Effect of Postoperative Immobility on Children with Musculoskeletal Injuries

Thesis

Submitted for Partial Fulfillment
of Master Degree in **Pediatric Nursing**

By

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Naglaa Ahmed Abd El-Ghani

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Operational Definitions

- **Musculoskeletal injuries**: refer to any injury of bones, muscles, tendons (connect muscle to bone) and ligaments (connect bone to bone).
- **Mobility:** state or quality of being mobile or movable.
- **Immobility:** inability to move.
- **Physical effect:** the person is not being able to perform routine activities.
- **Psychological effect:** the person describe as inability to concentrate and learn, report of mood and sleep disturbances, various degrees of anxiety and depression.
- **Postoperative immobility period:** is associated with neuroendocrine, metabolic and immune alterations which are combining with tissue damage, postoperative pain and psychological stress.

Abstract

Aim of the study: This study aimed to assess the effect of postoperative immobility on physical and psychological wellbeing of children with musculoskeletal injuries**. Design**: A descriptive design was used to conduct this study. **Setting**: The study was conducted at Pediatric Orthopedic Surgical Inpatient and Outpatient clinic at Children's Hospital affiliated to Ain Shams University and El-Helal Hospital affiliated to Ministry of Health. **Subjects:** A purposive sample including 80 children exposed to musculoskeletal injuries. **Tools of data collection**: **Tool I:** Structured interviewing questionnaire format to assess socio-demographic data about children, caregiver and medical history about children. **Tool II:** Assessment of physical postoperative immobility and assessment of psychologically postoperative immobility. **Results:** More than half of the studied sample had physical effect, low self-esteem and sever anxiety. **Conclusion**: The current study concluded that children stayed in cast for long period, so that the effect of postoperative immobility had negative effects on physical and psychological wellbeing of children with musculoskeletal injuries. **Recommendations:** Emphasized on the importance of implementing nursing care program for children in postoperative period for minimizing the physical and psychological effects of immobility on children with musculoskeletal injuries.

Keyword: *Musculoskeletal injuries, Postoperative immobility, Children.*

INTRODUCTION

The musculoskeletal system supports the body and provides for movement, the muscular and skeletal system work together to enable a person to sit, stand, walk and remain upright. Muscle move air into and out of the lungs, blood through vessels and food through the digestive tract. Musculoskeletal system also produces heat which aids in numerous body chemical reactions. Red blood cells are produced in the bone marrow and minerals such as calcium and phosphorus are also store there ***(Witmer et al., 2018).***

Musculoskeletal injuries are common in pediatric trauma victims and result in extensive surgical intervention and long-term hospitalization. Rapid healing rates in children enhance the prognosis for children with musculoskeletal injuries and may decrease the rate of morbidity from infection and other complication. Musculoskeletal injuries are conditions that involve the nerves, tendons, muscles and supporting structure of the body and compromise their function ***(Harrison, 2014).***

The musculoskeletal injuries sustained by children and adolescents have increased markedly. This may reflect an increasing use of motorized and high-speed wheeled vehicles among this population. It is important to recognize the basic skeletal differences between children and adults; the common signs and symptoms of fractures, sprains, strains, and

dislocations; and the initial treatment and stabilization of these injuries in children **(*Glen & Walter, 2018).***

Immobility may often be necessary in order to benefits injured or affected acutely parts of the body. However, it is now well established that extensive periods of bed rest can cause harm of the rest of the body. The most obvious effect of prolonged immobilization is seen in musculoskeletal system and includes the loss of muscle strength and en durance and weakens of bone. Immobility not only affected on the ability of move but also impact upon child's ability to independently carry out activities of daily living with resulting reduction in quality of life ***(Crist, 2013).***

Immobility characterized by reluctance to try moving or inability to move in with their own physical environment and limit the range of motion, imbalance of coordination, decreased muscle strength, control and mass in advanced stage. The most frequent reason of Immobility is due to congenital defect, or acquired musculoskeletal injuries or the therapies such as traction and cast ***(Template, 2014).***

Immobility has serious consequences physical, social and psychological for a child. Moreover, immobility for long period is affected on each musculoskeletal system, cardiovascular system, respiratory system, gastrointestinal system, genitourinary system, metabolic system and integumentary system ***(Maniere, 2012).***

Nurses have an important role in actively preventing complications and promote healing that and psychological support may be crucial in helping the child cope with the changes associated the musculoskeletal injuries. Nursing assessment should on not only the injured part but also the functioning of other system that may be affected the circulatory, gastrointestinal, renal and musculoskeletal system**.** Orthopedic postoperative nurse is responsible for the majority of child care following any orthopedic include close supervision and care immediately following surgery, routine daily monitoring and care plan management that helping in decrease length of hospitalization ***(Wilson, 2012).***

Significant of the study

Children who survive their injuries may require continuing care for disabilities that impact their health, their education and livelihoods of their families. Immobility have its effect physically on child wellbeing, functional and metabolic responses can be noted in the most of the body system and each a direct influence on child growth and development. Also, psychosocial wellbeing of child will be affected by immobility such as feeling isolation, helplessness, unwanted and being forgotten especially by beers. Children may understand immobility as a way of punishment for misbehavior. Worldwide, over 957,000 children aged less than 18years die as result of injuries. In Egypt, count for 25% of total injury among children aged less than 15 years ***(WHO, 2017).*** Nurses'

responsibility must identify the impact of physical on children and their family physical and psychological. So that, the study will be conducted to assess the effect of postoperative immobility among children with musculoskeletal injuries. The assessment of the effects on children also the finding of the might help in assuring quality of care and providing evidence data that can develop nursing practice and research.

AIM OF THE STUDY

The aim of the study to assess the effect of postoperative immobility on physical and psychological wellbeing of children with musculoskeletal injuries.

Research Questions

1. What is the effect of postoperative immobility on children with musculoskeletal injuries on physical wellbeing?
2. What is effect of postoperative immobility on children with musculoskeletal injuries on psychological wellbeing?

REVIEW OF LITERATURE

Part I: Musculoskeletal injuries:

Anatomy of human musculoskeletal system

The human musculoskeletal system is an organ system that gives humans the ability to move using their muscular and skeletal systems ***(Koutras et al., 2014)***. The musculoskeletal system provides form, support, stability, and movement to the body. It is made up of the bones of the skeleton, muscles, cartilage, tendons, ligaments, joints, and other connective tissue that supports and binds tissues and organs together ***(Bai & Hsu, 2017).***

The musculoskeletal system's primary functions include supporting the body, allowing motion, and protecting vital organs. The skeletal portion of the system serves as the main storage system for calcium and phosphorus and contains critical components of the hematopoietic system ***(Ashalath & Deepa, 2014).***

The musculoskeletal system describes how bones are connected to other bones and muscle fibers via connective tissue such as tendons and ligaments. The bones provide stability to the body. Muscles keep bones in place and also play a role in the movement of bones. To allow motion, different bones are connected by joints. Cartilage prevents the bone ends