The results showed that nurses were influenced by the patients' behavior since nurses were more likely to believe the pain score reported by the grimacing patient (80.9%) compared to the smiling patient (60.3%) who reported the same pain score on day one post abdominal surgery.

Moreover, nurses in both case scenarios were reluctant to give appropriate amount of analgesia despite the high pain score reported by the two patients. This knowledge deficit suggests again inadequate pain assessment and treatment.

A. Limitations

Internet survey questionnaires are practical and efficient; however low response rate (20.7%) is a limitation (Kaplowitz, Hadlock, & Levine, 2004). Although all nurses working at the hospital were surveyed, only 20% responded after two reminders. The fact that the study was conducted in one hospital and the small sample limits the generalizability of results. Moreover, all nurses were included even those who are not in direct patient care, like the clinical educators and nurses in the administrative and management positions, which might have negatively affected the results.

Some of the nurses who completed the survey stated that it is long and others found it difficult so they withdrew before completing it. There were a number of items that were not answered by the nurses, thus influencing the results. Installing the monkey survey so that the participant cannot move to a question until he/she has answered the previous one could have prevented this. However, few nurses informed the investigator later that they skipped the questions that they did not know which supports the trustworthiness of results.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The aim of the study was to assess nurses' knowledge and attitudes regarding pain at the American University of Beirut Medical Center. The results of this study showed deficiencies in knowledge and unfavorable attitudes towards pain in its different areas related to pain assessment and management.

The data depicted the baseline pain knowledge of nurses which will help in developing educational programs for nurses about essential knowledge, skills and competencies needed for efficient pain assessment and management in the future.

Miaskowski (2001) has stated that "Pain is a ubiquitous symptom that affects all patient populations", therefore it should be integrated in nursing curricula as one of the core courses.

Based on these findings the following is recommended:

- Integrate pain knowledge in undergraduate and graduate level nursing curricula.
- Introduce an ongoing mandatory continuing education courses on pain management to nurses working in clinical settings.
- Establish pain competencies and makes sure to monitor and maintain a review process on an annual basis.
- Conduct an evaluation study on nurses' knowledge and attitudes about pain upon completion of the mandatory continuing education courses at the institution level.

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Appendix A

Content Validation

Content Validation of Knowledge and Attitudes of Nurses on Pain Management Survey

Thank you for agreeing to evaluate Nurses' Knowledge and Attitudes on Pain Management Survey.

The Nurses' Knowledge and Attitudes Survey that will be used in this study is developed by Ferrell and McCaffery (1987). This is a very well-known validated tool that has been last revised in 2008 (available through the City of Hope Pain Resource Center, <http://prc.coh.org>). This tool has been used in most studies for assessing knowledge as well as for evaluating continuing education courses using pre-post studies.

The questionnaire includes 38 close-ended questions; 22 true or false questions, 14 multiple-choice questions, and two vignettes on pharmacological and nonpharmacological interventions and attitudes on pain management. I have added two questions related to opioids complication, which I believe are important to address after I did my clinical rotation at the American University of Beirut (AUBMC) and at the University of Maryland Medical Center (UMMC) with the pain team.

You are kindly asked to rate each of the 40 questions for cultural appropriateness and conceptual relevance. **Appropriateness** is the extent to which the item is clear, unambiguous and appropriate for the population of Lebanon. **Relevance** of the item is its fit to the concept of pain management. The rating is on a 4-point scale shown below. Please use the table below to rate the items and note down under suggestions any changes in wording or other that you think is needed.

Rating scale for:

Appropriateness: 1=completely inappropriate, 2=somewhat inappropriate, 3= somewhat appropriate and 4=completely appropriate

Relevance: 1=completely irrelevant, 2=somewhat irrelevant, 3=somewhat relevant and 4= completely relevant)

True or False Questions	Appropriateness rating	Relevance rating	Suggestions
1) Vital signs are always reliable indicators of the intensity of a patient's pain.			
2) Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.			
3) Patients who can be distracted from pain usually do not have severe pain.			
4) Patients may sleep in spite of severe pain			
5) Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.			
6) Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.			
7) Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent.			
8) The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.			
9) Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.			
10) Opioids should not be used in patients with a history of substance abuse.			
11) Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).			
12) Elderly patients cannot tolerate opioids for			

pain relief.			
13) Patients should be encouraged to endure as much pain as possible before using an opioid.			
14) Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent's assessment of the child's pain intensity.			
15) Patients' spiritual beliefs may lead them to think pain and suffering are necessary.			
16) After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.			
17) Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.			
18) Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5-10 mg of morphine PO.			
19) If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.			
20) Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.			
21) Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.			
22) Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.			

Multiple Choice Questions	Appropriate -ness rating	Relevance rating	Suggestions
23) The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is: a. intravenous b. intramuscular c. subcutaneous d. oral e. rectal			
24) The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is: a. intravenous b. intramuscular c. subcutaneous d. oral e. rectal			
25) Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients? a. codeine b. morphine c. meperidine d. tramadol			
26) Which of the following IV doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours? a. Morphine 5 mg IV b. Morphine 10 mg IV c. Morphine 30 mg IV d. Morphine 60 mg IV			
27) Analgesics for post-operative pain should initially be given: a. around the clock on a fixed schedule b. only when the patient asks for the medication c. only when the nurse determines that the patient has moderate or greater discomfort			
28) A patient with persistent cancer pain has been receiving daily opioid analgesics for 2			

<p>months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is: a. less than 1% b. 1-10% c. 11-20% d. 21-40% e. > 41%</p>			
<p>29) The most likely reason a patient with pain would request increased doses of pain medication is a. The patient is experiencing increased pain. b. The patient is experiencing increased anxiety or depression. c. The patient is requesting more staff attention. d. The patient's requests are related to addiction.</p>			
<p>30) Which of the following is useful for treatment of cancer pain? a. Ibuprofen (Motrin) b. Hydromorphone (Dilaudid) c. Gabapentin (Neurontin) d. All of the above</p>			
<p>31) The most accurate judge of the intensity of the patient's pain is: a. the treating physician b. the patient's primary nurse c. the patient d. the pharmacist e. the patient's spouse or family</p>			
<p>32) Which of the following describes the best approach for cultural considerations in caring for patients in pain: a. There are no longer cultural influences in the U.S. due to the diversity of the population. b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc). c. Patients should be individually assessed to determine cultural influences. d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue</p>			

collar workers report more pain than white collar workers).			
33) How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem? a.< 1% b. 5 – 15% c.25 - 50% d.75 - 100%			
34) The time to peak effect for morphine given IV is a. 15 min. b. 45 min. c. 1 hour d. 2 hours			
35) The time to peak effect for morphine given orally is a. 5 min. b. 30 min. c. 1 – 2 hours d. 3 hours			
36) Following abrupt discontinuation of an opioid, physical dependence is manifested by the following: a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued: b. Impaired control over drug use, compulsive use, and craving c. The need for higher doses to achieve the same effect. d. a and b			

Case Studies: (Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication. Directions: Please select one answer for each question)	Appropriate-ness rating	Relevance rating	Suggestions
37) Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8. A. On the patient’s record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew’s pain.			

<p>0 1 2 3 4 5 6 7 8 9 10</p> <p>-----</p> <p>-----</p> <p>No pain/discomfort Worst Pain/discomfort</p> <p>B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time.</p> <ol style="list-style-type: none"> 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now. 			
<p>39) Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.</p> <p>A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain:</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>-----</p> <p>-----</p> <p>No pain/discomfort Worst Pain/discomfort</p> <p>B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an</p>			

<p>acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time:</p> <ol style="list-style-type: none"> 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now. 			
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Do you have any suggestion regarding possible omission of items, modifications or rewording, or addition of any items?

Your feedback is highly appreciated.

Appendix B

Demographics and Revised Knowledge and Attitudes Survey Regarding Pain

Demographics

1. What is your gender?
 Female
 Male

2. Your age in years?
 20-30
 31-40
 41-50
 > 50

3. What is your highest level of education in nursing?
 Diploma degree
 College Bachelor's degree
 University Bachelor's degree
 Master's degree
 Doctorate degree

4. Overall experience as a Nurse?
 < 1 year
 1 – 4 years
 5 – 10 years
 > 10 years

5. What is your primary work location? _____

Knowledge and Attitudes Survey Regarding Pain

True/False – Circle the correct answer.

- T F** 1. Vital signs are always reliable indicators of the intensity of a patient's pain.
- T F** 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.
- T F** 3. Patients who can be distracted from pain usually do not have severe pain.

- T F 4.** Patients may sleep in spite of severe pain.
- T F 5.** Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.
- T F 6.** Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.
- T F 7.** Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent.
- T F 8.** The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.
- T F 9.** Research shows that promethazine (Phenergan) and hydroxyzine (Atarax) are reliable potentiators of opioid analgesics.
- T F 10.** Opioids should not be used in patients with a history of substance abuse.
- T F 11.** Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).
- T F 12.** Elderly patients cannot tolerate opioids for pain relief.
- T F 13.** Patients should be encouraged to endure as much pain as possible before using an opioid.
- T F 14.** Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent's assessment of the child's pain intensity.
- T F 15.** Patients' spiritual beliefs may lead them to think pain and suffering are necessary.
- T F 16.** After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.
- T F 17.** Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.
- T F 18.** Demerol 10mg intravenously is equal to 1mg of Morphine intravenously.
- T F 19.** If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.
- T F 20.** Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.
- T F 21.** Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.
- T F 22.** Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

Multiple Choice – Place a check by the correct answer.

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is:
- intravenous
 - intramuscular
 - subcutaneous
 - oral
 - rectal

24. The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is:
- intravenous
 - intramuscular
 - subcutaneous
 - oral
 - rectal
25. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?
- codeine
 - morphine
 - meperidine
 - tramadol
26. Which of the following IV doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours?
- Morphine 5 mg IV
 - Morphine 10 mg IV
 - Morphine 30 mg IV
 - Morphine 60 mg IV
27. Analgesics for post-operative pain should initially be given:
- around the clock on a fixed schedule
 - only when the patient asks for the medication
 - only when the nurse determines that the patient has moderate or greater discomfort
28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is:
- less than 1%
 - 1-10%
 - 11-20%
 - 21-40%
 - > 41%
29. The most likely reason a patient with pain would request increased doses of pain medication is:
- The patient is experiencing increased pain.
 - The patient is experiencing increased anxiety or depression.
 - The patient is requesting more staff attention.
 - The patient's requests are related to addiction.
30. Which of the following is useful for treatment of cancer pain?

- a. Ibuprofen (Advil)
- b. Morphine (Morstel)
- c. Gabapentin (Neurontin)
- d. All of the above

31. The most accurate judge of the intensity of the patient's pain is:

- a. the treating physician
- b. the patient's primary nurse
- c. the patient
- d. the pharmacist
- e. the patient's spouse or family

32. Which of the following describes the best approach for cultural considerations in caring for patients in pain:

- a. There are no longer cultural influences in Lebanon due to the diversity of the population.
- b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
- c. Patients should be individually assessed to determine cultural influences.
- d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).

34. The time to peak effect for morphine given IV is:

- a. 15 min.
- b. 45 min.
- c. 1 hour
- d. 2 hours

35. The time to peak effect for morphine given orally is

- a. 5 min.
- b. 30 min.
- c. 1 – 2 hours
- d. 3 hours

36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:

- a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued
- b. Impaired control over drug use, compulsive use, and craving
- c. The need for higher doses to achieve the same effect.
- d. a and b

Case Studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication.

Directions: Please select one answer for each question.

37) Patient A: Mr. Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Mr. Andrew's pain.

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort Worst

Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time.

1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.

38) Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Mr. Robert's pain:

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort Worst

Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time:

1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.