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THE ROLE OF THE NURSE IN THE ASSESSMENT AND TREATMENT OF PAIN IN ONCOLOGICAL PATIENTS

Abstract: Nowadays, pain along with respiratory rate, body temperature, heart rate, arterial blood pressure breathing, temperature, pulse and pressure is considered the fifth vital sign. It is often stated that the pain is the most common symptom in clinical practice, a frequent cause of functional impairment of individual inability to function in a normal way, and the most common reason for seeking medical help. In patients who suffer from a long-term feeling of intense pain, efficiency and working ability are reduced and their emotional state is damaged as well. Due to long-term treatment and damaged everyday functioning, these patients often find themselves as social and financial issues. Knowledge about pain goes back far into the history of medical science and says that pain is a symptom of disease and will disappear when the underlying disease is cured. Nowadays, especially the chronic pain is identified as an independent health issue that can and must be treated. The pain is not only the transmission of impulses from the place of injury to the perception area of the brain but a phenomenon that is influenced by factors quantitative, qualitative and sensory, as well as cultural, social and economic. In addition to physical damage, the combination of psychological, social and spiritual component leads us to the concept of total pain definition. Therefore, it is necessary to act to all these causes for complete pain relief.

Pain is an important public health issue worldwide. Despite the tremendous progress of science with new technological discoveries and pharmacological agents, pain is still a worldwide problem.

It is a basic human right to live without pain, which means that the health care system is responsible to provide help to anyone who feels pain.

Keywords: pain, disease, worldwide problem, life without pain

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Introduction

The public health strategy is that all patients receive appropriate health care regardless of the lack of funds. Patients must have access to analgesics and there must be no discrimination on any basis (racial, religious, political, social). The combination of moral conviction and active help should contribute to better results in pain treatment. However, the right to a life without pain is not clearly defined because in some environments it is not a law, nor a moral conviction, nor even a clinical recommendation (1,2).

The International Association for the Study of Pain (IASP) defined pain as “an unpleasant sensory and emotional experience associated with acute or potential damage”. Pain is an individual, multifactorial experience that is influenced by cultural environment, previous personal experience, belief, behavior and ability to cope with the problem. Pain can be the result of tissue damage, but it can also occur without a clear cause. The International Society for the Study of Pain defined pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. Back in 1968, McCaffery gave a simple definition that pain is whatever a person says it is and whenever it says it exists (3).

Pain classification

Pain can be classified according to duration, intensity, quality, pathophysiological changes and etiology (cause). All these divisions have a basis in pathophysiological events in the body, and each of them has its own clinical justification and usability. The classification of painful stimulus can be divided in several ways:

According to the duration: acute pain and chronic pain

Acute pain is a normal, predictable physiological response to a mechanical, chemical, or temperature stimulus caused by a surgical procedure, injury, or acute illness. It is the initial phase of a strong, permanent nociceptive cascade, which in a very short period, due to the development of peripheral and central sensation, can turn into chronic pain. Given that pain is an individual feeling, apart from sensory, it will be affected by emotional and cognitive components. Acute pain occurs suddenly and lasts for several hours/days, and the longest is up to 3 months, and the patient has a hard time tolerating it. It is clearly localized, and is characterized by a strong burning or cutting sensation. It is accompanied by increased activity of the autonomic nervous system (sympathetic) and signs of distress. Acute pain is the most common reason for self-medication and going to the doctor. Acute pain as the first symptom of the disease is easily detected. Common examples of acute pain are: acute illnesses, perioperative (postoperative pain, posttraumatic pain), burn pain, procedural (diagno-

stic and therapeutic procedures) pain. For the successful treatment of acute pain, it is important to know and recognize individual differences in the subjective experience of pain intensity. Untreated or unsuccessfully treated acute pain turns into chronic pain, which actually becomes a special disease (20).

Chronic pain develops gradually and lasts for months, and often years. When chronic pain occurs, sympathetic activity is emphasized, it is difficult to localize, it is characterized by a “dull” feeling or pressure, and diffusely spreads to the environment. Chronic pain is extremely disturbing because it can disturb sleep, make movement difficult, make work impossible and cause suffering both for the patient and for those around him. If the patient gets used to the pain over time, the problem arises if the cause cannot be treated and the pain becomes chronic, i.e. a special disease. Treatment of chronic pain is long-term and a major socio-economic problem (sickness, livelihood, social status). There is no clear boundary between acute and chronic pain (10).

Pain is a worldwide problem because more than 19% of people in the world suffer from chronic pain. Europe has recognized the problem of chronic pain, so in 2001 the European Association for Pain Research adopted the Declaration on Pain: “Acute pain can be considered a symptom of an acute disease or injury, while chronic pain constitutes a specific health problem, a disease in itself” (11).

According to pathophysiology: nociceptive (somatic and visceral) and neuropathic pain

Nociceptive pain (transmitted pain) is pain that occurs when tissue damage activates pain receptors located in the skin, mucous membranes, bones, and muscles. It is believed to be the result of stimulation of central afferent threads in the posterior horn of the spinal cord due to their convergence with skin nociceptors, which transmit part of the painful stimulus to the skin. An example is the pain that occurs with primary and secondary bone tumors, breast tumors, tumors of the digestive organs. Knowledge of this pathophysiological mechanism can help in establishing the diagnosis of diseases of internal organs (5,6).

Somatic pain is caused by stimulation of peripheral nociceptors in damaged tissue (bones, muscles, fascia, tendons, joints, connective tissue). The pain is usually continuous and well localized. Intermittent occurrence causes activity of the propulsion system (locomotor system) or muscle spasm. By nature, somatic pain is sharp and is described as pricking, stabbing, burning. This category also includes bone pain, although its complex mechanism of origin has not been fully explained (12).

Visceral pain is caused by injury of internal organs innervated by the sympathetic nervous system. These stimuli are most often presented as contraction, distension, ischemia, necrosis, etc. It is poorly localized, it can be superficial or deep, and it is often radiating (spreads) and can be far away from the source of the painful stimulus (referred pain). Patients describe it as a dull and muffled complaint, that is, as pressure, discomfort or as cramps. Intermittent visceral pain is pain that occurs occasionally,

with interruptions, is very strong and most often caused by intestinal (intestinal) constipation and urogenital spasm (18).

Neuropathic pain is caused by damage to the nerves that transmit stimuli from the periphery to the brain. It can occur in the periphery or in the central nervous system. It occurs due to tumor growth or metastasis, but it can also be a consequence of oncological treatment (administered chemotherapy and radiation therapy). Psychogenic pain is one for which there is no psychogenic basis, but psychological factors can significantly influence existing physical pain (19).

Etiological division (according to cause): malignant and non-malignant

Malignant pain is one form of chronic pain that occurs in all stages of a serious illness (malignant tumors, motor neuron diseases, immunodeficiency). Considering the causative factors, the pain can arise due to the disease itself, the method of diagnosis and treatment, general weakness of the organism or there is no connection with the underlying disease at all. When we talk about this division, we usually talk about malignant pain. It is often the first symptom that prompts a patient to seek medical help. Many equate it with pain caused by tumor processes.

Non-malignant pain is chronic pain associated with diseases that are not life-threatening, such as arthritis, back pain, neck pain and, among other things, neuropathic pain (2,6).

Pain assessment

There is no objective measurement of pain, but the assessment of pain intensity is based on the patient's own experience. When assessing, it is important to take into account the patient's cultural and social environment, religion, somatization of painful sensations, and the patient's cognitive status (the status of mental processes that are assumed to emphasize behavior). It is important to pay attention to leading features such as the patient's statement about the existence, intensity, localization, duration and manner of pain. But there are equally important and no less important features such as autonomic reactions that accompany acute pain, protective behavior, focus on pain, behavior like moaning, crying, facial expression, muscle tone. Measuring the intensity of pain and documenting the values are the foundation for quality treatment and quality healthcare. Measurement of the intensity of painful sensations is made possible by one-dimensional and multidimensional scales for determining the intensity of pain (6,7). One-dimensional scales are most often used. The patient is asked to mark the place on the scale that corresponds to the intensity of his pain. Multidimensional scales consist of a series of questions that are interconnected in sets. This method of

measuring pain intensity is primarily used in patients with chronic pain of malignant or non-malignant origin (20).

Visual-analog scale (VAS), the most commonly used one-dimensional scale for assessing the intensity of pain (Picture 1)

The VAS scales were developed on the model of the first scales for determining pain in children, where the facial expression describes the state of pain designed by Wong and Baker (13).

The patient is asked to mark on a 10 cm long line the place that corresponds to the intensity of his pain, after which the VAS sum is read on the other side of the millimeter scale. At the same time, 0 indicates no pain, and 10 the strongest pain. If the sum is 0-3, pain intensity does not require analgesic therapy.

The patient should regularly measure the intensity of his pain at the same time every day, which will show at what time of the day the pain is the strongest, and write those marks from the numerical scale in the table. It is also useful to keep a pain diary, i.e. daily schedule of occurrence and range of pain intensity that will occur during certain daily activities and daily physiological conditions. This makes it easier for the doctor to understand the patient's experience of pain, which should certainly be supplemented with additional questionnaires related to the patient's quality of life. The obtained data should be regularly monitored and used in adjusting the dose of the prescribed medicine or possibly correcting the therapy.

Children and less literate patients or people with developmental difficulties can choose pictures of faces – from smiling to painful expressions or they can choose fruits of different sizes to express their perception of the severity (intensity) of pain. For patients with limited cognitive ability, demented patients or patients on mechanical ventilation, scales are used where individual parameters are scored, i.e. “body language” is monitored, and their sum indicates the intensity of the pain. (9)

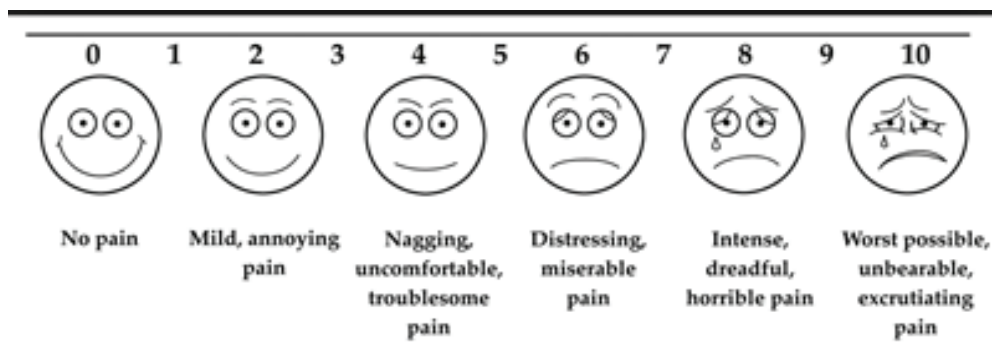


Figure 1. Presentation of the basic instrument for determining pain intensity – NRS scale, verbal-descriptive scale and facial expression scale [tps://operativeneurosurgery.com/doku.php?id=visual_analog_scale](https://operativeneurosurgery.com/doku.php?id=visual_analog_scale)

Other one-dimensional scales include:

Numerical scale (NRS)= intensity from 0 to 10

0	No pain
1-3	Mild pain
3-6	Troublesome pain
7-10	Intense pain

Table.1 Display of pain level on a numerical scale (7)

The numerical scale represents a horizontal line marked with numbers from 1 to 10. The marked number on the line represents the level of pain.

Four-point verbal scale (VAS 4) = no pain; a little pain; a lot of pain; it hurts a lot

Five-point verbal scale (VAS 5) = mild pain; unpleasant pain; present pain; severe pain; extreme pain

Treatment of pain

Freedom from pain is a basic human right of every individual. Pain is considered the most significant factor in the development of endocrine and neurological disorders in the postoperative or post-traumatic period and in a number of clinical conditions accompanied by severe pain. If we add to that that patients come with already determined comorbidities, we see the importance of proper and timely treatment. Pain treatment is rational, balanced and contains a multimodal approach – a combination of pharmacological and non-pharmacological methods. The goal of treatment is to achieve adequate and continuous relief from pain with minimal side effects, treatment without hospitalization and maintenance of quality of life. In 1986, the World Health Organization, WHO proposed a strategy for the treatment of cancer pain based on a three-step treatment algorithm (8). (Figure 2)

WHO's Pain Relief Ladder

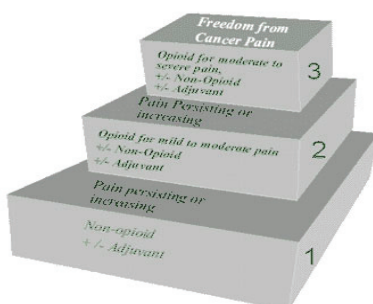


Figure 2. Pain Relief Ladder

www.who.int/cancer/palliative/painladder/en

Health care planning for patients suffering pain

Pain is an inevitable human experience, although it can be useful because it warns of injuries or disturbances in the functioning of some systems. Pain is also an intense stressor accompanied by fear and anxiety that affects the entire functioning and disrupts the satisfaction of all human needs. This is precisely why pain should not be considered simply as a symptom of a disease or a side effect of diagnostic and therapeutic procedures, but as a special problem. Assistance to the patient must not be limited to the detection and removal of the cause, but should be expanded and include measures to alleviate the pain itself and measures to enable the fullest possible functioning (17).

The nurse can greatly influence the patient's experience of pain, his reaction to pain and the degree of pain relief. Her role includes reducing or eliminating the influence of factors that increase pain in some ways:

- establish a relationship of trust and show the patient that you trust him, explain that everything you ask is not to check if he is telling the truth, but to better understand his pain

- assess how family members experience the patient's pain, whether they have any misconceptions about pain, whether they are afraid that the patient will abuse the attention given to him because of the pain, and advise the family how to deal with the patient when he is not in pain

- find out what family members know about pain and educate them about the differences between people in experiencing pain, tolerance and reactions to pain

- educate the patient in such a way as to explain to him what pain is, the causes if they are known and the expected duration of the pain, e.g. before diagnostic and other medical procedures, describe to him what he might feel during the procedure: discomfort, heat, cold, burning

- it is useful to warn the patient about the painlessness of some procedures such as X-ray imaging, EKG, etc.

- find out the causes of fear and give an appropriate explanation, provide support, teach him how to relax

- prevent and alleviate fatigue by explaining to the patient that fatigue affects pain, evaluate rest, sleep and all potential causes of fatigue

- educate the patient and family members about the action of distractors (instrument for building bones), keep the environment interesting and diverse, make a plan of activities throughout the day so that the patient's time is filled

- educate the patient on the use of distractors during short-term pain (eg during painful procedures), such as counting to oneself or out loud, rhythmic breathing, etc. (7).

The main difference in the approach to acute and chronic pain is that acute pain disappears if the cause that led to the pain is removed or cured. Chronic pain can also exist when the healing process is complete, that is, when there are no more factors that led to the pain. The treatment of chronic pain requires a multidisciplinary approach (15).

Acute pain is defined as an unpleasant sudden or slow sensory experience resulting from real or possible tissue damage with a predictable ending lasting less than 6 months (16). Nurse interventions in the treatment of acute pain consist of the following:

Nursing interventions in patients with acute pain

<i>Data gathering:</i>	<ul style="list-style-type: none"> – Assess the intensity with the pain scale – Collect data on localization, duration, spread and quality of pain, on vital functions, on previous illnesses or acute illnesses – Collect data on previous pain relief methods – Assess situational factors
<i>Critical factors:</i>	<ul style="list-style-type: none"> – Mechanical, chemical or thermal injuries – Diseases of the organ system – Acute inflammatory processes – Diagnostic and therapeutic procedures
<i>Leading features:</i>	<ul style="list-style-type: none"> – The patient's statement about the existence, strength, localization and duration of pain – Increased blood pressure, pulse and respiration rate – Taking a forced position – Pain orientation – Expression of displeasure – Painful facial expression – Pale and sweaty skin – Weeping – Fear
<i>Potential goals:</i>	<ul style="list-style-type: none"> – The patient will not feel pain – The patient will show a lower pain level than the initial one on the pain scale – The patient will state the causes of the pain – The patient will recognize the factors that influence the intensity of pain – The patient will know ways to relieve pain

<p><i>Interventions:</i></p>	<ul style="list-style-type: none"> – Recognize signs of pain – Measure vital signs – Relieve pain in a way the patient has learned – Explore with the patient different methods of pain control – Eliminate factors that can increase pain – Apply non-pharmacological pain relief procedures – Encourage the patient – Explain to the patient to take a comfortable position and to change it – Place the immobile patient in the appropriate position – Avoid pressure and tension on the painful area – Teach the patient relaxation techniques – Inform the doctor about the patient’s pain – Apply pharmacological therapy according to the written prescription of the doctor – Talk to the patient about his fears – Alleviate fear by talking – Encourage the patient to verbalize the feeling of pain – Involve the patient in planning daily activities – Distract from the pain – Use relaxation methods – Massage the painful area of the body if possible – Reassess the pain – Document the patient’s pain ratings on the scale
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Table 2. Presentation of nurses’ interventions in patients with acute pain (16)

Nursing interventions in patients with chronic pain

<p><i>Data gathering:</i></p>	<ul style="list-style-type: none"> – Assess the intensity with the pain scale – Collect data on localization, duration, spread and quality of pain, on vital functions, on previous illnesses or acute illnesses – Collect data on previous pain relief methods – Assess situational factors – Assess the impact of chronic pain on the patient's social life – Collect data on sleep quality – Collect data on the occurrence of mood changes
<p><i>Critical factors:</i></p>	<ul style="list-style-type: none"> – Malignant diseases – Diseases of the locomotor and organic system – Improper position, inactivity, pressure on body parts – Mechanical, chemical and thermal injuries
<p><i>Leading injuries:</i></p>	<ul style="list-style-type: none"> – The patient's statement about the existence, intensity, localization and duration of pain for more than six months – Changes in physical weight – Verbal or non-verbal display of protective behavior – Irritability, restlessness, depression – Muscle atrophy – Changes in sleep patterns – Fatigue
<p><i>Potential goals:</i></p>	<ul style="list-style-type: none"> – The patient will not feel pain – The patient will show a lower pain level than the initial one on the pain scale – The patient will state the causes of the pain – The patient will recognize the factors that influence the intensity of pain – The patient will know ways to relieve pain

<p><i>Interventions:</i></p>	<ul style="list-style-type: none"> – Measure vital signs – Relieve pain in a way the patient has learned – Explore with the patient different methods of pain control – Eliminate factors that can increase pain – Apply non-pharmacological pain relief procedures – Encourage the patient – Explain to the patient to take a comfortable position and to change it – Place the patient in the appropriate position, avoid pressure and tension on the painful area – Teach the patient relaxation techniques – Obavestiti lekara o pacijentovom bolu – Apply pharmacological therapy according to the doctor's order – Talk to the patient about his fears – Alleviate fear by talking – Encourage the patient to verbalize the feeling of pain – Involve the patient in planning daily activities – Distract from the pain – Massage the painful area of the body if possible – Reassess the pain – Document the patient's pain ratings on the scale – Eliminate the causes that can increase the patient's pain – Provide the patient with adequate rest – Document the implementation – Explain to the patient the beneficial effects of cold and warm compresses – Encourage the patient to implement a plan of daily activities in accordance with his capabilities
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Table 3. Presentation of nurses' interventions in patients with chronic pain (16)

Conclusion

There is no objective measurement of pain, but the assessment of pain intensity is based on the experience of the patient himself. During the assessment, it is important to take into account the patient's cultural and social environment, religion, somatization of painful sensations, and the patient's cognitive status (the status of mental processes that are assumed to emphasize behavior).

It is important to pay attention to leading features such as the patient's statement about the existence, intensity, localization, duration and manner of pain, but equally important and no less important features such as autonomic reactions that accompany pain. Measuring the intensity of pain and documenting the values are the basis for quality implementation of treatment and quality implementation of health care.

The role of the nurse in the assessment and treatment of chronic pain in cancer patients is of great importance, both for the patient and for his family members as well. That is why good knowledge of this issue is required from nurses (14).

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