



Acute pain management for road traffic injuries patients in the emergency ward

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Bachelor's thesis

June 2024

Degree Programme in Nursing

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Jyväskylä: Jamk University of Applied Sciences, June 2024, 32 pages

Degree Programme in Nursing. Bachelor's thesis.

Permission for open-access publication: Yes

Language of publication: English

Abstract

Road traffic injuries are a serious issue that negatively impacts public health and safety on a worldwide basis and may have disastrous consequences on people, families, and communities. Road traffic injuries are one of the leading causes of death and disability worldwide. Nurses are vital for the treatment of patients with injuries from traffic accidents. When a patient with a traffic accident arrives at the emergency room, nurses are often the first medical professionals to take care of patients.

Aim: To find out the intervention of acute pain management for road traffic injuries patients in the emergency ward.

Purpose: The purpose of this study is to gather the evidence-based information about how to monitor and manage the acute pain for road traffic injuries patients in the emergency ward.

Method: A literature review is an effective way for combining research findings to demonstrate evidence at the meta-level and identify areas that require additional study. CINAHL and PubMed were the two electronic databases used for this study's literature search which is available at Janet Finna for JAMK students.

Results: These articles originated from various countries, including one from Rwanda, two from Ethiopia, and one each from China and the USA. The findings are categorized into the main categories including assessment and monitoring of pain, pharmacological management, non-pharmacological management, and stress reduction. The findings of this study provide valuable assistance in managing acute pain in the emergency ward for patients with road traffic injuries. This can be achieved through the utilization of tools such as the numeric rating scale (NRS) for pain assessment, as well as non-pharmacological approaches including psychological support, positioning therapy, and relaxation techniques.

Keywords/tags (subjects)

Nurse, Road Traffic Injuries, Road traffic injuries Patients, Emergency Ward, Emergency Departments, RTI, Trauma, Nursing Interventions, Acute pain management

Miscellaneous (Confidential information)

None

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1 Introduction

Road traffic injuries (RTIs) are a serious issue that negatively impacts public health and safety on a worldwide basis and may have disastrous consequences on people, families, and communities.

Road traffic injuries are one of the leading causes of death and disability worldwide. According to the World Health Organization (WHO, 2023) estimates that approximately 1.3 million fatalities and millions of non-fatal injuries result from traffic accidents each year. Road traffic injuries (RTIs) are occurrences that happen on highways involving automobiles, bicycles, and other motor vehicles. Road traffic injuries are also known as road traffic accidents or road collisions. These injuries can range in severity from minor bruising or cuts to deaths. (Bachani et al., 2017)

Road traffic injuries are caused by a variety of factors, including actions performed by individuals, such as exceeding the speed limit, driving while drunk or use of drugs, texting while driving, distracted driving, and not using a seatbelt or a helmet. Road infrastructure can also play a role in accidents through problems including poor construction, inappropriate signage, and a lack of safety measures. Vehicle-related components especially the lack of safety measures like airbags and anti-lock brakes, are also very essential. In addition to the weather and road conditions (such as ice or wet roads), light exposure can also influence things. (WHO, 2023.)

Road traffic injury prevention activities frequently emphasize taking steps to prevent accidents including education and awareness campaigns to promote safe driving behaviours and enforcing road regulations such as seatbelt usage and speed restrictions. modifications to the road network and infrastructure that promote safety, and the regulation of vehicle safety standards, Rapid medical care for accident victims is required to reduce death rates, hence prompt emergency response systems are essential. (Gopalakrishnan, 2012)

These efforts attempt to reduce the severe economic and psychological costs that RTIs impact on people, families, and society at general in addition to preventing injuries and saving lives. Road traffic injuries have an impact that extends beyond just immediate injuries. These incidents come with significant financial and social costs such as healthcare expenses, reduced incomes, and the psychological stress suffered by victims and their families. To save lives, lower injury rates, and lessen the overall societal costs associated with road traffic injuries, a comprehensive, multi-sectoral strategy is necessary. (Gopalakrishnan, 2012). The aim of this literature review is to find out

interventions for acute pain management in road traffic injuries patients in the emergency department, while the purpose of this study is to gather evidence-based information on monitoring and managing acute pain for the same patient population in the emergency ward.

2 Nursing care in the Emergency ward and Road traffic injuries patient

2.1 Nursing care in the emergency Ward

Nursing care is the term used to describe the expert and all-encompassing care that nurses give to people, families, or communities to preserve and advance health, fend off illness, and aid in healing. Nurses are essential in treating patients who need emergency care because of severe illnesses, traumas, or life-threatening ailments. (WHO, 2020) Emergencies are conditions or incidents that represent a threat to life and require for prompt and intensive care. An emergency ward, sometimes referred to as an emergency room (ER), emergency department (ED), or casualty department, is a section of a hospital dedicated to treating patients who have injuries or diseases that need to be treated right away. (Yancey, 2023) An emergency department is a healthcare facility that offers unplanned outpatient services to patients whose conditions require immediate attention. It is staffed twenty-four hours a day, seven days a week. A diverse team of medical professionals, including emergency physicians, nurses, surgeons, specialists, technicians, and support staff, staff emergency rooms. They are all qualified to address a variety of urgent medical emergencies. (Yancey, 2023.) Effective communication, interaction, unique talents, and the capacity to work quickly are all necessary for professionals to collaborate in a multi-professional work setting. In an emergency department, each healthcare provider's the capacity to accept complementary roles within a team, collaborate, divide up the burden of problem-solving, and make the choices necessary to create and implement patient care. (Busari et al., 2017)

Rapid evaluation, stabilization, and treatment of patients with life-threatening illnesses is the main goal of an emergency ward. This covers serious wounds, unexpected sicknesses, breathing problems, chest pain, serious infections, and other potentially fatal conditions. (Yancey, 2023.) Patients with a wide range of medical conditions, varied in severity and urgency, present to the emergency ward. Road traffic injury emergency rooms have an involved concern that goes beyond providing emergency care. Following such accidents, patients frequently present with physical damage, ranging from head injuries, lacerations, and fractures to more serious conditions requiring

immediate surgical surgery. (Ali & Richard, 2023.) In the emergency department, nurses provide vital emotional and physical support to patients, fulfilling a critical role in their care. Fear, worry, and distress are common emotions experienced by patients and their families at times of crisis. A sense of comfort and certainty is given by nurses because of their sympathetic attitude and caring approach. They help reduce stress in challenging situations by listening intently, providing answers, and addressing concerns. (Flaubert et al., 2021.)

Emergency wards play a far larger role than just providing rapid medical care. They serve as vital elements in the healthcare system, acting as a link between patients and hospitals that offer more specialized care by responding quickly to medical emergencies. Their capacity to provide prompt, high-quality care has a substantial impact on patient outcomes and enhances community health and well-being. (Yancey, 2023.)

2.2 Road traffic injury patient

Patients with road traffic injuries are those injured or traumatized by accidents or occurrences involving cars, bicycles, people walking, or other road users. Individuals affected by incidents on roadways involving different forms of transportation are known as road traffic injury patients. (WHO, 2023.) Such injuries may have an extended impact on a person's mental, physical, and emotional well-being and can be minimal to severe. These accidents can result in various ailments, ranging from small bruises and cuts to serious and fatal conditions. While uncomfortable, small sprains, cuts, and bruises are examples of minor injuries that usually do not require significant medical care. Injuries producing severe pain and disability, deep cuts, and fractures are examples of more serious wounds. Some of the most severe injuries encountered in traffic accidents include multiple fractures, head trauma, spinal injuries, and extensive bleeding. These situations are critical and frequently fatal. (Rosenbloom et al., 2013.)

Nurses are vital for the treatment of patients with injuries from traffic accidents. When a patient with a traffic accident arrives at the emergency room, nurses are often the first medical professionals to take care of patients. Nurses perform initial assessments, collect important information on injuries, and determine the priority of care according to the seriousness of the wounds, guaranteeing that patients in critical condition receive prompt care. (Nshutiyukuri et al., 2020.)

After road traffic accidents, patients frequently deal with a variety of mental challenges. Nurses provide patients with a listening attitude and a supporting presence while recognizing and affirming their emotional discomfort. They offer a secure environment where patients can communicate their worries and fears while receiving comfort and understanding. Nurses inform patients about their health conditions, treatments, and rehabilitation schedules. By providing patients with knowledge that enables them to understand and take part in their recovery, they educate patients about treatments, prescription drugs, and rehabilitation exercises. Nurses work with other medical experts to determine the best psychosocial support for their patients after assessing their mental health requirements. To assist patients in coping with the emotional consequences of the accident, they might provide resources or recommendations for support groups, psychologists, or counselors. (Kourkouta & Papathanasiou, 2014.) When it comes to meeting the informational, emotional, and physical needs of patients with traffic injuries, nurses use a comprehensive approach. Their skill, knowledge, and understanding greatly aid patients in managing the difficulties brought on by their injuries and navigating the healing process. (Braaf et al., 2018.)

3 The Impact of Road Traffic Injuries on Patients

Depending on the type and extent of their injuries, people who have suffered from road traffic injuries may experience significant and diverse impacts. These impacts, which can be economic, social, emotional, and physical, frequently have a considerable effect on the lives of the people who are affected. Healthcare professionals, such as nurses and other team members, must offer RTI patient's complete treatment that considers both their physical and emotional requirements. Patients can recover and regain their independence as well as their general well-being with the aid of rehabilitation, pain management, psychological support, and community resources. (Almutairi & Altamimi, 2019)

Road traffic injuries frequently result in significant physical injuries, such as fractures, head trauma, spinal cord injuries, and internal injuries. These injuries can leave the patient with long-term or permanent disability and cause them great physical pain and suffering. As a result of their injuries, many RTI patients endure acute and chronic pain, which can impair their mobility and general quality of life. For patients to regain their physical and functional abilities, intensive rehabilitation frequently includes speech therapy, occupational therapy, and physical therapy. (Alharbi et al., 2019). Witnessing or involvement in a Road traffic injury can result in severe psychological trauma, which can result in problems such as post-traumatic stress disorder (PTSD), anxiety, depression, and adjustment difficulties. Many Road traffic injuries patients have increased anxiety when driving or even crossing the street, which can influence their daily lives. (Almutairi & Altamimi, 2019). Road traffic injuries (RTIs) can have a significant negative social impact on a person, making it more difficult for them to participate in social activities and keep up social networks. Due to the difficulties, people have reintroduced into their communities, the physical disabilities or psychological distress brought on by these injuries may cause social isolation. This affects the injured people immediately, but it also affects their families and caregivers, who could feel more stressed as they continue to support and help in the wake of RTIs. (Almutairi & Altamimi, 2019)

RTIs can result in high medical costs, such as those related to hospitalization, operations, rehabilitation, and continuous medical care. The medical expenditures connected with hospitalization, operations, rehabilitation, and continuous medical care can be significant. Furthermore, persons who experience injuries may be absent from work for extended period of time or have their earning potential decreased owing to their weakened health. These financial consequences impact not just

the wounded persons' immediate economic stability, but also their families and dependents. The interweaving of physical, psychological, social, and economic implications underscores the need for a comprehensive and coordinated approach to handle the many components of RTI consequences, ensuring sufficient assistance for people impacted on many different levels. (Gorea, 2016). The repercussions of a road traffic injury (RTI) frequently result in a significant decline in the affected people's quality of life. Physical limitations imposed by injuries, along with ongoing pain and mental distress, lead to a decreased feeling of well-being. The effects of an RTI might last beyond the first healing period, resulting in chronic health issues that demand continuing medical treatment. This persistent need for medical treatment not only adds to the physical load, but it also serves as a continual reminder of the injury's influence on the individual's everyday life. The subjective perception of diminished quality of life includes both the physical limits imposed by the disability as well as the intangible obstacles related with emotional and psychological well-being. The comprehensive understanding of the effects of RTIs on quality of life emphasizes the importance of comprehensive rehabilitation and support services that address not only the physical aspects but also the emotional and long-term health considerations for individuals on their journey to recovery. (Kovačević et al., 2020.)

As revealed, the impact of RTIs on individuals emphasizes the critical role of healthcare professionals, particularly nurses, in delivering complete care. Nurses are at the forefront of dealing with the various implications of RTIs, considering the economic, social, emotional, and physical elements. The nursing role includes not just medical treatment, but also an integrated strategy that identifies and addresses the larger consequences of RTIs on patients and their families. Nurses contribute greatly to the rehabilitation process by providing comprehensive care that addresses both the physical and emotional requirements of RTI patients. For patients to regain independence and general well-being, rehabilitation, pain management, psychological support, and collaboration with community resources must all be integrated. Nurses play a critical role as frontline caregivers in delivering a coordinated and integrative strategy that matches with the comprehensive nature of the issues faced by RTIs, eventually helping persons on their journey to recovery (Almutairi & Altamimi, 2019).

4 Aim, Purpose, and Research Question

The aim of this literature review is to find out the interventions of acute pain management for road traffic injuries patients in the emergency department.

The purpose of this study is to gather evidence-based information about how to monitor and manage the acute pain for road traffic injuries patients in the emergency ward.

Research Questions: What are the interventions of acute pain management interventions for road traffic injuries patients in the emergency department?

5 Methodology

5.1 Literature review

A literature review assesses the body of knowledge already available on a particular academic topic, theme, or issue to point out knowledge gaps and suggest future lines of inquiry. An effective literature review condenses, examines, assesses, and integrates the relevant research in a certain area of study. (Chigbu et al., 2023) A literature review is an effective way for combining research findings to demonstrate evidence at the meta-level and identify areas that require additional study. This is a key component in developing theoretical frameworks and conceptual models. It provides the framework for comprehending the state of knowledge as it exists today in an area by compiling important ideas, theories, techniques, and research results from a range of sources. A literature review places the study's findings in the larger context of scientific dialogue while also identifying gaps or issues in the literature of current research through its synthesis and analysis. It offers insights into the methodological techniques employed in earlier studies and influences research design, methodology selection, and idea formulation. (Snyder, 2019.)

In this study, the literature review was conducted to analyze the interventions of acute pain management accomplishing the requirements of patients with road traffic accidents in the emergency ward. These patients frequently have a variety of serious injuries when they first arrive, so they require quick nursing care.

5.2 Literature search

CINAHL and PubMed were the two electronic databases used for this study's literature search which is available at Janet Finna for JAMK students. These databases were selected due to the diversity of health-related research that they contain, including literature from the medical and nursing fields. The PICO's structure was used to formulate the research question. Boolean operators "AND" and "OR" were used with keywords like road traffic injuries patient, nursing interventions, emergency ward, emergency department, and acute pain management for searching the articles. The following were the defined inclusion criteria: Peer-reviewed articles with English as the primary language were published between 2012 and till 2024 and were available in full text.

The search was conducted by using PICOs illustrated in Table 1

Table 1. PICOs

PICOs	Criteria
Population	Road traffic injury patient OR road traffic accident patient OR patients with road traffic injuries
Intervention	Nursing intervention, acute pain management
Context	Emergency department OR emergency ward
Study design	Published from 2012 to 2024 peer-reviewed journals, full-text available in English for JAMK students.

The full inclusion criteria are summarized in Table 2.

Table 2. Inclusion criteria

Inclusion criteria
Full text available for JAMK students
Peer reviewed
Published between 2012-2024
English language
Answer the research question
Relevant publication

Table 3 illustrates the article search.

Table 3. Articles search

Database	Total articles number	Filtering articles	Studies were chosen based on their titles or abstract	Final article
CINAHL	31	7	4	0
PUBMED	68	40	15	5

As shown in the Table 3. In this review, studies were selected through a four-step process. Initially, 99 studies were identified using PICOS search in CINAHL and PubMed. Subsequently, 47 studies were retained after filtering based on inclusion criteria. Following this, 19 studies were chosen based on their article titles and abstracts. Finally, after reviewing the full texts, five studies were selected for inclusion in the review. Due to the limited number of articles directly relevant to the research question, only five articles that closely aligned with the study's focus were included.

5.3 Data analysis

Throughout the study, data analysis followed a multifaceted and iterative process typical of qualitative research. The main aim is to identify the implicit meanings people give to the things they do and say in relation to a given phenomenon. Even with digital instruments specifically made for analyzing qualitative data, the researcher is still the most important tool for deriving these meanings. This is accomplished by delving deeply into the data and interacting with the people who contribute to the database. Content analysis involves several key steps: preparing the data, reading, and reflecting, coding, categorizing, and developing themes. These steps are essential in all approaches

to content analysis. Throughout the process, it transitions from simply describing the phenomenon to conceptualizing and abstracting themes. (Ravindran, 2019)

There are two methods for analyzing qualitative data: deductive and inductive. Although deductive reasoning is usually associated with quantitative research, it can also be applied in qualitative research for explanatory reasons or to construct established categories. A deductive approach to analysis may be effective when it has a focused, narrow research question and is interested in particular elements of the phenomena. Inductive analysis is an approach that begins with observations and patterns identified throughout the data and then continues to create more general themes, concepts, or abstractions. (Ravindran, 2019) The author used an inductive analytical method in this study because it begins with observations and patterns observed in the data and then progresses to develop broader themes, concepts, or abstractions.

The results were analyzed based on five research articles, with one each published in the years 2014, 2020, 2021, 2023, and 2024. These articles originated from various countries, including one from Rwanda, two from Ethiopia, and one each from China and the USA. The findings are then presented as main categories including assessment and monitoring of pain, pharmacological management, non-pharmacological management, and stress reduction all of which contribute to addressing the research question. The results are explained in detail in the latter chapter. Figure 1 shows an example of the data analysis process followed by this study.

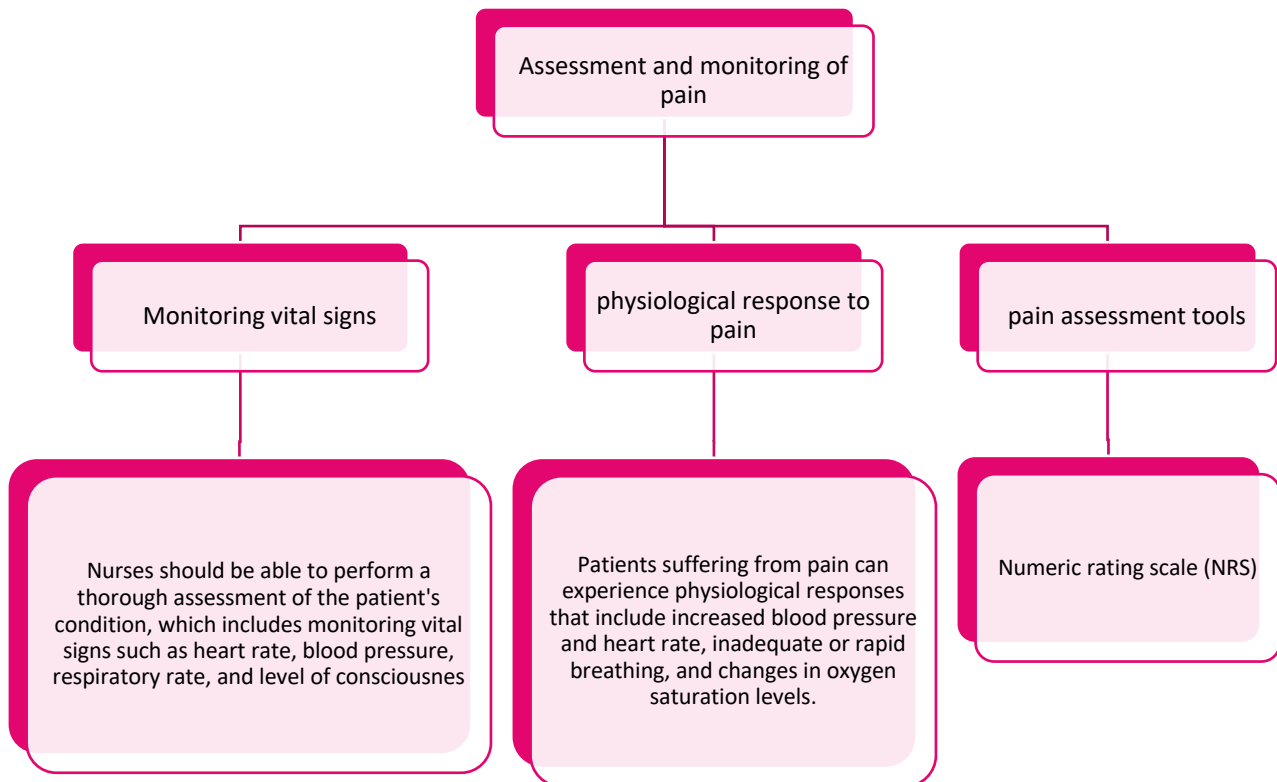


Figure 1. Example of data analysis process

6 Results

The content analysis for the study is demonstrated in Table 4. The main categories that emerged after analyzing the data were assessment and monitoring of pain, pharmacological management, and non-pharmacological management, and stress reduction.

Table 4. Subcategories and categories

Subcategories	Categories
<ul style="list-style-type: none"> • Monitoring vital signs • Physiological Responses to Pain • Pain assessment tools 	Assessment and monitoring of pain
<ul style="list-style-type: none"> • Drugs for pain relief • Types of pain in emergency setting • Using the pain management index • Pharmacological approaches in the treatment of pain 	Pharmacological management
<ul style="list-style-type: none"> • Nurse's roles in non-pharmacological pain treatment • Non-pharmacological approaches • Setting a calm and comfortable the environment 	Nonpharmacological management
<ul style="list-style-type: none"> • The effects of accidental injuries on mental health • Emotional support 	Stress reduction

6.1 Assessment and monitoring of pain

Pain is the uncomfortable blend of sensory and emotional sensations that arise from actual or possible harm to bodily tissues (Zelege et al., 2021; Ayano et al., 2023). After an accident, patients suffer from various types of injuries, leading to pain. In the emergency ward, patient monitoring for acute pain management with patients who have been in traffic accidents requires close monitoring and evaluation of the condition of the individual. Nurses should be able to perform a thorough assessment of the patient's condition, which includes monitoring vital signs such as heart rate, blood pressure, respiratory rate, and level of consciousness. Patients suffering from pain can experience physiological responses that include increased blood pressure and heart rate, inadequate or

rapid breathing, and changes in oxygen saturation levels. (Nshutiyukuri et al., 2020) According to Pereira GF et al. (2014) To assess pain, the study used the numeric rating scale (NRS) which is a self-reported measure of pain intensity. The NRS is a simple and effective tool for assessing pain and has been validated for use in the emergency department. The study revealed enhancements in the initial assessment and treatment of road traffic accident (RTA) patients, encompassing tasks such as airway management, bleeding control, and patient stabilization. Notably, improvements were noted in addressing specific injury patterns and employing advanced equipment and techniques during the management process. (Nshutiyukuri et al., 2020)

6.2 Pharmacological management

Pain is the most common reason for people to go to the emergency department (ED) worldwide. The most frequent types of pain are trauma pain, urologic pain, abdominal pain, and non-trauma musculoskeletal pain. Trauma pain is often overlooked but can have serious effects on a patient's health and well-being. To address this, experts recommend that pain should be considered a vital sign in emergency care. The study used the pain management index (PMI), which compares a patient's pain severity to the suitability of the prescription analgesics in accordance with the WHO pain management ladder, to evaluate the pain treatment practices among trauma patients. Understanding the pharmacological characteristics of both opioid and non-opioid analgesics as well as the evaluation of risks associated with opioid diversion, abuse, and misuse are essential for effective pain management. Tramadol was the most prescribed analgesic, followed by diclofenac and then paracetamol. The study shows that the assessment of the patient's pain intensity both prior to and during the administration of pain relief medication is essential for the effective and appropriate management of acute pain. To evaluate the effectiveness of acute pain management among trauma patients in compliance with the WHO pain management ladder. (Ayano et al.,2023)

6.3 Nonpharmacological management

Nurses play a crucial role in managing patient pain through non-pharmacological methods like psychological and educational support such as providing information about treatment can help patients understand the details of their care. Pain is influenced by psychological, social, and spiritual factors. These non-pharmacological approaches by reducing symptoms, changing pain perception, promoting relaxation, and improve sleep patterns. Examples of non-pharmacological pain

management techniques include heat and cold application, positioning therapy, relaxation therapy, deep breathing exercises, and distraction therapy. As part of non-pharmacological pain care, nurses reduce sounds for patients and reduce lighting levels to create a calm and comfortable environment. Nurses, being frontline caregivers, often hear about patients' pain and can address it directly. Therefore, their skill in non-pharmacological pain management is essential for effective care. (Zelege et al., 2021)

6.4 Stress reduction

Accidental injuries can result in mental problems like acute stress reactions or even post-traumatic stress disorder (PTSD), in addition to physical problems like musculoskeletal or brain injuries. Patients may feel scared, anxious, or depressed in addition to having nightmares, difficulty sleeping, and eating issues. These emotional reactions can interfere with their ability to heal and impair their general quality of life. It's vital for nurses to understand that patients' emotions are coping strategies for their incidents and that treating them with compassion is essential. Medical professionals help patients cope with trauma and enhance both their physical and mental well-being by respecting their values, giving them oversight, and encouraging resilience in them. (Xia et al., 2024) younger individuals tend to experience more stress than older individuals after a motor vehicle collision. In the study with younger adults, depression levels were assessed using the 20-item Center for Epidemiologic Studies Depression Scale-Revised (CES-D-20). For older adults, a modified 10-item version of the CES-D scale, tailored for their age group, was used to measure depressive symptoms. (Pereira GF et al., 2014)

7 Discussion

7.1 Discussion of the results

The findings of five research articles performed from 2014 to 2024 offer valuable insights into acute pain management practices across diverse countries (Rwanda, Ethiopia, China, and the USA) and healthcare settings. The results point out the value of comprehensive treatments that include methods for stress reduction, non-pharmacological therapies, pharmaceutical management, and assessment and monitoring of pain.

Assessment and monitoring of pain is a crucial component in treating acute pain, especially for those who have been in an accident with a vehicle. When performing comprehensive evaluations, nurses are essential because they keep an eye on vital indications like heart rate, blood pressure, breathing rate, and consciousness level. (Nshutiyukuri et al., 2020) The significance of considering pain as a vital sign in emergency care. The pain management index (PMI) is utilized to assess the appropriateness of prescription analgesics according to WHO guidelines. The findings reveal that tramadol, diclofenac, and paracetamol are commonly prescribed analgesics for accident patients. (Ayano et al., 2023)

Nurses are essential in enhancing non-pharmacological therapies for pain management by offering patients psychological and educational assistance. The goals of these interventions are to lessen symptoms, change how pain feels, encourage relaxation, and enhance sleep habits. Applying heat or cold, posture therapy, relaxation therapy, deep breathing exercises, and distraction therapy are a few examples of non-pharmacological approaches. (Zelege et al., 2021)

The most effective ways for treating acute pain in emergency department patients injured in traffic accidents are using medication-based treatments and keeping careful monitoring of patients, according to this review of the literature. The findings from this study assist in managing acute pain in the emergency ward for patients with road traffic injuries by utilizing tools such as the numeric rating scale (NRS) for pain assessment and non-pharmacological approaches such as psychological support, positioning therapy, and relaxation techniques. Additionally, those search articles included in Nshutiyukuri et al., (2020), Ayano et al., (2023)

7.2 Critical appraisal, Ethical consideration, Validity, reliability, and limitations

Evaluating clinical research critically is essential to making well-informed decisions in healthcare. The practice of closely and methodically evaluating research findings to determine their reliability, worth, and applicability in each situation is known as critical appraisal. It supports healthcare professionals in evaluating study quality, observing biases or other constraints, and figuring out how findings relate to patient care. Enhancing the ability of healthcare professionals to ascertain if study evidence is truthful (bias-free) as well as relevant to the needs of patients is an intention of critical appraisal. (Al-Jundi & Sakka, 2017)

The critical appraisal of articles in this literature review was guided by the checklist developed by Hawker et al. (2002). The checklist comprised nine criteria: (1) title and abstract, (2) introduction, and aims (3) method and data (4) sampling (5) data analysis (6) ethics and bias (7) results (8) transferability or generalizability (9) implications and usefulness. Each article was evaluated based on these criteria, with scores ranging from good (4) to very poor (1). Lower scores indicated poorer quality in the respective criteria. As shown in Appendix 1, A total score of 36 indicates that the article has been assessed as being of moderately to good quality using scoring criteria. In this literature review, five articles were evaluated using the criteria outlined by Hawker et al. (2002).

Contemporary research involves legal and ethical considerations that are relevant to both the research participant and the person conducting the study. The Declaration of Helsinki determined moral guidelines that are used in clinical research using human subjects. (Yip et al., 2016) Ethical guidelines that uphold and guarantee the dignity of every human vulnerable and preserve their rights and well-being apply to research in medical fields. The main role of research with human beings is to better understand the causes, symptoms, and effects of medical conditions to develop preventive in nature, screening, and therapeutic approaches. Even the most well-established therapies need to be continuously studied to guarantee their overall quality, affordability, accessibility, safety, and efficacy. (World Medical Association, 2013.) Most articles mentioned ethical considerations in the data used for the analysis. However, two articles specifically mentioned obtaining permission and approval from the Institutional Review Boards of the coordinating institution and the College of Medicine and Health Sciences. It also mentioned obtaining approval from the research committee of each hospital and obtaining written informed consent from participants.

An essential component of any research is validity and reliability. Among the most significant and vital areas in evaluating any measuring methodology for data collection in a quality research effort are reliability and validity. The reassurance of an approach when analyzing a concept is referred to as reliability. The accuracy with which a methodology assesses a variable that it is intended to measure therefore is recognized as validity. (Ahmed & Ishtiaq, 2021) The literature review utilized CINAHL and PubMed for data analysis, aligning with the research question.

During the literature review process, certain limitations were encountered. This research was confined to the utilization of English-language articles accessible for free to JAMK students or through public free access. It is important to recognize the possibility of missing relevant material written in languages other than English. It's also important to take into account that the author's review did not include any literature written in languages other than English. Due to the insufficient amount of availability research conducted on this study, there were few articles available that directly pertained to this study. The aim of this literature review was attained by the researcher through modifying the criteria accordingly.

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Appendices

Appendix 1. Data extraction

Author/ year	Study title	Aim of the study	methodology	Study finding	Critical appraisal (hawker et al.,2002)
Nshutiyukuri et al., 2020 Rwanda	An assessment of Nurses' knowledge, attitude and practice of emergency care related to road traffic accident victims	The purpose of this study was to assess- ment patients of traffic acci- dents' knowledge, attitudes, and emergency care prac- tices.	A cross-sec- tional de- scriptive study design was used.	The nurses approached giving emer- gency care to victims of traffic acci- dents with positivity.	35
Ayano et al., 2023 Ethiopia	Assessment of trauma pa- tients' pain management practices for suitability and adequacy	To investi- gate the ef- fectiveness and appropri- ateness of pain treat- ment meth- ods for road traffic injury patients	prospective observational research that was carried out.	The finding of this study is that Pain management for trauma patients should begin as soon as possible and be done cor- rectly to sup- port their	36

				<p>general health as well as pain reduction. To achieve efficient pain management, this entails utilizing the appropriate medications in accordance with World Health Organization (WHO) guidelines.</p>	
<p>Zelege et al. (2021) Ethiopia</p>	<p>Practices of non-pharmacological pain management</p>	<p>to determine non-pharmacological methods of treating pain</p>	<p>Version 3.1 of Epi Data was used to enter the data, and version 23 of SPSS (Statistical Package for Social Sciences) was used for analysis.</p>	<p>The finding is that Nurses were proficient in non-pharmacological pain relief approaches. However, they encountered significant obstacles, including a lack of collaboration from</p>	<p>36</p>

				physicians, the burden of multiple nurs- ing responsi- bilities, and an inade- quate nurse- to-patient ra- tio	
Xia et al., 2024 China	Provide treat- ment and lim- itations in providing trauma-in- formed care to people who have ac- cidentally suf- fered injuries	The aim of this study was to investigate the difficul- ties and cur- rent ap- proaches in providing trauma-in- formed treat- ment to indi- viduals who have acci- dentally suf- fered injuries.	The study used a quali- tative design,	The analysis showed themes: (a) awareness of patient’s psy- chological ex- periences by patients, (b) response to psychological trauma (c) recognition of psychological trauma. The	33
Pereira et al. (2014) USA	Pain, distress, and possible recovery fol- lowing a car crash among both younger	To find out the occur- rence and features of suffering and pain as well	It was cross- sectional re- search.	According to the study, fol- lowing a mo- tor vehicle ac- cident, older persons	32

	and older patients in the emergency room	as the anticipated duration of time needed for both mental and physical treatment in the emergency ward after the accident.		expected longer well-ness time required and had greater pain and distress scores than younger adults. Assessing and managing these differences is a vital role that nurses play in helping patients receive the best care possible.	
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Appendix 2. Critical appraisal (Hawker et al. 2002)

Author	Abstract /Title	Introduction And Aims	Method And data	sampling	Data analysis	Ethics and bias	re-sults	Transfer durability Or Generalizability	Implications and usefulness	Total scores
Nshutiyukuri et al., 2020	4	4	4	4	4	4	4	3	4	35
Ayano WA et al., 2023	4	4	4	4	4	4	4	4	4	36
Zelege et al. (2021)	4	4	4	4	4	4	4	4	4	36
Xia et al., 2024	4	4	4	3	3	4	4	3	4	33
Pereira et al. (2014)	4	3	4	4	3	3	4	4	3	32