



USAGE OF BODY MECHANICS IN SELECTED NURSING ACTIVITIES AND ITS EFFECT ON STAFF NURSES: A DESCRIPTIVE STUDY

Nursing

Mrs. Smitha Sunny PhD Scholar Himalayan University

ABSTRACT

A descriptive study was designed to identify the usage of body mechanics in selected nursing activities and its effect on nurses in selected tertiary care hospital in Karnataka. The sample was composed of 90 staff nurses who work on the medical, surgical, emergency and intensive care units of a tertiary care Medical College Hospital, Karnataka. Sample was recruited using purposive sampling technique. Data collected through observation and interviews. Data was analyzed using percentages, Chi-square and independent t tests. Results of the study showed that the majority of the nurses (73%) experienced musculoskeletal low back pain at some time in their lives. There was no significant relationship with musculoskeletal pain and base line variables. The conclusion from this research was that some of the nurses do not use body mechanics correctly and the majority has low back pain.

KEYWORDS

Body mechanics, Nursing activities, musculoskeletal pain.

Body mechanics' is a term that indicates a coordinated effort of the musculoskeletal and nervous systems to maintain balance, posture, and body alignment in daily life, which is directly related to effective bodily functioning. Improper working posture increases the risk of damage to the body. Body mechanics refers to the method of efficiently using the body when making movements, such as bending the body, lifting a heavy object or person, stretching an arm, sitting, standing, or lying while performing tasks (Karahana & Bayraktar, 2004; H.J. Lee, 2012). Research on nursing activities and body mechanics in clinical situations has been mostly related to backaches. It has been reported that most nurses who experienced backaches rarely used the body mechanics principle (Choi, 2009; Rahmah, Rozy, Halim, Jamsiah, & Shamsul, 2008). In addition, research on burdens to the body related to nurses' working posture revealed that the degree of burden on the body was highest when changing a patient's position due to improper posture, which could be the source of the backache. I.J. Lee (2012) proposed that a method should be implemented for the habitual use of body mechanics for nurses carrying out their jobs.

Nurses are at a higher risk of injuries and work-related musculoskeletal disorders, such as LBP, than other health-care professionals. Many studies have shown that there are many risk factors associated with LBP, including demographic, behavioral, and workplace/employment factors and improper usage of body mechanics. The demographic and behavioral factors associated with LBP include age, smoking status, and exercise habits. Other risk factors include seniority in the establishment, professional category, amount of direct patient contact, work posture, necessity of lifting objects or patients, previous LBP training, self-reported knowledge of LBP, job satisfaction, and job stress.

In developed countries, significant improvements in staff behaviors and in creating a supportive environment have helped prevent back pain associated with poor focus on body mechanics. Although studies have shown that ergonomics training to maintain an adequate body posture at work can reduce the prevalence of work-related musculoskeletal disorders among nurses, few studies have focused on changing risk behaviors (e.g., not maintaining correct vertebral posture), few have based their research on interventional models or theories, and few have focused on the course of low back pain after an intervention. Hence the researcher is spearheaded to the idea of studying usage of body mechanics in selected nursing activities and its effect on staff nurses working in a tertiary care hospital in Karnataka.

MATERIALS AND METHODS

This descriptive study was designed to identify the usage of body mechanics in selected nursing activities and its effect on nurses in selected tertiary care hospital in Karnataka. The sample was composed of 90 staff nurses who work on the medical, surgical, emergency and intensive care units of selected setting. Sample was recruited using purposive sampling technique. Data collected through observation and interviews. Outcomes were assessed using Interviews and observation checklist which provide data on usage of Body mechanics. First, demographic data were collected at baseline followed by observation checklist. Ethics committee clearance was obtained from the

institution and a written informed consent was obtained to avoid ethical concerns. Objectives and data collection process was explained after ensuring confidentiality of data to the study subjects. A pilot study was conducted to evaluate the feasibility of the study in two consecutive days and no major glitches were ruled out in data collection procedure and data collection methods. Data collection for main study was done after obtaining setting permission from authorities concerned. Nurses were observed by the researcher on two times on different days to evaluate their body mechanics. After the concealed observation structured questionnaire was used to collect data regarding baseline variable and musculoskeletal health related factors.

RESULTS

Socio demographic data

- The age group fell under 21 years, 38 years and 68.9% of the staffs were under the age group of 21 years-25 years. There is a significant association between age, work experience and lower back pain, leg pain and hands and shoulder pain.
- 71.2% nurses were having an ideal body weight and it is a positive finding.
- The staff nurses under study were qualified under GNM was 83.3% and B.Sc nursing was 17.3%.
- Majority (72.2%) of nurses was staying in the top floor and 84.4% of staff nurses belonged to nuclear family
- The work experience of 82% of staff nurses were between 0.5 years-4 years and 65.6% were working in intensive care unit.
- 95% of staff nurses were using shoes without heels.
- 56% of subjects had low back pain, 48.4% are having leg pain, 18% have foot pain, and 15.5% having upper back pain and 7.5% are having hands and shoulder pain.

Usage of body mechanics in selected nursing activities

(n=90)

Sl no	Usage of body mechanics Variable	Subjects			
		Right (F/ %)		Wrong (F/ %)	
1	Sitting	34	37.7 %	56	62.2%
2	Standing	33	36.6 %	57	63.3%
3	Lifting	19	21.1 %	71	78.8%
4	Extending	48	53.3 %	42	46.6%
5	Pulling and pushing	16	17.7 %	74	82.2%
6	Moving the patient in bed	13	14.4 %	77	85.5%

Occurrence and characteristics of musculoskeletal pain

Out of 66 nurses who experienced pain, 51 (77.2%) nurses were having pain during past one year, 10 (15.15%) were having pain during past two year and 5 (7.5%) were having pain during past three years. 56% of nurses were experiencing pain sometimes, 33.3% were having pain occasionally and 7.5% were having constant pain. Out of 66 nurses who were having pain 58 (87.7%) were having pain with activity and 98.4% of nurses were not having any past history of musculoskeletal disorders.

DISCUSSION

Nursing is cardinal component of health services and back pain is

one of the leading occupational health problems among nurses. Poor body mechanics is identified as a major factor for musculoskeletal disorders. In the present study nurses did not use body mechanics correctly in various nursing activities. The 37.7% staff nurses followed right body mechanics in sitting, 36.6% in standing, 21.1% in lifting, 53.3% in extending and moving the patient. Similar studies are published in United States of America in which they reported most of the health care workers especially nurses are not using proper techniques as well as not maintaining body mechanics adequately that might prevent them from any kind of musculoskeletal injuries.

In this study majority (73.3%) of nurse's experienced musculoskeletal pain and this ratio was found identical to studies conducted across Asian countries like china and Pakistan. There was no significant relationship with musculoskeletal pain and base line variables in this study. The conclusion from this research was that some of the nurses do not use body mechanics correctly and the majority has low back pain. These findings are also consistent with that of Carllus and Considine (2001), who emphasized that with increasing prevalence of chronic diseases and physical pains, it could explain the drop in nurses' work life quality. Additionally, it is shown that regular and continuous physical activity impacts on the health and work life quality improvement so that while maintaining physical and mental performance, the risk of many chronic diseases decreases. This was supported by Liu et al. (2015), who indicated that management's concern about safety, along with an ergonomic intervention program, had improved nurse's participation and compliance, which in turn reduced both work-related injuries and lost work days; and improve quality of patient care and quality of work life.

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