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The nurse providing care to trauma victims in pain: the fifth vital sign

O ENFERMEIRO NO CUIDADO À VÍTIMA DE TRAUMA COM DOR: O QUINTO SINAL VITAL

EL ENFERMERO EN EL CUIDADO A LA VÍCTIMA DE TRAUMA CON DOLOR: LA QUINTA SEÑAL VITAL

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ABSTRACT

This qualitative study evaluated nurses' knowledge regarding pain in trauma victims. This study was developed at a public hospital, using a questionnaire and a knowledge test, both of which were treated using Content Analysis. The sample as comprised by 27 nurses, mainly women (92.6%), with an average age of 31 ±10.3 years and most with less than one year since their graduation (51.8%). Results evinced pain as an unpleasant sensation, a warning sign and a subjective experience. Pain measurement is seen from subjective and objective perspectives. Most nurses (59.3%) are not familiar with the evaluation instruments and, among those with some familiarity, the numerical scale was the most referred. The strategies for pain control mentioned by the nurses were measured as pharmacologic and non-pharmacologic and associated. All nurses considered that pain measurement is *important* and that is a pathway to a humanized and qualified treatment that guides the therapeutic conduct and reestablished the patients' well-being.

KEY WORDS

Pain.
Wounds and injuries.
Pain measurement.
Nursing assessment.

RESUMO

Estudo qualitativo que avaliou o conhecimento do enfermeiro acerca da dor na vítima de trauma. Desenvolvido em um hospital público, por meio da aplicação de questionário e teste de conhecimento e tratados pela Análise de Conteúdo. A amostra compreendeu 27 enfermeiros, em sua quase totalidade de mulheres (92,6%), idade média 31 ±10,3 anos e maioria com formação inferior a 1 ano (51,8%). Os resultados evidenciaram a dor como sensação desagradável, sinal de alerta e uma experiência subjetiva. A avaliação da dor é vista por aspectos subjetivos e objetivos. A maioria (59,3%) desconhece os instrumentos de avaliação e dentre os que conhecem a escala numérica foi a mais referida. As estratégias de controle de dor mencionadas foram medidas em farmacológicas, não farmacológicas e combinadas. Todos os enfermeiros consideraram a avaliação da dor importante e um caminho para o tratamento humanizado e qualificado, que orienta a conduta terapêutica e restabelece o bem-estar do paciente.

DESCRITORES

Dor.
Ferimentos e lesões.
Medição da dor.
Avaliação em enfermagem.

RESUMEN

Estudio cualitativo que evaluó el conocimiento del enfermero respecto del dolor en la víctima de trauma. Desarrollado en un hospital público, a través de la utilización de cuestionario y test de conocimiento, tratados por el Análisis de Contenido. La muestra se compuso de 27 enfermeros, casi en su totalidad mujeres (92,6%), edad media de 31 ± 10,3 años, la mayoría con graduación inferior a un año (51,8%). Los resultados evidenciaron al dolor como sensación desagradable, señal de alerta y como una experiencia subjetiva. La evaluación del dolor es vista por aspectos subjetivos y objetivos. La mayoría (59,3%) desconoce los instrumentos de evaluación, de entre los que conoces, la escala numérica fue el más referido. Las estrategias de control de dolor mencionadas fueron medidas farmacológicas, no farmacológicas y combinadas. Todos los enfermeros consideraron la evaluación del dolor como *importante* y como forma para la humanización del tratamiento, calificado, que orienta la conducta terapéutica y restablece el bienestar del paciente.

DESCRIPTORES

Dolor.
Heridas y traumatismos.
Dimensión del dolor.
Evaluación en enfermería.

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INTRODUCTION

Trauma is a medical situation characterized by structural changes in an organism or physiological unbalance induced by the transfer of energy among tissues and the environment. It is a significant public health problem because it impacts the population's morbidity and mortality, since approximately 60 million people per year worldwide suffer some kind of trauma, which accounts for one of each six hospitalizations[1].

One of the main consequences of a trauma is pain, which significantly harms patients. Pain resulting from a trauma is the least investigated acute pain. It seems contradictory given the large number of victims of accidents and violence, events that cause intense pain[2].

The International Association for the Study of Pain defines pain as an *unpleasant sensory and/or emotional experience associated with actual or potential tissue damage, or described in terms of such damage*[3].

The organic repercussions of the experience of intense pain are usually underestimated or even ignored by nurses and physicians. Most health professionals do not know the impact of pain on patients and underestimate it as well as the prescription of medication. Not administering medication to patients in pain is one of the factors that worsen the problem[4].

This vital sign not only generates organic repercussions, but also implies: psychological, social, economic and physical harm leading to depression, anxiety, impaired memory and ability to concentrate; sick leave, loss of leisure activities, problems in interpersonal relationships; and economic problems that accrue from higher expenses that result from the use of the health system[5].

Pain is a physiological mechanism that may have a thermal, mechanical or chemical nature. Complex reactions are present in such mechanisms that result from the release of diverse chemical substances (bradykinin, histamine, prostaglandins, among others) responsible for triggering the transmission of a painful impulse[5].

Pain has been considered the 5th vital sign with a movement since 2000 requiring that, since measurement of vital signs is standardized in all health institutions, the measurement and recording of pain also be standardized in the routine of physicians and nurses who care for patients at the different levels of health care services[6].

Evaluating pain in an Emergency Department (ED) is very important and should be part of care delivered to any patient complaining of pain, however, there are difficulties in evaluating pain since it is a subjective phenomenon. Additionally, one has to take into account aspects such as the number of employees, demand of patients and services, available material resources, so that the assessment of the painful phenomenon is a feasible activity valued by the team[7].

A study was carried out with 100 victims of car accidents cared for in a hospital of excellence in trauma and revealed that acute pain is a common phenomenon in ED, reaching 90% of cases and most of them with intense pain (56%) in the first evaluation. These findings strongly indicate the need to pay more attention to trauma victims in relation to pain assessment[2].

The evaluation and recording of pain intensity by health professionals should be continually and regularly performed in the same way as vital signs are continually checked aiming to improve therapy, reassure the team providing care and improve the patients' quality of life[8]. Hence, pain is considered the 5th vital sign and its evaluation is very importance, since reestablishing patients' well being is not possible without a measure on which to base the treatment[9].

The evaluation and recording of pain intensity by health professionals should be continually and regularly performed in the same way as vital signs are continually checked aiming to improve therapy, reassure the team providing care and improve the patients' quality of life.

Pain should be assessed at the time of consultation and reassessed at short intervals according to each case. In this way, professionals identify the magnitude of variation of the pain, enabling therapeutic adjustments[7].

A study analyzed the perception of nurses from the Republic of Ireland of the barriers to alleviate pain in the ED. Among the barriers identified by the participants are the inability to medicate before reaching a medical diagnosis, lack of time to evaluate and appropriately control pain, and responsibility to care for other patients in addition to those with pain[10].

The most frequently used drugs in the ED to relieve pain are analgesics (dipyrone and paracetamol), anti-inflammatory drugs (ketoprogen and diclofenac), and opioids (meperidine and fentanyl). The use of opioids such as morphine is reduced in the ED, mainly because of the stigma associated with addiction to this drug and the ignorance and fear of health professionals in relation to this drug[11].

Pain relief in EDs is hindered due to the complexity of factors that accompany pain. Early treatment of pain without analyzing the situation and its causal pathology may aggravate the condition. Additionally, another difficulty in appropriately relieving pain is the ability of the professional to treat it[4]. The qualification of professionals in such a subject should be addressed with more emphasis during undergraduate programs.

Therefore, some questions were raised: What is the importance of measuring pain? Do nurses have knowledge concerning the assessment of this vital sign? What are the resources used to put this procedure into practice, espe-

cially in victims of trauma? What are the nursing interventions used to alleviate the pain of trauma patients?

This study is relevant because it seeks to understand how nurses care for victims of trauma with pain. Appropriate care influences the adoption of therapeutic conduct, reestablishment of a patient's well being and ensures humanized care. In addition, this study contributes to the literature in the field, which is limited.

An efficacious control of pain is a duty of health professionals, a right of patients, and an essential step towards the effective humanization of health services. From this perspective, it is expected that this study allow a situational diagnosis to contribute to directing the conduct of health professionals in addressing the 5th vital sign: pain in victims of trauma and thereby ensure their physical and emotional well being.

OBJECTIVES

- Identify the knowledge of nurses concerning the concept and evaluation of pain as the 5th vital sign in patients, victims of trauma;
- Identify the resources and instruments used to measure pain;
- Identify the measures adopted by nurses to alleviate the pain of trauma victims;
- Verify the level of importance attributed by nurses to the measurement of pain.

METHOD

This descriptive field study with qualitative approach was developed in a public general hospital, which provides a service of excellence to victims of trauma in Sergipe, Brazil, in the following units: Emergency Department (ED), Intensive Care Unit (ICU), Burn Treatment Units (BTU), and the Surgical Center (SC). These units have 51 nurses: 30 work in the ED, six in the ICU, three in the BTU and nine in the SC.

The non-probabilistic intentional sample was composed of 27 nurses, which is 53% of the nurses working in the studied units. The inclusion criteria were: working in the specified units and consenting to participate in the study through signing a free and informed consent form.

The study was approved by the Ethics Committee at the Federal University of Sergipe (CAAE nº 1600.0.000.107-08). Confidentiality and the right to refuse to participate or withdraw from the study at any moment without any harm were ensured to participants.

Data collection was carried out full time by undergraduate students in the nursing program from September to December 2008 in two consecutive stages. In the first stage, a questionnaire developed by the students was applied to identify how the professionals care for trauma victims with pain, and afterwards a knowledge test was applied to assess the professionals' knowledge.

The content analysis technique was chosen because it better adapts to the studied content and because it allows making explicit and systematizing the content of the answers. First, answers were transcribed and skimmed to become familiar with the data and obtain first impressions and directions. Afterwards, predetermined analytical categories were analyzed: pain, pain assessment, measures for alleviating pain, and the importance nurses attribute to these subcategories. Finally, content was analyzed in light of the literature and inferences were proposed based on significant and valid results. The participants' answers were identified by alphanumerical ordination in order to ensure anonymity.

RESULTS AND DISCUSSION

The study was conducted with 27 nurses aged on average 31±10.3 years old, almost all women (92.6%), and most (51.8%) had graduated less than a year ago. The following results were obtained.

Concept of pain

The following subcategories emerged from the analysis of answers: pain as an unpleasant sensation; a warning sign; and subjective experience.

Pain as unpleasant sensation

Pain is an unpleasant sensation that causes physical and/or emotional discomfort[3]. This concept of pain was reported by nurses in the following answers:

> Very uncomfortable state and discomfort in some region of the human body (E7).
>
> Feeling that causes discomfort (E11).
>
> It is a symptom that considerably disturbs a human being's health (E20).
>
> It is an unpleasant sensation associated with potential damage to the tissue (E24).

Such concepts were associated with negative feelings experienced in situations of prolonged suffering, non-existence of treatment, and inappropriate treatment.

Pain as a warning sign

Acute pain is very frequent in the ED and is related to traumas, burns, infections and other inflammatory processes and is important for reaching a diagnosis. It might be a sign that something in the body is not well[11]. This biological function of warning the body about aggression was reported by some nurses:

> A sign that appears when there is some lesion or disorder in the body (E6).

A warning of the body to explain some malfunctioning (E18).

Pain is a protective physiological mechanism that warns that there is a harmful stimulus to the tissues[5]. This protective mechanism is reported in the following excerpt:

It is a manifestation that occurs involuntarily as a result of a message sent to our brain with the information that something in our body is not going well (E2).

These concepts reveal that pain, especially acute pain, indicates that something in our body is altered, and has the function of warning and protecting. Such a concept is fundamental when caring for a victim of trauma.

Pain as subjective experience

Pain is one of the most intimate and subjective experiences of human beings. It is important to emphasize that the report of pain by patients should be acknowledged and valued, taking into account that this is a personal and individual experience[12]. Subjectivity was a characteristic found in the definitions of pain as the reports reveal:

It's a subjective and personal... experience...(E13).

Subjective sensation... manifested by the patient, when there is a physiological alteration in the body (E26).

The threshold of pain and sensitivity to various analgesic drugs present a large variability among patients, thus, individual assessment is necessary[13]. This statement agrees with the following report:

It feels uncomfortable... with intensity and tolerance that varies from person to person (E25).

Therefore, acknowledging the existence of pain is based on the patient's report. How much it hurts, how it hurts, how bearable it is, depend on physical aspects (lesions, biological characteristics of each person), psychological elements (cognitive and emotional) and social elements (environmental context). Because of these multiple elements, pain is a subjective and emotional experience, perceived and experienced in different manners by different people[5].

The subjectivity reported by nurses shows how important it is to assess this vital sign, especially in victims of trauma. The patient is that one who provides data to verify this vital sign, the person who experiences pain.

Pain evaluation

A pain evaluation consists of characterizing the painful experience in all its domains, identifying the aspects that may determine or contribute to the symptom's manifestation and assessing the repercussions of pain on the individual's biological, emotional and social functioning[11].

Physiological and behavioral (subjective) responses are triggered during the pain process, which can be observed in the subcategories:

Subjective aspects

Assessing the painful experience is not a simple procedure because it is an individual and subjective phenomenon, the interpretation and expression of which involve sensitive, emotional and cultural elements[11].

When nurses assist patients with pain, they observe behavioral signs that usually are non-verbal indicators such as: crying, facial expression, defensive position, agitation and altered sleep patterns[14]. These behavioral expressions of pain were observed in the reports of nurses when they were questioned about the assessment of victims of trauma with pain:

By the facial expression... impatience (others), hypoactive, crying... (E1).

Through signs of pain, facial expression, uneasiness… patient's position... (E13).

Through the observation of expressions and patient's behavior and history (E17).

The subjective aspects were frequently in the nurses' responses showing that behavioral responses and verbal manifestation constitute an efficacious way to evaluate pain.

Objective aspects

Neurodegenerative changes are triggered during the experience of pain and these lead to increased blood pressure and heart beat, increased bleeding, cardiac work, sweating, pallor, decreased oxygen supply to muscles, hypoventilation, hypoxia, and shallow breathing[11]. Some changes were reported by nurses when they were asked about the assessment of victims of trauma with pain:

Through hemodynamic changes like heart rate, blood pressure... (E12).

Through sweating, pallor…observation of vital signs… (E13).

Through physical exam, respiratory distress, tachycardia, sweating, pallor (E14).

... specific alterations of vital signs...(E15).

The objective aspects show the influence of pain in the patient's physiological functions and consequently indicate the importance of controlling pain in the victim of trauma.

Yet on the evaluation of pain, nurses were questioned about the signs and symptoms characteristics of the pain process: six (22.2%) nurses reported sweating, and three (11.1%) reported pallor as the physiological changes most frequently observed in patients with pain. In relation to behavioral alterations, ten (37.0%) reported uneasiness/agitation, nine (33.3%) facial expressions, eight (29.6%) verbal complaints, seven (25.9%) crying, and six (22.2%) assuming a defensive posture.

Instruments to evaluate pain

The instruments used to assess pain were created due to the need to quantify and qualify the painful sensation[7].

Nurses usually use one of four basic evaluation tools to quantify intensity of pain presented by the patient, such as numerical, nominal, analogical and illustrated scales[14].

Because of the importance of these evaluation instruments to understanding the painful experience, nurses were asked about the knowledge they have and use of these instruments during the assessment of victims of trauma with pain. Analyzing the answers we verified that most of the nurses do not know the instruments of pain evaluation (59.3%).

Among those who know such instruments (40.7%), most (72.7%) reported knowing the numerical scale and the majority (54.5%) reported they do not use them in their care practice. There is, therefore, the need to promote the education of nurses on the application of these instruments[15].

This result is in agreement with the statement of the authors[12] who describe the numerical scale as the 'gold standard' for evaluating the intensity of pain and the most frequently used instrument when evaluating adults.

It is believed that the use of the numerical scale in the ED is feasible because it is easy to use and understand, and quickly applied, enabling the performance of continuous evaluations of the pain condition[7].

Nurses are the health professionals who spend more time delivering care to patients with pain, hence they need to have the competence to evaluate pain, implement strategies to relieve pain and evaluate the efficacy of such strategies. Therefore, the knowledge of patients concerning pain scales is essential for an appropriate evaluation of the pain process.

The importance of assessing pain

Assessing pain is important to understanding its origin, magnitude, duration, onset, characteristics, the factors that increase or diminish its intensity, the adoption of analgesic measures, and the efficacy of therapies implemented and to share data with the team that assists this patient[11].

All nurses considered it *important* to assess pain and of these, 77.8% classify it as *very important*. This information corroborates a study conducted in an ED in which physicians and nurses acknowledged the importance of assessing pain after trauma, though they think it is a forgotten and undervalued treatment, for the most part, in care delivery.

When analyzing the explanations of nurses for the level of importance they attribute to the assessment of pain in victims of trauma, the following subcategories were identified:

Ensures humanized care

Relieving pain is currently seen as a basic human right, and therefore, it is not only a clinical issue, it is also an ethical situation that involves all health professionals[8]. Humanizing care was one of the explanations nurses provided for assessing trauma victims with pain as observed in the following reports:

> It's a matter of humanization, which is almost not seen in practice (E1).

> Acknowledging the patient's pain helps to minimize it (E10).

> Provide a more humanized care for patients (E13).

Appropriate assessment, control and relief of pain are humanitarian aspects that contribute to the immediate care delivered to the victim and to maintaining basic physiological functions and avoiding harmful side effects resulting from the pain process. Inappropriate pain control results in increased suffering for patients[7,10].

Qualifies care delivery

In the absence of analgesic treatment, neurological, circulatory, respiratory or metabolic consequences of pain may be especially damaging and can significantly worsen an already compromised clinical condition[7,11]. It shows that the quality of care provided to victims of trauma with pain is directly related to appropriate assessment of the experience of pain, as shown in the following reports:

> It is through pain that we find many problems and are able to collaborate and improve or even heal the patient's condition (E8).

> Pain can harm or worsen patients' other complications… hindering compensatory physiological mechanisms (E15).

> It's important to improving the quality of care (E22).

The persistence of pain results in the formation of vicious cycles with a progressive decrease in organic function and harmful effects to the trauma victim with hypoventilation, increased cardiac work, diminished peripheral blood perfusion, and reflexive muscle contraction[2].

Guides therapeutic conduct

Pain assessment is vital to verifying the impact and efficacy of treatment[10]. This claim is corroborated in the opinions of nurses when they report:

> Because it is a sign that will (identify), I mean, help the conduct of the patient's treatment (E5).

> Through its evaluation one can design the best conduct of treatment, increasing comfort and treatment adherence (E11).

> Pain assessment is always very important because you manage to obtain a better response to the treatment, making the patient trust in his recovery (E17).

Appropriate measurement of pain allows one to evaluate whether the risks of a treatment overcome the harm caused by the clinical problem and also to choose the best and safest therapeutic practice[9].

Reestablishes the patient's wellbeing

Pain assessment helps nurses to reduce the patients' anxiety and promote a better interaction between nurses and patients[10]. Nurses see that pain interferes in their patients' wellbeing and quality of life, which is evidenced in the following reports:

When the patient is in pain, it interferes in the breathing frequency and causes anxiety (E14).

Pain is a nuisance for the patient, it affects the treatment, leaves the patient restless and tearful (E16).

With pain the patient cannot resume his life or perform activities of daily living and his condition would worsen (E21).

The nurses' answers show that inappropriate pain assessment and relief can deprive the trauma victim of qualified and humanized treatment, negatively affecting his/her clinical condition.

Pain should be assessed at the time of consultation and reassessed as required by the patient's clinical condition. Pain assessment should be continuous and regular, in order to ensure appropriate control of any pain experienced. Regular assessment allows professionals and caregivers to identify the magnitude of the variation of pain, the need to change the proposed therapy and control other vital parameters[14,11].

When asked about situations of pain assessment, most (55.5%) of the interviewees reported that pain should be assessed in every situation. The remaining evoke the following situations: especially in situations of trauma (14.9%), when the patient or companion complains (11.1%), when the patient expresses discomfort (3.7%), whenever there is a pathology (3.7%), in neurological patients (3.7%), in chronic degenerative diseases (3.7%), and whenever necessary (3.7%).

Interventions to relieve pain

According to theoretical studies[7], the management of patients with pain should be a priority since there is a variety of situations that lead to a pain process. It is crucial that the health team know the harmful effects of continuous pain and assumes responsibility of controlling it and/or at least alleviating it. When questioned about measures used to alleviate pain in a victim of trauma, almost all (92.6%) respondents reported knowledge of such measures.

Recording the intensity of pain as the 5th vital sign is necessary for quality of care; however, it is by itself not sufficient for improving the quality of pain control. Pain assessment and treatment still are important elements to improve the quality of care[16].

The strategies to control pain include pharmacological, non-pharmacological strategies, and mixing both, which are described in the subcategories that follow:

Pharmacological measures

Drug therapy, used in isolation or in combination with other therapeutic measures, are essential to control pain[5]. This therapy was reported by the nurses when they were asked about their knowledge concerning pain relief measures:

Analgesia ... (E4).

Medication (E5 e E21).

Pain killers (E10).

Prescribed medications (E20).

Non-pharmacological measures

Non-pharmacological measures such as distraction, education, relaxation techniques, and application of heat and cold, can be applied to prevent pain, diminish its perception or change the reaction of patients to pain[17].

Measures such as providing a higher level of comfort, hygiene, massage, offering support and reassurance, appropriately positioning the patient, and controlling environmental factors also contribute to relieving pain[18]. Such measures were found in the following statements:

Position; thermal comfort; change wet or dirty diapers; dialog; bath (E8).

Use of local compresses, recumbent position, dialog and guidance (E16).

Mixed measures

Many times, patients consider medication and the health team itself the only strategy to alleviate pain. However, when drug therapy is combined with non-pharmacological measures, it is a more efficient method controlling pain[18]. This combination was observed in most of the reports:

Medication, ice, psychological support, breathing exercises, some types of massage (Shantala) (E1).

... comfortable environment, treat the patient in a more humanized way (holistic) coupled with drug treatment (E2).

In addition to drugs; changing position; alleviate pressure; emotional support, guidance (E12).

Analgesia... acupuncture, relaxation techniques, distraction, application of heat and cold... massage... (E13).

Drugs and soothing (E18).

Painkillers, therapeutic environment (E22).

Nurses indicated a variety of interventions to alleviate pain, showing that both pharmacological and non-pharmacological measures are taken into account in the care provided to victims of trauma.

CONCLUSION

The sample composed of 27 nurses, virtually all women (92.6%), with an average age of 31 ±10.3 years old, most graduated less than one year ago (51.8%), revealed the following results concerning pain:

Pain is understood as an unpleasant sensation, warning signal and subjective experience. Assessing pain is accomplished through subjective means, mostly non-verbal, and objective means through signs and symptoms. Most nurses (59.3%) do not know the evaluation instruments available and among those who know them, the numerical scale is the most frequently reported.

All nurses considered pain assessment as an *important* procedure and a form of providing humanized and qualified care that guides therapeutic practice and reestablishes the patient's well being. Most nurses believe that pain should be assessed in all situations (55.5%) and the strategies used to control pain were pharmacological and non-pharmacological measures and mixed measures.

The conclusion is that nurses reported concepts, signs and symptoms and measures to alleviate pain that are coherent with theoretical findings. However, a deficiency of knowledge was observed in relation to evaluation instruments, which can interfere in the choice of relief measures appropriate to the needs of trauma victims with pain. Such inappropriate knowledge is a barrier that may affect care delivered to victims of trauma.

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