Pain Experiences and Pain Management in Postoperative Patients

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**Abstract:** Pain is a subjective experience that can be perceived directly only by the sufferer. It is a multidimensional phenomenon that can be described by pain location, intensity, quality, impact, and meaning. Acute pain following a surgical procedure is the combination of pain as a specific sensation due to a nociceptive response to tissue damage and pain as suffering. Uncontrolled pain in the postoperative period could have detrimental physiologic effects. It can slow the patients’ recovery from surgery. It can contribute to postsurgical morbidity. Depending on the operative site, pain can greatly impede return of normal pulmonary function. Splinting, inability to cough, and bronchospasm can promote atelectasis and postoperative pulmonary complication. Nurses should aware of this situation and careful nursing assessment is needed when they deliver nursing care to a patient with pain. And also assessment of pain in integral to the planning and implementation of nursing care to relieve pain.

Pain also has impact on patients’ activities daily living such as moving, walk, eating, sleeping and relationship with others.

**Keywords:** pain experience, pain management, postoperative

**INTRODUCTION**

Effective control of postoperative pain remains to be one of the most important and pressing issues in the field of surgery and with significant impact on our health care system, because of the following (1) most of the hundreds of millions of the people world who undergo operations each year experience postoperative pain of varying intensity; (2) in too many patient, the pain is treated inadequately causing them needless suffering and many develop complication as an indirect consequence of the pain and; (3) analgesic modalities, if properly applied can prevent or
at least minimize the needless suffering and complications. Uncontrolled pain triggers the impairment of pulmonary, cardiovascular, gastrointestinal, neuroendocrine, and immunological and can lead to suffering, anxiety, fear, and immobility.

The site of surgery has a profound effect upon the degree of postoperative pain a patient may suffer. Operations on the thorax and upper abdomen are more painful than operations on the lower abdomen, which, in turn, are more painful than peripheral operations on the limbs. However, any operations involving a body cavity, large joint surfaces or deep tissues should be regarded as painful. In particular, operations on the thorax or upper abdomen may produce widespread changes in pulmonary function, an increase in abdominal muscle tone and an associated decrease in diaphragmatic function. The result will be an inability to cough and clear secretions, which may lead to lung atelectasis (collapse of lung tissue) and pneumonia. Matters are made worse by postoperative bowel distension or tight dressings.

Knowing the effects of postoperative pain and assessing the patients’ condition in light of the effects enables us to obtain at least two extremely important types of information: (1) Clues that alert us to the existence and nature of patients’ postoperative pain, and (2) The potential or actual harm to the patient.

Unrelieved acute postoperative pain has effect on activities of daily living in postoperative patient such as difficult to sleep, decreased of appetite, unsuitability emotional status and difficult to concentrate.

Postoperative pain is commonly found in clinical settings. This phenomenon is interesting topic to be explored within nursing scope. By investigating this phenomenon will help the author to understand and apply this phenomenon to the patient who has undergone surgery. The aspect of postoperative pain author want to explore is pain experience including pain perception and pain expression.

Individuals who are no expressive communicate pain to others by simply pointing the area, whereas expressive people use both verbal and nonverbal behavior such as moaning, gesturing, and crying. Individuals who are very expressive about their pain usually are extroverts or members of demonstrative cultures. Expressive style, however, can complicate pain assessment (e.g., pain intensity or pain relief).

DEFINITION OF PAIN

Pain is a universal human experience. The International Association for the Study of Pain (IASP) defines pain as “an unpleasant feeling that is conveyed to the brain by sensory neurons and emotional experience associated with actual or potential injury to the body”. McCaffrey stated the very popular definition of pain as “whatever the experiencing person says it is and existing whenever the person says it does.” Shweder and Sullivan defines pain as a complex perceptual experience that can be affected by situational factors, and by psychological processes including emotion, cognition and motivation, all of which are susceptible to cultural, ethnic and linguistic influences.

TYPES OF PAIN

There are two general types of pain and they differ significantly. First, acute pain is caused by tissue damage and it diminishes as the tissue heals. Acute pain lasts for hours to days, and is often accompanied by physical signs such as rapid heartbeat, sweating, pallor, and inability to sleep. Examples of acute pain include pain from a broken arm or surgery.

Chronic pain, on the other hand, is pain that lasts or recurs for months or even years. Chronic pain does not often decrease of its own accord and after the first weeks or months, is not accompanied by physical signs. Thus a person with chronic pain does not have an increased heart rate, sweating, pallor; and he or she is able to sleep to some extent.

Pain can also be divided into two broad categories: nociceptive and neuropathic (non-nociceptive). These types of pain differ in their causes, symptoms, and responses to analgesics. Nociceptive or somatic pain results from direct stimulation of nociceptive, intact (uninjured) afferent nerve endings. Descriptors for this type of pain are usually “dull,” “sharp,” and/or “aching,” or a combination of these, and the intensity of the pain varies from mild to severe. In general, somatic pain can be well controlled if the cause of the stimulation can be removed or otherwise treated (surgery, radiation therapy, chemotherapy, etc.), or
somatic pain can be treated with analgesics. Response to analgesics is usually good.

Neuropathic pain, on the other hand, is caused by nervous system dysfunction rather than stimulation of intact afferent nerve endings. It is characterized by burning, shooting, and tingling pain. The most frequent causes of neuropathic pain in cancer patients are tumor or treatment-related nerve damage, acute herpes zoster (shingles), post-herpetic neuralgia, and phantom limb pain. Compared with nociceptive pain, neuropathic pain usually requires more complex pharmacotherapy.

THEORIES OF PAIN

Specificity Theory
This theory is based on the belief that specialized pathways for pain transmission existed in the periphery that acted as pain receptors. These nerves were believed to be capable of receiving painful stimuli and transmitting the impulses via highly specific nerve fibers. The sensation would then be transmitted through the spinal cord to be interpreted in these higher areas and a response would occur.

The Gate Control Theory
Melzack and Wall (1965) first developed the Gate Control theory to explain the variation in perception of identical stimuli. They believe in the notion that there is a 'gate' in the spinal cord, which, under certain circumstances, allows nerve impulses resulting from pain stimulation, to pass through it and be interpreted by the brain as feeling pain. They suggest that when the gate is open, impulses can flow through easily and when closed none can pass through. Melzack and Wall also made the connection that the effects of psychological factors such as anxiety on pain perception can influence the degree of opening of the gate. Clinically, the closing of the gate forms the basis of pain relief.

It suggests that the transmission of pain impulses can be modulated by a gating mechanism all along the central nervous system and that impulses can flow in both ascending and descending directions. In other words, the entire nervous system is involved in the perception of and response to pain.

Pattern Theory
The pattern theory actually includes several slightly different theories. All of these theories generally have in common the concept that patterning of the nerve impulses generated by receptors forms the basis of a code that provides the information that there is pain. It is widely accepted that the basis of sensory perception is provided by the temporal and spatial summation of nerve impulses, that is, the patterns associated with the length of time a stimulus lasts and the area it covers. One of the pattern theories stresses a reverberating circuit mechanism. Another pattern theory is a specialized input-controlling systems. The latter proposes that all fiber endings are alike, except for those that innervate hair cells. It ignores the evidence that indicates that nervous system pathways have specialized functions related to pain.

POSTOPERATIVE PAIN
Postoperative pain is the pain you experience as a result of surgery. The incidence, intensity, and duration of postoperative pain vary considerably from patient to patient, from operation to operation and from one hospital to another. The site of the surgery has a profound effect upon the degree of postoperative pain a patient may suffer.

CAUSE OF POSTOPERATIVE PAIN
Surgical operations, like accidental injury or disease, produce local tissue damage with consequent release of alogenic substance and of a barrage of noxious stimuli, which are transducer by nociceptor in to impulses that are transmitted to the neuraxis by A delta and C fibers. Alogenic substance such as potassium and hydrogen ions, lactic acid, serotonin, bradykinin and prostaglandin's stimulate and sensitive nociceptors that persist after the operation.
Local tissue damage + direct nerve trauma

Spinal sensitization
Wind up
Postagladins, histamin, serotonin

Release of mediators
Substance p, bradikinin,

Nociception

Stress response
Acute pain
Chronic pain
Endocrine/metabolic/psychic

ASSESSMENT OF POSTOPERATIVE PAIN

Accurate pain assessment is the basis of pain treatment and a continuos process encompassing multidimensional factors. To formulate a pain management plan of care, an assessment is crucial in identifying the pain syndrome or the cause of pain. A comprehensive assessment addresses each type of pain and including an assessment of pain intensity and its characteristic, a physical examination with pertinent neurological exam, particularly if neuropathic is suspected, a psychosocial and cultural assessment and appropriate diagnostic work up to determine the cause of pain. Attention should be paid to any discrepancies.

Pain assessment should be performed at regular intervals. If there is a change in the pain, after analgesic administration and after any modifications in the pain management plan. Pain assessment should be individual and documented so that all multidisciplinary team members involve will have an understanding of the pain problem. Information about the patient’s pain can be obtained from multiple sources: observation, interviews with the patient and significant other, reviews of medical data, and feedback from other health care providers.

Location. Anatomical diagnosis is provided to illustrate the location of pain. Many patients’ have more than painful site: indicate multiple sites with letters, e.g. A.B.C. The patient may draw the pain sites on the form or trace the locations on his/her body and your or family member can mark the figure on the assessment form.

Intensity. The person experiencing pain is they only one capable of accurately rating its intensity. Two types of pain rating scale commonly used are verbal descriptor scale and numerical scales.

a. Faces Rating Scale
This scale is administered visually and facial expressions to suggest various pain intensities. The faces rating scale is used primarily with young children but also
maybe useful when treating adults who have difficulty using the numbers of a visual analog scale (VAS), a common pain assessment tool.

b. Flowsheets
These worksheets are used to document progress toward achieving and maintaining pain management goals. Physicians use flowsheets to record time, pain ratings, and facts about analgesic administration and side effects. The information on a pain management flowsheets can be incorporated into other forms to avoid duplicate charting.

c. Graphic Rating Scale
The graphic rating scale builds on the VAS by adding words or numbers between the extreme ends of the scale. If words are added, such as "no pain", "mild", "moderate" and "severe", it is called a verbal graphic rating scale. If numbers are added, such as zero though 10, it becomes a numerical graphic rating scale.

d. Numerical Rating Scale
This scale is administered verbally or visually from zero to ten and uses words and numbers along a vertical horizontal line. Zero equals no pain and ten equals the worst possible pain.

e. Simple Descriptor Scale
This scale uses a list of words describing different levels of pain intensity. A simple and clinically useful example is "no pain", "mild", "moderate" and "severe pain".

f. Visual Analog Scale
The VAS uses a horizontal 10-cm line with words at the extremes, such as "no pain" and "pain as bad as it could be ". The patient makes a mark along the line to represent pain intensity. A number is obtained by measuring the millimeters from the end to the point the patient has indicated.

Quality. In this section of the assessment form, patients are asked to describe the type of pain or what the pain feels like to them. They may use such as words, as throbbing, burning, stabbing, tender or heavy.

Onset, duration, variation and rhythms.
Many patients in pain have variations in their pain experiences over a 24-hour period. In planning care it is important to assess these fluctuations, to anticipate painful procedures and to modify activities (when possible) to decrease discomfort. If pain is present 12 or more hours out of 24 around the block scheduling of analgesics may be necessary.

MANAGEMENT OF POSTOPERATIVE PAIN
Objective of postoperative pain management is not only relief from pain but should be aiming at eliminating patient discomfort, initiating early recovery and avoiding, minimizing side effects of the specific therapy and controlling the cost effectiveness or their treatment.3

Although pain management techniques are many and varied, therapeutic approached can be classified as either pharmacologic or non-pharmacologic. Pharmacologic pain control involves the use at analgesics, as well as other medications that potentiate the analgesic effects or modify the patient's mood or pain perception. Non pharmacologic approaches include behavioral techniques, radiation, surgery, neurological and neurosurgical interventions, tradition nursing and psychosocial intervention, the latter measures attempting to promote comfort and evaluate the effectiveness of the therapy. Because of the complex nature of nature of postoperative related pain successful management usually involves a combination of techniques.

PHARMACOLOGIC MANAGEMENT
An analgesic is pharmacologic substance that diminishes or eliminates pain without producing unconsciousness. An anaesthetic is a pharmacologic substance that, in addition to abolishing pain, generally causes loss of feeling and sensation. Many analgesics, depending on their mode of action and route on administration, act as anesthetics when given are large doses. There are many different types of anesthesia. General anesthesia usually accompanied by loss of consciousness and amnesia. Local anesthesia produces anesthesia in a restricted area of the body without loss of consciousness. Various factors are considered in selecting the most effective analgesic for a specific patient, these include the cause, quality, intensity, duration and distribution of the patient’s pain.
NONPHARMACOLOGIC MANAGEMENT
The incidence severity and duration of pain and suffering during postoperative period can be decreased by cognitive-behavioral intervention consisting of information about the surgical procedure and expected sensations plus instructions regarding physical relaxation, distraction, guide imagery, hypnosis and body maneuvers designed to decrease discomfort during the postoperative period.

a. Distraction
Distraction, which involves focusing the patient’s attention on something other than the pain, may be the mechanism responsible for other effective cognitive techniques. Distraction is thought to reduce the perception of pain by stimulating the descending control system, resulting in fewer painful stimuli being transmitted to the brain. The effectiveness of distraction depend the patient’s ability to receive and create sensory input other than pain. Distraction techniques may range from simple activities, such as watching TV or listening to music, to highly complex physical and mental exercise. Pain relief generally increases in direct proportion to the person’s active participation, the number of sensory modalities used, and the person’s interest in the stimuli. Therefore the stimulation of sight, sound and touch is likely to be more effective in reducing pain is the stimulation of a single sense.

b. Relaxation
Simple relaxation techniques consist of abdominal breathing at a slow, rhythmic rate. The patient may close the eyes and breathe slowly and comfortably. A constant rhythm can be maintained by counting silently and slowly with each inhalation (“in, two, three”) and exhalation (“out, two, three”). When teaching this technique, the nurse may count out loud with patient at first. Slow, rhythmic breathing may also be used as a distraction technique. Relaxation techniques, as well as other noninvasive pain relief measures, may require practice before the patient becomes skillful in using them.

c. Guided Imagery
Guided imagery refers to the use of devices to assist in relaxation and the image formation. The devices may be commercial audiotape of verbal suggestion, music or sounds of nature, pictures of objects or places. Aromas from scented oils or candles, or another person giving suggestion in a soft, pleasant voice. The guide to imagery and relaxation may be necessary only during the beginning stages of learning the technique or during a acute phase of an illness. With very little practice, a person can usually reach a relaxed state quickly and allow image to develop spontaneously. After reaching this point a device become unnecessary and may even be a distraction.

The study by Sodergen using guided imagery found that the patient reported a reduction of symptom severity. These symptoms including acute and chronic pain, anxiety, nausea and vomiting, and depression. Manyandee et all compare 26 subject also used guided imagery before abdominal surgery with 25 control subjects who received background information about the hospital before surgery. They found that guided imagery subjects experienced less postoperative pain; were less distressed by the pain; and requested less analgesia than a control group.

RECOMMENDATION
Based on the result of this literature, author would like giving recommendation as follows.
1. Knowing the under treatment and consequence postoperative pain, nurses can do appropriate nursing intervention based on the systematic assessment of pain.
2. Relieve of pain, beside the medication, nurse can offer the pain another methods of pain relieve such as distraction technique, massage, and relaxation and guided imagery.
3. Besides giving the treatment to relieve pain, nurses expected to give information include pathophysiology of pain, side effects of drug and complication postoperative pain if uncontrolled pain.
REFERENCES


