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Good posture is a matter of the mind which makes you appear more confident and it can make you look ten pounds lighter”

Manjeet Kaur

ABSTRACT

Most low back pain follows injury to the back, poor physical conditions and inappropriate posture during activity. Pain in the back can restrict activities, reduce work capacity and quality of enjoyment in everyday living.

The goal of nursing is healing the sick, so it is ironic that nursing as a profession sees some of the highest rates of musculo- skeletal injuries and this might disrupt a nurse’s career. Hospital workers,

particularly ward nurses, are known to be at high risk for back injury, with patient handling tasks being implicated in most cases. It is widely accepted that chronic back pain can result in disability.

Clinical nursing, requires the Students to incorporate knowledge and skills into practice. To reduce the risk of injury to the Students when

transferring a client, the Student must know and practice proper body mechanics.

INTRODUCTION

Good posture is a matter of the mind which makes you appear more confident and it can make you look ten pounds lighter"

– Aubrey Greif

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 do not move correctly and safely, the spine is subjected to abnormal stresses that over time 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 principals of proper body mechanics. Proper body mechanics are vitally important for keeping our spine healthy. And it is easy to incorporate these principals into our daily life. It may seem unnatural at first, but if we keep at it, they will easily become routine and our back will thank us for it.

(Jaafar N and MohdGhazali AN 2013)

It is uncertain why these muscles become dysfunctional after a low back injury, but specific exercises focusing on the contraction of these two muscles together will improve the protective stabilizing ability of the spinal muscles, reduce pain intensity, and improve activities of daily living as well as improve body awareness and posture. In addition to the regular home exercise

program, individuals wishing to maintain a healthy spine need to do smaller scale exercises throughout the day. These might be postural correction / strengthening exercises or stretches of the back. Every day activities can place stress on the spine. Learning how to use good body mechanics will minimize these stresses and decreases the incidence of back and neck injuries. The key concept for maintaining a healthy spine is to strive for balanced stresses to the joints with dynamic neutral alignment during activities of daily living.

(Mrs.L.Shanthi , 2012) Efforts to reduce injuries associated with patient handling are often based on tradition and personal experience rather than scientific evidence. The purpose of this is to summarize current evidence for interventions, designed to reduce caregiver injuries, a significant problem for decades. Despite strong evidence, published over three decades, the most commonly used strategies have strong evidence that demonstrate they are ineffective. There is a growing body of evidence to support newer intervention that are effective or show promise in reducing musculo skeletal pain and injuries in care providers.

STATEMENT OF THE PROBLEM :-

A study to assess the effectiveness of video assisted Demonstration on knowledge Regarding Proper use of Body Mechanics among Nursing students of Selected Nursing Institute.

OBJECTIVES :-

(1) To assess the level of Knowledge of students towards the appropriate techniques of Body Mechanics.

(2) To assess the practice of students towards the Body Mechanics.

(3) To Find an association between Knowledge & practice on selected Demographic Variable.

Need for study :-

Taking care of our back is a life long project. The use of proper body mechanics is an effective way to prevent injury to your back. When incorporated into activities of daily living, body mechanics help to decrease the amount of stress on the spine. Education in body mechanics is therefore, essential in preventing the occurrence of back pain and musculoskeletal disorders[1].

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 [2].**(Jaafar N and MohdGhazali AN 2013)**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. Training seems to play an important role in reducing the incidence of injury, as shown by the fact that about 80% of injuries occur among nursing aides, orderlies, and attendants compared with 20% occurring among registered nurses.

HYPOTHESES :

H1:- There will be a significant difference in the level of the low back pain disability before and after video assisted teaching of spinal exercise and body mechanics.

H2 :-There will be a significant association in the level of low back pain disability with their selected demographic variables.

ASSUMPTIONS : -

1. Students may experience some level of low back pain disability.
2. Exercises may have reduction on the level of low back pain disability among Students.

DELIMITATION : -

Data collected period was 4 weeks.

REVIEW OF LITERATURE

The review of literature provides a basis for future investigations, justifies the need for replication, throws light on the feasibility of the study, indicates constraints of data collection and helps to relate findings of one study to another. It also helps to establish a comprehensive body of scientific knowledge in a professional discipline from which valid and pertinent theories may be developed.

Sienkiewicz Z, Paszek T, Wronska I,(2007) conducted a study on Strain on the spine-professional threat to nurses' health. Research was carried out on a group of 937 nurses working in health care units in the Warsaw district area. The study was conducted using the method of diagnostic survey and as a research tool a questionnaire sheet including 70 questions divided into 6 categories was used. Research was carried out voluntarily and anonymously.79% of tested people fears of degenerative changes of the spinal column. Health problems that are connected to lower back pain are reported by 61% of nurses. 67% of ward nurses and 79% of scrub nurses, more often than departmental nurses and these working in other basic and specialized units, complain about pain symptoms after duty. The greatest strain placed on the spine affects tested nurses working in gastrology department (74%), department of internal medicine and neurology department (70%). [6]

Smith DR(2003) conducted a study 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 MSD, affecting 59% of all nurses. This was followed by MSD 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 MSD 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 shows that MSD are reasonably common among registered nurses in a rural Japanese hospital. [8] Yassi A (2001**)** conducted a study on randomized controlled trial to prevent patient lift and transfer injuries of health care workers, to compare the effectiveness of training and equipment to reduce musculoskeletal injuries, increase comfort, and reduce physical demands on staff performing patient lifts and transfers at a large acute care hospital. The method of data collection was Randomized controlled trial (RCT). This three-armed RCT consisted of a "control arm," a "safe lifting" arm, and a "no strenuous lifting" arms. A medical, surgical, and rehabilitation ward were each randomly assigned to each arm. Both intervention arms received intensive training in back care, patient assessment, and handling techniques. Hence, the "safe lifting" arm used improved patient handling techniques using manual equipment, whereas the "no strenuous lifting" arm aimed to eliminate manual patient handling through use of additional mechanical and other assistive equipment. Frequency of manual patient handling tasks was significantly decreased on the "no strenuous lifting" arm. Self-perceived work fatigue, back and shoulder pain, safety, and frequency and intensity of physical discomfort associated with patient handling tasks were improved on both intervention arms, but staff on the mechanical equipment arm showed greater improvements. Musculoskeletal injury rates were not significantly altered.[9]

Derek R. (2004) conducted a study on musculoskeletal disorders among professional nurses in Mainland China. They investigated 180 nurses (84.1 percent response rate) from a teaching hospital using a previously validated, self-reporting musculoskeletal disorder survey. The overall prevalence of musculoskeletal disorders was 70.0 %, with individual categories reported as follows: lower back (56.7%), neck (42.8%), shoulders (38.9 %t) and upper back (38.9 %).

Period pain was shown to increase the risk of musculoskeletal disorders 23.8 times (odds ratio [OR] 23.8; 95 percent confidence interval [CI], 4.3–189.1; *P* = .0008). Excessive mental pressure incurred a 10.5-fold risk increase (OR 10.5; 95 percent CI, 2.2–67.5; *P* = .0058). Interestingly, occasional consumption of alcoholic drinks reduced the risk of musculoskeletal disorders 10-fold (OR 0.1; 95 percent CI, 0.01–0.4; *P* = .0046), as did working in the gynecology department (OR 0.1; 95 percent CI, 0.01–0.7, *P* = .0240). Overall, study

showed that musculoskeletal disorders are common among nursing professionals in mainland and represent an important occupational issue for this Asian demographic.[7]

Yip Y (2001) Conducted a cross sectional study of work stress, patient handling activities and the risk of low back pain among 377 nurses in Hong Kong. This study aims to measure the magnitude of LBP among nurses and its association with the workrelated psychological strain and patients handling activities. A cross- sectional study of hospital nurses was conducted. The samples were registered nurses or enrolled nurses working full-time for at least 1 month in the current ward, recruited from 6 district hospitals. Data were collected by face-to-face interviews. The data included work factors, demographics, psychological distress and lifestyle factors and the occurrence of LBP. Of the 377 nurses interviewed, 153 (40.6%) reported having LBP within the last 12 months. With symptoms of LBP as the outcome, risks were increased where nurses self-reported that they only occasionally or never enjoyed their work [adjusted odds ratio (OR) 2.07], where frequent manual repositioning of patients on the bed was required (adjusted OR 1.84) and where they were required to assist patients while walking (adjusted OR 2.11) after adjustment for other potential confounders. The results indicate that an association exists between work stress, manual lifting and LBP prevalence. Good posture and correct transferring techniques in ward situations should be reinforced with hands-on practice performed on nurses'

common types of clients .[10] **Engels JA et al, (1996)** conducted a study on Work related risk factors for musculoskeletal complaints in the nursing profession, Netherlands. The aim was to determine the prevalence of musculoskeletal complaints of the back, arms or neck, and legs among nurses, and to investigate the relation between these complaints and various work related and personal variables. A questionnaire survey was carried out in four nursing homes in The Netherlands. The response was 95% and resulted in 846 completed questionnaires. It was found that a large proportion of the subjects regularly had back complaints (36%) but also had arm or neck (30%) and leg complaints (16%). Almost all respondents (89%) considered nursing work as physically strenuous. Most of them complained of working under time pressure (69%), increased work pressure (70%), and having no opportunity to take a break from the work (70%). The physical variables, which seem to trouble the subjects most were lifting (65%), working in awkward postures (47%), and stooping (34%). Moreover, 53% of the subjects responded that the ergonomic lay out of the ward was disagreeable. From these results it may be concluded that future research of health risks of nursing work should have a wider focus than the relation between physical workload and low back pain.[5]

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RESEARCH METTHODOLOGY

This chapter deals with the methodology formulated for the problem selected and is discussed under the following heading : research approach, research design, setting, population, sample and sampling technique, development and description of the tool, development of teaching plan, observational checklist, pilot study, procedure for data collection and plan for data analysis.

In this chapter, the researcher deals with methodology adopted for the research. Methodology of the study includes:

- research approach,
- research design,
- variables,
- setting of the study,
- population, sample,
- sample techniques,
- sampling criteria,
- development and description of the tool,
- content validity of the tool,
- reliability of the tool,
- procedure of sitz bath,
- data collection process
- plan for the data analysis.

In short, research methodology provides a general pattern for gathering a processing research data.

Research approach and Research design : -

Research approach indicates the basic procedure for conducting the study. The section of the approach depends upon the purpose of the study.

A quantitative, evaluative survey research approach is an applied form of research that involves finding out how well a programme, practice, procedure or policy is working.

A research design is a blueprint of conducting a study that maximizes control over factors, which could interfere with the validity of the findings.

In order to accomplish the main objective of evaluating the effectiveness OF Video assisted Demonstration on Knowledge regarding proper use of Body Mechanics Nursing Students of Selected Nursing Institution. The pre test & post test design ssallows one to measure change objectively,

RESEARCH METHODOLOGY : -

(1) Research Approach:- Evaluative approach.

(2) Research Design : - One group pre-test, post-test design will be used for the study :-

(i) Pre-Test.
(ii) Video demonstration programme.

(iii) Post – Test.

Setting: - The study will be conducted in one of the Nursing institute YAMUNA GROUP OF INSTITUTION IN Yamuna nagar.

Population, Sample and Sample Techniques :-

Population :-

Population is the aggregation of the entire unit in which a researcher is interested. Population of the study would consist of Ist year nursing students at a selected Nursing institute.

Sample Size :-

Sample may define as a representative unit of a target population, which works upon by researcher during their study. Sample Size will consist of 60 Ist year GNM Nursing students from a Selected nursing Institution.

Sampling criteria:-

(1) Inclusion Criteria for Sampling :-

(i) Nursing Students who are willing to participate in the study.

(ii) Nursing students who are available at the time of data Collection.

(2) Exclusion Criteria for Sampling :-

(i) Nursing Students who are on clinical posting at the time of data collection.

Sampling technique :-

Simple random Sampling technique by using lottery method.

TESTING OF THE TOOL :-

Reliability:-

The reliability of the structured questionnaire was obtained by using split half method, which was r′ = 0.8. Hence the tool was found reliable for the study.

Analysis and interpretation

ANALYSIS AND INTERPRETATION

Analysis is a process of evaluating data using analytical and logical reasoning to examine each component of the data provided. Data from various sources is gathered, reviewed, and then analyzed to form some sort of finding or conclusion.

Data interpretation refers to the implementation of processes through which data is review for arriving at an informed conclusion. The interpretation of data assigns a meaning to the information analyzed and determines its signification and implications.

This chapter deals with the analysis and interpretation of data collected to evaluate the effectiveness of Video assisted Demonstration on Knowledge regarding

Proper use of Body Mechanics among Nursing Students of Selected Nursing Institution. The purpose of this analysis is to reduce the data to a manageable and interpretable form so that the research problems can be study and tested. The data interpreted by using descriptive and

inferential statistics method. The data was coded and analyzed as per the objectives and hypothesis formulated for the study.

Pre Knowledge

Table No:1

CRITERIA MEASURE OF KNOWLEDG E SCORE		
Score Level (N=60)	**Pre**	**Post**
Inadequate (0-7)	52(86.7%)	0(0%)
Moderate (8-14)	8(13.3%)	31(51.7%)
Adequate (15-20)	0(0%)	29(48.3%)

Maximum=20 Minimum =0

Table No 1 :- Above Table Shows that critical measure of Knowledge score level include Inadequate (0-7) pre score is 52(86.7%) & post score is 0(0%) ,Moderate (8-14) pre Score is 8(13.3%) & Post Score is 31(51.7%) and Adequate (15-20) Pre Score is 0(0%) & 29(48.3%).

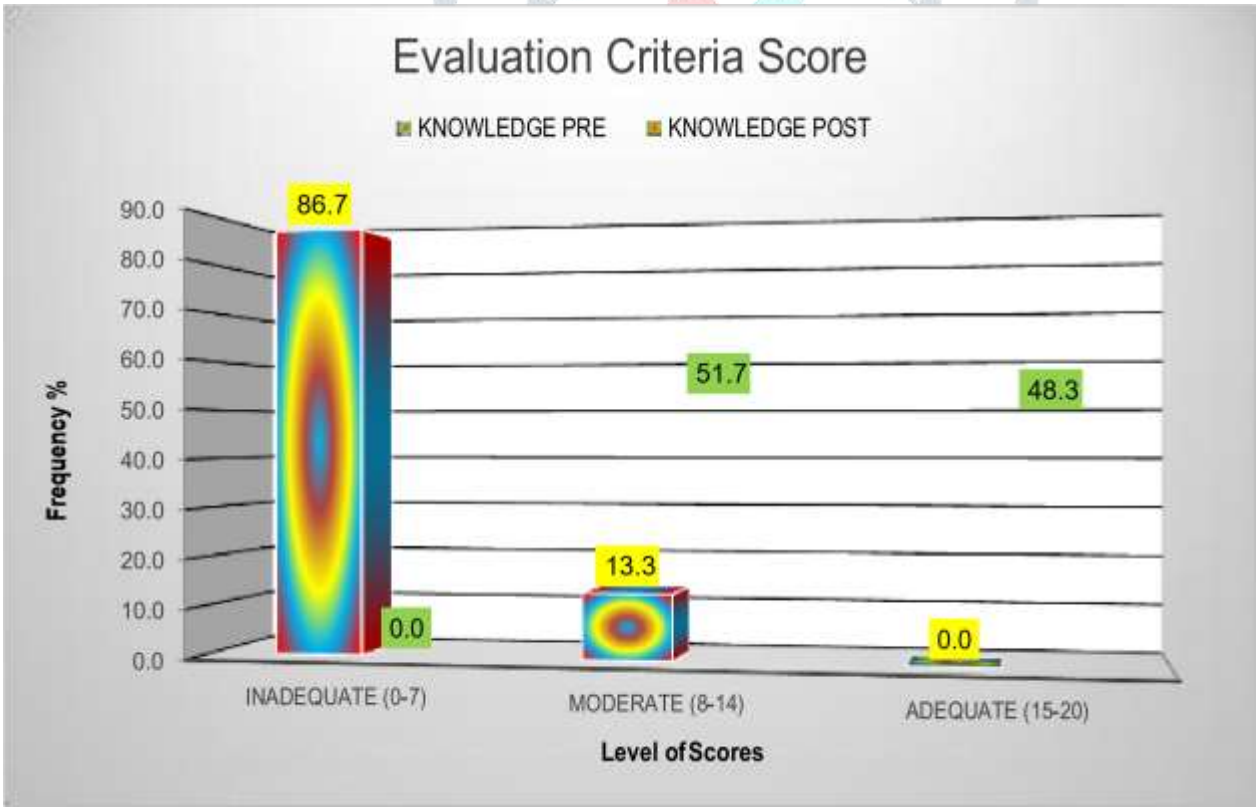

Table no.-2

PRE KNOWLEDGE Score	Mean	Median	S.D.	Range	Maximum	Minimum	Mean%
Pre Score	5.28	6	1.776	6	8	2	26.42

Maximum= 20 Minimum= 0

Table :- Above Table show the pre Knowledge score include mean score is 5.28 ,median score is 6,S.D score is 1.776,Range score is 6, Maximum score is 8,Minimum score is 2 and Means% is 26.42.

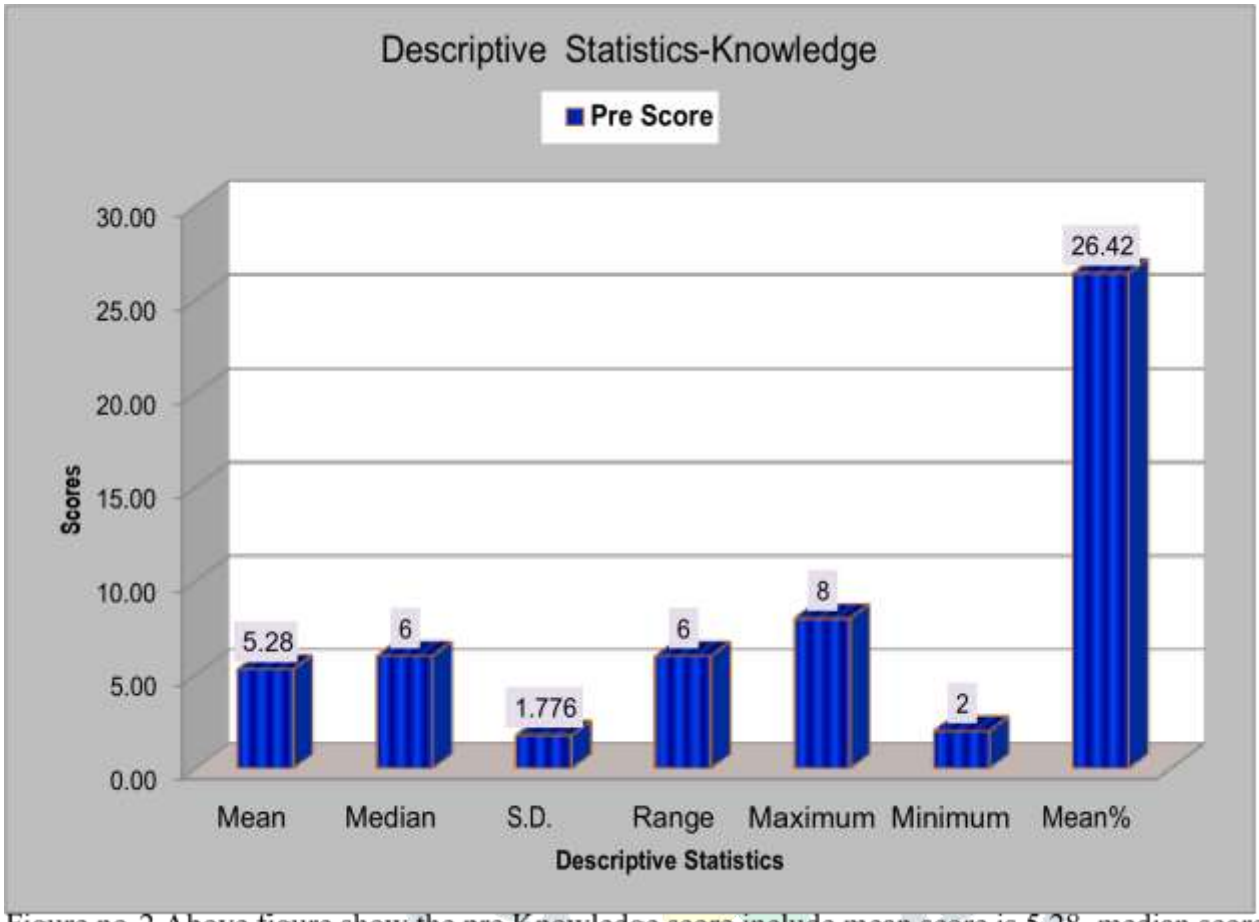

Figure no-2 Above figure show the pre Knowledge score include mean score is 5.28 ,median score is 6,S.D score is 1.776,Range score is 6, Maximum score is 8,Minimum score is 2 and Means% is 26.42.

Pre Practice

Table No:3

CRITERIA MEASURE OF PRACTICE SCORE	
Score Level (N=60)	Pre
Poor (0-7)	54(90%)
Average (8-14)	6(10%)
Good (15-20)	0(0%)
Maximum=20 Minimum =0	

Table no 3 :- Above Table shows that pre practice score poor (0-7) is 54(90%),Average score is (8- 14) is 6(10%) and Good (15-20) is 0(0%).

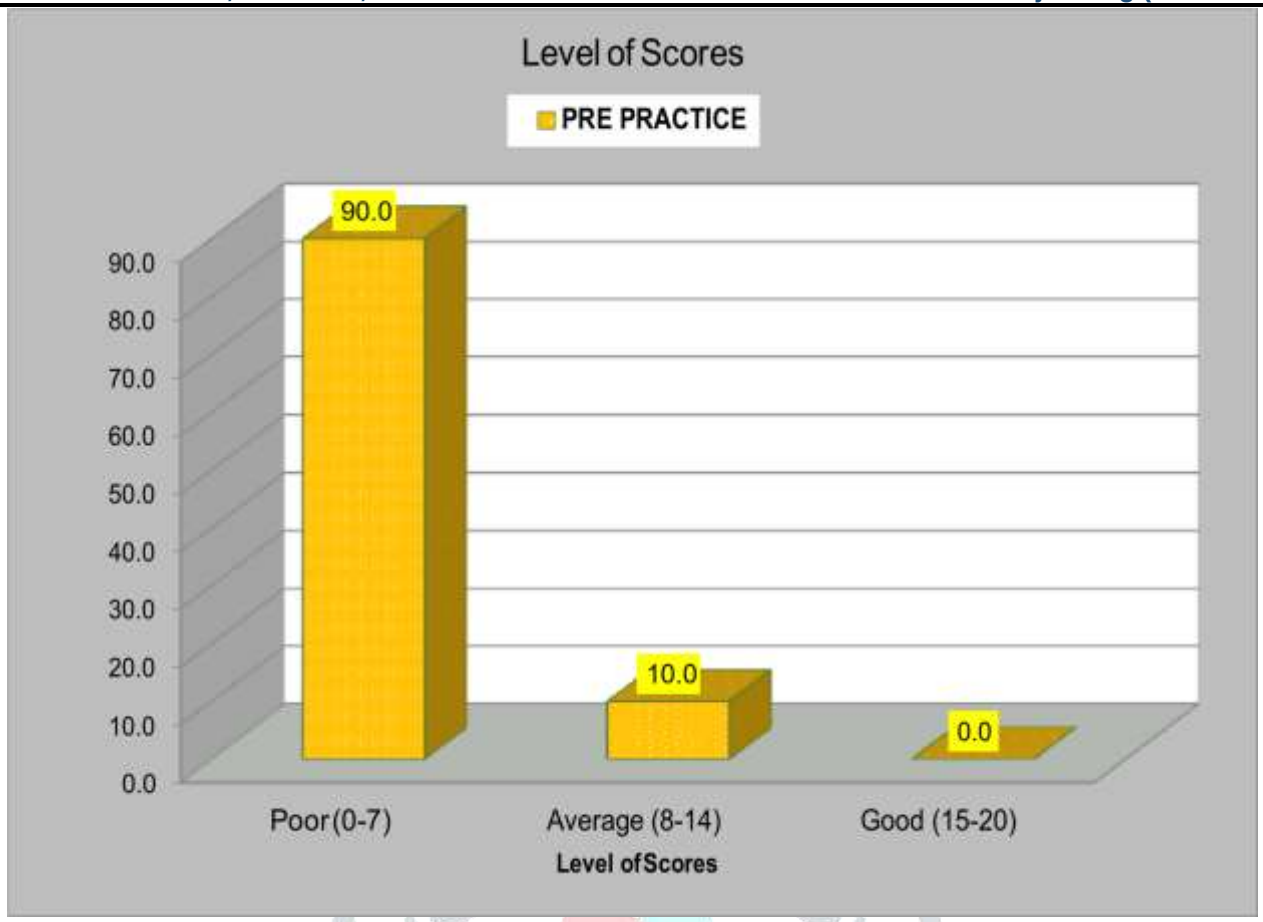

Figure No:3 Above Figure shows that pre practice score poor (0-7) is 54(90%),Average score is (8- 14) is 6(10%) and Good (15-20) is 0(0%).

Table No 4

PRE PRACTICE Score	Mean	Median	S.D.	Range	Maximum	Minimum	Mean%
Pre Score	5.28	5	1.637	6	9	3	26.42

Maximum= 20 Minimum= 0

Table No. 4 Above Table show Pre Practice score has mean score is 5.28,Median score is 5, S.D is 1.637,Range is 6,Maximum score is 9,minimum score is 3 and Means score is 26.42%.

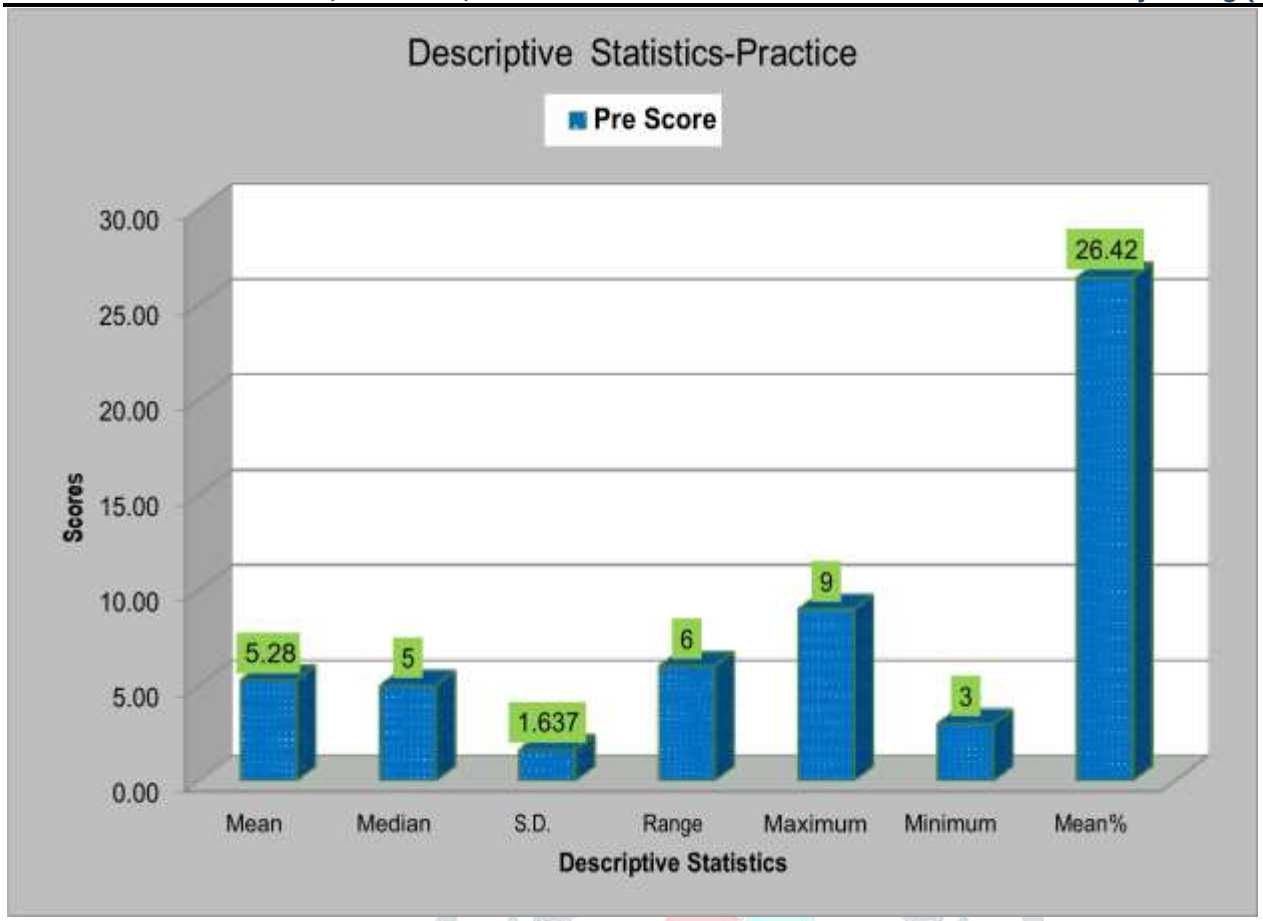

Figure No. 4 Above Figure Pre Practice score has mean score is 5.28,Median score is 5, S.D is 1.637,Range is 6,Maximum score is 9,minimum score is 3 and Means score is 26.42%.

Table no. 5

PRE KOWLEDGE :-

Demographic Variables		Levels(N=60)			Association with PRE KNOWLEDGE Score				
Variable	**Opts**	**Inadequate**	**Moderate**	**Adequate**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	Less than 20 years	52	8		NA				
	20 - 25 years	0	0						
	Above 26 years	0	0						
Gender	Male	5	1		0.064	0.800	1	3.841	Not Significant
	Female	47	7						
Place of Reidence	Rural	20	5		1.786	0.409	2	5.991	Not Significant
	Urban	17	2						
	Semiurban	15	1						
Religion	Hindu	40	6		1.388	0.500	2	5.991	Not Significant
	Muslim	5	0						
	Christian	0	0						
	Other	7	2						
Income	Less than Rs. 20,000	18	4						

	Rs. 20,000 - 30,000	20	3		1.026	0.599	2	5.991	Not Significant
	More than Rs.30,000	14	1						
Medium of Education	Hindi	18	4		0.707	0.401	1	3.841	Not Significant
	English	34	4						

Table no. 6 **Pre Practice :-**

Demographic Variables		Levels(N=60)			Association with PRE PRACTICE Score				
Variable	**Opts**	**GOOD**	**AVERAGE**	**POOR**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	Less than 20 Years		6	54	NA				
	20 - 25 years		0	0					
	Above 26 Years		0	0					
Gender	Male		1	5	0.329	0.566	1	3.841	Not Significant
	Female		5	49					
Place of Reidence	Rural		3	22	0.696	0.706	2	5.991	Not Significant
	Urban		1	18					
	Semiurban		2	14					
Religion	Hindu		3	43	15.507	0.000	2	5.991	Significant
	Muslim		3	2					
	Christian		0	0					
	Other		0	9					
Income	Less than Rs. 20,000		2	20	0.442	0.802	2	5.991	Not Significant
	Rs. 20,000 - 30,000		3	20					
	More than Rs.30,000		1	14					
Medium of Education	Hindi		2	20	0.032	0.858	1	3.841	Not Significant
	English		4	34					

Table no . 7 Post Score Association

Demographic Variables		Levels(N=60)			Association with POST KNOWLEDGE Score				
Variable	**Opts**	**Inadequate**	**Moderate**	**Adequate**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	Less than 20 years		31	29	NA				
	20 - 25 years		0	0					
	Above 26 years		0	0					
Gender	Male		1	5	3.270	0.071	1	3.841	Not Significant
	Female		30	24					
Place of Residence	Rural		13	12	0.698	0.705	2	5.991	Not Significant
	Urban		11	8					
	Semiurban		7	9					
Religion	Hindu		19	27	10.536	0.005	2	5.991	Significant
	Muslim		3	2					
	Christian		0	0					
	Other		9	0					
Income	Less than Rs. 20,000		7	15	5.602	0.061	2	5.991	Not Significant
	Rs. 20,000 - 30,000		14	9					
	More than Rs.30,000		10	5					
Medium of Education	Hindi		11	11	0.039	0.844	1	3.841	Not Significant
	English		20	18					

Table no. 8

Demographic Variables		Levels(N=60)			Association with PRE PRACTICE Score				
Variable	**Opts**	**GOOD**	**AVERAGE**	**POOR**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	Less than 20 years	28	32		NA				
	20 - 25 years	0	0						
	Above 26 years	0	0						
Gender	Male	3	3		0.030	0.863	1	3.841	Not Significant
	Female	25	29						
Place of Residence	Rural	16	9		5.283	0.071	2	5.991	Not Significant
	Urban	7	12						
	Semiurban	5	11						
Religion	Hindu	23	23						
	Muslim	2	3						Not

	Christian	0	0		0.938	0.626	2	5.991	Significant
	Other	3	6						
Income	Less than Rs. 20,000	12	10		1.633	0.442	2	5.991	Not Significant
	Rs. 20,000 - 30,000	11	12						
	More than Rs.30,000	5	10						
Medium of Education	Hindi	5	17		7.999	0.005	1	3.841	Significant
	English	23	15						

Table no. 9

Frequency Distribution

SECTION-1 SOCIO DEMOGRAPHIC PROFORMA		Percentage(%)	Frequency(f)
Age	Less than 20 years	100.0%	60
	20 - 25 years	0.0%	0
	Above 26 years	0.0%	0
Gender	Male	10.0%	6
	Female	90.0%	54
Place of Residence	Rural	41.7%	25
	Urban	31.7%	19
	Semiurban	26.7%	16
Religion	Hindu	76.7%	46
	Muslim	8.3%	5
	Christian	0.0%	0
	Other	15.0%	9
Income	Less than Rs. 20,000	36.7%	22
	Rs. 20,000 - 30,000	38.3%	23
	More than Rs.30,000	25.0%	15
Medium of Education	Hindi	36.7%	22
	English	63.3%	38

Result :- The overall pre test knowledge of Students revealed that 7 (86.7%) had inadequate knowledge, 14 (13.3%) had moderate adequate knowledge and 20 (0%) had adequate knowledge. The mean percentage obtained for overall knowledge was 5.28 with standard deviation of 1.776 which showed that the subjects had inadequate knowledge on body mechanics in selected Institute.

The overall pre test practice of students revealed that 7(90%) had inadequate practice, 14 (10%) had moderately adequate practice and there are no student who had adequate practice. The mean percentage obtained for overall practice was 5.28 with standard deviation 1.637 which showed that the subjects had inadequate practice on body mechanics in selected Institution.

The comparison of pre and post test knowledge and practice on body mechanics in selected nursing interventions among Student reveals that the overall knowledge improvement mean was 14.80 with standard deviation 1.764. The paired 't' test value was

25.71, which is highly significant at $p < 0.001$ level of significance. The overall practice improvement mean was 14.85 with standard deviation of 1.956. The 't' value was 29.642 which is highly significant at $p < 0.001$ level

Conclusion :-

The present study was conducted on to assess the effectiveness of Video assisted Demonstration on Knowledge regarding proper use of Body Mechanics among Nursing Students of Selected Nursing Institute. The main objective of the study was to assess the effectiveness of Video assisted Demonstration on Body Mechanics accomplish the objective and determine methodology for study, a through review of literature was done. The evaluative approach was adapted for the study. The developed research tool was circulated among the panel of the experts for establishing the validity of the content and necessary modifications were made according to the expert's views. The prepared tool was having following sections:

Tool for data collection was developed after extensive review of the literature and expert opinion it consists of Three sections-

(i) **Section – A :-** A consist of demographic variable Age, Sex, religion,

Income, Place of residence, medium of Education .

(ii) **Section - B :-** B consist of Structural Knowledge questionnaire for assessing Knowledge regarding use proper body mechanics caring helpless patients.

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