Nurses' Knowledge and Practice of Body Mechanic Techniques at Emergency Teaching Hospitals in Erbil City/Kurdistan region – Iraq

Kameran Wzw Rasool; *Department of Nursing, College of Nursing, Duhok University, Kurdistan Region, Duhok, Iraq.*
(Correspondence: **kameranw.rasool@gmail.com**)
Ronak Nematalah Hussain; *Department of Nursing, College of Nursing, Hawler Medical University, Kurdistan Region, Erbil, Iraq.*

ABSTRACT

Background and Objectives: Body mechanics is a term that indicates a coordinated effort between the neurological and musculoskeletal systems to maintain balance, posture, and body alignment in daily activities, which is essential for efficient bodily functioning. The study aimed to assess nurses' knowledge and practice regarding mechanical body movement at emergency hospitals in Erbil City.

Methods: The study was carried out at the West, East Emergencies and Emergency Management Center (EMC) in Erbil City -Kurdistan Region, Iraq. A non-probability convenient sample of 300 nurses at all emergencies in Erbil city was selected. A special questionnaire was prepared by an extensive literature review and opinion experts. The questionnaires consist of two parts, the nurses' knowledge questionnaire, which consists of 25 items, and the observation checklist to evaluate practice, which consists of 35 items. The reliability of the questionnaire was determined the performance of the pilot study. Data analysis was performed by using SPSS "vesion26" (Frequency, Percentage, and Chi-square test).

Results: The highest percentage of overall knowledge scores was poor (71.7%) and the highest percentage of overall practice scores were fair, (86%). The result showed significant associations and high significant associations between gender, level of education (Diploma in nursing), and knowledge. Also, the result showed a very high significant association between extra jobs and practice.

Conclusions: The study concluded that the total means score of knowledge was better than practice about body mechanics techniques. Those results revealed nurses' need for an education program to improve their knowledge and practice.

Keywords: Knowledge; Practice; Body Mechanics; Nurses.

INTRODUCTION

Body mechanics is a word that describes how to use the body in daily life, it includes the ways to maintain the body when sitting, standing, bending, and lifting heavy objects. By using body mechanics, the body protects from musculoskeletal injuries like low back pain; in contrast, un execution body mechanics principle the body at risk of injuries. [1]Nurses are more prone to work-related physical injuries which result in symptoms like back pain and other MSPs (musculoskeletal problems). Therefore, nursing officers required to incorporate knowledge and skills into the practice of body mechanics. Many nursing activities require muscle exertion to reduce the risk of musculoskeletal injury to the nursing officers while transferring patients; the nursing officers must know about the proper body mechanics [2]. The use of good body mechanics can lessen the chance of musculoskeletal system injury while simultaneously facilitating body movement, allowing for physical mobility without causing muscular strain or excessive use of muscle energy [3] 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 important to learn the principles of proper body mechanics [4].There are several practical reasons to use proper body mechanics when performing physical tasks. Not only to reduce the risk of injury but also to use the correct techniques can keep from becoming overly fatigued when doing physical labor. Employing the appropriate body mechanics requires less energy to complete a task, makes it easier to lift or move a large or heavy object, and puts less strain on the back, legs, and arms [5].

METHODS

The study design was carried out in the (West Emergency Hospital, East, Emergency Hospital and EMC-emergency management center) emergency hospitals in Erbil City. The administration departments of emergency hospitals were provided with all necessary information to obtain on nurses during data collected from December 26th, 2021, to March 26th, 2022. Samples of the study were non–probability purposive samples of 300 nurses who were worked in emergency hospitals that mentioned above. Data was collected through self-structure tools based on an extensive review of literature which includes nurses' sociodemographic data, and medical data of nurses' knowledge and practices; by using an observation checklist for it. According to practice scores, nurses were always practicing took two, sometimes practice took one, and never practice took zero. Statistical analysis was done by using SPSS 26, using frequency, percentage, and chi-square, with P-value =<0.05 considered statistically significant.

RESULT

Table1 shows the Sociodemographic characteristics of emergency nurses. The result revealed that 74.7% nurses were 40 years or less and 56.7% of them were males. The majority of them 77% have diplomas in nursing. Whereas the highest percentage, 84% of them had less than fifteen years of experience, and about 47% of the nurses were from the West Emergency Hospital. 71% of nurses did not participate in body mechanics movement training sessions. And also 46.7 % of nurses had not done any extra jobs after hospital work. 80.7% of emergency nurses worked from four to six days per week.

Table 1 : Sociodemographic Characteristics of Nurses Emergency

Sociodemographic characteristics of emergency nurses		F.	(%)
Age group (years)	26-30	12	(4)
	31-35	110	(36.7)
	36-40	102	(34)
	41-45	48	(16)
	46-50	13	(4.3)
	> 50	15	(5)
Gender of nurse	Male	170	(56.7)
	Female	130	(43.3)
Level of education	Secondary nursing school	30	(10)
	Technical Diploma in nursing	231	(77)
	B.Sc. in Nursing	39	(13)
Years of experience	1-5	15	(5)
	6-10	90	(30)
	11-15	147	(49)
	16-20	35	(11.7)
	21-25	11	(3.7)
	>25	2	(0.6)
Setting of nurses	East emergency	93	(31)
	West emergency	141	(47)
	Emergency management center	66	(22)
Participation in body mechanic training Session	Yes	87	(29)
	No	213	(71)
Secondary or extra job	Nothing	140	(46.7)
	Private hospital	39	(13)
	Self-clinic	41	(13.7)
	Pharmacy	23	(7.7)
	Others	57	(19)
Working days per week in Hospitals	1-3	58	(19.3)
	4-6	242	(80.7)

The figure1 illustrates that 71.7 % of emergency nurses had poor knowledge, while only 28.3% of them had good knowledge about body mechanics
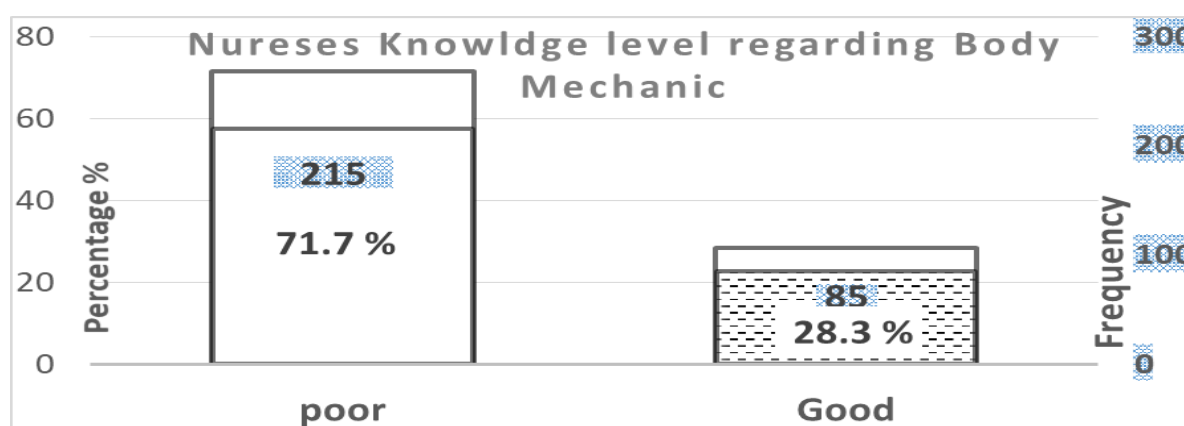

Figure 1 Nurses' level Knowledge regarding Body Mechanic

Figure2 depicts the distribution frequency of nurses according to the practice of body mechanics , the highest percentage

Of emergency nurses, 86% had fair practice and 14% of emergency nurses had poor practices of body mechanics.
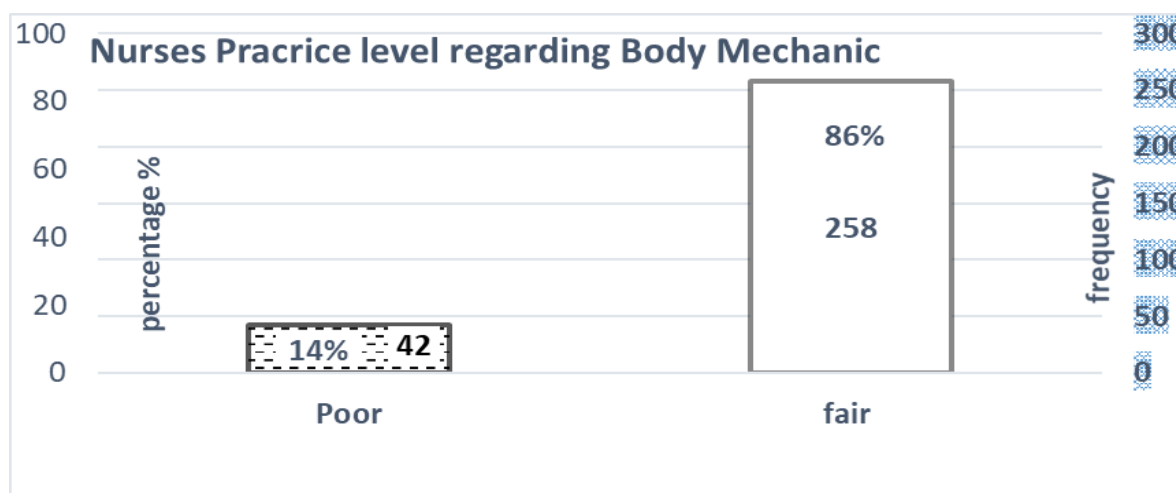

Figure 2 Nurses practice Body Mechanic

Regarding nurses' knowledge, Table 2 shows that the mean score is 15.113 for nurses' knowledge out of a total of 25 questions with a standard

deviation of 2.427. While the average practice score across all 70 scores was 27.7700, with a standard deviation of 5.685.

Table 2 : the overall mean of nurses' knowledge and their practice

The total mean of nurses' knowledge and their practices		
	Overall Knowledge	Overall Practice
Mean	15.1133	27.7700
Std. Deviation	2.42765	5.68549
Minimum	9	14
Maximum	22	48

Table 3 revealed a significant association between emergency nurses' knowledge and their gender (p-value of 0.022), and a highly significant p-value of 0.008 association between emergency nurses' knowledge of body mechanics and their level of schooling, while there was a non-significant association between nurses' knowledge with other characteristics such as age, job, experience, and working days per week, at p-value (0.35, 0.54, 0.39, 0.92, 0.36, 0.64 respectively).

Table3: association between overall nurses' knowledge and their sociodemographic characteristics

Socio-demographic characteristics		Overall Knowledge				P-Value
		poor		Good		
		F	(%)	F	(%)	
Age group (years)	26-30	9	(75)	3	(25)	
	31-35	77	(70)	33	(30)	
	36-40	74	(72.5)	28	(27.5)	0.358
	41-45	35	(72.9)	13	(27.1)	
	46-50	12	(92.3)	1	(7.7)	
	> 50	8	(53.3)	7	(46.7)	
Gender of nurse	Male	113	(66.5)	57	(33.5)	0.022
	Female	102	(78.5)	28	(21.50	
Level of education	Secondary nursing school	24	(80)	6	(20)	
	Diploma in nursing	171	(74)	60	(26)	0.008
	B.Sc. in nursing	20	(51.3)	19	(48.7)	
Experience in job	1-5	8	(53.3)	7	(46.7)	
	6-10	64	(71.1)	26	(28.90)	
	11-15	108	(73.5)	39	(26.5)	0.541
	16-20	27	(77.1)	8	(22.9)	
	21-25	8	(63.6)	5	(36.4)	
Setting of nurse	East emergency	71	(76.3)	22	(23.7)	0.396
	West emergency	100	(70.9)	41	29.1	
	Emergency management center	44	(66.7)	22	33.3	
Participation in body mechanic training Session	Yes	62	(71.3)	25	(28.7)	0.921
	No	153	(71.8)	60	(28.2)	
Secondary or extra job	Nothing	105	(75)	35	(25)	
	Private hospital	24	(61.5)	15	(38.5)	0.366
	Self-clinic	32	(78)	9	(22)	
	Pharmacy	16	(69.6)	7	(30.4)	
	Others	38	(66.7)	19	(33.30	
Working days per week in Hospital	1-3 days	43	(74.1)	15	(25.9)	0.642
	4-6 days	172	(71.1)	70	(28.9)	

Table 4 showed that none of the socio-demographic characteristics of nurses were significantly associated with their practice (p-value > 0.05), except for the variable extra job, which was significantly associated with practice (p-value 0.001).

Table 4: association between overall nurses' practices and their sociodemographic characteristics.

Socio-demographic characteristics		Overall Practice				P-Value
		Poor		Fair		
		F	%	F	(%)	
Age group (years)	26-30	3	(25)	9	(75)	
	31-35	14	(12.7)	96	(87.3)	
	36-40	12	(11.8)	90	(88.3)	0.769
	41-45	8	(16.7)	40	(83.3)	
	46-50	4	(30.8)	9	(69.2)	
	> 50	1	(6.7)	14	(93.3)	
Gender of nurse	Male	25	(14.7)	145	(85.3)	0.420
	Female	17	(13.1)	113	(86.9)	
Level of education	Secondary nursing school	4	(13.3)	26	(86.7)	
	Diploma in nursing	34	(14.7)	197	(85.3)	0.878
	B.Sc. in nursing	4	(10.3)	35	(89.7)	
Experience in job	1-5	3	(20)	12	(80)	
	6-10	13	(14.4)	77	(85.6)	
	11-15	16	(10.9)	131	(89.2)	0.603
	16-20	8	(22.9)	27	(77.1)	
	21-25	2	(9.1)	11	(90.9)	
Setting of nurses	East emergency	10	(10.8)	83	(89.3)	0.238
	West emergency	22	(15.6)	119	(84.4)	
	Emergency management center	10	(15.2)	56	(84.8)	
Participation in body mechanic training Session	Yes	10	(11.5)	77	(88.5)	0.596
	No	32	(15)	181	(85)	
Secondary or extra job	Nothing	22	(15.7)	118	(84.3)	
	Private hospital	3	(7.7)	36	(92.3)	0.001
	Self-clinic	4	(9.8)	37	(90.2)	
	Pharmacy	4	(17.4)	19	(82.6)	
	Others	9	(15.8)	48	(84.2)	
Working days per week in Hospitals	1-3	7	(12.1)	51	(87.9)	0.695

DISCUSSION

The present study revealed that the majority of nurses had fair knowledge and 28.3% of nurses had good knowledge about body mechanics techniques. This result is supported by studies conducted by [1], in Saudi Arabia., [7, 9, 10,] in India, [11] in Malaysia. And also, this result is not congruent with studies done by [4, 12, 13, 14], in India, who revealed that most nurses had good knowledge. The result of this study shows that the majority of nurses had fair practice and the lowest percentage of emergency nurses had poor practices of body mechanics. A similar result was found in a study done by [6] in India. This found that 60% of nurses had average practice and 40% of them had poor practice regarding body mechanics. There was a significant association and a high significant association between nurses' knowledge and their select sociodemographic variables like gender and level of education (p-value 0.022, 0.008 respectively). There was no significant association between variables like age, experience in the job, setting, training session, or extra job at the level of p>0.05. This was congruent with the results of the studies done by [4,6] in India and [8], in Egypt.

There was no significant association between nurses' practice and variables of sociodemographic except for the variable extra job. The p-value was 0.001 an indicators of a very high significant association between extra jobs and nurses' practice regarding body mechanics. it was supported by [6,9,16] in India. [15], in South Korea. [8], in Egypt.

CONCLUSION

Body mechanics is an important practice that should be practiced in simple or complex treatment procedures. to avoid musculoskeletal disorders such as back pain. In conclusion, this study tried to determine the extent of knowledge and practice of body mechanics among nurses, which revealed that their knowledge and practice were not good; therefore, nurses need education and training programs to improve their knowledge and practice.

CONFLICT OF INTERES

The authors report no financial assistance or conflicts of interest.

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