Assessment of Body Mechanics Application among Nurses in Intensive Care Units

Thesis

Submitted for Partial Fulfillment of the Requirement of
Master Degree in Critical Care Nursing

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Researcher

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List of Abbreviations

Abb.	Full term

BOS : Base of support

COG : Center of gravity

CPM : Continuous passive motion

ICU : Intensive care unit

NIOSH : National Institute for Occupational Safety and Health

SD : Standard Deviation

SPH : Safe patient handling

VGL : Vertical gravity line

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Abstract

Using of body mechanics is very important to nurses' staff because it maintains balance and control during their work**. Aim:** to assess body mechanics application among nurses in Intensive Care Units, through assessment of the nurses' application of body mechanics in Intensive Care Units and assessment of the factors affecting the application of body mechanics among nurses in Intensive Care Units. **Subject & Methods: Design,** Descriptive exploratory design. **Setting**, ICU units (Neuro-surgery Intensive Care Unit, Surgery Intensive Care Unit and Emergency Intensive Care Unit) at Demerdash Hospital affiliated to Ain Shams University in Cairo. **Subject** A convenient sample of 50 nurses were worked at the previously mentioned setting at the time of data collection were recruited in this study. **Tools of the study**; Self-administered questionnaire and an observational checklist. **Results:** There were statistically significant relation between age and qualification of the studied nurses with their knowledge and practice regarding body mechanics in ICU. While there was a statistically insignificant relation between professional experiences and experience in ICU and gender of the studied nurses with their knowledge and practice regarding body mechanics in ICU. **Conclusion:** more than half of the studied nurses had satisfactory knowledge regarding body mechanics and its principles. Also, two thirds of them did not apply the body mechanics during their work. Also, the majority of the nurses stated that common factors which affect their application of body mechanics as sliding ground, two high or low storage space, unavailable mechanics crane and bed sheet, unavailable shower chair and lift tools, work overload, insufficient nurses number, heavy weight and dependent patients and changes of patient position**. Recommendations:** This study recommended that an educational nursing program to improve nurses' application of body mechanics in ICU.

Key words: Body mechanics, principle, application, nursing.

Introduction

Body mechanics is a broad term used to denote an effort coordinated by the muscles, bones and nervous system. It can either be good or bad and can be directly related to the occurrence of back pains. Jobs of health care team members require pushing, pulling, carrying and lifting during patient care activities. Prolonged performance of these actions and utilization of incorrect muscles in completing a task can cause severe musculoskeletal strains and fatigue thereby increasing the risk of injuring the patients as well. To avoid these problems, proper body mechanics should be consciously used in performing a physical activity ***(Jane, 2015).***

Correct body mechanics is the utilization of proper body movement and a result of the coordination of musculoskeletal and nervous systems in maintaining balance, posture, body alignment during activity performance. The scope of body mechanics involves the knowledge on how certain muscles are utilized and explanations of its exploitation ***(Mitchell, 2012).***

Reasons on the utilization of body mechanics through the nursing procedure especially in ICU are mainly to prevent and avoid; musculoskeletal strain, injuries to staff members, injuries to clients and extreme fatigue ***(Parse, 2011).***

The Principles of body mechanics are to maintain a stable center of gravity and this posture evenly distributes the weight in the body through; keep a low center of gravity, a lower center of gravity means greater balance, flex the hips and knees while keeping the trunk erect as an alternative of bending on the waist and a wide base of support is maintained ***(Neal, 2010).***

This provides lateral stability and helps in lowering the center of gravity by wider base of support means greater stability, spread the feet apart to a comfortable distance and flex the knees to move the center of gravity to the base of support ***(Mitchell, 2012).***

Proper body alignment refers to the arrangement of joints, tendons, ligaments, and muscles while in a standing, sitting or lying positions, a line of gravity passing through its base for support maintains equilibrium, equal activity balance in upper and lower body parts reduces risk of back injury, a stronger muscle group means a greater amount of work can be safely executed with it and keep the back straight in performing any activity ***(Jane, 2015).***

Body balance is achieved when these principles are implemented. Always remember, when the body is improperly balanced, the center of gravity is displaced, the base of support is narrowed and the body is not correctly aligned ***(Parse, 2011).***

So that the nurses should use the principles of body mechanics, when they do any activities in caring for patients in ICU, so that body balance can be achieved in ICU when these principles are implemented ***(Neal, 2010 and Fawcett, 2009).***

Significance of the study:

The safety of nurses from musculoskeletal disorders is remains challenge and important to nurses themselves as well as to the patients who serve. A nurse places stress on body daily as lifting, pushing, pulling, stooping and bending repeatedly ***(Tinubu, 2010).*** In hospital, most of nurses are not aware of consequences of improper body mechanics. Nurses have attributed the onset of musculoskeletal disorders to their patient handling activities. About 40% of all musculoskeletal disorders episodes and 75% of compensable musculoskeletal disorders appear to be related to lifting, transfer or movement of patients**.** Back injuries can be serious enough to prevent the nurses from participating in activities that enjoying in life ***(Rosecrance & Cook, 2013).***

Aim of the Study

A study was conducted to assess body mechanics application among nurses in Intensive Care Units, through the following:-

1- Assessment of the nurses' application of body mechanics in Intensive Care Units.

2- Assessment of the factors affecting the application of body mechanics among nurses in Intensive Care Units.

Research Question:

1. Did the nurses apply body mechanics during their work in Intensive Care Units?

2. What are the factors affecting the application of body mechanics among nurses in Intensive Care Units?