

Knowledge, Attitudes, and Practices of Emergency Physicians Towards Acute Pain Management

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Abstract

Background: Emergency departments are multi-disciplinary workplaces that comprise of professionals with different skills and abilities that allow them to manage pain and other patient conditions. Acute pain is an imaginable short term pain as witnessed in most emergency departments in different health facilities. The management of such pain requires specific knowledge on the levels of analgesics used in the management of specific pain. This study aimed to assess and document the current levels of Saudi emergency physicians with regard to acute pain management in the emergency department. **Methods:** A multicenter cross-sectional study was conducted lasting for 3 months. We collected data for the study from 127 emergency physicians distributed in 31 hospitals in 18 cities and 4 regions in the Kingdom of Saudi Arabia. The data was collected using structured questionnaire and later recorded in an excel sheet for analysis. **Results:** The results disapprove the null hypothesis since the p value is more than .05 ($p=0.091$) thereby accepting the alternative hypothesis that the knowledge, attitudes, and practices of Saudi Physicians regarding acute pain management in the emergency unit meet global standards. **Conclusion:** In summary, the study manages to attain its objectives by demonstrating that there are high levels of knowledge, attitude, and practices regarding pain management in the emergency departments in KSA.

Keywords: Acute pain, Pain Management, Emergency Physicians, Knowledge

INTRODUCTION

An emergency situation requires an emergency solution. An emergency is common event in every healthcare institution across the world. Emergency is normally caused by complex diseases and accidents¹. The emergency disease and accidents result in acute pain to the patient's body requiring an emergency care. In case a patient is undergoing acute pain as a result of an emergency accident or disease, he/she is received first by the emergency health^{1,2}. In the Kingdom of Saudi Arabia (KSA), it is the government policy for health institutions to have a well-structured emergency department (ED)³. KSA government in its intervention to serve its citizens effectively encourages hospitals to introduce training programs for their health practitioners, especially those in ED^{3, 4}. The government only runs a known emergency training for medicine usage under the Ministry of National Guard, Health Affairs³.

Despite the inadequate treatment of pain in the ED, KSA still prides in providing the most effective healthcare services for

their clients within the Asian region⁴. Nevertheless, the narrative of acute pain management in (ED) remains a complex issue in Saudi Arabia among other nations⁵. According to the International Association for the Study of

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How to cite this article: Alanazi, A., Alosaimi, M., Ali Ibrahim Alsudais, M., Faisal Ahmad Mehawish, S., Abdullah M Alofi, E., Mohammad Alharbi, O. and et al. Knowledge, Attitudes, and Practices of Saudi Emergency Physicians with Regard to Acute Pain Management in the Emergency Department: A Multicenter Cross-Sectional Study. Arch Pharma Pract 2019;10(4):75-9.

Pain (IASP), pain is considered as an antagonistic emotional experience in response to an injury at hand⁶. Pain commonly affects the entire body of the victim with a direct effect on the cognitive and sensory organs leading to behavior change.

Every health institution is recommended to construct an accessible emergency wing in its respective facilities. In most cases, the emergency wing is the first wing in every healthcare institution receiving clients with diverse health problems causing instant pain. Physicians or any other healthcare practitioners working in this wing are expected to remain alert and focused. This is because they play a pivotal role in first-line managing pain of emergency cases^{7, 8}. Their approach to pain is quite crucial as they can have a tremendous impact on the subsequent health of the patient. The impact can either be negative or positive depending on the approach and knowledge of the physicians⁸. International organizations have done several research studies on effective ways to manage pain and determine whether the physicians at the ED are knowledgeable enough to manage the pain of emergency patients.

World Health Organization (WHO), as one of the outlined organization, found out that there is inadequacy in pain and emergency care management in most hospitals across the world⁹. Although, the study connected the physician's knowledge with the country's economy. It was found out that countries with a strong economy have specialized physicians trained to assist in pain management in health facilities⁹.

Furthermore, Paul Owono Etoundi *et al.* (2019) in their study in Cameroon, found out that physicians in EDs of Cameroon exhibited poor knowledge and substandard practices in pain management. Cameroon is one of the African countries with a low GDP rate as compared to the developed economies across the world⁹. Thus, the government's GDP was also found to play a critical role in training public health practitioners' ineffective ways to regulate acute pain in EDs⁹. Moreover, other social factors such as race, age, sex, ability to express pain, and underlying illness among other factors were also outlined to have an impact on pain management. Ali Abdolrazaghnejad *et al.* (2018) found out that the outlined factors may prevent proper pain control in patients¹.

Kingdom of Saudi Arabia (KSA) economy is at the middle level in terms of the country's recent GDP rates. Most hospitals in KSA provide a two-year program in acute, chronic, and cancer pain management following completion of a continuum of education in anesthesiology or any other accepted training program¹⁰. In contrary, Rifat Rehman (2010) in his study found out that almost a quarter of the patient seeking care in ED for acute painful conditions do not receive analgesics¹¹. And with regard to those receiving it, there is a relative delay of 54 minutes in providing the initial analgesia which is against the (IASP). This study also identified gender disparity in the provision of emergency care¹¹. The female patients waited for 24 minutes longer than their male counterparts.

KSA is one of the regions with a wide gap of gender disparity¹¹. Females suffer more than the males and in most cases render as the minority and of low value. Hence, there is an uncertainty of pain management in KSA ED as some physicians are knowledgeable, possessing positive attitudes towards the patient with acute pain situations, whereas others operate as general physicians subjecting the patients to extreme pain in ED.

There are close to 3000 primary centers spread across the nation. The public health centers in Saudi Arabia is about 80% with 20% delivered through the private sector. The healthcare-related emergency services in Saudi Arabia are open and guaranteed to both citizens and non-citizens of Saudi Arabia^{3, 5, 8}. All the health facilities in Saudi Arabia have EDs at accessible locations.

In terms of quality healthcare, both the private and public healthcare systems provide quality services, but the privately-owned facilities charge substantially high as they also pay high taxes to the government. Although KSA is ranked among the top nations providing quality health services, there is still a gap in pain management in ED^{12, 13}. This gap is associated with low emergency training programs, low capital in training the physicians in ED by some hospitals, low workforce, especially in highly populated areas, and the general global problem in approaching emergency services¹⁴. Hence, most EDs are facing both internal and external problems limiting different health facilities in KSA to provide up-to-standard service for their patients.

This study therefore will assess the level of knowledge, attitude, and practices with regard to acute pain management among the health practitioners in the EDs of KSA. This will be done through assessing their documents and training programs they have achieved in addition to continuum of education in their related studies. This will further provide the national government with insight information on the gap needed to be filled in their quest to achieve 100% pain management in most health institutions in KSA EDs.

MATERIALS AND METHODS

Study Design and Setting

This is a multicenter cross-sectional study with prospective collection of data for three months in Saudi Arabia. The study was carried out in 4 regions and 18 cities in KSA. Within these cities, the study collected data from Saudi Emergency Physicians working in 31 hospitals offering residency training program certified by the Saudi Commission for health specialties. The questionnaire was distributed to a total of 127 Saudi Emergency Physicians. They answered the questions independently and resubmitted the answers for analysis.

Definition of Terms

- **Acute pain:** Is a typical pain lasting for a period of 3-6 months. In most cases, acute pain is directly related to soft tissue damage in human body².
- **Emergency Department:** It is a department in a health facility with key responsibility to attend to patients with acute pain requiring immediate care¹.
- **Analgesics:** Is a drug used to relieve a patient from pain. Analgesic can completely remove the pain or may act on a temporal basis depending on emergency¹¹.

Data Management and Analysis

Each participant was given a hard copy with questions needed to be filled as shown in attached document to assess the current levels of Saudi emergency physicians with regard to acute pain management in the ED in the 31 aforementioned healthcare institutions EDs. The data collected were then entered into the SPSS for statistical analysis. For instance, in order to determine the continuous variable, the team calculated the mean and standard deviation values¹⁵. On the other hand, Chi-Square was also used by the team to determine the categorical variables. Where necessary, the team applied other statistical elements in determining other factors which include the relationship between different continuous variables.

RESULTS

Descriptive Statistics

The first step in the research was to evaluate the summary of the collected data to assist in understanding the participant dynamics and demographics. The research established that a majority of the practitioners in KSA were male as demonstrated in Table 1 below

Table 1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	77	60.6	60.6	60.6
Female	50	39.4	39.4	100.0
Total	127	100.0	100.0	

About 60.6% (n=77) of the participants were male; while, only 39.4% were female. The implication of this finding is that - KSA medical sector is male-dominated. Therefore, understanding gender dynamics is crucial.

Table 2: Profession

	Frequency	Percent	Valid Percent	Cumulative Percent
Resident	53	41.7	41.7	41.7
Specialist	45	35.4	35.4	77.1
Consultant	29	22.9	22.9	100.0

Total	127	100.0	100.0
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The study further established that the specialty of the participants varied significantly with 41.7% being resident practitioners, 35.4% being specialists, and 22.9% being consultants.

The research further focused on establishing the attitudes of practitioners regarding specific practices in the emergency department.

Table 3: Descriptive Statistics

	After administering the analgesic, do you reassess the severity of pain to know if it is relieved or not	When do you administer an analgesic?	When do you administer level 1 analgesic?	When do you administer stage 2 analgesics?	When do you administer stage 3 analgesics?	How do you evaluate pain management over time?
Valid	127	127	127	127	127	127
Missing	0	0	0	0	0	0
Mean	.61	2.19	1.78	1.31	1.68	1.86
Median	1.00	2.00	2.00	1.00	2.00	2.00
Std. Deviation	.489	.710	.999	.940	1.007	1.435

The mean value of the responses obtained when the participants were asked whether or not they reassessed the severity of pain to know whether there was a relief tended towards 1 (n= 0.61) with the median being 1.00 demonstrating that most practitioners were cautious of treatment outcomes. The other responses regarding their practice illustrated that the administration of analgesics was done based on the type of pain experienced.

The final finding of the research, based on descriptive statistics, was that a majority of the doctors and physicians in the emergency units used all the available methods at their disposal to assess their pain management approaches.

Table 4: Pain Management Evaluation

	Frequency	Percent	Valid Percent	Cumulative Percent
All the above	31	24.4	24.4	24.4
Pain severity scores	24	18.9	18.9	43.3
In relation to the onset of action of the analgesic	27	21.3	21.3	64.6
In relation to the duration of action of the analgesic	22	17.3	17.3	81.9

Patient's verbal response of 'pain relief'	23	18.1	18.1	100.0
Total	127	100.0	100.0	

Inferential analysis

The researcher further conducted correlations to establish the existence of some relationships between the main variables and the research obtained from both bivariate and chi-square analysis was as demonstrated in Table 5 and 6 below.

Table 5: Correlations

	Gender	How do you evaluate pain management over time?
Pearson Correlation	1	-.022
Sig. (2-tailed)		.810
N	127	127
Pearson Correlation	-.022	1
Sig. (2-tailed)	.810	
N	127	127

Table 5 above demonstrates that there was no significant statistical association between gender and pain management approaches ($p>0.05$).

Table 6: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.924 ^a	6	.091
Likelihood Ratio	11.394	6	.077
Linear-by-Linear Association	.000	1	.986
N of Valid Cases	127		
a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 3.31.			

Additionally, the results in the table above disapproves the null hypothesis since the p value is more than .05 ($p=0.091$) thereby accepting the alternative objective that there is a relationship between the approaches used by specialists, their knowledge and global practices.

DISCUSSION

Pain management within the emergency department is highly critical, given the high number of patients having conditions that are characterized by increased agony. The research focused on examining the different elements of the knowledge and practice that would assist in the evaluation of the central research goal that was to assess the level of

knowledge, attitude, and practices with regard to acute pain management among the health practitioners in the EDs of significant health facilities of KSA. Therefore, the study focused on establishing whether or not there existed a correlation between the approaches used by physicians in testing the alternative hypothesis that stated: "The knowledge, attitudes, and practices of Saudi Physicians regarding acute pain management in the emergency unit meets global standards."

The first finding demonstrated the existence of some noticeable gender gaps within the Saudi health care system, as more than 60% of the participants were male. The findings were demonstrative of the point that most of the opinions and attitudes of the participants would be made with the consultation of only one gender due to the dominance and supported the assertions of Rehmani (2010) that KSA still struggles with issues about the balance between professionals.¹¹ The second finding demonstrated that the specialty of the participants varied significantly, with 41.7% being resident practitioners, 35.4% being specialists, and 22.9% being consultants. The establishment is significant as it reflects the qualification of the entire Saudi healthcare system. Osman *et al.*'s (199) argument was consistent with the findings, as the authors stated that healthcare-related emergency services in Saudi Arabia is open and guaranteed to both citizens and non-citizens of Saudi Arabia.ⁿ Therefore, the central implication of the second finding is that the knowledge and skills possessed by doctors within the Saudi healthcare system allow them to handle complex issues that affect the emergency unit and other divisions within the country's healthcare system.

Additionally, the study emphasized the examination of the knowledge possessed by physicians in relation to their practice and preferences and established that the physicians had a norm of reassessing the pain to establish whether the approaches that they used were effective in minimizing discomfort. Huijer (122) argued that the quality of care, in the global arena, can be gauged based on the ability of the techniques used in pain management to attain their goal and relieve the patient.¹² The results of the study are significant as they illustrate the authenticity and reliability of the choices that most physicians make in relation to pain management.

The final sets of results and perhaps the most important in responding to the central objectives were that there existed no significant statistical association between gender and pain management approaches and that there is a relationship between the approaches used by specialists, their knowledge, and global standards. Therefore, the findings disapproved the null hypothesis ("The knowledge, attitudes, and practices of Saudi Physicians regarding acute pain management in the emergency unit do not global standards") and accepted the alternative hypothesis that "The knowledge, attitudes, and practices of Saudi Physicians regarding acute pain management in the emergency unit meets global standards." Rehmani (540) stated that despite the Kingdom of Saudi

Arabia being one of the most rapidly developing states in terms of GDP rates, most healthcare facilities in KSA provide a two-year program in acute, chronic, and cancer pain management following completion of a continuum of education in anesthesiology or any other accepted training program.¹¹ The quality of care in such facilities meet global standards. The obtained p-values from the chi-square analysis demonstrated in Table 6 in the results section above demonstrate that there is little to no chance of getting similar results if the null hypothesis was true. The results further showed that the doctors in Saudi Arabia had adequate knowledge of the specific analgesics that could manage all the mild, moderate, and severe pains.

CONCLUSION

In summary, pain management remains a critical practice within the emergency division. The study is aimed at investigating the level of knowledge, attitude, and practices with regard to acute pain management among the health practitioners in the EDs of significant health facilities of KSA. Moreover, the research focused on providing the national government with insightful data and information on the gap that needed to be filled in their quest to achieve 100% pain management in most health institutions in the emergency divisions in KSA facilities. The findings are demonstrative of the point that there are high levels of knowledge, attitude, and practices regarding pain management in the emergency departments in KSA. Moreover, the perceived gender gap in facilities is evident in the findings, with the exception that it did not affect service delivery and the expertise of the physicians. In summary, the study supports the hypothesis that the knowledge, attitudes, and practices of Saudi physicians regarding acute pain management in the emergency unit meet global standards.

REFERENCES

1. Abdolrazaghnejad A, Banaie M, Tavakoli N, Safdari M, Rajabpour-Sanati A. Pain management in the emergency department: a review article on options and methods. *Advanced journal of emergency medicine*. 2018;2(4).
2. Aaron D.-L. Acute Pain Control. The Clerkship Directors in Emergency Medicine (CDEM), 2019.
3. Mousa W, Aldehayyat JS. Regional efficiency of healthcare services in Saudi Arabia. *Middle East Development Journal*. 2018 Jan 2;10(1):152-74.
4. Al-Hanawi MK, Khan SA, Al-Borie HM. Healthcare human resource development in Saudi Arabia: emerging challenges and opportunities—a critical review. *Public Health Reviews*. 2019 Dec;40(1):1.
5. Osman H, Abboud M, El Zein L, Ghusn H, Hanna J, Kanazi G. Setting Practice Standards for Palliative Care in Lebanon: Recommendations of the Subcommittee on Practice: National Committee for Pain Control and Palliative Care. *Lebanese Medical Journal*. 2013 Oct;103(888):1-5.
6. IASP. International Association for the Study of Pain. Proposed taxonomy search, 2008.
7. Alghamdi, H. Pain Management. 12 November 2019. 8 December 2019. <<https://www.kfshrc.edu.sa/en/home/education/programs/622>>.
8. Nasser SC, Nassif JG, Saad AH. Physicians' attitudes to clinical pain management and education: Survey from a Middle Eastern country. *Pain research and management*. 2016;2016.
9. Etoundi PO, Mbengono JA, Ntock FN, Tochie JN, Ndom DC, Angong FT, Beyiha G, Minkande JZ. Knowledge, attitudes, and practices of Cameroonian physicians with regards to acute pain management in the emergency department: a multicenter cross-sectional study. *BMC emergency medicine*. 2019 Dec 1;19(1):45.
10. Senitan M, Gillespie J. Health-Care Reform in Saudi Arabia: Patient Experience at Primary Health-Care Centers. *Journal of Patient Experience*. 2019 Sep 3;2374373519872420.
11. Rehmani RS. Pain practices in a Saudi emergency department. *Saudi medical journal*. 2010 May;31(5):539-44.
12. Abu-Saad HH, Dimassi H. Palliative care in Lebanon: knowledge, attitudes and practices of physicians and nurses. *Le Journal medical libanais. The Lebanese medical journal*. 2007;55(3):121-8.
13. Thomas SH. Management of pain in the emergency department. *ISRN Emergency Medicine*. 2013 May 16;2013.
14. Todd KH, Ducharme J, Choiniere M, Crandall CS, Fosnocht DE, Homel P, Tanabe P, PEMI Study Group. Pain in the emergency department: results of the pain and emergency medicine initiative (PEMI) multicenter study. *The journal of pain*. 2007 Jun 1;8(6):460-6.
15. Zanolin ME, Visentin M, Trentin L, Saiani L, Brugnolli A, Grassi M. A questionnaire to evaluate the knowledge and attitudes of health care providers on pain. *Journal of pain and symptom management*. 2007 Jun 1;33(6):727-36.