THERAPEUTIC PLAY OPTIMALIZATION IN PEDIATRIC POST OPERATIVE PAIN WITH *LEVINE'S CONSERVATION MODEL APPROACH*

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ABSTRACT

Surgery still remains in a great number among children each year. Post operative pain is a traumatic experience that become general problem among children with surgery. Pain treatment, including farmakologic and nonfarmakologic management is needed. The aim of this study is to provide an overview of therapeutic play as a nonfarmakologic management of post operative pain with Levine's Conservation Model approach. There were five managed cases that discussed in this study, and all of those experiencing post operative pain problems. The trophicognosis of pain, based on assessment incuding: energy conservation, structural, personal and social integrity. Children with therapeutic play showed decreased of pain and adaptation faster. Therapeutic play as theraphy need a good cooperation among health care provider.

Keywords*: therapeutic play, post operative pain, Levine Conservation Model*

Preliminary

Children who experience malignancy, injury, or are born with congenital abnormalities, and other acute diseases will experience impaired organ function and will affect children's life. In these conditions surgery is often needed as an unavoidable option (Bowden & Greenberg, 2010). The majority of children experience moderate to severe post-surgical pain (Baratee, Dabirian, Yoldashkhan, Zaree, & Rasouli, 2011). For that we need adequate pain relief, both pharmacological and nonpharmacological.

One of non-pharmacological therapy that can give is playing therapeutic. Therapeutic games carried out with the purpose of reducing fear and discomfort faced by children during the experience of care, which is usually done by nurses (Hockenberry & Wilson, 2012). The study conducted by Athanassiadou, Tsiantis, Christogiorgos, and Kolaitis (2009) proved that puppet play in children aged 4-6 years can reduce postoperative aggressiveness and hyperactivity.

Levine's conservation model approach to pain management in postoperative children is carried out as an effort to obtain conservation: energy, structural integrity, personal integrity, and social integrity. One of them is conservation through playing therapeutic by storing energy and reducing unnecessary energy

use such as crying, excessive movement and changes in vital signs.

APPLICATION OF NURSING THEORY IN NURSING CARE

Case Overview

Case 1

Y, (1 year 5 months), after the cut stump operation. Energy conservation: weight 11 kg, height 75 cm , the patient is rather fussy and a little weak because he is fasting and no interest to interact. Conservation of structural integrity: Consiousness level is composed mentis, temperature 37^0C, pulse frequency 105 x /sec, RR 40 x/sec, moist lip mucosal, elastic skin turgor, normal bowel sounds, warm akral, CRT < 2 sec. Conservation of personal integrity: he is the 1^{st} child, lives with his parents who always look after him and the patient is. Conservation of social integrity: the patient is always watched by his mother and sometimes with his father. The family hopes that An.Y will immediately recover and be normal like other children. Trophicognosis is enforced: the risk of deficit fluid volume, the risk of nutritional imbalance: lack of body requirements, pain, and potential complications of infection. Interventions that have been carried out include observing signs of pain scale, maintaining a comfortable position for the child, taking care of the perianal with the mother. Evaluations conducted on February 22, 2016 were obtained: deviation of fluid volume did not occur, nutritional imbalance: less than body requirements did not occur, pain was resolved, and infection did not occur

Case 2

RA, children (8 months), with PSARP surgery on February 23, 2016. Assessment on February 24, 2016. Energy conservation: weight 6.8 kg, height 64 cm, post-surgery children become fussy and nervous about the pain scale (FLACC Scale) 4. Eat porridge one portion, drink gradually. Conservation of structural integrity: pulse frequency 115 x/sec, RR 36 x/sec, sound of breathing Ronchi, coughing occasionally. Conservation of personal integrity The client lives with his parents, the second child are twin. Since hospitalized, R become more fussy, often cry and not interested to interact with other people. Conservation of social integrity: the client is always watched by his mother and sometimes with his father. After the operation, parents are took turns because

of fussy children. Parents ask for how to care for it to succeed. Trophicognosis is found: ineffective airway clearance, risk of fluid and electrolyte imbalances, pain, damage to skin integrity, potential infectious complications, and lack of knowledge.

Interventions carried out among others monitor vital signs, observe the scale of pain, provide distraction techniques, educate families how to care for children with post PSARP. Results of the evaluation on 29 February 2016: the airway clearance was effective, fluid and electrolyte imbalances did not occur, the pain was resolved, damage to the integrity of the skin had not been resolved, the infection did not occur, and lack of knowledge was resolved.

Case 3

AA, (3 years), underwent laparoscopic herniotomy on March 2, 2016. Assessment on March 3, 2016 at 09.00; Energy conservation: weight 12 kg, height 84 cm , clients appear active and easy to smile when invited to talk to anyone. After surgery the child becomes fussy and agitated on the pain scale (VAS) 3-4. Postoperative drinking and a diet free gradually. Conservation of structural integrity: level of conciousness was compos mentis, temperature 36.6^0C, pulse frequency 110 x/sec, RR 24 x/sec, lip mucosal dry, elastic skin turgor, normal bowel sounds, warm akral, <2 sec CRT, vesicular breath sounds , normal heart sounds (S1-S2). Conservation of personal integrity: the client lives with his parents who always look after him and the client is an only child. Conservation of social integrity: When the client studies are always watched by his mother and sometimes with his father. Family hopes for client immediately recovered and was able to be normal like other children. Post operation AA is more often seen being carried by his mother because of fuss. Trophicognosis: the risk of deviation from fluid volume, acute pain, damage to skin integrity and potential complications of infection.

Interventions include observing nonverbal reactions from discomfort and playing therapeutic. Evaluation results: Devisit fluid volume does not occur, pain is resolved, damage to skin integrity has not been resolved, and infection does not occur.

Case 4

An SZ (9 years 3 months) diagnosis of open supracondyler fracture of the right elbow, after ORIF insertion with K-wire. Assessment (5 April 2016): Energy conservation: BB 22 kg, TB 135 cm, client's face looks less relaxed, occasionally looks grimace, lack of interest in the surroundings. After surgery the child becomes fussy and agitated pain scale (VAS / FACES) 2-3. Eat a half portion, drink gradually. Conservation of structural integrity: regular pulse frequency 110 x / min, moderate pain. The right hand seen a fracture wrapped with bandage, no seepage. Middle finger, ring and little right can be moved and feel stiff, painful. Conservation of personal integrity: the client is cared for by parents, is the second child of 3 siblings. Conservation of social integrity: when the client's assessment is always accompanied by his father. parents hope their child recovered quickly and could return to normal like other children. Enforced trophicognosis: acute pain, physical mobility barriers, risk of injury (contractures) and potential complications of infection.

Interventions include: conducting a comprehensive assessment of pain, teaching deep breathing techniques, monitoring vital signs, and assessing the client's ability to mobilize. Evaluation results: pain is resolved, physical mobility obstacles are overcome, injury does not occur, and infection does not occur.

Case 5

An AD (4 months) laparotomy surgery release invagination ileotransversum anastomosis resection, accompanied by his mother with the main complaint of bloody bowel movements since 1 day before entered the hospital. A few days ago, he vomits with the contents of ASI (the client gets exclusive ASI). Bloating and vomiting occur each time the client is breastfed with a frequency of > 5 times a day, with an amount that cannot be predicted by the mother. Since yesterday the BAB which was originally brown turned red with thick mucus. When checking at the clinic, they recommended to be examined at Cikini Hospital and said "folding of the intestine" then referred to RSCM. Clients receive paracetamol therapy 3x100 mg (k / p), Cefotaxime 3x200 mg, Metronidazole 3x50 mg, and IVFD

maintenance D10 15 ml / hour and AS 6% 7 ml / hour.

Conservation assessment results: Energy conservation: weight 6.5 kg, height 68 cm, client looks uneasy with pain scale (FLACC Scale), fasting diet status, general state of moderate pain. Conservation of structural integrity: compos mentis awareness, temperature 37.9^{0}C, pulse frequency 136 x / sec, RR 34 x / sec, slightly dry lip mucosa, less elastic skin turgor, normal bowel sounds, warm acral, CRT < 2 sec, breath sounds vesicular. Conservation of personal integrity: the client from birth lives with his parents who always take care of him and the client is the second child of two siblings. Conservation of social integrity: when the client's assessment is always attended by his mother, the father only comes occasionally because he has to work. The family hopes that. AD immediately as before. Environmental assessment: internal: Abdomen has surgical scars, inserted NGT with solid green production; external: current AD was treated at the BCH in the observation room. Complete blood and electrolyte results: Hb: 9.82 gr / dl; Ht 30.9%; Leukocytes 13,200; Platelets 460,000, Na:: 134 meq / dl, K: 3.3 meq / dl; GDS: 135 mg / dl

The hypotheses (nursing plans) compiled in client related to pain problems include: Energy conservation: observe / monitor pain scale signs, perform pain reduction techniques such as touch, play / tell stories, singing.

Conservation of structural integrity: maintain a comfortable position for children, collaboration in administering analgesics if needed: Paracetamol 3x150 mg.

On the last day an evaluation was carried out (organismic response) with the results: Subjective: the mother said the child's fever no longer exists, no nausea and vomiting, the wound was good and was allowed to go home today by the doctor; Objective: Energy Conservation: the client drinks free breast milk, the NGT drainage is concentrated green, IVD fluid is stopped. Conservation of structural integrity: consciousness level (GCS) 15, warm acral, CRT < 2 seconds, moist lip mucosa nausea, vomiting absent, elastic skin turgor, stable temperature, flat abdomen, supple, intestinal noises, wound free from signs of infection and closed clean kassa;

Analysis: devisit fluid volume; the risk of nutritional imbalance is less than the body's needs; pain; potential complications of infection; Planning: intervention stopped.

Integration of Theories and Concepts in the Nursing Process

The Basics and Assumptions of the Levine Conservation Model have three main concepts: wholeness (holism), adaptation, and conservation. Nursing practice with models and conservation principles focuses on conserving patients' energy to achieve health and recovery (Levine, 1991 in Alligood & Tomey, 2010).

Wholeness is an open system and combines its parts into a unit to deal with changes in their environment. Adaptation is a process carried out by an individual in order to maintain the integrity of his life by synchronizing the internal environment with his external environment by considering the patterns and adaptability of each individual that varies according to the time (Historicity), individual character (Specificity) and level of adaptation (Redundancy) .

Conservation is a product of adaptation. Through conservation, individuals can face obstacles, adapt according to their uniqueness and maintain their integrity.

According to Alligood (2010), the nursing process based on the Levine model can be explained as follows: Assessment, is the stage of collecting data on changes that occur in patients by considering conservation principles. Nurses assess changes in the internal and external environment of clients that can hinder their ability to achieve overall health. The nurse will assess changes in the following aspects: a. *Energy conservation*: a balance between client energy expenditure and supply; b. *Conservation of structural integrity*: a defense system for the body; c. *Conservation of personal integrity*: client's feelings about self-esteem, and personality; d. *Conservation of social integrity*: a person's ability to participate in social systems (family, community, etc.)

Levine recommends trophicognosis as an alternative nursing diagnosis. According to Wilkinson and Ahern (2012), nursing problems that can occur in patients undergoing surgery include:

pain, anxiety, body image disorders, delay in post-surgical recovery, risk of infection, intolerant activity, and damage to skin integrity.

The hypothesis, is a plan for implementing nursing interventions that aim to maintain the integrity of the patient and promote their adaptation to the current situation. The nurse will make a hypothesis of the problem and a solution that can be done, and then it will become a nursing plan.

Interventions, carried out based on conservation principles (energy conservation), structural integrity, personal integrity and social integrity. Acute pain due to post-surgical incisions is usually a collaborative problem that is addressed, especially by providing narcotic analgesics. As for independent nursing interventions such as teaching patients to divide the incision area while moving, teach distraction techniques (eg. by playing therapeutic) and other pain management (Wilkinson & Ahern, 2012).

Evaluation, is an assessment of the client's response to the intervention provided. Evaluation is done by reviewing the client's response. .

DISCUSSION

Avoid excessive fatigue and maintain energy balance so that the incoming energy in accordance with the energy that comes out, is an effort for energy conservation. Physiological children by requiring surgical action cause imperfect biochemical and metabolic cell work which ultimately makes working vital organs such as the heart, kidneys, lungs and others imperfect so that energy disturbances arise (Mefford & Alligood, 2011).

From the study of energy conservation to the five cases, it is found that data generally shows that clients get a disruption in energy conservation in the form of acute pain. Acute pain is an unpleasant sensory experience arising from acute tissue damage described in such a way as to invasive procedures (NANDA, 2012). In the short term, pain causes a decrease in oxygen saturation and a decrease in the work of the heart which eventually results in cardiorespiratory disorders.

The above conditions will affect energy conservation due to the imbalance of supplies with needs. But this does not occur in all five cases. This is due to the rapid and precise management of pain.

Pain management performed on all managed clients is to provide therapeutic play distraction techniques, monitor pain scale, nonverbal response, vital signs and provide analgesic therapy. Distraction works by diverting the focus of the child's attention to something, so that the child is expected to "forget" their pain.

The recommended type of game is a game that can be enjoyed by children on the bed, because in post-surgical care children usually experience restriction of activity until the third day. Magnetic numbers / letters on board, finger / hand puppets, drawing / coloring are examples of games that can be given (St. Louis Children Hospital, 2014). Therapeutic games are given starting from playing dolls, listening to music, blowing balloons, playing video games, coloring, and storytelling (James, Nelson & Ashwill, 2013). In infants, distraction can be done by touching, swinging and giving Non Nutritive Sucking (NNS) (Sahoo, Rao, Nesargi, 2013).

Music therapy is used to help reduce stress and pain in children. The results show that music therapy can reduce pain scores, respiratory rate and pulse and reduce anxiety in children who are undergoing lumbar puncture (Nguyen, Nillson, Hellstrom, & Bengston, 2010). Studies conducted by Athanassiadou, Tsiantis, Christogiorgos, and Kolaitis (2009) prove that puppet play in children aged 4-6 years can reduce postoperative aggressiveness and hyperactivity.

The implementation of therapeutic play was also one of the resident innovation projects while undergoing practice in the BCh room at Cipto Mangunkusumo Hospital. This activity was chosen in order to carry out a holistic approach to improve the effectiveness of pain management. The responsibilities of nurses in this regard include: ensuring that patients get appropriate assessment and management based on evidence-based nursing, monitoring pain and managing pain associated with complications, educating patients and families, documenting steps for pain management, and seeking (applying) standard for post-operative patient care (Yuceer, 2011).

Another treatment that is done in dealing with pain is collaborating with doctors in administering analgesics. Several types of analgesics are given to managed patients with an intravenous route. Oral analgesics are usually given after the fifth day or for treatment at home. The study by Chorney and Kain (2010), showed that parents and children did not get the recommended dose of treatment at home. Therefore, adequate education needs to be given before patients are discharged (James, Nelson & Ashwill, 2013). The brain has a pain management system ("analgesia"). There are several types of transmitters involved in this analgesia system, including dopamine, serotonin and endorphins that have morphine-like properties. Activating the analgesia system can suppress peripheral nerve signals (Hall, 2014). Morphine receptors are released in the brain due to feelings of pleasure, happiness and comfort. This process occurs when children play therapeutic, so this activity is effective for reducing pain.

Conclusion

1. Pain is a problem that is always faced by children after undergoing a surgical procedure. The provision of nursing care with the Levine Conservation model approach to children with post-surgical pain shows that this model can be used to optimize patient adaptability.
2. Therapeutic play has an important role in handling non-pharmacological pain in post-surgical children.

Recommendation

The application of the Levine Conservation model in handling postoperative child pain shows that children can optimize their adaptive abilities. The application of nursing theory in practice is very helpful in developing nursing science, especially child nursing. Therefore nursing services are expected can consider the management of nursing care using the approach of nursing theories.

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