

## Stop on Knowledge Regarding Body Mechanics and Selected Nursing Procedures and Prevention of Back Pain Among the Staff Nurses

Gowri Sayee Jagadesan<sup>1</sup> Mala V S<sup>2</sup>

### Abstract

Good body mechanics is the efficient co-ordinated and safe use of the body to produce motion and maintain balance during activity. Based on the problem selected and objectives of the study an evaluative research approach was used.<sup>5</sup> The design adopted for this study was pre- experimental one group pre-test post-test design; Sample of 30 staff nurses were selected by Non-probability convenient sampling technique. Data was collected by using self administered knowledge questionnaire before and after the implementation of Video Assisted Teaching Program. Paired 't' test was used to compute the difference between mean pre-test and mean post-test knowledge scores of the Staff Nurses reveal that 46.67 per cent of Staff Nurses had inadequate knowledge, 53.33 per cent had moderate knowledge and none of them had adequate knowledge in pre-test. In post test the knowledge scores of the Staff Nurses reveal that 13.33 per cent of them had inadequate knowledge, 46.67 per cent had moderate knowledge and 40 per cent of them had adequate knowledge regarding Body Mechanics on selected Nursing Procedures and prevention of back pain. Hence teaching programme regarding Body Mechanics on selected Nursing Procedures and prevention of back pain followed by pre test was effective. Chi-square test was applied to find out the association between selected demographic variables and post-test knowledge score. There was no significant association found between the post-test knowledge score and socio-demographic data. The overall findings of the study revealed that the Video Assisted Teaching Program is significantly effective in improving the knowledge scores of staff nurses regarding of Body Mechanics on selected nursing procedure and prevention of back pain among Staff Nurses

**Keywords:** Video Assisted Teaching Program; Staff nurses; Effectiveness; Knowledge; Body Mechanics.

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### Introduction

The co-coordinated efforts of musculo skeletal and nervous system to maintain balance, posture, and body alignment during lifting, bending, moving and performing activities of daily living provide the foundation for body mechanics. The proper implementation of these activities reduces the risk of injury to the musculo skeletal system and facilitates body movements, allowing physical mobility without muscle strain and excessive use of muscle energy.<sup>1</sup>

The concept of body mechanics includes body alignment, body balance and body movement. The intent of body mechanics is to protect nurses, repositioned patients by shifting their weight in certain ways thought to protect the back. Correct body alignment reduces strain on musculoskeletal structures, maintain adequate muscle care and contribute to balance.<sup>3</sup>

Compared to other occupations nursing personnel are among the highest at risk for musculo skeletal disorders. The bureau of Labour Statistics lists registered nurses 6<sup>th</sup> 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.<sup>9</sup>

**Author Affiliation:** <sup>1</sup>Professor, Department of Obg, <sup>2</sup>Professor, Department of Child Health, Fortis Institute of Nursing, Bengaluru.

**Corresponding Author:** Mala V S, <sup>2</sup>Professor, Department of Child Health, Fortis Institute of Nursing, Bengaluru.

**E-mail:** vs.mala78@gmail.com

*The Aims and Objective of the Present study was*

1. To assess the level of knowledge regarding Body Mechanics on selected Nursing Procedures and prevention of back pain among Staff Nurses by conducting pre-test.
2. To administer Structured Teaching Programme regarding Body Mechanics on selected Nursing Procedures and prevention of back pain among Staff Nurses.
3. To assess the level of knowledge regarding Body Mechanics on selected Nursing Procedures and prevention of back pain among Staff Nurses by conducting post-test.
4. To evaluate the effectiveness of Structured Teaching Programme regarding the knowledge of Body Mechanics on selected Nursing Procedures and prevention of back pain among Staff Nurses by comparing pre-test and post-test knowledge scores.
5. To identify the association between post-test knowledge scores of Staff Nurses regarding Body mechanics on selected Nursing Procedures and prevention of back pain with socio-demographic variables.

## **Materials and Methods**

A pre-experimental one group pre test and post test design with evaluative approach was adopted in order to evaluate the effectiveness of structured teaching program regarding Body Mechanics on selected nursing procedures and prevention of back pain working in Fortis Hospital. Validity and reliability of the questionnaire and structured teaching program regarding Body Mechanics on selected nursing procedures and prevention of back pain among Staff Nurses were tested.

The sampling technique selected for this study is non probability convenient sampling technique. The researcher had taken permission to conduct the research study. Consent was taken from the subjects before data collection. The subjects were informed that the confidentiality of data will be maintained. The subjects were also informed that their participation was purely voluntary basis and they can withdraw from the study any time.

Structured knowledge questionnaire was developed with the help of related literature from various textbook, journals and research articles. Knowledge questionnaire consisted of 30 questions, where each questions have four options. Corrected answer carried one mark, wrong answer

carry zero mark .The total score awarded was 30. Multiple choice questionnaires is prepared on Body Mechanics on selected nursing procedures and prevention of back pain It consisting of two sections:

### *Section 1: Socio-Demographic data.*

It includes variables like age, gender, marital status, educational qualification, years of experience, department of work, hours of working, distance to work place, mode of transportation, height, weight, BMI, any musculo skeletal problem, regarding back pain, any regular exercise, meal time, previous knowledge regarding body mechanics, practices of body mechanics during work.

### *Section 2: Structured Knowledge Questionnaire*

It includes questionnaire on knowledge regarding Body Mechanics which is divided upon six headings such as general information on Body Mechanics, purpose, principles of proper Body Mechanics, regulation of body movement, complication of poor Body Mechanics and prevention of back pain.

*Structured Teaching Programme consists of the following content:*

Introduction, Body Mechanics definition, Purpose, Principles of proper Body Mechanics, Regulation of body movement, Complication of poor Body Mechanics, Prevention of back pain

On first day, a pre-test was conducted on 30 staff nurses who were working in Fortis hospital Bannerghatta road, using the Structured Knowledge Questionnaire followed by structured teaching program administered for the group using lecturer method with appropriate AV aids (power point) for 45 minutes. On seventh day a post-test was conducted for the groups using the same structured knowledge Questionnaire that was used in pre test.

*Analysis* interpreted with the help of descriptive statistics such as mean, mean percentage, median, standard deviation.

Paired t-test used to compare pre-test and post test knowledge of Staff Nurses regarding Body Mechanics on selected nursing procedures and prevention of back pain in pre-experimental group.

Chi-square used to assess the association between knowledge regarding Body Mechanics on selected nursing procedures and prevention of back pain. The data will be presented in the form of tables, graphs and diagrams.

**Results**

This chapter deals with the analysis of the data collected and its interpretation. The analyzed data are given in the tables and graphs according to the objectives of the study. The data is categorized into four sections.

The first section shows the distribution of Staff Nurses according to the selected demographic variables. Frequency and percentage distribution of socio-demographic variables such as age, gender, marital status, educational qualification, years of experience, department of work, hours of working, distance to work place, mode of transportation, height, weight, BMI, any musculo-skeletal problem, regarding Back pain, any regular exercise, meal time, previous knowledge regarding Body Mechanics, practices of Body Mechanics during work of Staff Nurses working in Fortis Hospita.<sup>1</sup>

The second section describes frequency and percentage distribution of level of knowledge of Staff Nurses regarding Body Mechanics on selected nursing procedures and prevention of Back pain.

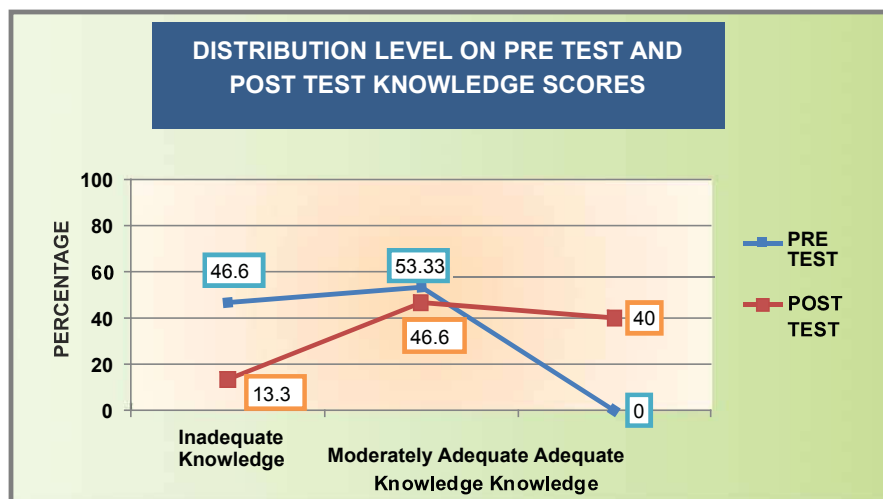
It reveals that with regard to overall knowledge scores of pre-test 14 Staff Nurses (46.67 per cent) had inadequate knowledge, 16 Staff Nurses (53.33 per cent) had moderately adequate knowledge and none of Staff Nurses had adequate knowledge whereas 4 Staff Nurses (13.33per cent) had inadequate knowledge, 14 Staff Nurses (46.67 per cent) had moderately adequate knowledge and 12 Staff Nurses (40 per cent) had adequate knowledge in post-test.

The third section illustrates frequency and percentage distribution of pre-test and post-test scores with paired t-test value.

The final section deals with the chi square test showing the association between the post-test knowledge scores and selected socio-demographic variables. It reveals that there was no significant association found between the post-test knowledge score and socio-demographic data. Hence, the research null hypothesis H1.0 was accepted with regard to the socio-demographic variables and the post test knowledge scores regarding Body Mechanics on selected nursing procedures and

**Table 1:** Distribution of Subjects Regarding Body Mechanics According to their Pre-Test and Post-Test Scores With Paired „t“ Test Value

S. No.	Level of knowledge	Pre Test		Post Test		„t“ VALUE
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	
1)	Inadequate knowledge (≤50%)	14	46.67	4	13.33	5.15
2)	Moderately adequate knowledge (51-74%)	16	53.33	14	46.67	
3)	Adequate knowledge (≥ 75%)	0	0	12	40	



Sl. No.	Socio Demographic Data	Post Test Knowledge			Df	Chi Squar E	Infer Ence
		Inadequate Knowledge	Moderate Ly Adequate Knowledg E	Adequate Knowledge			
1)	Age (in years)						
	23-26	3	8	4			
	27-30	1	2	5			
	31-34	0	1	1	8	6.78	NS
	35-38	0	1	2			
	39-42	0	2	0			
2	Gender						
	Male	0	1	3	2	2.49	NS
	Female	4	13	9			
3	Marital status						
	Married	1	8	6	2	1.28	NS
	Unmarried	3	6	6			
4	Educational qualification						
	Graduation	4	14	11			
	Post-graduation	0	0	1	2	1.55	NS
5	Years of experience						
	0-5	4	10	6			
	6-10	0	1	4			
	11-15	0	2	2	6	6.42	NS
	16-20	0	1	0			
6	Department of work						
	Medical-surgical	4	11	10			
	Paediatric	0	2	1	4	1.18	NS
	OBG	0	1	1			
7	Hours of working						
	6-7	1	0	2			
	8-9	3	13	10			
	10-11	0	1	0	4	4.11	NS
8	(Distance from workplace (km						
	0-3	3	5	8			
	4-6	0	6	4			
	7-9	1	1	0			
	10-12	0	2	0	6	8.38	NS
9	Mode of transportation						
	Walk	3	5	8			
	Public transport	1	7	2			
	Two wheeler	0	2	2	4	4.45	NS

10	(Subjects' Height (cm						
	131-150	1	2	1			
	151-170	3	12	10			
	171-190	0	0	1	4	2.18	NS
11	(Subjects' Weight (kg						
	31-50	1	5	4			
	51-70	2	8	5			
	71-90	1	1	1	6	6.46	NS
	91-120	0	0	2			
12	Subjects' BMI						
	Normal	3	9	5			
	Underweight	0	2	1			
	Overweight	1	3	4			
	Obese	0	0	2	6	4.89	NS
13	Musculoskeletal problem						
	Yes	2	9	4			
	No	2	5	8	2	2.47	NS
	Specifying Problems						
	Neck pain	0	1	0			
	Leg pain	0	1	1			
	Knee pain	0	1	0			
	Back pain	2	6	3			
	No problem	2	5	8	8	4.63	NS
14	Back pain						
	Yes	2	6	3			
	No	2	8	9	2	1.24	NS
	Frequency of Pain						
	Daily	0	1	1			
	During work	2	4	2			
	Frequently	0	1	0	6	9.11	NS
	No Back pain	2	8	9			
	Management of Back pain						
	Medication	1	2	0			
	Rest	0	4	1			
	Exercise	1	0	2			
	No Back pain	2	8	9	6	8.00	NS

15	Exercise							
	Yes	1	4	4				
	No	3	10	8	2	0.12		NS
	Type:							
	Walking	1	2	1				
	Gym	0	1	1				
	Others	0	1	2	6	2.04		NS
	No exercise	3	10	8				
	Duration of Exercise							
	30 minutes	1	1	2				
	60 minutes	0	3	2				
	No exercise	3	10	8	4	1.80		NS
16	Previous Sources of Information							
	College	0	0	3				
	SOP class	0	5	1				
	Personal experience	1	4	3				
	Peer group	1	1	0	10	11.94		NS
	Text book	0	1	1				
	No information	2	3	4				
	Practice of Body Mechanics							
	Yes	2	10	5				
	No	2	4	7	2	2.41		NS

## Conclusion

The present study revealed the knowledge regarding Body Mechanics in selected nursing procedure and prevention of back pain among Staff Nurses. The knowledge of the Staff Nurses was found to be inadequate in the pre-test with. Whereas in the post-test 13.33 per cent of the Staff Nurses had inadequate knowledge, 46.67 per cent gained moderately adequate knowledge and 40 per cent had adequate knowledge regarding Body Mechanics in selected nursing procedure and prevention of back pain. The findings of the study have implications on the field of nursing education, nursing practice, nursing administration and nursing research. Nurses through interpersonal interaction could identify the various problems faced by them regarding Body Mechanics in selected nursing procedure. Here more focus should be given on Body Mechanics to create awareness among them regarding Body Mechanics in selected nursing procedure and prevention of back pain.

## Discussion

The present study the knowledge scores of the Staff Nurses reveal that 46.67 per cent of Staff

Nurses had inadequate knowledge, 53.33 per cent had moderate knowledge and none of them had adequate knowledge regarding Body Mechanics on selected Nursing Procedures and prevention of back pain in pre-test. In post test the knowledge scores of the Staff Nurses reveals that 13.33 per cent of them had inadequate knowledge, 46.67 per cent had moderate knowledge and 40 per cent of them had adequate knowledge. Hence, structured teaching programme regarding Body Mechanics on selected Nursing Procedures and prevention of back pain was effective

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