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Barriers and Enablers to Pain Management in Emergency Department

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Abstract
This paper is just a sample template for the prospective authors of IISTE Over the decades, Background: Despite the growing interest in pain management (PM) around the world, under treatment of pain is still a major problem faced by the healthcare professionals in emergency departments (EDs). Identifying barriers and enablers of PM among nurses and physicians is important to overcome factors that hinder effective PM. Aim: To explore the barriers and enablers of PM among nurses and physicians working in the Jordanian EDs. Design: Descriptive cross-sectional design, using self-reported questionnaire. Result: Nursing participants reported moderate mean score of barriers (M6.68), while physicians reported (6.65). On the hand, nurses' participants reported a mean of enablers (6.68), while physicians reported (6.65).There was no significant difference in the barriers and enablers of PM between nurses and physicians. However, among all enablers of PM, "following a protocol for pain assessment" and "treating pain as the fifth vital sign" contribute to optimal PM care?" differed between nurses and physicians. The least frequently reported barrier of PM for nurses and physicians was "Lack of intravenous access", which was reported by 66 nurses (39.1%) and 25 physicians (35.2%). The least frequently reported enabler of PM for both physicians and nurses was "Do you have a PM Champion in your area?" No significant correlation between the demographic characteristics of nurses and physicians and the total scores of enablers and barriers of PM was found. Conclusion: There is a need to adopt an intervention to overcome barriers of PM by training sessions and monitor side effects of medication, as well as enhance the enablers of PM by using of posters and focus on pain policies and protocols.
Keywords: Pain Management; Enablers; Barriers; Nurses; Physicians; Emergency Departments.
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1. Introduction

Pain is one of the most common symptoms that make patients visit emergency department (ED) (Alavi, Aboutalebi, & Sadat, 2016; Ferrell, Coyle, & Paice, 2015). Among all hospitals departments, ED is the most to continuously face the challenge of treating pain because it has a complex and dynamic environment with patients who have various conditions (Morris, Boyle, Beniuk, & Robinson, 2012). Moreover, many of the patients visiting ED are suffering from chronic diseases such as advanced cancer, respiratory failure, heart failure, and dementia (Wu, Newman, Lasher, & Brody, 2013). Therefore, pain assessment and management in ED constitute a major concern for the healthcare professionals (HCPs) in ED (Calil, Pimenta, & Birolini, 2007). Pain assessment is an important procedure that helps to diagnose and treat the causes of pain, where proper assessment of pain can help to choose the proper type of analgesia and estimate the urgency of the needed pain relief (Baharuddin, Mohamad, Abdul-Rahman, Ahmad, & Him, 2010).

Under-treatment of pain is a worldwide serious problem in different hospitals settings (Darawad, Al-hussami, Saleh, & Al-sutari, 2012) and especially in EDs (Belayachi et al., 2014), which might cause negative physical, psychological, and social consequences for patients and their families including increasing morbidity and mortality rates (El-Aqoul, Obaid, Yacoub, Al-Najar, Ramadan, & Darawad, 2018; Friesgaard, Paltved, & Nikolajsen, 2017). Under-treatment of pain may cause problems to patients such as decreased appetite, decreased physical activity, poor social communication, sleep disorders, and reduction in quality of life (Pretorius, Searle, & Marshall, 2015).

There are many barriers that affect the proper pain management (PM) in EDs, which can lead to under-treatment of pain. Such barriers include unawareness of pharmacological managements and poor educational background of nurses and physicians about the pain in EDs (Qadri, Abdalrahim, Majali, Stomberg, & Bergbom, 2012; Darawad, Alnajar, Abdalrahim, & El-Aqoul, 2017), lack of time to adequately assess and control patients pain (Elcigil, Maltepe, Esrefgil, & Mutafoglu, 2011), inability to monitor analgesia side effects, patient reluctance to report pain, lack of intravenous (IV) access, and inability to determine the adequate history of allergy (Modanloo et al., 2010; Pretorius et al., 2015). On the other hand, there are many factors that act as enablers of PM in EDs such as pain champion program, which can be achieved by incorporating unit-based pain nurses into all clinical areas and providing high-quality PM (Pretorius et al., 2015). Other factors include PM education, applying pain protocols in EDs, provision of adequate staff and treating pain as the fifth vital signs (Bennetts, Campbell-Brophy, Huckson, & Doherty, 2012; Pretorius et al., 2015).

All HCPs should have a clear, concise and suitable evidence based information on pain and its appropriate management (Rortveit et al,. 2015). Although physicians had a major role for describing the type, dose, and

frequency of analgesia, nurses are responsible for administering pain medication and assessing pain before and after administering pain medication (Modanloo et al., 2009).

In Jordan, literature has indicated a lack of knowledge regarding enablers and barriers to PM by nurses (Al Qadire & Al Khalaileh, 2014; Alnajar, Darawad, Alshahwan, & Samarkandi, 2017; D'emeh et al., 2016). Previous studies in Jordan have also revealed some barriers that affected PM as patient-related barriers and nurse-related barriers (Al Qadire, 2012). Although many of the studies in Jordan discussed PM, but there are limited studies have conducted to investigate the barriers and enablers of PM especially in EDs among nurses and physicians. Investigating this area of research could be helpful to tailor specific interventions to enhance PM in EDs in Jordan. Therefore, the aim of this study was to explore barriers and enablers to effective PM in EDs among nurses' and physicians at Jordanian hospitals. Specifically the current study tried to answer the following research questions:

1. What are the barriers to PM as identified by nurses and physicians working in EDs in Jordanian hospitals?
2. What are the enablers of PM as identified by nurses and physicians working in EDs in Jordanian hospitals?
3. Is there a difference in barriers and enablers of PM according to the demographic characteristics of nurses and physicians?

2. Methods

2.1 Design and Setting

A descriptive cross-sectional design was utilized using self-reported questionnaire. This study was conducted in the EDs of four hospitals located at the north and middle regions of Jordan representing two healthcare sectors in Jordan; public and educational hospitals.

2.2 Sampling

A non-probability convenience sampling was utilized. To recruit the sample of this study, the target populations included all Jordanian registered nurses and physicians working at the ED in Jordan. To be included, nurses had to be registered nurses. For both nurses and physicians, they had to have experience of at least three months in ED to ensure that they are oriented to PM policies and procedure in their units.

2.3 Instruments

A self-reported questionnaire was used to collect data.For the purpose of the current study, the researchers have developed the demographic survey, which inquired about the socio-demographic variables and their experiences in ED. The second section asked about the barriers of PM using 14 Yes/No questions with "Yes" means the barrier always interferes with PM while "No" means the barrier never interferes with PM. The barrier section was originally prepared by Tanabe and Buschmann (2000) who established content validity for this tool by seven experts (3 pain experts, 3 emergency nursing experts, and 1 gerontology nurse expert). The third questionnaire contained 10 Yes/No questions (Pretorius et al., 2015) about the enablers of PM, with "Yes" means it is an enabler of PM and "No" means it is not an enabler of PM. At the end of questionnaires, additional space is added to allow participants to suggest any other barriers or enablers. Content validity of barriers and enablers questionnaires was assured by consulting three Jordanian emergency experts who proved the relevance of the items, cultural and clinical suitability of the tools for Jordanian ED nurses and physicians. Further, the researchers conducted a pilot testing among 10 nurses and 10 physicians who reported no problems in understanding the items of the tools.

2.4 Data Collection

After obtaining the required ethical approvals, the primary researcher contacted the head nurses and physicians in the selected hospitals prior to data collection and asked for their cooperation. Title and purpose of the study were announced by using wall posters in each participating ED to allow all nurses and physicians to have a chance to participate in this study. The researcher visited the EDs in the selected hospital in different shifts. The cover letter was attached to explain the aim of this study and commitment was kept for their privacy to be ensured and documented. No identification information was requested from participants. Nurses and physicians who agree to participate were given about 15 minutes to fill the questionnaire, and the opportunity to ask any questions.

2.5 Ethical consideration

Ethical approval was obtained from the Scientific Research Committee at the school of Nursing- the University of Jordan, and from the institutional review board (IRB) of the selected hospitals. Each participant was provided information about this study explaining the purpose and voluntary nature of participation. Returning the filled

out questionnaires was considered as an implied consent.

2.6 Data analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS version- 21.0). Descriptive analyses were presented to describe the sample and study variables. To evaluate the differences in barriers and enablers of PM according to demographic characteristics, a series of independent sample t test and Pearson correlation were run.

3. Results

3.1 Sample characteristic

The total number of participants was 240 out of 254 invited HCPs (Response rate= 94.5%), including 169 nurses (70.4%), and 71 physicians (29.6%). Most nurses (*n*=52.1%) and physicians (*n*= 54, 76.1%) were male. Most nurses (*n*=149, 88.2%) had a Bachelor degree in nursing, while most physicians (n=55, 77.5%) were residents. Only 94 nurses (55.7%) and 34 physicians (47.9%) reported that they are competent in PM. In addition, only 37 nurses (21.9%) and 13 physicians (18.3%) reported participating in PM courses. The most commonly reported PM course by nurses was "Pain management", while the most commonly reported PM course by physicians was "palliative care". The mean training hours in PM was 9.1 hours for nurses (*SD*= 12.97) and 5.5 hours for physicians (*SD* = 3.71). The mean age was 29.1 years (*SD*=6.07) for nurses, and the mean age was 29.6 years (*SD*=4.49%) for physicians. The mean overall experience for nurses was 6.1 years (*SD*= 4.41) and for physicians was 11.7 (*SD*=11.72). The mean experience in ER for nurses was 4.2 (*SD*=3.48) and for physicians was 6.7 (*SD*=1.62), and the mean experience in the current hospital for nurses was 3.9 (*SD*= 3.31) and for physicians was 9.1 (*SD*= 2.78).

3.2 Barriers of PM among ED Nurses and Physicians

The mean score for barriers among nurses was 9.26 out of 14, (*SD*= 2.59), while the mean score for barriers among physicians was 9 (*SD*= 2.80). As shown in Table 1, there was no statistically significant difference (*t*= 0.66, *df*= 238, *P*=.51) in the mean barriers of PM between nurses and physicians.

Table 1: Barriers of PM among ED nurses and physicians

Population	Min	Max	Mean (SD)	*t*	*df*	*P*	95% CI
Nurses	4	14	9.26 (2.59)	.66	238	.51	-.49 - .98
Physicians	2	14	9.01(2.80)				

As shown in Table 2, there was no statistically significant difference in any of the items regarding barriers of PM. The most frequently reported barrier of PM for nurses was *"Inadequate initial assessment of pain and re-assessment of pain relief "*, which was reported by133 nurses (78.7%), followed by *"The responsibility of caring for other acutely ill patients in addition to a patient with pain"*, which was reported by 130 nurses (76.9%), while the least frequently reported barrier of PM for nurses was *"Lack of IV access*", which was reported by only 66 nurses (39.1%). For physicians, the most frequently reported barrier of PM was *"Inability to monitor for side effects when patients leave the department for diagnostic procedures",* (*n*=58, 81.7%), followed by *"Inadequate staff knowledge of PM principles"* which was reported by 57 physicians (80.3%) and *"The responsibility of caring for other acutely ill patients in addition to a patient with pain.",*(*n*=55, 77.5%), while the least frequently reported barrier of PM for physicians was *"Lack of IV access",* which was reported by only 25 physicians (35.2%).

Table 2: Comparing nurses and physicians` perceived barriers of PM in ED

Item	Nurses (N=169) Yes n (%)	Physicians (N=71) Yes n (%)	*p*
1. The responsibility of caring for other acutely ill patients in addition to a patient with pain.	130 (76.9)	55 (77.5)	.927
2. Patients' reluctance to report pain	107 (63.3)	43 (60.6)	.688
3. Patients, reluctance to take opioids	109 (64.5)	47 (66.2)	.801
4. Nursing & physicians' staff reluctance to give opioids	107 (63.3)	41 (57.7)	.468
5. Inadequate initial assessment of pain and re-assessment of pain relief	133 (78.7)	49 (69)	.110
6. Inadequate staff knowledge of PM principles	127 (75.1)	57 (80.3)	.391
7. Lack of time to adequately assess and control pain	126 (74.6)	54 (76.1)	.811
8. The inability to medicate until a diagnosis is made	108 (63.9)	47 (66.2)	.743
9. The inability to determine adequate history allergies	90 (53.3)	38 (53.5)	.973
10. The patient's use of alcohol or other recreational drugs.	121 (71.6)	42 (59.3)	.063
11. Lack of intravenous access	66 (39.1)	25 (35.2)	.584
12. Inability to monitor for side effects when patients leave the department for diagnostic procedures	127 (75.1)	58 (81.7)	.271
13. Time to find narcotic keys	87(51.5)	30 (42.3)	.204
14. The need for frequent monitoring post- intravenous opioids	127 (75.1)	54 (76.1)	.882

3.3 Enablers of PM among ED Nurses and Physicians

Table 3 indicates that the mean score for enablers among nurses was 6.68 (*SD*= 1.47), and6.65 (*SD*=1.62) among physicians, which were not significantly different (*t*= 0.15, *df*= 238, *P*= .88).

Table 3: Enablers of PM among Nurses and Physicians Working in ED

Population	Min	Max	Mean (SD)	*t*	*df*	*P*	95% CI
Nurses	4	9	6.68 (1.47)	.15	238	.88	-.39 - .45
Physicians	2	14	6.65(1.62)				

Two items have significantly differed between nurses and physicians including item 5 *"Do you follow a protocol to assess a patient's pain?"* that was reported by more nurses (65.7%, *n*= 111) than physicians (50.7%, *n*= 36), and item 8 *"Does treating pain as the fifth vital sign contribute to optimal PM care?"* that was reported by more physicians (88.7%, *n*= 63) than nurses (78.1%, *n*= 132). The most frequently reported enabler of PM (Table 4**)** for nurses was *"Would posters of PM tools like this improve the accuracy of pain score assessment and documentation of pain score?",* which was reported by 155 nurses (91.7%), followed by *"Does nurse and physicians' initiated analgesia protocols improve PM for ED patients?"* which was reported by 147 nurses (87%), while the least frequently reported enabler of PM for nurses was*"Do you have a PM Champion in your area?*"which was reported by 56 nurses (33.1%).In contrast, the three most frequently reported enablers of PM for physicians (Table 4) were *"Does nurse and physicians' initiated analgesia protocols improve PM for ED patients?", "Will attending PM courses/conference /in-service courses improve nursing and physicians' management principles?,", and "Does treating pain as the fifth vital sign contribute to optimal PM care?",* as each of these three enablers was reported by 63 physicians (88.7%). The least frequently reported enabler of PM for physicians was *"Do you have a PM Champion in your area*?" (23.9%, *n*= 17).

Table 4: Comparing nurses and physicians' perceived enablers of PM in ED

Item	Nurses (N=169) Yes n (%)	Physicians (N=71) Yes n (%)	*P*
1. Does nurse and physicians' initiated analgesia protocols improve PM for emergency department patients?	147 (87)	63 (88.7)	.713
2. Do you have a PM champion in your area?	56 (33.1)	17 (23.9)	.161
3. Would PM champion improve pain assessments, management and nursing knowledge of pain?	110 (65.1)	51 (71.8)	.312
4. Will attending PM courses/conference /in-service courses improve nursing and physicians' management principles?	141 (83.4)	63 (88.7)	.293
5. Do you follow a protocol to assess a patient's pain?	111 (65.7)	36 (50.7)	.034
6. Does workload impact your ability to assess and manage patient's pain?	141 (83.4)	58 (81.7)	.742
7. Would regular audits on PM motivate nurses and physicians to achieve the goal of optimum PM?	136 (80.5)	60 (84.5)	.461
8. Does treating pain as the fifth vital sign contribute to optimal PM care?	132 (78.1)	63 (88.7)	.045
9. Would posters of PM tools like this improve the accuracy of pain score assessment and documentation of pain score?	155 (91.7)	61 (85.9)	.172

*P value < .05 is considered significant

3.4 Comparing PM Barriers and Enablers according to Participants' Demographics

As presented in Table 5, only the mean score of enablers of PM among nurses was significantly different between the public and educational hospitals (t= 2.62, df= 167, P= .007). Regarding the barriers of PM, the mean score was higher among nurses working in educational hospitals (M=9.42, SD= 2.73) compared with those working in public hospitals (M= 8.76, SD= 2.05). Regarding barriers of PM, the mean scores were higher among physicians working in public hospitals (M=9.62, SD=2.06) compared with those working in educational hospitals (M= 8.83, SD= 2.94) but this difference were not statistically significant. Table 6 shows that none of the continuous nurses' sample characteristics had a significant correlation with enablers and barriers of PM except for age, which was significantly correlated with the mean score of enablers of PM (r=.167, P< .05). However, none of the continuous sample characteristics of physicians has significantly correlated with enablers and barriers of PM as shown in Table 6.

Table 5: Comparing PM Barriers and Enablers according to Participants' Specialty and Type of Hopsital

Population	Variable	Type of Hospital	Mean (SD)	*t*	*df*	*P*
Nurses	Barriers	Public	8.76 (2.05)	1.67	167	.099
		Educational	9.42 (2.73)			
Nurses	Enablers	Public	6.16 (1.52)	2.62	167	.007
		Educational	6.85 (1.40)			
Physicians	Barriers	Public	9.62 (2.06)	.99	69	.32
		Educational	8.83 (2.94)			
Physicians	Enablers	Public	6.43 (1.45)	.58	69	.55
		Educational	6.70 (1.67)			

Table 6: Correlates of PM Barriers and Enablers Participants' Continuous Demographics

	Variable		
	Age	Total experience	ER experience
Nurses			
Total Barrier	.071	.032	.039
Total Enabler	.167*	-.005-	-.009-
Physicians			
Total Barrier	-.118-	.122	0.052
Total Enabler	.126	.128	0.161

*Significant at P< .05

4. Discussion

This study explored the barriers and enablers of PM in EDs among nurses and physicians working in Jordanian

hospitals, where both reported moderate levels. There was no statistically significant difference between nurses and physicians neither in the mean score of PM barriers nor the individual barrier items. These results indicate that both nurses and physicians might face the same barriers that could inhibit their ability to provide effective PM for ED patients. This result was supported by Chafe, Harnum, and Porter (2016) who reported that both ED physicians and nurses face various difficulties in assessing and managing pain experienced by patients admitted to EDs.

The most frequently reported barrier of PM among nurses was poor assessment and re-assessment of pain. This barrier was reported by Pretorius et al. (2015) who reported that about 65% of the nurses working in EDs had this barrier of PM. However, they found "responsibility of caring for other acutely ill patients" as the most commonly reported barrier of PM, which was reported by 83% of their participants. Actually, it might be argued that most nurses in the current study were concerned with their ability to assess pain adequately, which was supported by previous literature that revealed little attention was given to pain assessment and management by Jordanian nurses (Ayasrah, O'Neill, Abdalrahim, Sutary, & Kharabsheh, 2014).

Among physicians, the most frequently reported barrier of PM was lack of ability to monitor for side effects. In fact, unlike nurses, physicians are usually medically-oriented and focus more on the medical consequences of the medication, which makes them cautious about the side effects of PM medications (Potter, Perry, Stockert, & Hall, 2016). In addition, it was reported that physicians are usually concerned about the side effects of certain analgesic treatments, which might lead to under-treatment of pain (Sinatra, 2010).

Overall, there was no difference in the mean enablers of PM between nurses and physician, which means that both nurses and physicians might have the same level of enablers that could enhance their ability to manage pain for patients admitted to the ER. In this study, two items were different between nurses and physicians regarding the protocol of assess the patients complaining the pain and put pain as fifth vital signs to achieve optimal pain care. These results were reported by previous studies (Pretorius et al., 2015; Thomas, 2013), which indicated that nurses are the first to meet the patient visiting the ED. In addition, pain care in ED is an ongoing and time consuming process for nurses who have a professional responsibility to assess pain and administer pain medications. The physicians might be interested more in prescribing, identifying the type, dose, and frequency of administering the pain medication, while nurses are usually responsible for assessing the pain and administering the pain medication. Therefore, having a pain assessment protocol to follow when providing care for patients might be of special importance for nurses who are responsible for doing so, and who are usually busy, highly stressed, and have a high workload in EDs (AbuAlRub & Foudeh, 2004).

A previous study suggested that assessment of pain as the fifth vital sign is generally accepted by nurses (Nascimento & Kreling, 2011). However, it seems that some nurses might be more reluctant than physicians to report this enabler. Nurses are responsible for assessing the vital signs in EDs, and reassessing pain with each evaluation of the vital signs could increase the workload for nurses who are usually busy and have a high workload in EDs. Therefore, this enabler was reported by physicians more frequently than nurses.

The most frequently reported enabler of PM among nurses was posters of PM toolsmay improve the accuracy of pain assessment and documentation. In fact, posters of PM tools are not commonly used in Jordan. The high percent of nurses who reported this item as an enabler of PM in the current study may reflect their perception of the need of such posters due to the inadequate knowledge and skills of pain assessment (Al Qadire, & Al Khalaileh, 2014), which could be improved by utilizing posters of PM tools. The results of the current study could be supported by various studies that revealed little attention given to pain assessment and documentation by Jordanian nurses (Ayasrah et al., 2014; Pretorius et al. 2015).

In contrast, the most three enablers reported by physicians were initiated analgesia protocols, attending courses/conference /in-service and put pain as the fifth vital sign. This indicates that all of these factors could be very helpful to improve PM from the perspective of physicians. The least frequently reported enabler of PM for both physicians and nurses was PM Champion. This item was rated by only 33.1% of the nurses and 23.9% of the physicians. This outcome is similar with study of Pretorius et al. (2015) who reported this enabler as the least reported enabler, which was rated by 19% of the participants.

The current study revealed that the reported barriers and enablers of PM did not have significant differences in regard to the sample characteristics, which was emphasized for both nurses and physicians. This indicates that the reported barriers and enablers of PM are experienced by all participants regardless of their characteristics. This was also reported by Moceri and Drevdahl (2012) who highlighted the importance of developing specific interventions to empower all nurses and physicians regardless of their characteristics to effectively assess and manage pain in EDs. In addition, nurses in educational hospital had higher enabler mean scores than nurses in public hospitals. Despite the significant difference between the public and educational hospitals regarding the enablers of PM among nurses, this difference was very small. This may indicates that nurses might have benefited from some PM teaching programs implemented in educational hospitals.

Our study suggested that professional educational programs about PMmay encourageHCPs to do proper pain assessment and management. Also, the health policy makers and hospital administrators should develop the

competency policies for nurses and physicians. In addition, nurse educators can make suggestions to those involved in the educational system to add educational materials in different schools, colleges and university courses that address various topics of PM. Also, to improve pain assessment and documentation, the vital signs charts can be modified to include pain as a component of vital signs assessment process. Indeed, standardized pain assessment tool might be helpful for both nurses and physicians to achieve this purpose.

The current study is one of few studies in Jordan. Thus, future studies are encouraged to recruit larger samples representing HCPs from different specialists and from different regions in Jordan. Also, future research may need to use action research methodology to explore conditions of nurses' and physicians' PM practices, and identify the possibilities for improvement of pain assessment and management.

A convenience sample used in this study may limit the generalizability of the findings. The researchers acknowledge that recruitment of a randomly selected sample is a great challenge because the number of nurses and physicians in EDs that is relatively small. Also, nurses and physicians in EDs are usually busy and overloaded. Consequently, not all of them were available to participate in the study. Reliance on self-reported measures is another potential limitation to be considered. Despite these limitations, the current study provided valuable information regarding enablers and barriers of PM in Jordanian EDs.

5. Conclusion

This study explored the barriers and enablers of PM in EDs among nurses and physicians working in Jordanian hospitals, where both reported moderate levels. Generally, participants reported moderate levels, with lack of significant differences between them, which highlights the importance of programs aiming at encountering barriers and promoting enablers. The results highlighted the needs of nurses and physicians to be trained on adequate pain assessment for patients admitted to EDs, in addition to the need for physicians to overcome the barriers related to the inability to monitor the side effects of the medications when patients leave the ED. Among the enablers of PM, posters of PM tools, initiation of analgesia protocols, and attending PM courses were suggested to improve pain assessment and documentation of pain, which can be utilized by hospital administrators in the future. Key to this work is how to adapt an intervention to overcome barriers of PM and enhance the enablers of PM.

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