

Knowledge, attitudes, and practices of Cameroonian physicians with regards to pain management at the emergency department: a multicenter cross-sectional study

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Research article

Keywords: knowledge, attitudes, practices, doctors, pain, emergency department, Cameroon

Posted Date: June 12th, 2019

DOI: <https://doi.org/10.21203/rs.2.10155/v1>

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Version of Record: A version of this preprint was published on August 8th, 2019. See the published version at <https://doi.org/10.1186/s12873-019-0260-3>.

Abstract

Introduction: Pain is the most frequent presenting complaint in patients consulting or admitted to the emergency department (ED). Thus, its acute management is often done by physicians working in the ED. These practitioners are often general practitioners and not emergency medicine physicians in resource-poor settings. Hence, a mastery of pain management by these physicians may be important in relieving acute pain. We aimed to assess the knowledge, to determine the attitudes and practices of physicians in the management of pain in EDs of Cameroon. **Methods:** We carried out a prospective analytic cross-sectional study over four months in the year 2018. We enrolled all consenting physicians who were neither emergency medicine doctors nor anesthesiologists working at the EDs of five tertiary hospitals of Cameroon. Using a 30-item structured questionnaire, data on the knowledge, attitudes, and practices of pain management at the ED by these clinicians were studied. We used an externally validated score to assess the knowledge as either poor, insufficient, moderate or good. **Results:** A total of 58 physicians were included; 18 interns and 39 general practitioners. Their mean age was 28.6 ± 3 years and their average number of years of practice was 2.9 years. The level of knowledge was rated "poor" in 77.6% of physicians. Being a general practitioner was significantly associated with a poor level of knowledge ($p=0.02$; $OR=5.1$). We found a negative and significant correlation between knowledge and years of practice ($p=0.04$; $r^2= 0.06$). More than three-quarter (82.8%) of participants used a pain scale to evaluate the severity of pain. The most used scale being the Visual Analog scale (56.9%). The most frequently used analgesic was paracetamol (98.3%), although only 3.5% of physicians correctly knew its half-life, delay of onset of action and duration of action. **Conclusion:** These findings suggest that physicians in EDs of Cameroon have poor knowledge and suboptimal practices in pain management. General practice and a greater number of professional experience seemed to favour these attitudes. Overall, there is an urgent need for refresher courses in acute pain management for physicians working in these resource-limited EDs.

Background

Pain is the most common reason for consultation in the emergency department. Its global prevalence is 20% [1,2]. According to the International Association for the Study of Pain, pain is an unpleasant emotional experience in response to a real or potential tissue injury[3]. It is a multidimensional symptom involving sensory, emotional, cognitive and behavioral components [4]. Etiologies of pain are many and varied. They cause of pain depend on the type of pain, the location and the severity of the symptom. Hence, an adequate knowledge of the physiological and semiological bases of pain allows for a better diagnostic procedure and therefore an early and adequate aetiological and/or symptomatic management [4,5].

The emergency department (ED) of a health facility is often the first unit to encounter patients consulting for diverse forms of pains. Health professionals working in the ED, therefore, play a key role in the first-line management of pain. This initial management will, therefore, influence the subsequent medical and/or surgical treatment of the patient. In order to improve the initial care of patients presenting with

pain in the ED, we proposed this study to assess the level of knowledge, attitudes, and practices with regards to pain management in clinicians working in the EDs of major referral hospitals of Cameroon.

Methods

Study design, setting, participants and sampling

This was an analytic multicentre cross-sectional study carried out prospectively between June 1, 2018, to September 30, 2018. The study population consisted of all consecutive consenting physicians working at the ED of five tertiary hospitals in Yaounde, the political city of Cameroon. These five hospitals were the Yaoundé Gyneco-Obstetrics and Pediatrics Hospital (HGOPY), the Yaoundé General Hospital (HGY), the Yaoundé National Emergency Center (CURY), the Yaoundé University Hospital Center (CHUY) and Yaoundé Central Hospital (HCY). We excluded emergency medicine physicians and anesthetist physicians.

Data management and analysis

Data collection was conducted from physicians practicing in the five aforementioned EDs using a pre-established and pre-tested questionnaire (see attached data collection form). This questionnaire consisted of 30 items. The variables studied were socio-demographic data, questions related to knowledge, attitudes, and practices of pain management. Knowledge was scored out of 32 and ranked as in Table 1 [6]. The data were coded, entered and analyzed using SPSS software version 20.0. The mean, median, standard deviation and interquartile were used for the description of continuous variables. Categorical variables were described in terms of frequency and percentage. The association between categorical variables was measured by the Chi-square and Fisher tests with odds ratios (OR) and logistic regression calculation. The association between two continuous variables was measured by the Pearson correlation test and materialized where appropriate by linear regression. Comparisons of continuous variables between the two groups were made by the Student t-test and the Mann-Withney U test when this was not the case. When necessary, covariate adjustment by covariance analysis (ANCOVA) was used. The threshold of significance has been set at 5%.

Results

Socio-demographic characteristics

A total of 75 physicians were interviewed of whom 58 consented to participate in the study. Hence, a response rate of 77.3%. The average age of participants was 28.6 ± 3 years and the average number of years of experience was 2.9 ± 2 years. The sex ratio was 1.14 in favor of men. Twenty-one (36.2%) of the participants practiced at the Yaoundé Central Hospital. More than half of the participants (67.2%) were general practitioners. (Table 2)

Knowledge of pain in emergencies

On average, the level of knowledge of the physicians was rated "poor", with a mean score of 11.8 ± 4.3 (range: 3 – 24). This corresponded to 45 (77.6%) participants having a poor level of knowledge, 10 (17.2%) with an insufficient level of knowledge, and 3 (5.2%) has a moderate level of knowledge. No "good" level of knowledge was seen amongst the participants.

The highest percentage of the correct answer (93.1%) was obtained for the question regarding the types of analgesics used to treat pain. The lowest percentage (5.2%) was scored on the question regarding the number of types of pains. Residents and interns had significantly higher knowledge scores than general practitioners ($p = 0.014$). Being a general practitioner was significantly associated with poor knowledge ($P = 0.02$, $OR = 5.1$). The number of years of professional experience was significantly and negatively correlated with the level of knowledge ($p = 0.04$ $r^2 = 0.06$). The same was true for age ($p = 0.02$, $r^2 = 0.08$). Hence, the older the age of the clinician and the higher his or her number of years of professional experience, the worse was his or her level of knowledge regarding the management of pain in the ED.

Attitudes and practices of physicians regarding pain in the ED

Almost all participants (57/58) reported to maintain their calm when confronted with a patient in pain. For 38 (65.5%) participants, the pain was ranked among the first symptoms in patients consulting at the ED. Concerning participants' practices towards pain, 38 (62.1%) administered an analgesic based on the patient's complaint. Pain assessment was performed using the Visual Analogue Scale (VAS) in 56.9% by participants. The numerical scale was used by 13.8% of participants. In addition, 10(17.2%) of the participants affirmed that their administration of analgesics was not based on any pain scale.

The decision to administer WHO group I analgesics was adequate in 42 (72.4%) of physicians. The administration of WHO group II and III analgesics was adequate in 40 (69%) of physicians. With regards to the most used analgesics, paracetamol was the most used analgesics by 57 (98.3%) physicians, followed by tramadol used by 44 (75.9%) physicians and diclofenac used by 22 (37.9%) physicians. Morphine was the least reported analgesic, used by only 5 (8.6%) physicians (Table 3). Paracetamol was the preferred analgesic used. The reason given by 26.3% of participants was due to its effectiveness in pain relief. Of the 57 physicians who reported using paracetamol in the ED, only two (3.5%) knew its correct half-life, delay of onset of action and duration of action. On the other hand, 6 (10.5%), 11(19.3%) and 15 (26.3%) physicians reported good answers concerning the half-life, the delay of onset of action and the duration of action of the drug, respectively.

Discussion

The study's objectives were to assess the knowledge, to determine the attitudes and practices of physicians in the management of pain in EDs of Cameroon. We found that the level of knowledge was "poor" and significantly associated with being a general practitioner. Furthermore, there was a negative and significant correlation between knowledge and years of practice. More than three-quarter of participants used a pain scale to evaluate the severity of pain. The most used scale being the Visual

Analog Scale. The most frequently used analgesic was paracetamol, although only 3.5% of physicians knew its exact half-life, delay of onset of action and duration of action.

This study focused on clinicians working in the EDs of five major referral hospitals in Yaoundé with a good response rate (77.3%). However, this percentage is significantly lower than the 92% and 89.5% respectively found by Nasser et al [7] in Lebanon in 2016 and Subhashini et al [8] in India in 2008. This difference reflects the difficulty of clinicians, in our setting to undergo an assessment of their knowledge, attitudes, and practices in a domain. The mean age of participants was 28.6 ± 3 years, lower than the 30.8 ± 5.7 years found in Iran [9]. This disparity may imply younger physicians practicing in the EDs of Cameroon compared to Iran.

The level of knowledge was averagely poor and lower than that found by Zanolin et al [10] in Italy and by Kheshti et al [9] in Iran. This low level of knowledge on pain management in comparison with that found in the literature could be explained by the lack of refresher courses on pain management undertaken by clinicians in Cameroon.

General practitioners had a statistically lower knowledge score than residents and interns. The number of years of professional experience was significantly and negatively correlated with the knowledge score and therefore the percentage of correct answers. This is in contrast with previous reports which showed inexperienced physicians to have a lower level of knowledge on pain management. More contradicting results were obtained in an Iranian study [9] which observed a positive and significant correlation between the number of years professional experience and the level of knowledge on pain management ($p = 0.002$, $r = 0.03$). The discrepancy between our finding and the aforementioned studies [7,9], may be explained by the absence of regular refresher courses organized in our resource-poor setting to form and update physicians on pain management in the ED.

We found that 82.8% of participants used a pain scale to evaluate pain intensity. The main scale used was the VAS (56.9%) probably explained by the simplicity in the clinical application of the VAS. By contrast, Nasser et al [7] found that the most used pain scale was the simple verbal scale (72.5%) and the VAS was used by only 29% of physicians. The most used analgesic was paracetamol, but its pharmacokinetics was mastered by only 3.5% of participants. Morphine was the least used analgesic (5/58). This could be explained by physicians' fear of its side effects, especially respiratory distress which can be fatal in some patients.

The results from the present study should be interpreted within the context of its limitations. Firstly, its relatively small number of participants ($n = 58$), implying cautious generalization of findings. Nevertheless, we note a high response rate of 77.3% obtained and a multicenter study design conducted in five major referral hospitals of Cameroon, where the vast majority of physicians in the country work or train. With extensive literature search, to our knowledge,

this study is one of the first to assess the knowledge, to determine the attitudes and practices of physicians in the management of pain in the EDs of Cameroon. The current study is thus an invaluable

contribution to the scarcity of data on the management of pain in the EDs of sub-Saharan Africa.

Conclusion

This is one of the largest and first series to assess the knowledge, to determine the attitudes and practices of physicians in the management of pain in EDs of Cameroon and perhaps sub-Saharan Africa at large. This study shows the low level of physicians' knowledge about pain management, as well as suboptimal practices, particularly in terms of acute pain management. General practice and a greater number of professional experience seemed to favour these attitudes. Overall, this study emphasizes an urgent need to organize regular refresher courses on pain management for clinicians working in EDs in resource-limited settings.

List Of Abbreviations

ED: Emergency Department; VAS: Visual Analog Scale; CHUY: University Hospital Center of Yaoundé; CURY: Yaoundé National Emergency Center; HCY: Yaoundé Central Hospital; HGY: General Hospital of Yaoundé; HGOPY: Obstetrics and Pediatric Gynecological Hospital of Yaoundé

Declarations

Ethics approval and consent to participate: The study was approved by the Institutional Review Board of the Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Yaoundé, Cameroon under the ethical clearance No 361/CIERSH/DM/2018. Administrative authorizations were equally obtained from the directorate of all five participating hospitals prior to the beginning of the study. Written consent to participate was obtained from all participants prior to their enrolment into the study.

Consent for publication: Not applicable

Availability of data and materials: All data generated or analysed during this study are included in this published article.

Competing interests: The authors declare that they have no competing interests.

Funding: Not applicable

Authors' contributions:

POE, JAMM, FNN, and JNT: Study conception and design, acquisition of data, data analysis and interpretation of results, manuscript writing and critical revisions. DCAN and FTEA: acquisition of data, data analysis and interpretation of results. GB and JZM: interpretation of results, manuscript writing and critical revisions of the manuscript for intellectual content. All authors read and approved the final manuscript.

Acknowledgments

The authors thank all the general practitioners and physicians in specialization who participated in the realization of this study.

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Tables

[Table 1: Correspondence between scores, percentages of correct answer and level of knowledge on pain management by physicians](#)

Score	Percentage of good answers	Niveau de connaissance
0 – 15	Less than 50%	Poor
16 – 20	Between 50 to 65%	Insufficient
21 – 27	Between 65 to 85%	Moderate
≥ 28	More than 85%	Good

Table 2: Socio-demographic characteristics

Variable	Frequency (n=58)	Percentage (%)
Hospitals		
CHUY	7	12.1
CURY	11	19
HCY	21	36.2
HGY	7	12.1
HGOPY	12	20.7
Gender		
Female	27	46.6
Male	31	53.4
Occupation		
Resident/Intern	19	32.8
General practitioner	39	67.2
Number of years of professional experience		
Less than 5 years	47	81
More than 5 years	11	19

CHUY: Yaoundé University Hospital Center, CURY: Yaoundé National Emergency Center, HCY: Yaoundé Central Hospital, HGY: Yaoundé General Hospital, HGOPY: Yaoundé Gyneco-Obstetrics and Pediatric Hospital.

Table 3: Attitudes and Practices towards Pain

Variables	Frequency (n = 58)	Percentage (%)
Assessment of Pain		
Yes	48	82.8
No	10	17.2
Administration WHO group I analgesics		
Yes	42	72.4
No	16	27.6
Administration WHO group II analgesics		
Yes	40	69
No	18	31
Administration WHO group III analgesics		
Yes	40	69
No	18	31
Use of paracetamol		
Yes	57	98.3
No	01	1.7
Use of tramadol		
Yes	44	75.9
No	14	24.1
Use of diclofenac		
Yes	22	37.9
No	36	62.1
Use of Morphine		
Yes	05	8.6
No	53	91.4

WHO : World Health Organization