Assessment of Knowledge and Practice of Nurses towards uses of Body Mechanics Techniques

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Abstract:
Background: The body mechanic is the combined use of body parts to produce movement and maintain balance. The use of good body mechanics promotes effective use of tissue and keeps energy with the knowledge of the proper use of their muscles **Aim of the Study** to assess the nurses' knowledge and practices towards uses of body mechanics and barrier to do not use it. **Design:** A descriptive design **Setting:** The study was conduct at Sohag University Hospital. It was encompassed all nurses in medical and surgical units **Sample:** A convenience sample was included of (247) nurses who working at Sohage University Hospital. **Tools:** Four tools were used for data collection. **Tool (I):** Structured Interview Questionnaire sheet. **Tool (II):** Assess Knowledge questionnaire sheet. **Tool (III):** The body mechanics observational checklist. **Tool (v):** Barriers of unused of body mechanics questionnaire. **Results:** The findings of the study clarified that most of nurses were females and (٤٩.٨%) married. With mean age was (24.9 ± 13.16) .while, (67.6%) do not have any information about body mechanics technique and (99.6%) of nurses who performed moving the patient to the side of the bed without an assistant bathing, moving the patient to sitting position in bed and (94.7%) preparing bed making of patient and moving the patient to standing position with unsatisfactory. The present study also revealed that there was statistically significant difference between age and knowledge, while there was no statistically significant difference between knowledge and sex, level of education. **conclusion:** The findings of the study revealed that majority of sample had no training, and also nurses don't understanding important of practicing body mechanics. Although they know the importance of body mechanics. So they were faced barrier during performing their work **Recommendations**: provide enough supply the health facilities of patient-lifting devices which have been shown to be effective in decreasing costs and workdays lost to back injuries and pain among nurses and formation of continuous, planned and competent in-service occupational health programs for nurses on body mechanics.

Key words: Body Mechanics, Knowledge, Musculoskeletal disorders, Practice.

Introduction:

Nursing is a career with high risk of musculoskeletal injury. Nurses' awareness of the risk of injury have a role in preventing such injury. Uses of correct body mechanics decrease risk of damage to the musculoskeletal system **(Hemed, Taha, Abd-Elwahab & Mohamed, .2017)** Nurses employ around 20 percent of their work time performing patient mobility and handling tasks. Safe patient handling and mobility tasks involve any physical maneuver or activity that requires the nurse to move, transfer, or lift patients **(Vendittelli, Penprase, & Pittiglio, .2016)** Musculoskeletal injuries arising from manual handling injuries comprise a significant organizational, employee, and social problem **(Lee & Lee, 2017).**

Nurses cover the largest group of healthcare service workers accounting for about 70 percent of all healthcare staff .at the same time hospital environment influences nurses to several physical problems and stress making nursing a high-risk occupation **(Movahedi, Ghafari, Nazari, & Valiani, .2017)** Nurses more time with and provide more direct care to patients than any other type of healthcare worker **(Tosunoz & Oztunc, 2017).**

Therefore, healthcare organizations are progressively focusing on environmental and organizational strategies to produce a safety culture that involves the safe carrying out of patient mobility and handling tasks. On the other hand, nurses continue to experience musculoskeletal injuries despite the heightened emphasis on training, education, injury prevention guidelines on Safe Patient Handling and Mobility (SPHM), and 'no lift policies' **(Vendittelli, etal. 2016).**

Around the world, more common and major problem is the chronic low back pain among all health care workers including nursing personnel. Keeping good body posture is dynamic in reducing this problem **(Akhtar, etal. 2017).** Poor body mechanics and poor posture are major risk causes for lower back pain. Proper body posturing and mechanics can reduce back pain. **(Aljohani &Pascua, .2019).** The mobilization and transport of patients, repetitive movements, elongated standing work and absence of rest due to double work in the majority are significant risk factors that produce in nursing work and hazard increases. If this is added to an inadequate posture and incorrect use of the principles of body mechanics. **(Olalla, et al., 2020)**

Significance of the study

During the training of the students at Sohag University Hospital, I noticed that most of the nurses use body mechanics technique with wrong way during deal with the patient, such as perform some work for the patient, such as bed making,

feeding the patient, raising the patient from the bed to the wheelchair and vice versa and other works. As well as most nursing complaints of back pain, neck pain, joints pain. And so, it was recently noticed that many of skilled nurses demand for the change of duty from the busy department or demanding for leave in order to take rest due to low back pain and other musculoskeletal problem. Also, many of them are leaving the bed side care and transfer to the education or management work for the same reasons. As well as, shortage of knowledge and practices related to appropriate body mechanics techniques lead to the increase of morbidity among nurses. The illness of nurses not only effect on the quality care of patients, but also declines the productivity and efficiency of nurses. So, this study will help to assess of knowledge, practice and barriers of nurses towards uses of body mechanics techniques that further will reduce the morbidity related to the musculoskeletal injuries.

Aim of the Study

1- To assess the nurses' knowledge and practices towards uses of body mechanics technique.

2- To assess barrier to do not use proper body mechanics techniques.

Research Questions

To achieve the aims of the current study the following two research questions were formulated:

1- What is the knowledge and practices of nurses about body mechanics techniques?

2- What are the barriers that prevent nurses to apply body mechanics techniques?

Research Design:

A descriptive design was utilized in the current study. This design was adopted to describe a particular phenomenon that the researcher observes, describes, and documents various aspects of a phenomenon

Setting of the study:

The study was conduct at Sohag University Hospital. It was encompassed all nurses in medical and surgical units (N=14 unit) namely: medical units (general medical, intermediate intensive care unit, dialysis, tropical) surgical units (general surgical, orthopedics, urology, plastic, maxillofacial, burn) and (ICU, CCU, and stroke care unit) and traumatology unit.

Sample:

Convenience sample was included of (247) nurses who working at Sohage University Hospital that are working in places mentioned previously and who met the following inclusion criteria: both gender, with different age, educational level, and years of experience, and willing to participate in the study.

Tools for Data Collection:

Four tools were used for data collection.

Tool (I): Structured Interview Questionnaire sheet: This tool was consisted of two parts

Part I: It was included demographic data such as age, educational level, experience (years) marital

status, working unit, body mass index (BMI) and most health problems that associated with improper use of body mechanics .

Part II: Nurse's Body Mass Index (BMI) is estimating BMI = weight (Kg)/height (cm) ^{2} **Underweight** will consider if BMI (< 18.5), **normal weight** if BMI (18.5 – 24.9) **overweight** if BMI (25 – 29.9) and **obese** if BMI (> 30). **(El-Rasol & Rahman., 2018).**

Tool (II): Assess Knowledge questionnaire sheet: this tool was developed by **(Akhtar et al., 2017)**. It was included (13) questions regarding knowledge of staff nurses about proper body mechanics, musculoskeletal health hazards and preventive measures followed.

For each question, there is a possible of 5 points: 1 = strongly disagree, 2 = disagree, 3= neutral, 4= agree, and 5= strongly agree.

The total score 65 of 13 items were summated to create subscale and overall scores. The nurse considered having poor knowledge if nurse's responses were less than 50% (0-33 score), fair knowledge if nurses responses ranged 50%-75% (34-49 score). The nurses is considered having good knowledge if nurse's responses were more than 75% (50-65).

Tool (III): The body mechanics observational checklist: The observational checklists were developed by **(Karahana &Bayraktar., 2004)**, it design to assess nurses' performance regarding proper body mechanics during the actual nursing care. It was included two parts: **The first part** was used to assess the nurses' body mechanics uses during practice of general physical tasks (including maintain proper body ligament, reaching, pivoting, pushing, pulling and lifting).

The second part was used to assess the nurses' body mechanics uses during practice of patients handling (including positioning and moving patient in bed, transfer patient from bed to wheelchair, transfer patient from bed to trolley).

Responses were measured on four choices: (3) done correct and complete practice; (2) correct and incomplete practice; (1) incorrect practice; and (0) not done. For each procedure, the scores of the items will summed- up and the total divided by the number of the items. These scores will convert into a percent score. The score of ≥ 60 % for the practices was considered satisfactory; whereas a score of <60 % was considered unsatisfactory.

Tool (v): Barriers of unused of body mechanics questionnaire

This tool was developed by **(Muhammed et al., 2015)** to assess barriers that influence on nursing staff decisions to use proper body mechanics during patient handling and mobility such as, lack of knowledge and training, shortage of staff to assist with lifting or transfers, lack of assistive devices, lack of adequate space to apply the techniques,

forgetting to use the techniques, and it contain of (1١items).

The scoring system for barriers of uses of body mechanics was calculated as: 1 if the answer (Yes) and zero if the answer (No). The validity of their tools was assessed to check the relevance coverage and clarity of the questions by jury of experts as all the tools.

Validity & Reliability of the Tools
Content validity was established by five experts in Medical – Surgical Nursing field from Sohage University they were asked to examine knowledge questionnaire, barriers of uses of body mechanics questionnaire and body mechanics observational checklist for clarity, relevance, comprehensiveness, understanding and applicability. While reliability was tested statistically using Cronbach's Alpha 0.893**.**

Pilot study
 pilot study was conducted on 10% of nurses sample (25 nurses) to test the applicability and feasibility of the study tools, obtained results were used as a guide to reconstruct the modifications needed in the data collection tools, the data obtained from the pilot study were analyzed no modifications were done, so those nurses who were involved in the pilot study were included in the study.

Ethical considerations
❖ Research proposal was approved by Research Ethics Committee of the Faculty of Nursing, Sohag University.
❖ An official permission was taken from hospital administrators to conduct the study.
❖ Oral consent was obtained from patients included in the study.
❖ The purpose and nature of the study as well as the importance was explained to the participants who met the inclusion criteria.
❖ Anonymity and confidentiality were assured.
❖ Participants were assured that participation in this study was voluntary and they have the right to withdraw from the study at any time without any penalty.
❖ Study sample privacy was considered during data collection.

Data collection procedure:
A-Assessment and planning phase: This phase emphasis on nurses' assessment, the study sample was approached individually by the investigator to collect the data, it was done through data collection from the subjects through the following: Demographic data, knowledge assessment, barriers assessment .As regard to tool (III) body mechanics observational checklist. It design to assess nurses' performance regarding proper body mechanics during the actual nursing care. The investigator conducted a structured interview for 30-60 minutes for each nurse.

B-Implementation phase: firstly, an official permission was taken from hospital administrators to conduct the study after explaining the aim and natural of study to them to obtain their cooperation. Then, data were collected from all nurses in medical and surgical units (N=14 unit) at Sohag University Hospital. At initial interview; the researcher introduced herself to initiate line of communication in order to facilitate the implementation of the tools. And explained purpose of the study nurses prior to answering the questions. Then taken written consent from nurses. Nurses were asked to fill out questionnaire by using (tool I and tool III) to asses' knowledge and barriers of nurses toward uses of body mechanics, And each nurse was observed directly to fill observational checklist sheet by using (tool II).The study was carried out during shifts that are available for nurses.

Statistical design
The collected data were tabulated and statistically analysed to assess knowledge ,practice and barriers about uses of body mechanics techniques under study as regards the various variables by computer program SPSS" ver. 20" Data were presented using descriptive statistics in the form of percentages,

Frequency mean to identify the average of the scores, standard deviation and inferential statistical tests of significance such as Pearson correlation and independent samples t-test, Chi-square test and ANOVA test.

P > 0.05 non- significant. P ≤ 0.05 significant. P ≤ 0.001 highly significant.

Results:
Table (1): Shows the distribution of nurses regarding to their socio-demographic characteristics. It was noticed that the mean age of nurses were (24.9 ± 13.16). Most of nurses were females and having nursing institute. Nearly half of the samples were married and more than half of nurses were having from 1 to 5 years, Also the most health problems that associated with improper use of body mechanics was low back pain and more than half of nurses of the respondents nurses hadn't any children .According to working hours three-quarter of respondents nurses were working from 9 to 12 h/ daily and body mass index shows that more than half of respondents were overweight.

Table (2): This table show that distribution of the study sample knowledge about uses of body mechanics and barriers of unused of body mechanics. According to the knowledge score two fifth of the respondents nurses were good knowledge and half had faire knowledge but less than one fifth had poor knowledge while majority of nurses had barriers about uses of body mechanics, From my point of view this due to sum of causes as do not have any information about body mechanics technique, hadn't not received any

training about the uses of body mechanics technique, there weren't enough nursing staff to help me while lifting or transferring sick or heavy things, hadn't enough equipment to help me with the use of body mechanics and hadn't enough space to use body mechanics technique.

Table (3): This table show percentage distribution of the study sample about barriers of used of body mechanics techniques. More than half of nurses had barriers about uses of body mechanics, from investigator point of view this due to sum of causes as do not have any information about body mechanics technique, hadn't received any training about the uses of body mechanics technique, there weren't enough nursing staff to help me while lifting or transferring sick or heavy things, hadn't enough equipment to help me with the use of body mechanics and hadn't enough space to use body mechanics technique. Also there weren't enough time to use body mechanics technique in quick transfers. In addition to, There are many problems that facing them during lifting or transferring heavy patients/ objects.

Table (4): This table show that percentage distribution of the study sample performance about uses of body mechanics. More than half of sample study who performed sitting, standing, extending with satisfactory manner, while vast majority from sample study who performed moving the patient to the side of the bed without an assistant, bathing, moving the patient to sitting position in bed, preparing bed making of patient, moving the patient to standing position with unsatisfactory manner.

Table (5): This table show correlation between performance of body mechanics and knowledge of study samples about uses of body mechanics techniques. There were positive correlation between knowledge and practice except siting, standing, moving the patient to sitting position in bed and there was no significant difference between knowledge and practice except preparing bed making of patient, Pulling and pushing, extending.

Table (1): Distribution of socio-demographic characteristics of the study sample (n=247)

Demographic data	N		%
Sex	Male	47	19.0
	Female	**200**	**81.0**
Age	18 – less than 20 years	15	6.1
	20 – less than 24 years	**129**	**52.2**
	24 – less than 30 years	78	31.6
	30 ≥years	25	10.1
	Mean ± SD 24.9 ± 13.1		
Educational level	Diploma	52	21.1
	Bachelor	90	36.4
	Nursing Institute	**96**	**38.9**
	Internal student	9	3.6
Marital status	Married	**123**	**49.8**
	Single	112	45.3
	Widow	11	4.5
	Divorce	1	.4
Years of experiences	less than 1 year	67	27.1
	1 - less than 5 years	**138**	**55.9**
	5 - less than 10 years	34	13.8
	10 ≥ years	8	3.2
Most health problems associated with improper use of body mechanics	Low back pain	**143**	**57.9**
	Neck pain	**98**	**39.7**
	Neck stiffness	71	28.7
	Shoulder stiffness	**79**	**32.0**
	Shoulder pain	74	30.0
	Lumber disc prolapse	28	11.3
Do you have children	**Yes**	107	43.3
	No	140	56.7
Number of children	0	**140**	**56.7**
	1 – 2	47	19.0
	3 – 5	57	23.1
	5 >	3	1.2
Daily working hours	2 – 6	26	10.5
	7 – 8	45	18.2
	9 – 12	**161**	**65.2**
	13 – 18	15	6.1
Body mass index (BMI)	Below normal	7	2.8
	Above normal	**133**	**53.8**
	Normal	107	43.3

Table (2): Percentage distribution of the study sample knowledge about uses of body mechanics and barriers of unused of body mechanics

Items		N	%
Knowledge	**poor knowledge**	20	8.1
	fair knowledge	118	**47.8**
	good knowledge	109	44.1
Barriers	**There are no barriers**	56	22.7
	There are barriers	191	**77.3**

Table (3): Percentage distribution of the study sample performance about uses of body mechanics

Performance of body mechanics	Satisfactory		Un satisfactory	
	NO.	%	NO.	%
Sitting	147	**59.5**	100	40.5
Standing	124	**50.2**	123	49.8
Lifting	67	27.1	180	72.9
Carrying	108	43.7	139	56.3
Extending	132	**53.4**	115	46.6
Pulling and pushing	26	10.5	221	89.5
Moving the patient to the side of the bed without an assistant	1	0.4	246	**99.6**
Moving the patient to sitting position in bed	6	2.4	241	**97.6**
Moving the patient to standing position	25	10.1	222	**89.9**
Preparing bed making of patient	13	5.3	234	**94.7**
Bathing	2	.8	245	**99.2**
Ambulation	51	20.6	196	79.4

Table (4): Percentage distribution of the study sample about barriers of used of body mechanics techniques

Barriers	No		Yes	
	NO.	%	NO.	%
I do not have any information about body mechanics technique.	80	32.4	167	67.6
I have not received any training about the uses of body mechanics technique.	89	36.0	158	64.0
There is not enough nursing staff to help me while lifting or transferring sick or heavy things.	83	33.6	164	66.4
There isn't enough equipment to help me with the use of body mechanics.	97	39.3	150	60.7
I forget using the body mechanics technique.	91	36.8	156	63.2
I don't have enough space to use body mechanics technique.	94	38.1	153	61.9
There isn't enough time to use body mechanics technique in quick transfers.	85	34.4	162	65.6
There are many problems that facing me during lifting or transferring heavy patients/ objects.	90	36.4	157	63.6
The number of patients that handled daily were too much for the number of nurses.	90	36.4	157	63.6
Bend your back during work is the nature of nurse's work.	104	42.1	143	57.9
I have musculoskeletal problems and nervous problems that prevent me from using body mechanics technique.	114	46.2	133	53.8

Table (5): Correlation between performance of body mechanics and knowledge of study samples about uses of body mechanics techniques

Performance of body mechanics		Knowledge			R	P. value
		Poor knowledge	Fair knowledge	Good knowledge		
Sitting	Unsatisfactory	7	46	47	**-0.052**	0.414
	Satisfactory	13	72	62		
Standing	Unsatisfactory	10	53	60	**-.073**	0.250
	Satisfactory	10	65	49		
Lifting	Unsatisfactory	17	85	78	0.056	0.380
	Satisfactory	3	33	31		
Carrying	Unsatisfactory	13	72	54	.118	.063
	Satisfactory	7	46	55		
Extending	Unsatisfactory	12	61	42	.148	.020*
	Satisfactory	8	57	67		
Pulling and pushing	Unsatisfactory	18	113	90	.161	.011*
	Satisfactory	2	5	19		
Moving the patient to the side of the bed without an assistant	Unsatisfactory	20	118	108	.065	.308
	Satisfactory	0	0	1		
Moving the patient to sitting position in bed	Unsatisfactory	20	114	107	**-.007**	.915
	Satisfactory	0	4	2		
Moving the patient to standing position	Unsatisfactory	19	104	99	.000	.998
	Satisfactory	1	14	10		
Preparing bed making of patient	Unsatisfactory	20	114	100	.125	.049*
	Satisfactory	0	4	9		
Bathing	Unsatisfactory	20	118	107	.092	.148
	Satisfactory	0	0	2		
Ambulation	Unsatisfactory	20	86	90	.010	.876
	Satisfactory	0	32	19		

Discussion:

Good body mechanics will help restoration and prevent future back problems. While bad body mechanics give to back problems and other muscle and bone problems (**Jayakrishnan, 2016**). Nurses need to use body mechanic technique during performing every procedure. They can use body mechanics more effectively if they have good knowledge about it (**Akhtar, et al, .2017**).

Based on the results on the present study; more than the half were female and married these finding are match with study that done by **Swamy, et.al 2017**) more than half of subjects were females and married. Entitled "Assess knowledge and practice of internship students regarding assisted body mechanics to reduce musculoskeletal disorders and to develop safety guideline on manual handling technique" In the study who reported that more than the half of the study sample were females. This might be due to that the majority of nursing force working in Sohage university hospitals are females. This finding due to nursing education in the past was specialized only to females.

In present study, half of the study subjects were in the age group of 20-24 years with the mean age of 24.9 ± 13.16 yrs. and more than half had work experience of 1-4 years .Similarly, In **Rawat. et al 2017**) study entitled "Knowledge assessments on use of body mechanics and safety measures among ward attendants in selected hospitals, Dehradun, Uttarakhand" half of them belongs to age group 21-30 yrs. while **D'Souza,et al 2020**) study, nearly

half of them are between age group of 36-45 yrs. and two fifths had work experience of 6-10 yrs. On the other hand **Priyanka, Kaur Ravneet, Sakshi et.al 2020)** study entitled "Assess knowledge and use of body mechanics practices and its association with musculoskeletal problems among hospital attendants in selected wards of PGIMER, Chandigarh" two fifths of the study subjects were in the age group of more than thirty. With the mean age of 35.7 years with majority were males & two third of the hospital attendants had work experience of less than 10 years.

Regarding to education level, the current study show that two fifth of sample had diploma follow by bachelor and they haven't children Also present study shows that two third of samples working per day about 9-12 h. Similarly, these findings are consistent with study done by **Ibrahim & Elsaay. ,2015)** entitled **"**The effect of body mechanics training program for intensive care nurses in reducing low back pain.

In the present study statistics shows that more than half of the study subjects had always complain from low back pain follow by   neck   pain, neck stiffness, shoulder stiffness, shoulder pain and Lumber disc prolapse.this result consistent with study done by **Kalkim et al 2019).** entitled "Musculoskeletal disorder symptoms in nurses and etiological factors" conducted an investigation of 498 nurses with MSDs and discovered that the body locations with the highest prevalence rates were the lower back , follow by back, knee joint, neck shoulder .Although knee joint discomfort was not the most common location of discomfort in the present study.

According to body mass index the current study found approximately more than half of sample suffering from obesity. This result matching with study that done by **Hossein, etal. 2019)** entitled "Relation between body mechanics performance and nurses' exposure of work place risk factors on the low back pain prevalence".

Regarding distribution of the study sample knowledge about uses of body mechanics. The present study results showed that based on the knowledge score two fifth of the respondents nurses were good knowledge and half had faire knowledge, while less than one fifth had poor knowledge. This result don't match with study conduct by(**Kumar & Damanpreet , .2021)** Entitled "Assess knowledge and use of Body Mechanics Practices and its Association with Musculoskeletal Problems among Hospital Attendants in Selected Wards of PGIMER, Chandigarh" that show three quarter of the study subjects had poor knowledge and one fifths had good knowledge. As well as more than half of nurses had barriers about uses of body mechanics, From researcher point of view this due to sum of causes as do not have any information about body

mechanics technique, hadn't not received any training about the uses of body mechanics technique, there weren't enough nursing staff to help me while lifting or transferring sick or heavy things, hadn't enough equipment to help me with the use of body mechanics and hadn't enough space to use body mechanics technique.

Regarding distribution of the study sample about barriers. The present study results showed more than half of nurses had barriers about uses of body mechanics, From my point of view this due to sum of causes as do not have any information about body mechanics technique, hadn't not received any training about the uses of body mechanics technique, there weren't enough nursing staff to help me while lifting or transferring sick or heavy things, hadn't enough equipment to help me with the use of body mechanics and hadn't enough space to use body mechanics technique. Also there weren't enough time to use body mechanics technique in quick transfers.

Regarding distribution of the study sample performance about uses of body mechanics. In the present study more than half of sample study who performed sitting, standing, extending with satisfactory manner, while vast majority from sample study who performed moving the patient to the side of the bed without an assistant, bathing, moving the patient to sitting position in bed, preparing bed making of patient, moving the patient to standing position with unsatisfactory manner. This result don't matching with study done by **Priyanka, Kaur Ravneet, Sakshi et.al 2020).** Study entitled "Assess knowledge and use of body mechanics practices and its association with musculoskeletal problems among hospital attendants in selected wards of PGIMER, Chandigarh". That show majority of the nurse used the body mechanics with correctly manner while sitting, standing, carrying, pulling or pushing, moving the patient to a standing position, lifted and extended incorrectly and having experienced low back pain.

Regarding correlation between performance of body mechanics and knowledge of study samples about uses of body mechanics techniques. the present study results showed that there were positive correlation between knowledge and practice except siting, standing, moving the patient to sitting position in bed and there was no significant difference between knowledge and practice except preparing bed making of patient, Pulling and pushing, extending. Similarly, this result matching with study done by **Rawat, Negi, Rana & et al 2017).** Entitled "Knowledge and uses of body mechanics among class IV workers" In contrast to this study conducted by **Jayakrishnan 2016).**entitled" descriptive study on Knowledge and practice among staff nurses regarding body mechanics at Odisha" revealed that

there was significant relation between knowledge and body mechanics practices".

Conclusion:-

Based on findings of the present study, it can be concluded that:

On the light of the current study results, majority of studied nurses had no training, and also nurses don't understanding important of practicing application of body mechanics. However, there is still a nurses who is not practicing body mechanics even though they know the importance of this practice. Therefore, their awareness about the practice of body mechanics should be changed from now to avoid any complications that will occur such as back pain. At the same time the practice of body mechanics should also be done to facilitate handling with patient.

Recommendations

On the light of the findings of the present study, the following recommendations are suggested:

❖   Provide enough supply the health facilities of patient-lifting devices which have been shown to be effective in decreasing costs and workdays lost to back injuries and pain among nurses.

❖   Formation of continuous, planned and competent in-service occupational health programs for nurses on body mechanics.

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