THE KNOWLEDGE AND PRACTICE OF BODY MECHANICS AMONG STAFF NURSES: DESCRIPTIVE CORRELATIONAL STUDY

Ms. Vidya V. P., Ms. Vinita Freeda D’Souza, Ms. Vinyamol T. O., Mr. Vivian Machado, Ms. Joicy Francis, Gireesh G.R., Sachina B.T., Mrs. Swapna Dennis

Abstract: Body mechanics is the efficient use of the body as a machine and as a means of locomotion. And the body mechanics is directly related to the effective functioning of the body. The correct use of body mechanics should be evident in every activity and even during rest periods. Hospital workers experience more low back pain than many other groups, the incidence varies among countries. Clinical nursing requires the nurses to incorporate knowledge and skills into practice. Many nursing activities require muscle exertion. To reduce the risk of injury to the nurses when transferring a client, the nurses must know and practice proper body mechanics. Descriptive survey research approach was used. Descriptive correlational design adopted for the study. The study sample consists of 50 staff nurses in Yenepoya Medical College Hospital, Mangalore. The sampling technique used for the study was non-probability purposive sampling. A structured knowledge questionnaire on body mechanics and practice scale on body mechanics were used to determine the knowledge and practice regarding body mechanics and to identify the correlation between the knowledge and practice among staff nurses. The data was analysed using descriptive and inferential statistics. The result of the study has shown that Many of the subjects(50%), were having good knowledge regarding body mechanics, followed by 40% were having very good knowledge, and 10% were having average knowledge, in terms of practice majority(88%), of the subjects had average practice of body mechanics, followed by 12% had good practice of body mechanics. The mean percentage of overall level of practice was 73.35%.

Key words: Body mechanics, Correlation, Knowledge, Practice

I. INTRODUCTION

Body mechanics” is a two-word phrase used to describe the movements we make each day during normal activities, including lying in bed, sitting, standing, lifting, pulling, pushing and walking. Good body mechanics will help remedy and prevent future back problems, while bad body mechanics contribute to back problems and other muscle and bone problems. Body mechanics can be both good and bad and can have direct effects on back pain. Jobs of healthcare team members require pushing, pulling, carrying and lifting during patient care activities. Prolonged performance of these actions leads to muscles injuring the patients as well as nurses. To avoid these problems, proper body mechanics should completing a task can cause severe musculoskeletal strains and fatigue thereby increasing the risk be consciously used in performing a physical activity. A nurse should have thorough scientific knowledge of body mechanics and its proper use in their daily practice, muscles which cannot provide the best support and strength are forced into exertion, strain, injury, fatigue of the body tissue. The bureau of labour statistics stated that back and nearly 80% of all back and shoulder injuries are caused due to handling and transferring resident. Nearly 80%of all injuries are due to over exertion from lifting, pulling, pushing, carrying and turning motions. Totally there are more than 6,6500 injuries are resulted in days away from work where reported among nursing assistance.17% nursing home workers lost work time due to injury on the job that is at the rate of 216400 injuries and illness with untold pain and suffering. A cross sectional study was conducted on work related determinations of multi-site musculoskeletal pain. The method of the study was health survey method. The health 2000 survey was carried among a representative sample of Finnish adults. Musculoskeletal pain during the preceding month in the lower back, neck or shoulders, upper extremities, hips and lower extremities, and work ability and intentions to retire early were assessed. Result revealed that two –thirds of the study sample reported pain in ≥2 body sites during the past 12 months, and in 23%; >3sites were affected.
An explorative study was designed to identify the usage of body mechanics in clinical settings and the occurrence of low back pain among staff nurses. The sample was composed of 56 nurses who work on the medical, surgical, emergency and intensive care units of a state hospital. Data collected through observation and interviews were evaluated using percentages, Chi-square and Mann-Whitney U tests. Result of the study showed that the majority of the nurses (87.5%) experienced low back pain at some time in their lives. According to observations, the majority of the nurses used body mechanics correctly, however, 57.1% of the nurses lifted and 82% extended incorrectly.

A descriptive correlational study conducted on knowledge and practice of body mechanic techniques at Mangalore. The data was collected through structured knowledge questionnaire and observation checklist, and the study findings revealed that 13 (43.33%) had good knowledge 13 (43.33%) had average knowledge and 4 (13.34%) had poor knowledge on body mechanics and only 13 (43.34%) performed body mechanics technique satisfactorily.

A study was conducted in regarding Work-Related Musculoskeletal Disorders (WMSDs) among Nurses in Ibadan. The study revealed that eighty-four point four percent of the nurses have had WMSDs once or more in their occupational lives. The 12-months period and point prevalence rate of WMSDs at any body part was 78% and 66.1% respectively. WMSDs occurred mostly in low back (44.1%), neck (28.0%), and knees (22.4%). 30.3% treated themselves or had visited other health practitioners for care. Nurses with > 20 years of clinical experience are about 4 times more likely to develop WMSDs (OR 3.81; CI 1.08-13.4) than those with 11-20 years of experience. Working in the same positions for long periods (55.1%), lifting or transferring dependent patients (50.8%) and treating an excessive number of patients in one day (44.9%) were the most perceived job risk factors for WMSDs. Getting help in handling heavy patients (50.4%), modification of nursing procedures in order to avoid re-injury (45.4%), and modifying patient’s/nurse position (40.3%) were the top three coping strategies.

A research study was conducted on musculoskeletal disorders among female nurses in a rural Japanese hospital. Data were gathered by means of a self-reporting questionnaire from 305 female staff nurse. Lower back pain (LBP) was the most commonly reported musculoskeletal disorders, affecting 59% of all nurses. This was followed by musculoskeletal disorders of the shoulder (46.6%), neck (27.9%), knees (16.4%) and upper leg (11.8%). Working in the surgical department was shown to increase the risk of any musculoskeletal disorders 2.7 times when compared to nurses in the other departments (odds ratio 2.7, 95% confidence interval 1.2-6.7, P = 0.0202). Overall, study show musculoskeletal disorders that care reasonably common among registered nurses in a rural Japanese hospital.

II. MATERIALS AND METHODS
Descriptive survey research approach was used. Descriptive correlational design adopted for the study. The study sample consists of 50 staff nurses in Yenepoya Medical College Hospital, Mangalore. The sampling technique used for the study was non-probability purposive sampling. A structured knowledge questionnaire on body mechanics and practice scale on body mechanics were used to determine the knowledge and practice regarding body mechanics and to identify the correlation between the knowledge and practice among staff nurses. The data was analysed using descriptive and inferential statistics.

III. RESULTS

Section I: Demographic data
A vast majority of subject (74%) belongs to the age group of 21-25 years. Maximum number of subject were female gender (84%). Maximum number of subject were having GNM as qualification (58%), and About 28% of subjects were having <1 year experience, 60% were having 1-5 years of experience.

Section II: Identifying the correlation between knowledge and practice

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Practice</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Correlation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.48</td>
<td>11.10</td>
<td>2.985</td>
<td>1.418</td>
<td>0.611</td>
<td>Significant</td>
</tr>
</tbody>
</table>

\[ r = -1 + 1 \]

The above table showed that there is a positive correlation between knowledge and practice of body mechanics among staff nurses, that is \( r = 0.611 \). Correlation is significant at 0.01 the level (2-tailed).

Section III: Association between knowledge score and selected demographic variable
There was no significant association between knowledge score and demographic variables. Thus it was interpreted that level of practice was not dependent on demographic variables.

Section IV: Association between practice score and selected demographic variable
There was no significant association between practice score and demographic variables. Thus it was interpreted that level of practice was not dependent on demographic variables.
IV DISCUSSION
In the present study many of the subjects (50%), were having good knowledge regarding body mechanics, followed by 40% were having very good knowledge, and 10% were having average knowledge. The mean percentage of overall level of knowledge was 58.26%. The following study support the findings of present study: A descriptive study was conducted about assessment of knowledge on importance of body mechanics in preventing back ache at ESI hospital. The 50 nurses were selected in study by purposive sampling method. The study shows that among 50 trained nurses 21 (42%) nurses had adequate knowledge regarding body mechanics, 12 (24%) had moderate knowledge and 17 (34%) had inadequate knowledge regarding importance of body mechanics.

V. CONCLUSIONS
The following conclusions were drawn on the basis of the findings of the study:

- In the present study, many of the subjects had good knowledge (50%), followed by very good for 40%, average for 10%. Nobody had poor and excellent knowledge.
- The mean percentage of knowledge score was 58.26%.
- In the present study majority (88%) of the subjects had average, followed by 12% of the subjects had good practice towards body mechanics.
- The mean percentage of practice score was 73.33%.
- There was a positive correlation between knowledge and practice of body mechanics among staff nurses, that was $r = 0.611$. Correlation was significant at 0.01 the level (2-tailed).
- There was no significant association between knowledge score among staff nurses and demographic variables.
- There was no significant association between practice score among staff nurses and demographic variables.

REFERENCES

VI. ACKNOWLEDGEMENT
Our special thanks to all the participants who enthusiastically participated in the study for being very co-operative and also adding light to our studies with their heartfelt expression.

VII. Conflict of Interest
The authors declare that they have no competing interest