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Awareness of Opioid Use for Pain Control among Healthcare Practitioners: A Systematic Review

Haifa Saeed Almalki[1*]

[1]Family Medicine Senior Registrar, Alrawdah Primary Health Care Center, Taif City, Saudi Arabia

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***Corresponding author:** Haifa Saeed Almalki
Family Medicine Senior Registrar, Alrawdah Primary Health Care Center, Taif City, Saudi Arabia

Abstract

***Objectives*:** To compile the recent literature's findings and shed light on knowledge of healthcare personnel about the use of opioids in pain management. ***Methods*:** A thorough search of pertinent databases was done in order to find studies that satisfied the requirements for inclusion. A thorough search of PubMed, Web of Science, SCOPUS, and Science Direct was conducted to find pertinent literature. ***Results*:** Ten studies, including a total of 58,234 participants and 21,769 (37.4%) of them were females, were included in our data. There were notable differences found between the clinical skills of physicians in managing pain and prescribing opioids and their self-perceived knowledge in these areas. Many studies reported that nearly half of the participants had poor knowledge about using opioids for pain management. Physicians with higher clinical knowledge ratings prescribed fewer opioids. Only two studies reported that professionals with advanced degrees were found to have a sufficient level of understanding regarding pain and opiate use. ***Conclusion*:** This study demonstrated a lack of and insufficient knowledge about opioids on pain management among healthcare personnel. Prospective investigations ought to concentrate on crafting customized instructional curricula and decision-assistance instruments for primary care practitioners, as well as analyzing the influence of interdisciplinary pain treatment groups on patient results.

Keywords: Knowledge, Awareness, Opioids, Pain, Management Systematic Review.

INTRODUCTION

The administration of opioid painkillers is a two-edged sword. Opioid analgesics, such as morphine, oxycodone, and fentanyl, have been demonstrated to offer individuals with chronic non-cancer pain a moderate improvement in pain and function. However, when prescribed opioids are taken at large dosages (e.g., more than 200 mg of morphine equivalents per day), they might cause opioid-induced algesia [1, 2], addiction, or diversion [3]. Prescription opioids are therefore linked to grave and growing public health issues, including admissions to addiction treatment centers and overdose deaths [4].

"An unbearable emotional and sensory experience associated with, or approaching that accompanied with, actual or probable tissue damage" is how the International Association for the Study of Pain defined pain [5]. The psychosocial aspects of managing patients with persistent non-cancer pain must therefore be taken into account. This is standard procedure in multidisciplinary pain clinics, where patients are assisted in understanding and managing their pain by a pain psychologist, social worker, pain doctor, and pain therapist. In addition, monitoring patients is necessary for pain management in order to reduce the hazards associated with opioid medication, such as diversion and addiction. In 2016, the CDC published risk stratification techniques for chronic non-cancer pain, recommending the use of UDT in conjunction with prescription medication monitoring programs [6]. All of the aforementioned advice must be included in training on opiate use for chronic non-cancer pain for healthcare professionals in order to effectively treat patients. The combination of experiences that each clinician brings to the table about the prescription and stewardship of opioids can have a substantial impact on how many opioids a patient is administered.

Healthcare professionals' attitudes and knowledge about the prescription of opioids have not been extensively researched. At this time, it is unknown how much medical staff at a tertiary medical center know about these subjects.

The purpose of this systematic review was to compile the recent literature's findings and shed light on knowledge of healthcare personnel about the use of opioids in pain management by synthesizing current literature, identifying knowledge gaps, and offering insights for future research and clinical practice.

METHODS

We followed the recommendations in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [7] for this systematic review. An electronic search was performed on databases like PubMed, Web of Science, SCOPUS, and Science Direct in order to find English-language research. Relevant keywords were included in the search strategy for these situations; "Opioids," "Pain," "Management," "Knowledge," and "Awareness." Independently, reviewers went through the search results, chose pertinent papers, collected data, and used the right assessment methods to determine how good the included research was.

Eligibility Criteria:

Inclusion Criteria:

1. Studies published in the English language.
2. Studies reported the knowledge of healthcare personnel about the use of opioids in pain management.
3. Studies included healthcare practitioners; physicians and nurses.
4. Studies conducted within the last ten years (2014-2024).
5. Randomized controlled trials, cohort studies, case-control studies, and cross-sectional studies.

Exclusion Criteria:

1. Studies not published in English.
2. Review articles, case reports, letters to the editors, commentaries, and case series.
3. Studies with insufficient data or unclear methodology.
4. Studies included medical students or dentists.
5. Studies with overlapping data or duplicate publications.

Data Extraction

Rayyan (QCRI) was used to validate the search results in order to guarantee accuracy [8]. The inclusion and exclusion criteria were used to determine the relevancy of the titles and abstracts that the search produced. Papers that satisfied the inclusion requirements were carefully examined by the study team. Consensus was used to settle disagreements. Using a predetermined data extraction form, key study data, such as titles, authors, publication year, study location, gender distribution, participant demographics, population type, data collection tool, and main outcomes were documented. To evaluate the possibility of bias, an impartial assessment instrument was created.

Data Synthesis Strategy

Summaries of the research findings and elements were created utilizing information taken from pertinent studies to offer a qualitative assessment. The best method for making use of the data from the studies that were included was decided upon after the data collection for the systematic review was finished.

Risk of Bias Assessment

The Joanna Briggs Institute (JBI) [9] critical assessment criteria for studies reporting prevalence data were utilized to assess the study's quality. This tool had nine questions. A score of one was given for a positive response, while a score of zero was given for a negative, ambiguous, or irrelevant response. The following scores will be categorized as low, moderate, and high quality, respectively: below 4, between 5 and 7, and above 8. The quality of the studies was evaluated by researchers independently, and differences were settled through discussion.

RESULTS

Systematic Search Outcomes

After 299 duplicates were removed, a total of 619 study papers were found through a systematic search. After 320 studies had their titles and abstracts evaluated, 256 papers were discarded. Merely 2 articles were not located out of the 64 reports that were required to be retrieved. 62 articles passed the screening process for full-text evaluation; 31 were rejected due to incorrect study results, 19 due to incorrect population type, and 2 articles were editor's letters. Ten research publications in this systematic review satisfied the requirements for eligibility. An overview of the procedure used to choose the research is illustrated in Figure 1.

Sociodemographic Features of the Comprised Studies

The research publications' sociodemographic information is displayed in Table 1. Ten studies, including a total of 58,234 participants and 21,769 (37.4%) of them were females, were included in our data. All of the included studies were cross-sectional [10-19]. Two studies were conducted in the USA [13, 17], one in Vietnam [10], one in Switzerland [11], one in Jordan [12], one in Canada [14], one in India [15], one in the Netherlands [16], one in Bangladesh [18], and one in Brazil [19].

Clinical outcomes (Table 2)

There were notable differences found between the clinical skills of physicians in managing pain and prescribing opioids and their self-perceived knowledge in these areas [10, 16]. Many studies [11, 12, 15, 17] reported that nearly half of the participants had poor knowledge about using opioids for pain management. Physicians with higher clinical knowledge ratings prescribed fewer opioids [13]. Only two studies reported that professionals with advanced degrees were found to

have a sufficient level of understanding regarding pain and opiate use [16, 19].

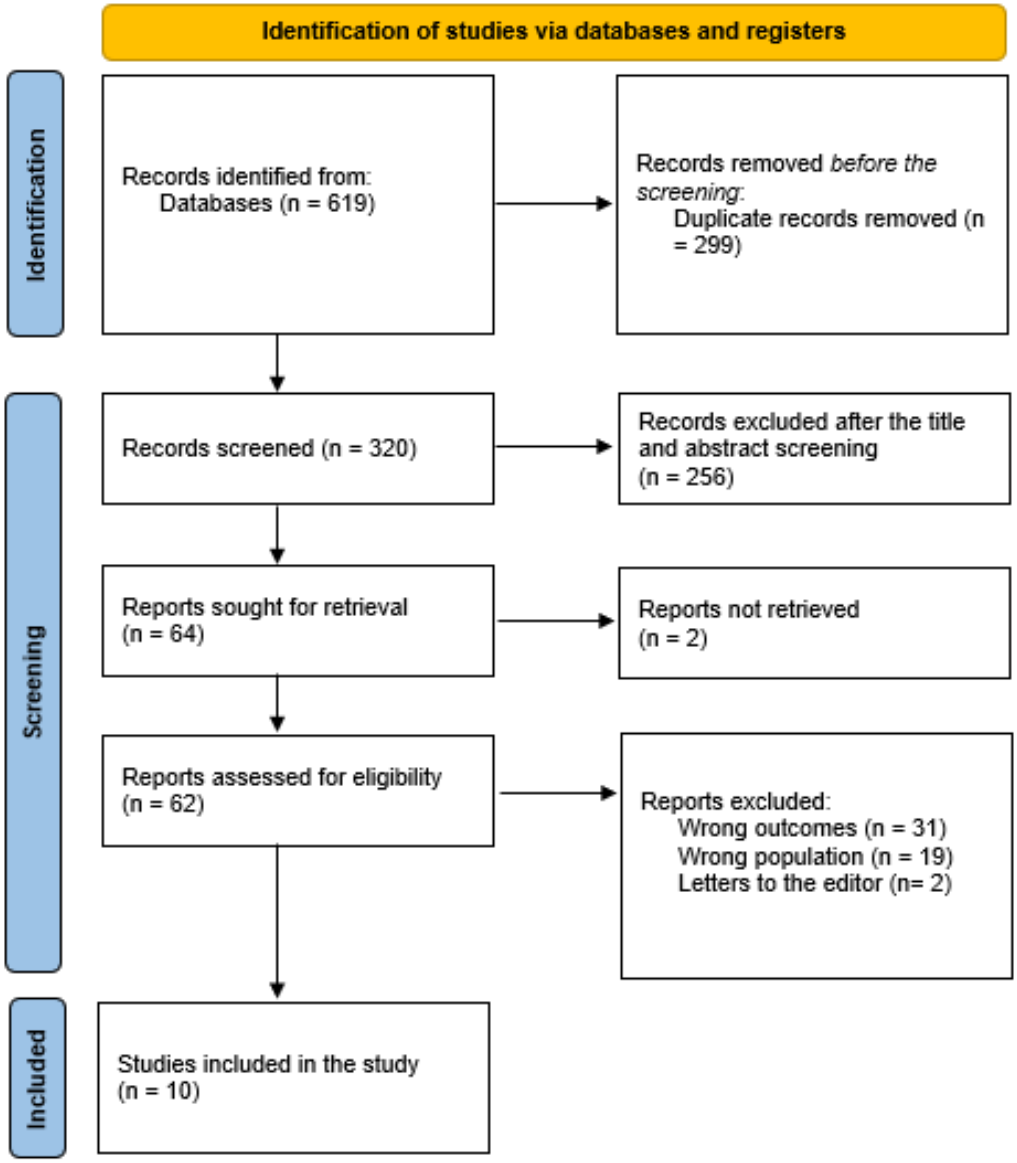

Figure 1: Study decision is summed up in a PRISMA diagram

Table 1: The sociodemographic attributes of the participating populations

Study	Study design	Country	Participants	Mean age/ range	Females (%)
Nguyen *et al.*, 2024 [10]	Cross-sectional	Vietnam	207	28-36	139 (67.1%)
Biesiada, 2024 [11]	Cross-sectional	Switzerland	724	NM	425 (58.7%)
Ayoub *et al.*, 2022 [12]	Cross-sectional	Jordan	201	23-58	114 (56.7%)
Gray *et al.*, 2021 [13]	Cross-sectional	USA	55,387	76.2	20,078 (36.3%)
Fowler *et al.*, 2020 [14]	Cross-sectional	Canada	136	44	60 (54%)
Singh *et al.*, 2019 [15]	Cross-sectional	India	308	NM	163 (52.9%)
Griffioen *et al.*, 2017 [16]	Cross-sectional	The Netherlands	435	25-66	291 (67.7%)
Pearson *et al.*, 2016 [17]	Cross-sectional	USA	131	51.8	89 (68%)
Khan *et al.*, 2014 [18]	Cross-sectional	Bangladesh	583	NM	299 (51.3%)
de Freitas *et al.*, 2014 [19]	Cross-sectional	Brazil	122	41.8 ± 9.7	111 (91%)

Table 2: Clinical features and results of the included research

Study ID	Type of participants	Data collection tool	Main outcomes	JBI
Nguyen *et al.*, 2024 [10]	Physicians	A questionnaire	The opportunity for education covered overdose recognition and management, prescription combinations, risk factors for opioid-related adverse events, and distinctions between patients who are tolerant of and naïve to opioids.	Moderate
Biesiada, 2024 [11]	Physicians	A questionnaire	There were notable differences found between the clinical skills of physicians in managing pain and prescribing opioids and their self-perceived knowledge in these areas. Overall, 41% of doctors gave false information on tramadol dose conversion rates.	Moderate
Ayoub *et al.*, 2022 [12]	Healthcare practitioners	A questionnaire	Of the participants, 50.7% had knowledge at an adequate level and 49.3% had poor knowledge. The majority of knowledge items with wrong answers had to do with administering opioids, pharmacology, dose, side effects, rotation, and toxicity. Compared to pharmacists and nurses, consultant doctors had substantially higher knowledge scores.	Moderate
Gray *et al.*, 2021 [13]	Physicians	Equated scores from the internal medicine MOC examination	When guidelines were quickly updated to prescribe fewer opioids, doctors with higher clinical knowledge ratings prescribed fewer opioids.	Moderate
Fowler *et al.*, 2020 [14]	Physicians	Survey	When prescribing opioids to children, emergency department doctors seemed to be less concerned about the risk of addiction, physical dependency, and the present opioid epidemic.	High
Singh *et al.*, 2019 [15]	Physicians	A questionnaire	Indian physicians believed that professional training in pain management was necessary. Regarding the use of opioid analgesics to treat pain, opinions differ.	Moderate
Griffioen *et al.*, 2017 [16]	Physicians	A questionnaire	Average knowledge scores were adequate; individuals who thought they knew too little about opioids scored less than those who thought they knew enough.	Moderate
Pearson *et al.*, 2016 [17]	Healthcare practitioners	A questionnaire	The lack of understanding among healthcare professionals on the use of opioids for chronic pain was evident. Reduced scores on clinically grounded opioid inquiries can suggest a chance to offer targeted instruction in this field of practice.	Moderate
Khan *et al.*, 2014 [18]	Physicians	A questionnaire	Physicians who specialize in oncology had noticeably higher knowledge scores. The findings showed how ignorant, unfriendly, and unaware doctors were about opioids.	Moderate
De Freitas *et al.*, 2014 [19]	Healthcare practitioners	A questionnaire	Professionals with advanced degrees were found to have a sufficient level of understanding regarding pain and opiate use. However, the degree of expertise for nursing assistants and technicians was lower than anticipated, especially when we consider that these personnel directly assist patients.	Moderate

*NM=Not-mentioned

DISCUSSION

This synthesis has produced important new information that will help us better understand the reservations doctors have about writing prescriptions for opioid drugs. With this information, theory-driven and evidence-based behavior modification principles that

explicitly address the many aspects of clinical inertia that have been found can be clarified.

We found that there were notable differences between the clinical skills of physicians in managing pain and prescribing opioids and their self-perceived knowledge in these areas [10, 16]. Many studies [11, 12, 15, 17] reported that nearly half of the participants had poor knowledge about using opioids for pain management. Physicians with higher clinical knowledge ratings prescribed fewer opioids [13]. Bell *et al.,* highlighted a number of obstacles to the prescription of opioids, such as clinicians' apprehension about the subjectivity of pain and the effectiveness of opioids, their worry for the patient and public safety, their recollection of unpleasant experiences, and their fear of undermining the therapeutic partnership [20].

As a result, residents in all medical specialties frequently lack the necessary training to administer opioids for treating patient pain or handle various opioid-related patient management situations [21-25]. In spite of their reliance on opioids for postoperative pain management, 90% of surgical residents at a big academic institution reported having no formal training in pain management best practices or opioid prescribing [23], demonstrating the extent of this deficiency. The lack of adequate training for medical trainees has led residency schools to start introducing opioid and pain management content into their curricula. Numerous teaching models have been employed by programs, and some have used techniques like survey data gathering to measure the efficacy of these didactics [23-25].

Limitations

This review is limited by the qualitative synthesis only. We restricted our inclusion criteria to nurses and physicians. There is a lack of similar literature that may be used to interpret and compare our findings. Due to a dearth of relevant evidence, the focus of this evaluation was on the prescription of opioids rather than the alignment of prescription with practice standards.

CONCLUSION

This study demonstrated a lack of and insufficient knowledge about opioids on pain management among healthcare personnel. Prospective investigations ought to concentrate on crafting customized instructional curricula and decision-assistance instruments for primary care practitioners, as well as analyzing the influence of interdisciplinary pain treatment groups on patient results.

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