Pain Assessment and Management in Critically ill Intubated Patients in Jordan: A Prospective Study

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Abstract:

Objectives: The purpose of this study was to describe: (1) pain indicators used by nurses and physicians to assess pain, (2) pain management interventions (pharmacological and non-pharmacological) used by nurses, and (3) indicators used by nurses to verify pain intervention effectiveness.

Methodology: A total of 301 medical records of currently admitted patients from six different ICUs in Jordan were reviewed using a data collection instrument developed by Gélinas et al. (2004) Pain-related indicators were classified into non-observable (patient's self-reports of pain) and observable (physiological and behavioral) categories.

Results: Only 105 (35%) of a total 301 reviewed medical records contained pain assessment data. From these medical records, 15 pain episodes were collected altogether. Observable indicators documented 98% of the 115 pain episodes. Patients' self-reports of pain were documented only 1.7% of the time. In 78% and 46% of the 115 pain episodes, pharmacological and nonpharmacological interventions for pain management were documented, respectively. Only 37% of the pain episodes were reassessed with self- report (1%) and observable indicators (36%) to determine the effectiveness of the interventions.

Conclusion: Pain documentation for assessment, management, and reassessment was lacking and needs improvement.

Key words: Pain assessment; Pain management; critically ill; intubated patients.

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Introduction

Pain is a significant problem in critically ill patients. [1-5] Moderate to severe pain is a common phenomenon experienced by patients in the Intensive Care Units (ICUs).[5] Multiple intrinsic and extrinsic sources contributing to this pain include underlying health conditions or disease, trauma, and routine care procedures.[3,5,6] Care related pain is a broad concept includes painful procedures such as medical examination, and nursing care. In addition, those expected to be harmless and routine such as transportation within the hospital and waiting periods for diagnostic imaging or specific treatments such as radiotherapy or minor surgical interventions are also included in this concept.[7] Turning the patient has been reported by patients, to be the most painful procedure. [5, 8] Despite the frequency of these procedures, little is known about the level of associated pain, particularly, in critically ill patients.

Inadequate pain assessment and management have been associated with increased morbidity and mortality rates within the critical care settings. [2] Appropriate pain management has been shown to be associated with better overall patient results, shorter length of hospitalization, and reduced cost of care.[1] For these reasons, pain management in the ICUs should be a priority and considered as an ethical obligation for all health professionals.[9,10]

Appropriate assessment is the first step in managing pain for those who are critically ill. [6, 10] Patients' self- reports were found to be the most valid measure of pain for those patients. [11,12] Unfortunately, pain is difficult to be assessed within the ICU environment because patients are often unable to communicate verbally due to many reasons such as the severity of the disease, the presence of an endotracheal tube, and sedating agents.[2,13] However, in the absence of a self- reports, objective or observational pain measurements such as physiological and behavioral indicators can be used as alternative approaches to assess pain.[10] For this purpose, many objective pain measurements have been developed to assess pain in nonverbal adult patients in ICUs. These measurements have been categorized as either one dimensional (involving behavioral scales) or multidimensional (objective measures which evaluate two or more pain dimensions including behavioral and physiologic responses). Though some of these measurements show valid evidence for assessing pain in this group, there is no standardized measurement of pain in nonverbal ICU patients. [3] Furthermore, the lack of systemic comprehensive methods for assessing and treating pain in nonverbal ICU patients is one of the barriers to effective pain management in critical care settings. [12] As a result, pain remains underrated and under-treated in most critically ill patients. [9,14]

Many patients in ICU are mechanically ventilated, and managing this care is a fundamental component of clinical nursing practice. [16] Pain assessment and management in these patients need to be a priority with routine monitoring, assessment, reassessment, and clear documentation done to facilitate treatment and communication among healthcare members. [9, 10, 17] Documenting of patients' pain history, its treatment, and its reassessment actions is needed to improve practice and research.[17] Pain assessment and management documentation in critical care settings has been addressed in many studies. However, few studies have addressed documentation of pain assessment and management in critical care, especially in patients unable to verbally communicate. Most of these studies were conducted retrospectively. These studies highlight that pain documentation is often incomplete or inadequate with pain is undertreated.[9,17] Worldwide nursing documentation concerning pain assessment and management remains insufficient.[18] The lack of using and implementing pain flow sheets in the patients' medical records may contributes to this insufficiency.[9]

In Jordan, pain has been identified in the critical care units as a major stressor. [19] No studies have been found investigating the documentation of pain assessment and its management in critically ill intubated patients in Jordan. Limited research studies exist in documenting postoperative pain in surgical wards and post anesthesia care unit in Jordan. [18, 20] These studies revealed that little attention was given in the area of pain assessment and management by Jordanian nurses. [18, 19] Standardized pain assessment

and treatment strategies have not yet been developed in Jordan. There is a lack of established protocols in clinical settings for pain assessment and management. Thus, evaluation of the current pain assessment and management practices in many clinical areas is needed. In particular, there is a need to evaluate pain assessment and management in the Jordanian ICU environments.

This study evaluates the current pain assessment and management practices in Jordanian ICUs, with its goal to improve pain assessment and management. The three purposes of this study were to describe: (1) pain indicators used by nurses and physicians to assess pain, (2) pain management (Pharmacological and non-pharmacological interventions) used by nurses to reduce pain, and (3) pain indicators used by nurses to reassess pain to validate pain management efficiency.

Methods

Design, Sample, and settings

A descriptive exploratory design was used for this study. Relevant data was collected prospectively from 301 patients' medical records during their ICU admission. Data collection occurred between June 2010 and March 2011, from six different ICUs in three major hospitals in Jordan representing its major health sectors: military, governmental, and educational health (university teaching hospitals). All admitted patients in the selected ICUs were included in the study if they were (1)18 years or older, and (2) mechanically ventilated for a minimum of 72 hours. Patients were excluded if they were one of the following: (1) quadriplegic, (2) receiving neuromuscular blocking agents, and (3) extubated earlier than 72 hours.

Ethical approvals were obtained from research committees in all three hospitals before conducting the study. Prior to data collection in order to access the patients' medical record, as all the subjects were sedated, written informed consents were obtained from patients' nearest relatives, which is considered legal in Jordan. Identification codes were assigned to each subject to ensure anonymity and confidentiality.

Data collection procedure

Data came from patients' medical records was classified by using the second section of a data collection instrument developed by Gélinas et al [9] based in part, on Melzack's pain theory and other existing tools measuring pain. The content validity of the instrument was verified by experts in nursing and measurement.

The instrument was organized to collect two types of data: (1) general and medical information such as demographic data (age, gender) and other sample characteristics (reason for admission and method of intubation) (Table 1) and (2) physicians' and nurses' notes on patients' pain. Physician and nurse documentation was organized differently. Since the physicians were not at the patients' bedsides on a continual basis, all information on pain documented in the physicians' notes was considered and presented by the number of medical records in which pain assessment indicators were included. As nursing documentation is a continual process, a total of 2 to 6 pain episodes in chronological order were collected from each medical file, reflecting nursing documentation of pain assessment, management and reassessment.

All medical records of patients who met the inclusion criteria were searched for the presence of nurse and physician documentation on the patients' pain, from the time of intubation through the first 72 hours of being mechanically ventilated, in order to gain more comprehensive data about the pain assessment and management provided to them.

Based on Gélinas et al [9], both physician and nurse documentation was classified into different categories. For physician documentation on pain, data collection was classified into three main categories: non-observable indicators, observable indicators, and response to treatment. Each of these main categories had different subcategories (Table 2). For nursing assessment and reassessment pain documentation these data were classified into two main categories of non-observable indicators and observable indicators, also with different subcategories (Table 3). Furthermore, pain management provided by nurses was additionally categorized into pharmacological

and non-pharmacological interventions, each divided into its respective categories (Table 4).

Data Analysis

Descriptive statistics (including frequency distributions and measures of central tendency) were used to organize and summarize the data. The statistical software SPSS (version 15) was used for data analysis. Frequencies and percentages were calculated for each pain-related indicator in assessing, reassessing and managing of pain.

Results

Sample characteristics

A total of 301 patients were included in this study. Most of the patients were male (62.1%), with a mean age of 60 years (SD = 16.7 years). The majority of the patients (87.4 %) were intubated via an endotracheal tube, and the rest of them were intubated via tracheostomy. Details of these sample characteristics are presented in (Table 1).

Table 1
Patients' characteristics and methods of intubation (n=301)

Characteristics	n (%)
Age (Mean, SD)	60.77, 16.72
Gender	
Male	187 (62.1)
Female	114 (37.9)
Reason for Admission	
Emergent cases	178 (59.1)
Cardiopulmonary	74 (24.6)
Abdominal	34 (11.3)
Renal	15 (5.0)
Method of Intubation	
Endotracheal tube	263 (87.4)
Tracheostomy tube	38 (12.6)
Total	301 (100%)

Pain assessment and reassessment

Regarding physicians assessment of pain, only 25 % of the medical records included pain assessment indicators. These records were further analyzed in terms of the presence of pain indicators (Table 2). In the majority of these records (97%), physicians did not document information on patients' self-reports of pain as a non-observable pain indicator. Observable indicators that could imply pain were categorized into body movements, ventilator compliance (behaviors while intubated), neuromuscular signs, means of communication, facial expression and reaction to physical examination. Specifically, Reactions to physical examination were the most often recorded observable pain indicator (48.7%). Patient's response to treatment was often documented in the physicians' notes (18.5 %). Patients' body movements and ventilator compliance were sometimes recorded by physicians (15.8% and 11.8%, respectively). Other indicators such as facial expressions were seldom documented (2.6%). Finally, physicians' notes related to neuromuscular signs and means of communication were absent from all records.

Table 2
Pain assessment in physicians' notes (n=76)

Type of pain indicators	Medical records in which indicators appeared n (%)
Non-observable indicators:	
Patient's self- reports of pain	2 (2.6)
Observable indicators:	
Body movements	12 (15.8)
Compliance with ventilator	9 (11.8)
Neuromuscular signs	0 (0)
Means of communication	0 (0)
Facial expression	2 (2.6)
Reaction to physical examination	37 (48.7)
Responses to treatment	14 (18.5)
Total	76 (100)

In the nursing assessment and reassessment of pain, results were divided into two time periods: patients' pain assessment before an intervention, and the reassessment of their pain up to an hour after the interventions (Table 3). Although nurses were at the patients' bedsides on a continual basis, only 105 of the 301medical records reviewed contained pain assessment data in the nurses' documentation. Within these 105 medical records, only 115 pain episodes of the stated pain indicators appeared in the nurses' documentation. Some of the medical records may have included more than one pain episode and one pain episode may include more than one type of pain indicator.

Regarding the non-observable indicators used by nurses to assess patients' pain, the use of patient's self- reports of pain was mentioned only twice (1.7%). Specifically, the notes stated that “the patient reported that he is free of pain” this could be occurred during a weaning trial for extubation. However, information about the methods used to obtain the patient's self- reports of pain including the using of the pain scale were not documented.

Observable indicators were the most commonly documented pain indicators. Behavioral indicators were the most commonly recorded observable indicators (68%). Particularly, body movements were the most frequently recorded behaviors (40.8%). Nurses often recorded information such as agitation, and pulling tube restraints as body movements they assumed that these were related to pain. Compliance with ventilator behaviors were recorded in (27.8%) of the 115 pain episodes, in particular, biting the endotracheal tube and coughing were the most often documented ventilator behaviors. Nurses mentioned information about neuromuscular signs that could be related to pain such as muscular rigidity and spastic body in only (3.5%) of the 115 pain episodes. In identifying such pain, nurses documented “kitting the bed with hands” (hand restlessness), and “pointing to something” in (6.1%) of the 115 pain episodes. Moreover, facial expressions such as grimacing were recorded in some of the pain episodes. Finally, rest indicators such as “patient seemed unable to sleep” and notes on patients' neurological states such as their reaction to pain were rarely documented by nurses in the collected pain episodes.

Physiological pain indicators were documented in (30%) of the 115 pain episodes. The most frequently documented potential physiological response to pain was respiratory (22.6%), with decreased oxygen saturation being the most recorded respiratory response. Also, potential cardiovascular responses to pain such as increased blood pressure, and cardiac arrhythmias were often recorded. The least documented physiological responses were cerebral responses such as increased intracranial pressure (1.7%).

On the subject of pain reassessment, almost (63%) of the 115 pain episodes were

not reassessed by nurses after pain interventions to verify the effectiveness of the intervention. The nurses' notes up to an hour after providing an intervention were classified into the same categories as those in the initial assessment (Table 3). Concerning the results of the nurses' documentation of pain assessment, only one reassessment indicated a patient had reported relieved pain. No information, however, was documented about the methods used to obtain the patient's self-report of no pain or using a pain scale.

Behavioral indicators were most often used observable indicators to reassess patients' pain. Rest quality was the most often recorded behavioral indicators (12%) of possible relieved pain, including “the patient became quiet,” “patient seems restful in bed” and “patient seems more comfortable”. However, the phrase, “patient seems restless”, was documented by nurses for several episodes as an indicator of unrelieved pain. Body movements were commonly used as indicators evaluating the effectiveness of pain management interventions (8%). “Agitation” and “pressed the bed mattress with legs” were often used in nurses' documentations as a sign of unrelieved pain. Concerning compliance with ventilator behaviors such as biting the tube and neuromuscular signs such as body rigidity were rarely mentioned as signs of unrelieved pain. However, no information was recorded related to the other indicators (Table 3).

Regarding the physiological indicators, the results showed that respiratory and cardiovascular responses which could be related to pain relief were often recorded in patients' medical records (8% and 4%, respectively). On the other hand, cerebral responses to pain management interventions were not reassessed. Global statements related to the absence of pain such as “stable patient's conditions”, and “stable vital signs”, were recorded as evidence of the effectiveness of pain management interventions in (2%) of the 115 pain episodes (Table 3).

Table 3
Pain assessment and reassessment in nurses' note (n=115)

Type of pain indicators	Pain episodes for which pain assessment indicators appeared in medical records n (%)	Pain episodes for which pain reassessment indicators appeared in medical records n (%)
Non-observable indicators:		
Patient's self- reports of pain	2 (1.7)	1 (1)
Observable indicators:		
Physiological indicators		
Cardiovascular responses	22 (19.1)	5 (4)
Respiratory responses	26 (22.6)	9 (8)
Cerebral responses	2 (1.7)	0 (0)
Global responses	0 (0)	2 (2)
Behavioral indicators		
Body movements	47 (40.8)	9 (8)
Compliance with ventilator	32 (27.8)	1 (1)
Neuromuscular signs	4 (3.5)	1 (1)
Means of communication	7 (6.1)	0 (0)
Facial expression	5 (4.3)	0 (0)
Rest quality	3 (2.6)	14 (12)
Neurological state	2 (1.7)	0 (0)

Pain management

Pain management provided by nurses included two main categories: pharmacological and nonpharmacological pain management interventions (Table 4). Pharmacological pain management interventions were documented in (78%) of the 115 pain episodes. Pharmacological pain management was assessed in relation to the administration of analgesics or sedatives and other therapies such as medications administered via epidural catheter. For some patients, analgesics were combined with sedative agents. However, Midazolam Hydrochloride and Remifentanil Hydrochloride were the sedatives most often administered. Morphine Sulfate was the most commonly used analgesic medications. Other pharmacological pain management interventions such as epidural perfusion were not used. A small percentage of patients received sedative or analgesic medications by continuous infusion (21.7% and 15.6%, respectively).

Documentation of non-pharmacological pain management interventions occurred in (46%) of the 115 pain episodes. Endotracheal suctioning (26.9%) was the most often used non- pharmacological intervention to relieve pain. Moreover, positioning and safety orienting measurements such as the use of restraints, adjustment of ventilator and the checking of arterial blood gases were also recorded (9.5% and 7.8% respectively). Other comfortable procedures such as oral care and massage were rarely recorded (1.7%) (Table 4).

Table 4
Pain management in nurses' note (n=115)

Type of pain intervention	Pain episodes in which interventions were documented n (%)
Pharmacological	
Both analgesics and sedatives	11 (9.5)
Sedatives only	48 (41.7)
Analgesics only	31 (26.9)
Others	0 (0)
Continuous infusion	
Analgesic	18 (15.6)
Sedative	25 (21.7)
Nonpharmacological	
Positioning	11 (9.5)
Endotracheal suctioning	31 (26.9)
Safety oriented	9 (7.8)
Other comfort measures	2 (1.7)

As previous research suggests that pain documentation in medical files is incomplete or in adequate, additional analyses were conducted to compare the findings of this study with results from previous studies addressed documentation of pain assessment and management in critically ill intubated patients (Table 5). The study of Gélinas et al. (2004) [9] was selected because it was conducted in similar settings of the current study. In their study Gélinas and colleagues reviewed 52 medical records in which they found 183 pain episodes. Some of the medical records may have included more than one pain episode and one pain episode may include more than one type of pain indicator.

Table 5
Comparison of physicians and nurses documentation of pain

Type of pain indicators	Results of the current study medical files (N=301), pain episodes (N=115) n (%)	Results of Gélinas et al. study medical files (N=52), pain episodes (N=183) n (%)
Pain assessment in physicians' notes (n = # of medical files)		
Non-observable indicators	2 (0.6)	1 (1.9)
Observable indicators	60 (19.9)	54 (103.8)
Responses to treatment	14 (4.7)	7 (13.5)
Pain assessment, reassessment in nurses' note (n = # of pain episodes)		
Non-observable indicators	2 (0.6), 1 (0.3)	53 (29), 14 (7.7)
Observable indicators	50 (43.5), 16 (13.9)	52 (28.4), 23 (12.6)
Physiological indicators	100 (86.9), 25 (21.7)	183 (100), 110 (60.1)
Behavioral indicators		
Pain management in nurses' note (n = # of pain episodes)		
Pharmacological	90 (78.2)	163 (89)
Nonpharmacological	53 (46.0)	41 (22)

Discussion

The authors believe this is the first study to evaluate prospectively pain assessment and management in a large population of hospitalized, critically ill, intubated patients in Jordan. One limitation needs consideration with the present study findings. This study used a convenience sample from three hospitals at Amman. Thus, these results might not be generalizable to all hospitals in Jordan. However, these hospitals are the major hospitals in Jordan and provide care for different patients from all regions in the country.

The results of this study reveal that pain assessment and management in critically ill, intubated patients is inadequate. This is consistent with the findings of previous research in the same area. [9] Previous studies have reported that there is a problem with inadequate pain management in hospital settings.[5,18,21] Such studies conducted in critical care settings found that nurses working in critical care settings often underrate and under treat pain. [21] Documenting pain assessment, its management and its reassessment is infrequent and inconsistent. [5,18,21] Deficiencies and inconsistencies exist in nurses' knowledge regarding pain management, in addition to persistent of inaccurate, misconceptions about patients' pain.[21,22] These misconceptions include but are not limited to, inaccurate concerns about addiction, tolerance, respiratory depression, and other side effects.[23]

Pain assessment

Physicians' and nurses' notes included two types of pain indicators: non-observable and observable. The results indicated that non-observable indicators were rare in both notes. Physicians' and nurses' documentations included no information about the methods used to obtain the patients' self- report of pain and its intensity, and were limited to reporting only the presence or absence of pain. This might be explained by the presence of an endotracheal tube in the majority of patients which was found to be a major barrier for adequate assessment and management of pain. [10] However, in the case of those who could communicate their pain such as those undergoing ventilator weaning, no evidence indicated patients' self- reports of pain. This could be explained in several ways: nurses were too busy to document what they were doing to assess and manage pain in those

patients, a lack of hospital policies emphasizing the importance of using pain scales, and the absence of well established guidelines concerning pain assessment and management in critically ill patients.

Regarding observable pain indicators (considered as potential indicators of pain in both physician and nurse notes); physiological indicators were recorded only in the nurses' notes. Checking physiological indicators such as vital signs are a routine component of nursing care and not routinely done by physicians. Some of the physiological indicators such as respiratory indicators (rate, oxygen saturation), and cardiovascular indicators (blood pressure, and cardiac rate) were recorded more often than other indicators. These indicators are easily obtainable since they are continuously monitored in most critically ill patients, and this may explain the using of them as common indicators. Other indicators needing special preparations to be obtained and monitored in specific cases such as cardiac output, and intracranial pressure were rarely recorded in nurses' notes.

Although increased blood pressure and increased cardiac rates were found to be associated with acute pain in previous studies, [24] other studies found that these physiological indicators are not suitable indicators for the presence of pain. [6, 15] In this study, physiological indicators were recorded less frequently than behavioral indicators in nurses' notes, which was consistent with the findings of a previous study. [9]

Many subcategories of behavioral indicators were noted in both the physicians' and the nurses' notes with body movement being the most frequently recorded. Ventilator specific behaviors were the second most frequently recorded behavioral indicator. This was a positive indicator in the physician and the nurse pain documentation. Ventilator compliance is considered to be a pain related indicator in critically ill intubated patients. Payen et al [15] used ventilator specific behaviors along with other items in developing the Behavioral Pain Scale.

In the current study, facial expressions were less often recorded. Previous research indicates that certain behaviors such as grimacing facial expression, rigid body movements, and verbal responses are more specifically related to pain. [9,15,25] Body language can be used as a means of identifying the need for pain management interventions or reassessing the effectiveness of these interventions provided to relieve pain, especially in patients who are unable to communicate. [25]

Some behavioral indicators in the present study were recorded by either physicians or nurses, but not by both. For example, reaction to physical examinations was the most commonly recorded pain related behavior in physicians' documentation. However, nurses noted rest quality, neuromuscular signs, means of communication, and neurological state, as indicators of pain. These findings were similar to the results found by Gélinas et al. [9]

The literature has indicated that critically ill patients, including those intubated or sedated, are able to communicate extensive information about their pain levels. Happ et al [25] found that nonspeaking nonsurviving ICU patients who are mechanically ventilated communicated to nurses, other clinicians, and family members mainly through head nods, mouthing of words, and gestures, despite serious terminal illness and the use of sedatives and narcotic analgesics. [25] Pain is a subjective experience, and therefore self-report of pain is the single most reliable indicator of the existence and intensity of pain. [27] Whenever possible, critically ill patients should be given chance to rate their pain. [5] Physiological indicators are not a reliable measure of pain in the ICUs as they can be affected by medications. [7,15] In addition, behavioral indicators are not always accurate reflections of pain as these indicators are often associated with anxiety, and emotional or physiological distress. Absence of these behaviors does not denote the absence of pain. [25, 27] Yet, in the current study both physicians' and nurses' notes rarely used non-observable indicators (patient's self- reports of pain) and instead used observable indicators (physiological and behavioral) more often.

Regarding pain reassessment, the results revealed that nurses rarely re-evaluated the effectiveness of pain management interventions. The reason for this could be that nurses do in fact reassess pain intervention effectiveness but they do not document this, it can be construed that re-documentation is not

required or unnecessary as the pain medication was given and worked. The nurse is then available for other nursing activities other than spending time writing pain reassessment notes. This is consistent with previous studies. [9, 18]

Only one third of pain episodes were reassessed by nurses after providing pain management interventions. Documentation did not use patients' self- reports of pain in order to evaluate the effectiveness of the pain management interventions provided. As in the pain assessment section, observable indicators were more frequently used than non-observable indicators. After pain management interventions administered, some documentation still included the persistence of pain, and pain levels decreased or relieved. Body movements and rest quality were the most commonly recorded indicators for the pain management intervention effectiveness.

Many pain indicators were used in the pain assessment such as cerebral responses, means of communication, facial expression, and neurological state. However, none of these responses appeared in the reassessment documentation, reinforcing the inconsistency of the pain assessment and management documentation. Lack of documentation did not simply mean that nurses did not use reassessment methods; it was just not documented. The study results reinforce the importance of using clinical practice guidelines to manage pain in critically ill patients. These guidelines emphasize pain reassessment and its documentation regularly over the time using the methods of the initial pain assessment appropriate for each individual. [10]

Pain management

The current study revealed that pain management in nurses' documentation included both pharmacological and non-pharmacological interventions. Regarding pharmacological interventions, sedative agents were most often administered. At times, sedative agents were administered along with analgesic agents, but less frequently than analgesic agents alone. The study results revealed that pain in critically ill patients remains under-treated. These results are consistent with a previous study [21] indicated that pain management in hospital settings is inadequate. In addition, previous studies have reported that individuals who were unable to communicate their discomfort are at greater risk for inadequate analgesia due to the nurses' misconceptions toward the use of opioids such as the risk of possible addiction that can hinder adequate pain management.[10, 23] Niekerk, Hons, and Martin[28] have detected a variety of barriers for optimal pain management provided by nurses including; nurse-patient ratio (especially in the critical care units), lack of nurse- physician cooperation, inadequate prescription of analgesic agents, physicians 'lack of knowledge concerning pain assessment and management, inappropriate perception of pain and insufficient knowledge about the patients.

The findings of the current study indicate that non-pharmacological interventions were used less frequently than pharmacological interventions. This is consistent with Gélinas et al [9] results which found that nonpharmacological interventions were documented in less than 22% of the pain episodes collected from patients' medical records. However, pharmacological interventions were documented in 89% of these episodes.

Conclusion

This study evaluated nurse and physician pain assessment and documentation in critically ill patients in Jordan. Conclusions about quality of pain relief are difficult to state due to insufficient pain documentation in the medical record. Using recognized pain scales for pain assessment and reassessment in critically ill patients in ICUs need implementation in Jordan by developing and reinforcing clearly articulated hospital policies. Further studies on this phenomenon are needed to address facilitators and barriers to utilizing existing globally recognized pain scales in Jordan and the Arab world.

Acknowledgement

The authors would like to thank the Applied Science Private University for supporting this research. The study was made possible through help and support from the scientific research deanship at the Applied Science Private University, to which the authors are deeply appreciative. In addition, the authors

would like to thank Dr. Mohammed Yaqoup for helpful comments on this article.

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