



A Study to Observe the Use of Body Mechanic Practices among Nursing Students While Working in the Clinical Fields

Shally Sharma, Lecturer Dipak Sethi, Lecturer Jasmeet kaur

M.Sc. Nursing (Medical Surgical Nursing)

Student Saraswati Nursing Institute Dhianpura Roopnagar.

Abstract- Mechanics is concerned with the analysis of the action of forces on object. Body mechanics is the term used to describe the efficient, coordinated and safe use of the body to move objects and carryout the activities of daily living. The major purpose of body mechanics is to facilitate the safe and efficient use of appropriate muscle groups to maintain balance, reduce the energy required, reduce fatigue and decrease the risk of injury. Good body mechanics is very much essential for the nurses. When a person moves, the balance of that person depends on the interrelationship of the centre of gravity and the base of the support. The closer the line of gravity is to the centre of base of support, the greater the person's stability. Appropriate preparation prevents potential falls and injury and safeguards the person and equipment¹.

Keywords- Body Mechanics, Nursing Students, Practice.

I.INTRODUCTION

Body mechanics is a term used to describe the ways we move as we go about our daily lives. It includes how we hold our bodies when we sit, stand, lift, carry; bend and sleep. Poor body mechanics are often the cause of back problems. When we don't move correctly and safely, the spine is subjected to abnormal stresses that overtime can lead to degeneration of spinal structures like discs and joints, injury and unnecessary wear and tear .That is why it is so important to learn the principles of proper body mechanics. Proper body mechanics are vitally important for keeping our spine healthy. And it's easy to incorporate these principles into our daily life².

There must be proper alignment in order to have proper movement. Some of the most common injuries sustained by members of the health care team are severe musculoskeletal strains. Many injuries can be avoided by the conscious use of proper body mechanics when performing physical labor¹.

Body mechanics is the efficient use of the body as a machine and as a means of locomotion. Body mechanics is directly related to the effective functioning of the body. The correct use of body mechanics should be evident of every activity and even during rest periods because correct use of body mechanics is another phase of illness prevention and health promotion. Correct body alignment reduces the strain on musculoskeletal structures. Body alignment means positioning of the joints, tendons, ligaments and muscles while in standing, sitting and lying position. Body balance is achieved when center of gravity is balanced over a wide stable of supports. The student nurse can increase body balance when working by spreading their feet apart and by flexing their hips and knees³.



Faulty body mechanics is a contributing factor in most back disorder. Lifting with the back in a flexed posture, especially repetitive lifting is one of the leading causes of back disorders. Injury to the disc occurs gradually as a result of perhaps hundreds of thousands of repeated forward bends and lifts. This forward bending and lifting is especially stressful on the lower back when done with the legs straight. If the legs are straight the trunk acts as a lever arm and increases the compressive load on the back by seven to ten times.

Compared to other occupations nursing personnel are among the highest at risk for musculoskeletal disorders. The bureau of Labor Statistics lists registered nurses 6th in a list of at risk occupations for strains and sprains. Research on the impact of musculoskeletal injuries among nurses in US showed that 52% of nurses complain of back pain, 12% of nurses 'leaving for good' because of back pain, 20% transferred to different unit or employment and 38% suffered occupational related back pain severe enough to require leave from work and 6%, 8% and 11% of registered nurses reported even changing jobs for neck, shoulder and back problems respectively.⁴

Objectives

- To assess the use of body mechanic practices among Nursing Student in clinical areas.
- To determine the association between body mechanic practices with students of different classes.

II. MATERIAL & METHODS

1. Research Approach

A non-experimental research approach was used to observe the use of body mechanic practices among nursing students while working in the clinical fields.

2. Research Design

The research design selected for the study was descriptive design to observe the use of body mechanic practices among nursing students while working in the clinical fields.

RESEARCH SETTING: The study was conducted in the month of February and March in selected hospitals. These were :

- Civil Hospital Roopnagar,
- Civil Hospital Fatehgarh
- IVY Hospital Mohali.

3. Study Population

All nursing students who were posted in clinical fields.

4. Target Population

Nursing students who were undergoing ANM, GNM, B.Sc Nsg. and Post Basic courses.

5. Sample and Sampling Technique

- **Size:** 300 nursing students were taken as sample for the study.
- **Sampling Technique:** Convenience sampling technique was used to collect data.

Criteria

Inclusion Criteria

Nursing students who were:

- Undergoing nursing courses in the selected institute will be included.
- Nursing students who were working in selected hospitals.
- Both male and female nursing students.



Exclusion Criteria

Nursing students who were absent during data collection.

III. DEVELOPMENT AND DESCRIPTION OF TOOL

The tool consists of basically 2 parts:-

TOOL-1: It was comprised of five items of demographic variables for observe the body mechanic practice i.e. Gender, Grade, Working area, Working hours/day and Footwear used.

TOOL-2: It was comprised of 34 items .Each item was having two options.

Scoring Procedure: There were 34 items pertaining to the practice of body mechanic. Each item was having two options with one appropriate answer. The maximum score for correct response to each item was given '1' and for the wrong response '0'. The level of practice was categorized based on the percentage of scores obtained.

Ethical Consideration

- Written permission was taken from Principal Saraswati Nursing Institute Dhianpura kurali.
- Written permission was taken from ethical clearance committee of the college..
- Confidentiality and anonymity of subjects was maintained throughout study.

IV. RESULTS

Table 1: Distribution of Socio-demographic variables according to their mean score regarding body mechanic practices.

| Socio demographic Variables | N | Mean Score | Mean % |
|-----------------------------|-----|--------------|--------|
| Gender Female | 300 | 20.92± 3.36 | 51.52% |
| Class | | | |
| ANM | 012 | 19.66± 3.20 | 57.82% |
| GNM | 159 | 21.13± 3.82 | 62.14% |
| B.Sc | 129 | 20.78± 2.76 | 61.11% |
| Working Area | | | |
| ICU | 008 | 24.50 ± 1.06 | 72.05% |
| CCU | 017 | 23.00 ± 2.42 | 67.60% |
| Emergency Unit | 063 | 20.71 ± 3.98 | 60.88% |
| General Ward | 144 | 20.50 ± 3.22 | 60.29% |
| Other | 068 | 21.05 ± 3.11 | 61.91% |
| Working hours/Day | | | |
| <8hrs | 293 | 20.93± 3.41 | 61.55% |
| >8hrs | 007 | 20.57± 2.07 | 60.40% |
| Footwear Used | | | |
| Flat Heel Shoes | 296 | 20.94 ± 3.39 | 61.50% |
| Medium Heel shoes | 004 | 19.00 ± 1.41 | 55.80% |

The above table depicts that the distribution of Socio-demographic variables according to their mean score regarding body mechanic practices.



Table 2: Mean Percentage score of subjects regarding body mechanic practices.

N= 300

| N | Mean Score | Mean% |
|-----|--------------|--------|
| 300 | 20.92 ± 3.36 | 61.52% |

The above table showed that overall mean percentage score of correct body mechanic practices were used by study subjects 61.52% and mean score was 20.92 ± 3.36. Less than half 39.48% of incorrect body mechanic techniques were used by study subjects while giving care to immobilized patient, performing procedure, sitting, standing and also while moving the patient to the side of the bed without an assistant. So the result is maximum of correct body mechanic techniques were using by study subjects while only few were using less accurate technique.

Table 3: Association of body mechanic practices with students of different classes.

N=300

| Classes | N | Mean score | F Value | Df | P Value |
|---------|-----|--------------|---------|----|---------|
| ANM | 12 | 19.66 ± 3.82 | 1.24 | 2 | .291 |
| GNM | 159 | 21.13 ± 3.82 | | | |
| B.Sc | 129 | 20.78 ± 3.82 | | | |

The above table depicts that association of body mechanic practices with the different classes of subject was found non-significant ($p = 0.291$) at the level of $p < 0.05$. Hence, there is no significant association between body mechanic practices with different classes of subjects.

V. DISCUSSION

The findings of present study were 61.52% of correct body techniques were used by study subjects and only 38.4% of study subjects were performed incorrectly. This study is supported by Pinto M (2008)⁵ who conducted a research study 'on knowledge and practice of body mechanic techniques' from pre-operative, post operative, ICU, neuro, surgical, orthopedic, and gynecology units. The data was collected through structured knowledge questionnaire and observation checklist. The study findings revealed that 43.33% had good knowledge 43.33% had average knowledge and 13.34% had poor knowledge on body mechanics and only 43.34% performed body mechanic technique satisfactorily

The findings of present study were 49.3% of study subjects lifted correctly and only 6.3% experienced back pain due to lifting of heavy objects in wrong way. This study is supported by Karahan.A (2006)⁶ who conducted 'an explorative study about action of the usage of body mechanics in clinical settings and the occurrence of low back pain'. Results of the study showed that the majority of the nurses (87.5%) experienced low back pain at some time in their lives. However 57.1% of the nurses lifted and 82% extended incorrectly. The conclusion from this research was that some of the nurses do not use body mechanics correctly and the majority has low back pain.



VI. CONCLUSION

The findings of the study revealed that 61.52% of correct body mechanic techniques were used by study subjects. Whereas only 38.4% of incorrect body mechanic techniques were used by nursing students. Most of correct body mechanic practices were following by subjects who were posted in CCU/ICU. There were no significant association between body mechanic practice with different classes.

Acknowledgement

My sincere thanks go to my guide and Dr. Raman Kalia Principal Saraswati Nursing Institute, who held my hands throughout this journey. I appreciate all the different forms of assistance from my parents, siblings, my friends, who walked with me from the very first step of this research.

Source of Funding: Self

REFERENCES

1. Kozier B, Erb G, et al. 'Fundamental of nursing: concepts, process and practice'. 5th ed. New Delhi: Pearson Education; 2007.
2. Mandy Mitchle, 'Back to life: Nursing Times' 1996 June 5; 92(23).
3. Basavanthappa BT. 'Fundamentals of Nursing' p-254.
4. Nelson. 'American nurses association: handle with care'. Available at <http://www.nursingglad.com>.
5. Pinto M. Body Mechanics. Nurses of India 2008 Aug;23:4-5
6. Karahan, International Journal of Nursing Studies, Determination of the usage of body mechanics in clinical settings and the occurrence of low back pain in nurses. Volume 41, Issue 1, Pages 67 - 75 A.