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Knowledge of proper body mechanics and ergonomics among hospital workers in Rivers State

Madume AK [1*], Aaron FE [2], Otokwala IC [3], Dago GT [4], Paul JN [5], Ezekiel R [6]

[1] Department of Physiotherapy, Faculty of Basic Medical Science, College of Medical Sciences, Rivers State University, Port Harcourt, Rivers State, Nigeria

[2] Department of Surgery, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

[3, 4] Department of Physiotherapy, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

[5] Department of Anatomy, Faculty of Basic Medical Science, College of Medical Sciences, Rivers State University, Port Harcourt, Rivers State, Nigeria

[6] Department of Nursing Science, PAMO University of Medical Sciences, Port Harcourt, Rivers State, Nigeria

* Corresponding Author: **Madume AK**

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Abstract

Over 59 million healthcare workers are prone to occupational hazards including biological, physical, ergonomic, environmental and psychosocial and having knowledge about it will go a long way in determining how well, safe and far every worker will go in the course of his or her job. The aim of this study was to assess knowledge of proper body mechanics and ergonomics among hospital workers in Rivers State. A descriptive design with sample size of 390 was used and the data was collected using researcher-modified questionnaires. Frequency of each demographic variable across the questions were determined on the average of 84% knowledge of ergonomics and body mechanics by the health workers. Inferential statistics of Chi-square was considered at 0.05 level of significance to determine the relationship between the demographic variables and the questions on knowledge and analyzed using Statistical Product and Service Solution, version 21. Age (what ergonomics/body mechanics is about, Chi-square, p = 0.017), Marital status (knowledge/awareness that standing for a long time can be hazardous to one's health, Chi-square, p = 0.037), Occupation [(what ergonomics/body mechanics is about, Chi-square, p = 0.000), (Back pain is one of the consequences of bad posture while doing procedures, Chi-square, p = 0.004), (Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health, Chi-square, p = 0.019), (Do you know that foot wears contribute to your musculoskeletal wellbeing, Chi-square, p = 0.000)], Years of Working [(what ergonomics/body mechanics is about, Chi-square, p = 0.002), (knowledge/awareness that standing for a long time can be hazardous to your health, Chi-square, p= 0.023)] and Highest Educational Qualification [(what ergonomics/body mechanics is about, Chi-square = 0.000), (knowledge/awareness that standing for a long time can be hazardous to your health, Chi-square, p= 0.002)]. It was concluded that the health workers in Rivers State are knowledgeable about ergonomics and body mechanics.

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Keywords: Knowledge, Body Mechanics, Ergonomics, Hospital Workers, Rivers State

Introduction

Body mechanics describes how we use our body in daily routine. It includes the ways we maintain the body when we sit, stand, bend, and lift something [1]. By body mechanics, we can use our body in a safe manner and thus prevent many musculoskeletal injuries including low back pain. When we move our body safely and not follow the body mechanic techniques, our spine is at risk of getting injury, for this reason it is important to have good knowledge about body mechanics technique in order to apply

its principle in daily life to prevent it from various musculoskeletal injuries [2].

Ergonomics is a process which helps to assess the abilities of human and help the design makers to build certain systems and processes to help balance with human characteristics [3]. The goal of ergonomics is to reduce the risk of work-related injury at work places [4]. When properly applied to workplace environment and tasks, it has been reported to promote efficiency of the employee, improve productivity, and ultimately contribute to achievement of organizational goals [4]. Due to the various advancements in health care, there is an increase in the workload of the health care professionals. The role of the hospital staff is becoming more and more dynamic. The increasing complexity of patient care in the newer hospital environment increases the chances of work-related musculoskeletal disorders [3].

Ergonomics is defined as the study of interface between individuals and their working environment. Additionally, body mechanics refers to the method of efficiently using the body when making movement, such as bending the body, lifting a heavy object or person, starching an arm, sitting, standing or lying while performing work, increasing job satisfaction, increasing national income and economic benefits [4].

Therefore, there is a need for awareness and knowledge of proper body mechanic technique among the hospital personnel. Good body mechanics in moving, handling patients and lifting heavy object in a safe manner, many healthcare practitioners are suffering from the problem of musculoskeletal disorder due to the nature of their work such as performing various tasks most of the time in upright position, including lifting and moving equipment, handling patients [6]. Proper and effective body mechanic is possible only when health practitioners have good knowledge about it. Most common work related musculoskeletal disorder was lower back pain which is affecting 79.4% of health practitioners. Studies on healthcare activities and body mechanics in clinical area are mostly related to low back pain. Studies show that most healthcare practitioners who had back pain rarely used the body mechanics principle [7]. In most clinical settings in Nigeria, safety which is practiced is often focused on eliminating contact of personnel with infectious agents through the routine use of personal protective devices such as hand gloves, laboratory coats, and face masks, while paying little or no attention to other elements that may not necessarily cause an infection, but have the capacity to compromise the health of the worker. Healthcare practitioners working in a hospital with poor application of principles of ergonomics have increased risk for the development of work-musculoskeletal disorders (MSDs) [8], which could adversely affect his performance on the job, quality of test result, and ultimately patient's management and care.

Awareness basically is the knowledge or perception of a situation or fact [9]. Awareness of proper body mechanics and ergonomics helps prevent many work related musculoskeletal disorders among health practitioners and also the general population. Ergonomics awareness helps in ergonomic application and contributes significantly to human wellbeing and safety at workplaces [10]. While ergonomics has gained significant momentum in the developed countries, in developing regions of the world, its awareness still remains critically low [11]. The growing relevance of ergonomics to medical practice has been extensively described in a previous study [12]. Although speedily becoming an integral part of the operation of most organizations, little is known about the awareness of the science of ergonomics among health practitioners working in Nigeria.

Statement of the problem

Over 59 million healthcare workers are prone to occupational hazards including biological, physical, ergonomic, environmental and psychosocial [3]. Musculoskeletal disorders (MSDs) are defined by National Institute for Occupational Safety and Health (NIOSH) as "injuries or disorder of the muscles, nerves, tendons, joints, cartilage and disc and supporting structures of the upper and lower limbs and lower back that are caused, precipitated or exacerbated by sudden exertion or prolonged exposure to physical factors such as repetition, force, vibration or awkward posture [13].

It is in the light of the above that the researchers seeks to know the extent of knowledge, awareness of proper body mechanics and ergonomics among hospital workers in Rivers State, for if the workers' goal is to remain at work healthy, fit and without much load of work on him/her, he/she must know how to work safe in such a manner as to reduce the negative effects of body mechanics and ergonomics, especially as he/she ages at work.

Methodology

The design for this study is the descriptive design. This study was carried out at the Rivers State University Teaching Hospital, Old GRA, Port Harcourt. The study population was made up of all staff of the university community

Permanent staff – 512

Casuals/Locums – 360

Interns/HO – 150

Sample size determination

There are two schools of thought about sample size – one is that as long as a survey representative, a relatively small sample size is adequate. Perhaps 300 – 500 respondents can work. The other point of view is that while maintaining a representative sample is essential, the more respondents you have the better. Using a standard deviation of 0.5 is a safe choice. Using Andrew Fisher's Formula:

Converting the confidence level into a Z-score => 1.96

Put these figures into the sample size formula to get

$$\text{Sample Size} = \frac{(\text{Z-Score})^2 \times \text{Std Deviation} \times (1 - \text{Std Deviation})}{(\text{Confidence Interval})^2}$$

$$= \frac{\{(1.96)^2 \times 0.5(0.5)\}}{(0.05)^2}$$

$$= \frac{3.8416 \times 0.25}{0.0025}$$

$$= \frac{0.9604}{0.0025} = 384.16$$

Here, sample size of 390 was used. (easycalculation.com)

The hospital community was sensitized and volunteers asked to buy into the study.

Data collection procedure

Researcher-modified (adopted) questionnaires were distributed to the members of staff. The questionnaires was retrieved after about 3 days. The various variables in the

questionnaire were sieved and noted

Data analysis method

Frequency and percentage of the various variables was analysed. Inferential statistics of chi-square was used to ascertain the relationship between the variables at 0.05 level of significance. This was done using Statistical Product and Service Solutions (SPSS) version 21. The first of the analysis was the demographic analysis, followed by the extent of knowledge of proper body mechanics and ergonomics among hospital workers in Rivers State and finally extent of practice of proper body mechanics and ergonomics among hospital workers in Rivers State.

Results

Table 1: Demographic Analysis

Socio-demographics	Frequency	Percent
Sex of the participants		
Male	155	39.7
Female	235	60.3
Total	**390**	**100.0**
Marital Status		
Single	183	46.9
Married	201	51.6
Divorced/Widow/Widower	6	1.5
Total	**390**	**100.0**
Occupation		
Nurse	58	14.9
Physiotherapist	11	2.8
Doctor	104	26.7
Medical Laboratory Scientist	78	20.0
Pharmacist	39	10.0
Medical Records	16	4.1
Admin	24	6.1
Others	60	15.4
Total	**390**	**100.0**
Participants years of working (categorized)		
0-10years	199	51.0
11-20years	100	25.7
21-30years	50	12.8
Over 30years	41	10.5
Total	**390**	**100.0**
Highest educational qualification		
High School (WASC)	20	5.2
RN/RM	25	6.4
First Degree	231	59.2
Postgraduate	114	29.2
Total	**390**	**100.0**

The study revealed participation of (235) 60.3% of females compared to (155) 39.7% of males

On the marital status of the participants, we had more married people with (201) 51.6% followed by the singles with (183) 46.9% and then divorced/widow/widower with (6) 1.5%

On participant's occupation, doctors have the highest participation with (104) 26.7% followed by medical laboratory scientist with (78) 20.0%. This was followed by Others majorly radiographers, catering department, etc with (60) 15.4% and then nurses (58) 14.9% followed by pharmacists (39) 10.0% then admin with (24) 6.1% followed by medical records with (16) 4.2% and lastly physiotherapists (11) 2.8%.

On participants years of working, less than 10years were more with (199) 51.0% followed by 11-20years with (100) 25.7% then 21-30years with (50) 12.8% and lastly over 30 years with (41) 10.5%.

On their highest educational qualification, first degree was the highest with (231) 59.2% followed by postgraduate with (114) 29.2% followed by Registered Nurse (RN)/ Registered Midwife (RM) with (25) 6.4% and lastly high school/West African School Certificate(WASC) with (20) 5.1%.

Question 1: Do you know what ergonomics/body mechanics is about?

Table 2: Knowledge of ergonomics and body mechanics among healthcare workers

		Yes	No	Total
Sex of the participants	Male	118 (30.2%)	37 (9.5%)	155 (39.7%)
	Female	152 (39.0%)	83 (21.3%)	235 (60.3%)
	Total	**270 (69.2%)**	**120 (30.8%)**	**390 (100%)**
Marital Status of the participants	Single	124 (31.8%)	59 (15.1%)	183 (46.9%)
	Married	141 (36.2%)	60 (15.4%)	201 (51.6%)

	Divorced/Widow/Widower	5 (1.2%)	1 (0.3%)	6 (1.5%)
	Total	**270 (69.2%)**	**120 (30.8%)**	**390 (100%)**
Occupation of the participants	Nurse	48 (12.3%)	10 (2.6%)	58 (14.9%)
	Physiotherapist	10 (2.5%)	1 (0.3%)	11 (2.8%)
	Doctor	91 (23.3%)	13 (3.4%)	104 (26.7%)
	Medical Lab. Scientist	56 (14.4%)	22 (5.6%)	78 (20.0%)
	Pharmacist	24 (6.2%)	15 (3.8%)	39 (10.0%)
	Medical Records	9 (2.3%)	7 (1.8%)	16 (4.1%)
	Admin	9 (2.3%)	15 (3.8%)	24 (6.1%)
	Others	23 (5.9%)	37 (9.5%)	60 (15.4%)
	Total	**270 (69.2%)**	**120 (30.8%)**	**390 (100%)**
Participants years of working	0-10years	129 (33.1%)	70 (17.9%)	199 (51.0%)
	11-20years	64 (16.4%)	36 (9.3%)	100 (25.7%)
	21-30years	45 (11.5%)	5 (1.3%)	50 (12.8%)
	Over 30years	32 (8.2%)	9 (2.3%)	41 (10.5%)
	Total	**270 (69.2%)**	**120 (30.8%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	10 (2.6%)	10 (2.6%)	20 (5.2%)
	RN/RM	21 (5.4%)	4 (1.0%)	25 (6.4%)
	First Degree	144 (36.9%)	87 (22.3%)	231 (59.2%)
	Postgraduate	95 (24.3%)	19 (4.9%)	114 (29.2%)
	Total	**270 (69.2%)**	**120 (30.8%)**	**390 (100%)**

Question 2: Is it better to use bed sheet/other aids to lift patients or heavier objects?

		Yes	**No**	**Total**
Sex of participants	Male	121 (31.0%)	34 (8.7%)	155 (39.7%)
	Female	169 (43.3%)	66 (16.9%)	235 (60.3%)
	Total	**290 (74.4%)**	**100 (25.6%)**	**390 (100%)**
Marital Status of the participants	Single	145 (37.2%)	38 (9.7%)	183 (46.9%)
	Married	142 (36.4%)	59 (15.2%)	201 (51.6%)
	Divorced/Widow/Widower	3 (0.8%)	3 (0.8)	6 (1.5%)
	Total	**290 (74.4%)**	**100 (25.6%)**	**390 (100%)**
Occupation of the participants	Nurse	47 (12.1%)	11 (2.8%)	58 (14.9%)
	Physiotherapist	9 (2.3%)	2 (0.5%)	11 (2.8%)
	Doctor	78 (20.0%)	26 (6.7%)	104 (26.7%)
	Medical Lab. Scientist	60 (15.4%)	18 (4.6%)	78 (20.0%)
	Pharmacist	31 (7.9%)	8 (2.1%)	39 (10.0%)
	Medical Records	14 (3.6%)	2 (0.5%)	16 (4.1%)
	Admin	15 (3.8%)	9 (2.3%)	24 (6.1%)
	Others	36 (9.2%)	24 (6.2%)	60 (15.4%)
	Total	**290 (74.4%)**	**100 (25.6%)**	**390 (100%)**
Participants years of working	0-10years	145 (37.2%)	54 (13.8%)	199 (51.0%)
	11-20years	75 (19.2%)	25 (6.5%)	100 (25.7%)
	21-30years	40 (10.3%)	10 (2.5%)	50 (12.8%)
	Over 30years	30 (7.7%)	11 (2.8%)	41 (10.5%)
	Total	**290 (74.4%)**	**100 (25.6%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	13 (3.4%)	7 (1.8%)	20 (5.2%)
	RN/RM	23 (5.9%)	2 (0.5%)	25 (6.4%)
	First Degree	172 (44.1%)	59 (15.1%)	231 (59.2%)
	Postgraduate	82 (21.0%)	32 (8.2%)	114 (29.2%)
	Total	**290 (74.4%)**	**100 (25.6%)**	**390 (100%)**

Question 3: Back pain is one of the consequences of bad posture while doing procedures?

		Yes	**No**	**Total**
Sex of the participants	Male	150 (38.5%)	5 (1.3%)	155 (39.7%)
	Female	227 (58.2%)	8 (2.1%)	235 (60.3%)
	Total	**377 (96.7%)**	**13 (3.3%)**	**390 (100%)**
Marital Status of the participants	Single	178 (45.6%)	5 (1.3%)	183 (46.9%)
	Married	193 (49.6%)	8 (2.0%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**377 (96.7%)**	**13 (3.3%)**	**390 (100%)**
Occupation of the participants	Nurse	56 (14.4%)	2 (0.5%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0 (0.0%)	11 (2.8%)
	Doctor	103 (26.4%)	1 (0.3%)	104 (26.7%)
	Medical Lab. Scientist	76 (19.5%)	2 (0.5%)	78 (20.0%)
	Pharmacist	39 (10.0%)	0 (0.0%)	39 (10.0%)

	Medical Records	14 (3.6%)	2 (0.5%)	16 (4.1%)
	Admin	20 (5.1%)	4 (1.0%)	24 (6.1%)
	Others	58 (14.9%)	2 (0.5%)	60 (15.4%)
	Total	**377 (96.7%)**	**13 (3.3%)**	**390 (100%)**
Participants years of working	0-10years	191 (49.0%)	8 (2.0%)	199 (51.0%)
	11-20years	98 (25.2%)	2 (0.5%)	100 (25.7%)
	21-30years	50 (12.8%)	0 (0.0%)	50 (12.8%)
	Over 30years	38 (9.7%)	3 (0.8%)	41 (10.5%)
	Total	**377 (96.7%)**	**13 (3.3%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	19 (4.9%)	1 (0.3%)	20 (5.2%)
	RN/RM	25 (6.4%)	0 (0.0%)	25 (6.4%)
	First Degree	221 (56.7%)	10 (2.5%)	231 (59.2%)
	Postgraduate	112 (28.7%)	2 (0.5%)	114 (29.2%)
	Total	**377 (96.7%)**	**13 (3.3%)**	**390 (100%)**

Question 4: Do heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?

		Yes	**No**	**Total**
Sex of participants	Male	150 (38.5%)	5 (1.3%)	155 (39.7%)
	Female	216 (55.4%)	19 (4.9%)	235 (60.3%)
	Total	**366 (93.8%)**	**24 (6.2%)**	**390 (100%)**
Marital Status of the participants	Single	173 (44.3%)	10 (2.6%)	183 (46.9%)
	Married	187 (48.0%)	14 (3.6%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**366 (93.8%)**	**24 (6.2%)**	**390 (100%)**
Occupation of the participants	Nurse	54 (13.8%)	4 (1.0%)	58 (14.9%)
	Physiotherapist	10 (2.5%)	1 (0.3%)	11 (2.8%)
	Doctor	100 (25.7%)	4 (1.0%)	104 (26.7%)
	Medical Lab. Scientist	76 (19.5%)	2 (0.5%)	78 (20.0%)
	Pharmacist	37 (9.5%)	2 (0.5%)	39 (10.0%)
	Medical Records	16 (4.1%)	0 (0.0%)	16 (4.1%)
	Admin	20 (5.1%)	4 (1.0%)	24 (6.1%)
	Others	53 (13.6%)	7 (1.8%)	60 (15.4%)
	Total	**366 (93.8%)**	**24 (6.2%)**	**390 (100%)**
Participants years of working	0-10years	185 (47.4%)	14 (3.6%)	199 (51.0%)
	11-20years	95 (24.4%)	5 (1.3%)	100 (25.7%)
	21-30years	48 (12.3%)	2 (0.5%)	50 (12.8%)
	Over 30years	38 (9.7%)	3 (0.8%)	41 (10.5%)
	Total	**366 (93.8%)**	**24 (6.2%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	16 (4.2%)	4 (1.0%)	20 (5.2%)
	RN/RM	24 (6.1%)	1 (0.3%)	25 (6.4%)
	First Degree	219 (56.1%)	12 (3.1%)	231 (59.2%)
	Postgraduate	107 (27.4%)	7 (1.8%)	114 (29.2%)
	Total	**366 (93.8%)**	**24 (6.2%)**	**390 (100%)**

Question 5: Improper usage of body mechanics techniques can cause spinal injury?

		Yes	**No**	**Total**
Sex of participants	Male	147 (37.7%)	8 (2.0%)	155 (39.7%)
	Female	212 (54.4%)	23(5.9%)	235 (60.3%)
	Total	**359 (92.1%)**	**31 (7.9%)**	**390 (100%)**
Marital Status of the participants	Single	171 (43.8%)	12 (3.1%)	183 (46.9%)
	Married	182 (46.8%)	19 (4.8%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**359 (92.1%)**	**31 (7.9%)**	**390 (100%)**
Occupation of the participants	Nurse	53 (13.6%)	5 (1.3%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0 (0.0%)	11 (2.8%)
	Doctor	93 (23.9%)	11 (2.8%)	104 (26.7%)
	Medical Lab. Scientist	73 (18.7%)	5 (1.3%)	78 (20.0%)
	Pharmacist	37 (9.5%)	2 (0.5%)	39 (10.0%)
	Medical Records	15 (3.8%)	1 (0.3%)	16 (4.1%)
	Admin	22 (5.6%)	2 (0.5%)	24 (6.1%)
	Others	55 (14.1%)	5 (1.3%)	60 (15.4%)
	Total	**359 (92.1%)**	**31 (7.9%)**	**390 (100%)**
Participants years of working	0-10years	184 (47.2%)	15 (3.8%)	199 (51.0%)
	11-20years	90 (23.1%)	10 (2.6%)	100 (25.7%)
	21-30years	48 (12.3%)	2 (0.5%)	50 (12.8%)
	Over 30years	37 (9.5%)	4 (1.0%)	41 (10.5%)

	Total	**359 (92.1%)**	**31 (7.9%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	17 (4.4%)	3 (0.8%)	20 (5.2%)
	RN/RM	24 (6.1%)	1 (0.3%)	25 (6.4%)
	First Degree	216 (55.4%)	15 (3.8%)	231 (59.2%)
	Postgraduate	102 (26.2%)	12 (3.0%)	114 (29.2%)
	Total	**359 (92.1%)**	**31 (7.9%)**	**390 (100%)**

Question 6: Do you know that sitting for long hours at a stretch can be injurious to your musculoskeletal system & health?

		Yes	**No**	**Total**
Sex of participants	Male	132 (33.8%)	23(5.9%)	155 (39.7%)
	Female	203 (52.1%)	32(8.2%)	235 (60.3%)
	Total	**335 (85.9%)**	**55 (14.1%)**	**390 (100%)**
Marital Status of the participants	Single	153 (39.2%)	30 (7.7%)	183 (46.9%)
	Married	176 (45.2%)	25 (6.4%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**335 (85.9%)**	**55 (14.1%)**	**390 (100%)**
Occupation of the participants	Nurse	51 (13.1%)	7 (1.8%)	58 (14.9%)
	Physiotherapist	10 (2.5%)	1 (0.3%)	11 (2.8%)
	Doctor	98 (25.1%)	6(1.6%)	104 (26.7%)
	Medical Lab. Scientist	65 (16.7%)	13 (3.3%)	78 (20.0%)
	Pharmacist	30 (7.7%)	9 (2.3%)	39 (10.0%)
	Medical Records	10 (2.6%)	6 (1.5%)	16 (4.1%)
	Admin	20 (5.1%)	4 (1.0%)	24 (6.1%)
	Others	51 (13.1%)	9 (2.3%)	60 (15.4%)
	Total	**335 (85.9%)**	**55 (14.1%)**	**390 (100%)**
Participants years of working	0-10years	174 (44.6%)	25 (6.4%)	199 (51.0%)
	11-20years	84 (21.6%)	16 (4.1%)	100 (25.7%)
	21-30years	39 (10.0%)	11 (2.8%)	50 (12.8%)
	Over 30years	38 (9.7%)	3 (0.8%)	41 (10.5%)
	Total	**335 (85.9%)**	**55 (14.1%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	16 (4.2%)	4 (1.0%)	20 (5.2%)
	RN/RM	24 (6.1%)	1 (0.3%)	25 (6.4%)
	First Degree	195 (50.0%)	36 (9.2%)	231 (59.2%)
	Postgraduate	100 (25.6%)	14 (3.6%)	114 (29.2%)
	Total	**335 (85.9%)**	**55 (14.1%)**	**390 (100%)**

Question 7: Do you know/aware that standing for a long time can be hazardous to your health?

		Yes	**No**	**Total**
Sex of participants	Male	131 (33.6%)	24 (6.1%)	155 (39.7%)
	Female	185 (47.4%)	50 (12.9%)	235 (60.3%)
	Total	**316 (81.0%)**	**74 (19.0%)**	**390 (100%)**
Marital Status of the participants	Single	139 (35.6%)	44 (11.3%)	183 (46.9%)
	Married	171 (43.9%)	30 (7.7%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**316 (81.0%)**	**74 (19.0%)**	**390 (100%)**
Occupation of the participants	Nurse	51 (13.1%)	7 (1.8%)	58 (14.9%)
	Physiotherapist	7 (1.8%)	4 (1.0%)	11 (2.8%)
	Doctor	92 (23.6%)	12 (3.1%)	104 (26.7%)
	Medical Lab. Scientist	61 (15.6%)	17 (4.4%)	78 (20.0%)
	Pharmacist	33 (8.5%)	6 (1.5%)	39 (10.0%)
	Medical Records	11 (2.8%)	5 (1.3%)	16 (4.1%)
	Admin	17 (4.3%)	7 (1.8%)	24 (6.1%)
	Others	44 (11.3%)	16 (4.1%)	60 (15.4%)
	Total	**316 (81.0%)**	**74 (19.0%)**	**390 (100%)**
Participants years of working	0-10years	152 (39.0%)	47 (21.0%)	199 (51.0%)
	11-20years	81 (20.8%)	19 (4.9%)	100 (25.7%)
	21-30years	47 (12.0%)	3 (0.8%)	50 (12.8%)
	Over 30years	36 (9.2%)	5 (1.3%)	41 (10.5%)
	Total	**316 (81.0%)**	**74 (19.0%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	13 (3.4%)	7 (1.8%)	20 (5.2%)
	RN/RM	25 (6.4%)	0 (0.0%)	25 (6.4%)
	First Degree	178 (45.6%)	53 (13.6%)	231 (59.2%)
	Postgraduate	100 (25.6%)	14 (3.6%)	114 (29.2%)
	Total	**316 (81.0%)**	**74 (19.0%)**	**390 (100%)**

Question 8: Are you aware that interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chair are options for standing relief?

		Yes	No	Total
Sex of participants	Male	101 (25.9%)	54 (13.8%)	155 (39.7%)
	Female	148 (37.9%)	87 (22.4%)	235 (60.3%)
	Total	**249 (63.8%)**	**141 (36.2%)**	**390 (100%)**
Marital Status of the participants	Single	123 (31.5%)	60 (15.4%)	183 (46.9%)
	Married	122 (31.3%)	79 (20.3%)	201 (51.6%)
	Divorced/Widow/Widower	4 (1.0%)	2 (0.5%)	6 (1.5%)
	Total	**249 (63.8%)**	**141 (36.2%)**	**390 (100%)**
Occupation of the participants	Nurse	38 (9.7%)	20 (5.2%)	58 (14.9%)
	Physiotherapist	8 (2.0%)	3 (0.8%)	11 (2.8%)
	Doctor	70 (18.0%)	34 (8.7%)	104 (26.7%)
	Medical Lab. Scientist	50 (12.8%)	28 (7.2%)	78 (20.0%)
	Pharmacist	19 (4.9%)	20 (5.1%)	39 (10.0%)
	Medical Records	10 (2.6%)	6 (1.5%)	16 (4.1%)
	Admin	14 (3.5%)	10 (2.6%)	24 (6.1%)
	Others	40 (10.3%)	20 (5.1%)	60 (15.4%)
	Total	**249 (63.8%)**	**141 (36.2%)**	**390 (100%)**
Participants years of working	0-10years	127 (32.6%)	72 (18.4%)	199 (51.0%)
	11-20years	62 (15.8%)	38 (9.9%)	100 (25.7%)
	21-30years	34 (8.7%)	16 (4.1%)	50 (12.8%)
	Over 30years	26 (6.7%)	15 (3.8%)	41 (10.5%)
	Total	**249 (63.8%)**	**141 (36.2%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	14 (3.6%)	6 (1.6%)	20 (5.2%)
	RN/RM	14 (3.6%)	11 (2.8%)	25 (6.4%)
	First Degree	149 (38.2%)	82 (21.0%)	231 (59.2%)
	Postgraduate	72 (18.4%)	42(10.8%)	114 (29.2%)
	Total	**249 (63.8%)**	**141 (36.2%)**	**390 (100%)**

Question 9: Do you know that foot wears contribute to your musculoskeletal wellbeing?

		Yes	No	Total
Sex of participants	Male	115 (29.5%)	40 (10.2%)	155 (39.7%)
	Female	179 (45.9%)	56(14.4%)	235 (60.3%)
	Total	**294 (75.4%)**	**96 (24.6%)**	**390 (100%)**
Marital Status of the participants	Single	136 (34.8%)	47 (12.1%)	183 (46.9%)
	Married	152 (39.1%)	49 (12.5%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**294 (75.4%)**	**96 (24.6%)**	**390 (100%)**
Occupation of the participants	Nurse	49 (12.6%)	9 (2.3%)	58 (14.9%)
	Physiotherapist	7 (1.8%)	4 (1.0%)	11 (2.8%)
	Doctor	94 (24.1%)	10 (2.6%)	104 (26.7%)
	Medical Lab. Scientist	57 (14.6%)	21 (5.4%)	78 (20.0%)
	Pharmacist	27 (6.9%)	12 (3.1%)	39 (10.0%)
	Medical Records	8 (2.0%)	8 (2.1%)	16 (4.1%)
	Admin	14 (3.6%)	10 (2.5%)	24 (6.1%)
	Others	38 (9.8%)	22 (5.6%)	60 (15.4%)
	Total	**294 (75.4%)**	**96 (24.6%)**	**390 (100%)**
Participants years of working	0-10years	140 (35.9%)	59 (15.1%)	199 (51.0%)
	11-20years	80 (20.5%)	20 (5.2%)	100 (25.7%)
	21-30years	40 (10.3%)	10 (2.5%)	50 (12.8%)
	Over 30years	34 (8.7%)	7 (1.8%)	41 (10.5%)
	Total	**294 (75.4%)**	**96 (24.6%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	12 (3.1%)	8 (2.1%)	20 (5.2%)
	RN/RM	19 (4.9%)	6 (1.5%)	25 (6.4%)
	First Degree	170 (43.6%)	61 (15.6%)	231 (59.2%)
	Postgraduate	93 (23.8%)	21 (5.4%)	114 (29.2%)
	Total	**294 (75.4%)**	**96 (24.6%)**	**390 (100%)**

Question 10: Ergonomically, soft sole shoes are better with in-soles. Do you agree?

		Yes	No	Total
Sex of participants	Male	120 (30.7%)	35 (9.0%)	155 (39.7%)
	Female	198 (50.8%)	37 (9.5%)	235 (60.3%)
	Total	**318 (81.5%)**	**72 (18.5%)**	**390 (100%)**
Marital Status of the participants	Single	149 (38.2%)	34 (8.7%)	183 (46.9%)
	Married	164 (42.1%)	37 (9.5%)	201 (51.6%)
	Divorced/Widow/Widower	5 (1.2%)	1 (0.3%)	6 (1.5%)
	Total	**318 (81.5%)**	**72 (18.5%)**	**390 (100%)**
Occupation of the participants	Nurse	50 (12.8%)	8 (2.1%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0(0.0%)	11 (2.8%)
	Doctor	86 (22.0%)	18 (4.7%)	104 (26.7%)
	Medical Lab. Scientist	62 (15.9%)	16 (4.1%)	78 (20.0%)
	Pharmacist	28 (7.2%)	11 (2.8%)	39 (10.0%)
	Medical Records	12 (3.1%)	4 (1.0%)	16 (4.1%)
	Admin	20 (5.1%)	4 (1.0%)	24 (6.1%)
	Others	49 (12.6%)	11 (2.8%)	60 (15.4%)
	Total	**318 (81.5%)**	**72 (18.5%)**	**390 (100%)**
Participants years of working	0-10years	162 (41.5%)	37 (9.5%)	199 (51.0%)
	11-20years	80 (20.5%)	20 (5.2%)	100 (25.7%)
	21-30years	42 (10.8%)	8 (2.0%)	50 (12.8%)
	Over 30years	34 (8.7%)	7 (1.8%)	41 (10.5%)
	Total	**318 (81.5%)**	**72 (18.5%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	16 (4.1%)	4 (1.1%)	20 (5.2%)
	RN/RM	23 (5.9%)	2 (0.5%)	25 (6.4%)
	First Degree	187 (47.9%)	44 (11.3%)	231 (59.2%)
	Postgraduate	92 (23.6%)	22 (5.6%)	114 (29.2%)
	Total	**318 (81.5%)**	**72 (18.5%)**	**390 (100%)**

Question 11: High heels shoes are not good for your limbs, do you agree?

		Yes	No	Total
Sex of participants	Male	139 (35.6%)	16 (4.1%)	155 (39.7%)
	Female	208 (53.4%)	27 (6.9%)	235 (60.3%)
	Total	**347 (89.0%)**	**43 (11.0%)**	**390 (100%)**
Marital Status of the participants	Single	162 (41.5%)	21 (5.4%)	183 (46.9%)
	Married	179 (46.0%)	22 (5.6%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**347 (89.0%)**	**43 (11.0%)**	**390 (100%)**
Occupation of the participants	Nurse	54 (13.9%)	4 (1.0%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0 (0.0%)	11 (2.8%)
	Doctor	87 (22.3%)	17 (4.4%)	104 (26.7%)
	Medical Lab. Scientist	70 (17.9%)	8 (2.1%)	78 (20.0%)
	Pharmacist	34 (8.7%)	5 (1.3%)	39 (10.0%)
	Medical Records	15 (3.8%)	1 (0.3%)	16 (4.1%)
	Admin	22 (5.7%)	2 (0.4%)	24 (6.1%)
	Others	54 (13.9%)	6 (1.5%)	60 (15.4%)
	Total	**347 (89.0%)**	**43 (11.0%)**	**390 (100%)**
Participants years of working	0-10years	174 (44.6%)	25 (6.4%)	199 (51.0%)
	11-20years	90 (23.1%)	10 (2.6%)	100 (25.7%)
	21-30years	43 (11.0%)	7 (1.8%)	50 (12.8%)
	Over 30years	40 (10.3%)	1 (0.2%)	41 (10.5%)
	Total	**347 (89.0%)**	**43 (11.0%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	17(4.4%)	3 (0.8%)	20 (5.2%)
	RN/RM	24(6.1%)	1 (0.3%)	25 (6.4%)
	First Degree	209 (53.7%)	22 (5.5%)	231 (59.2%)
	Postgraduate	97 (24.8%)	17 (4.4%)	114 (29.2%)
	Total	**347 (89.0%)**	**43 (11.0%)**	**390 (100%)**

Question 12: High heel shoes are only cosmetic but injurious functionally. Agreed?

		Yes	No	Total
Sex of participants	Male	140 (35.9%)	15 (3.8%)	155 (39.7%)
	Female	214 (54.9%)	21 (5.4%)	235 (60.3%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Marital Status of the participants	Single	162 (41.5%)	21 (5.4%)	183 (46.9%)
	Married	186 (47.8%)	15 (3.8%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**354 (90.8%)**	**36(9.2%)**	**390 (100%)**
Occupation of the participants	Nurse	56 (14.4%)	2 (0.5%)	58 (14.9%)
	Physiotherapist	10 (2.6%)	1 (0.2%)	11 (2.8%)
	Doctor	94 (24.1%)	10 (2.6%)	104 (26.7%)
	Medical Lab. Scientist	73 (18.7%)	5 (1.3%)	78 (20.0%)
	Pharmacist	33 (8.5%)	6 (1.5%)	39 (10.0%)
	Medical Records	14 (3.6%)	2 (0.5%)	16 (4.1%)
	Admin	23 (5.8%)	1 (0.3%)	24 (6.1%)
	Others	51 (13.1%)	9 (2.3%)	60 (15.4%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Participants years of working	0-10years	177 (45.4%)	22 (5.6%)	199 (51.0%)
	11-20years	90 (23.1%)	10 (2.6%)	100 (25.7%)
	21-30years	46 (11.8%)	4 (1.0%)	50 (12.8%)
	Over 30years	41 (10.5%)	0 (0.0%)	41 (10.5%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	16 (4.2%)	4 (1.0%)	20 (5.2%)
	RN/RM	25 (6.4%)	0 (0.0%)	25 (6.4%)
	First Degree	213 (54.6%)	18 (4.6%)	231 (59.2%)
	Postgraduate	100 (25.6%)	14 (3.6%)	114 (29.2%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**

Question 13: Soft and flat rubber shoes with friction are the best for the work place Do you agree?

		Yes	No	Total
Sex of participants	Male	145 (37.2%)	10 (2.5%)	155 (39.7%)
	Female	210 (53.8%)	25 (6.5%)	235 (60.3%)
	Total	**355 (91.0%)**	**35 (9.0%)**	**390 (100%)**
Marital Status of the participants	Single	167 (42.8%)	16 (4.1%)	183 (46.9%)
	Married	182 (46.7%)	19 (4.9%)	201 (51.6%)
	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**355 (91.0%)**	**35 (9.0%)**	**390 (100%)**
Occupation of the participants	Nurse	53 (13.6%)	5 (1.3%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0 (0.0%)	11 (2.8%)
	Doctor	96 (24.6%)	8 (2.1%)	104 (26.7%)
	Medical Lab. Scientist	72 (18.5%)	6 (1.5%)	78 (20.0%)
	Pharmacist	35 (9.0%)	4 (1.0%)	39 (10.0%)
	Medical Records	11 (2.8%)	5 (1.3%)	16 (4.1%)
	Admin	21 (5.3%)	3 (0.8%)	24 (6.1%)
	Others	56 (14.4%)	4 (1.0%)	60 (15.4%)
	Total	**355 (91.0%)**	**35 (9.0%)**	**390 (100%)**
Participants years of working	0-10years	181 (46.4%)	18 (4.6%)	199 (51.0%)
	11-20years	94 (24.1%)	6 (1.6%)	100 (25.7%)
	21-30years	45 (11.5%)	5 (1.3%)	50 (12.8%)
	Over 30years	35 (9.0%)	6 (1.5%)	41 (10.5%)
	Total	**355 (91.0%)**	**35 (9.0%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	18 (4.6%)	2 (0.5%)	20 (5.2%)
	RN/RM	23 (5.9%)	2 (0.5%)	25 (6.4%)
	First Degree	212 (54.4%)	19 (4.9%)	231 (59.2%)
	Postgraduate	102 (26.1%)	12 (3.1%)	114 (29.2%)
	Total	**355 (91.0%)**	**35 (9.0%)**	**390 (100%)**

Question 14: Putting on soft sole shoes will help cushion your weight on your knees during walking. Do you agree?

		Yes	No	Total
Sex of participants	Male	139 (35.6%)	16 (4.1%)	155 (39.7%)
	Female	215 (55.2%)	20 (5.1%)	235 (60.3%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Marital Status of the participants	Single	167 (42.8%)	16 (4.1%)	183 (46.9%)
	Married	181 (46.5%)	20 (5.1%)	201 (51.6%)

	Divorced/Widow/Widower	6 (1.5%)	0 (0.0%)	6 (1.5%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Occupation of the participants	Nurse	54 (13.9%)	4 (1.0%)	58 (14.9%)
	Physiotherapist	11 (2.8%)	0 (0.0%)	11 (2.8%)
	Doctor	97 (24.9%)	7 (1.8%)	104 (26.7%)
	Medical Lab. Scientist	73 (18.7%)	5 (1.3%)	78 (20.0%)
	Pharmacist	35 (9.0%)	4 (1.0%)	39 (10.0%)
	Medical Records	13 (3.3%)	3 (0.8%)	16 (4.1%)
	Admin	19 (4.9%)	5 (1.2%)	24 (6.1%)
	Others	52 (13.3%)	8 (2.1%)	60 (15.4%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Participants years of working	0-10years	178 (45.6%)	21 (5.4%)	199 (51.0%)
	11-20years	89 (22.9%)	11 (2.8%)	100 (25.7%)
	21-30years	48 (12.3%)	2 (0.5%)	50 (12.8%)
	Over 30years	39 (10.0%)	2 (0.5%)	41 (10.5%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**
Participants highest educational qualification	High School/WASC	16 (4.2%)	4 (1.0%)	20 (5.2%)
	RN/RM	23 (5.9%)	2 (0.5%)	25 (6.4%)
	First Degree	213 (54.6%)	18 (4.6%)	231 (59.2%)
	Postgraduate	102 (26.1%)	12 (3.1%)	114 (29.2%)
	Total	**354 (90.8%)**	**36 (9.2%)**	**390 (100%)**

Table 2 contained some interesting questions looking at the knowledge of ergonomics and body mechanics among healthcare workers. We had 69.2% (270) that have knowledge on what ergonomics and body mechanics is all about against 30.8% (120) that do not. 74.4% (290) agreed that it is better to use bed sheet/other aids to lift patients or heavier objects against 25.6% (100) that do not agree. 96.7% (377) of the participants agreed that back pain is one of the consequences of bad posture while doing procedures against 3.3% (13) who disagreed. 93.8% (366) agreed that heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain while 6.2% (24) disagreed. Also 92.1% (359) agreed that improper usage of body mechanics techniques can cause spinal injury while 7.9% (31) disagreed. Out of the 390 participants, 85.9% (335) know that sitting for long hours at a stretch can be injurious to their musculoskeletal system and health while 14.1% (55) do not know. 81% (316) are aware that standing for a long time can be hazardous to their health while 19% (74) are not. On if they -were aware that interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chair are options for standing relief, 63.8% (249) are aware while 36.2% (141) are not.75.4% (294) knows that foot wears contribute to their musculoskeletal wellbeing while 24.6% (96) do not. Ergonomically, 81.5% (318) agreed that soft sole shoes are better with in-sole while 18.5% (72) disagreed. Also, 89% (347) agreed that high heel shoes are not good for one's limbs while 11% (43) do not agree. On if high heel shoes are only cosmetics but injurious functionally, 90.8% (354) agreed while 9.2 (36) do not agree. 91% (355) agreed that soft and flat rubber shoes with friction are the best for the work place while 9% (35) do not. 90.8% (354) agreed that putting on soft sole shoes will help cushion their weight on the knees during walking while 9.2 (36) do not.

Table 2: Chi-square result

Sex of the participants				
	Questions	**Chi-Square**	**Degree of freedom**	**Significance**
1	Do you what ergonomics/body mechanics is about?	5.746	1	0.017
2	It is better to use bed sheet/other aids to lift patients or heavier objects?	1.853	1	0.173
3	Back pain is one of the consequences of bad posture while doing procedures?	0.009	1	0.923
4	Heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?	3.819	1	0.051
5	Improper use of body mechanics technique can cause spinal injury. Do you agree?	2.732	1	0.098
6	Do you know that sitting for long hours at a stretch can be injurious to your musculoskeletal system and health?	0.115	1	0.734
7	Do you know/aware that standing for a long time can be hazardous to your health?	2.039	1	0.153
8	Interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chain are options for standing relief?	0.193	1	0.661
9	Do you know that foot wears contribute to your musculoskeletal wellbeing?	0.197	1	0.657
10	Ergonomically, soft sole shoes are better with in-soles. Do you agree?	2.899	1	0.089
11	High heel shoes are not good for your limbs. Agreed?	0.130	1	0.719
12	High heel shoes are only cosmetic but injurious functionally, Agreed?	0.061	1	0.805
13	Soft and flat rubber shoes with friction are the best for the work place. Do you agree?	2.004	1	0.157
14	Putting on soft sole shoes will help cushion your weight on your knees during walking. Agreed?	0.300	1	0.545

Table 3

Marital Status of the participants				
	Questions	**Chi-Square**	**Degree of freedom**	**Significance**
1	Do you what ergonomics/body mechanics is about?	0.826	2	0.662
2	It is better to use bed sheet/other aids to lift patients or heavier objects?	5.602	2	0.061
3	Back pain is one of the consequences of bad posture while doing procedures?	0.673	2	0.714
4	Heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?	0.773	2	0.679
5	Improper use of body mechanics technique can cause spinal injury. Do you agree?	1.624	2	0.444
6	Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health?	2.238	2	0.327
7	Do you know/aware that standing for a long time can be hazardous to your health?	6.607	2	0.037
8	Interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chain are options for standing relief?	1.783	2	0.410
9	Do you know that foot wears contribute to your musculoskeletal wellbeing?	2.078	2	0.354
10	Ergonomically, soft sole shoes are better with in-soles. Do you agree?	0.015	2	0.993
11	High heel shoes are not good for your limbs. Agreed?	0.783	2	0.676
12	High heel shoes are only cosmetic but injurious functionally, Agreed?	2.461	2	0.292
13	Soft and flat rubber shoes with friction are the best for the work place. Do you agree?	0.660	2	0.719
14	Putting on soft sole shoes will help cushion your weight on your knees during walking. Agreed?	0.786	2	0.675

Table 4

Occupation of the participants				
	Questions	**Chi-Square**	**Degree of freedom**	**Significance**
1	Do you what ergonomics/body mechanics is about?	64.527	7	0.000
2	It is better to use bed sheet/other aids to lift patients or heavier objects?	12.214	7	0.094
3	Back pain is one of the consequences of bad posture while doing procedures?	21.099	7	0.004
4	Heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?	11.790	7	0.108
5	Improper use of body mechanics technique can cause spinal injury. Do you agree?	2.724	7	0.909
6	Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health?	16.805	7	0.019
7	Do you know/aware that standing for a long time can be hazardous to your health?	13.933	7	0.052
8	Interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chain are options for standing relief?	5.390	7	0.612
9	Do you know that foot wears contribute to your musculoskeletal wellbeing?	31.048	7	0.000
10	Ergonomically, soft sole shoes are better with in-soles. Do you agree?	6.606	7	0.471
11	High heel shoes are not good for your limbs. Agreed?	6.161	7	0.521
12	High heel shoes are only cosmetic but injurious functionally, Agreed?	8.159	7	0.319
13	Soft and flat rubber shoes with friction are the best for the work place. Do you agree?	12.013	7	0.100
14	Putting on soft sole shoes will help cushion your weight on your knees during walking. Agreed?	9.853	7	0.197

Table 5

Participants years of working				
	Questions	**Chi-Square**	**Degree of freedom**	**Significance**
1	Do you what ergonomics/body mechanics is about?	14.720	3	0.002
2	It is better to use bed sheet/other aids to lift patients or heavier objects?	1.120	3	0.772
3	Back pain is one of the consequences of bad posture while doing procedures?	4.586	3	0.205
4	Heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?	0.996	3	0.802
5	Improper use of body mechanics technique can cause spinal injury. Do you agree?	1.870	3	0.600
6	Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health?	4.819	3	0.186
7	Do you know/aware that standing for a long time can be hazardous to your health?	9.492	3	0.023
8	Interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chain are options for standing relief?	0.525	3	0.913
9	Do you know that foot wears contribute to your musculoskeletal wellbeing?	5.695	3	0.127
10	Ergonomically, soft sole shoes are better with in-soles. Do you agree?	0.413	3	0.937
11	High heel shoes are not good for your limbs. Agreed?	4.119	3	0.249
12	High heel shoes are only cosmetic but injurious functionally, Agreed?	5.121	3	0.163
13	Soft and flat rubber shoes with friction are the best for the work place. Do you agree?	2.756	3	0.431
14	Putting on soft sole shoes will help cushion your weight on your knees during walking. Agreed?	3.349	3	0.341

Table 6

Participants highest Educational Qualification				
	Questions	**Chi-Square**	**Degree of freedom**	**Significance**
1	Do you what ergonomics/body mechanics is about?	21.828	3	0.000
2	It is better to use bed sheet/other aids to lift patients or heavier objects?	5.353	3	0.148
3	Back pain is one of the consequences of bad posture while doing procedures?	2.627	3	0.453
4	Heavy work activities like bending, twisting and frequent heavy lifting contribute to low back pain?	7.208	3	0.066
5	Improper use of body mechanics technique can cause spinal injury. Do you agree?	3.596	3	0.309
6	Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health?	3.412	3	0.332
7	Do you know/aware that standing for a long time can be hazardous to your health?	14.885	3	0.002
8	Interchanging the legs on a low stool, sitting on high stools and having short rest periods on a normal chain are options for standing relief?	1.061	3	0.786
9	Do you know that foot wears contribute to your musculoskeletal wellbeing?	6.313	3	0.150
10	Ergonomically, soft sole shoes are better with in-soles. Do you agree?	1.955	3	0.582
11	High heel shoes are not good for your limbs. Agreed?	3.866	3	0.276
12	High heel shoes are only cosmetic but injurious functionally, Agreed?	7.147	3	0.067
13	Soft and flat rubber shoes with friction are the best for the work place. Do you agree?	0.550	3	0.908
14	Putting on soft sole shoes will help cushion your weight on your knees during walking. Agreed?	3.612	3	0.306

In table 4, it is evident that sex was significant in one question about knowledge as well as Marital status, occupation in four questions about knowledge, years of working in two questions about knowledge, same as highest educational qualification which is significant in two questions about knowledge.

Discussions

This study was conducted to know the extent of knowledge of ergonomics and body mechanics among healthcare workers in River State, Nigeria. Demographic data of the respondents showed that majority are females 60.3%, marital status had more married 51.6%, closely followed by singles. Profession had doctors 26.7% followed by medical laboratory scientists 20% with 0 to 10 years of working experience 51% having first degree educational qualification 59.2%. In this study, the second part of the questionnaires were about how knowledgeable the health workers are as regard ergonomics and body mechanics. From the chi-square results, sex which had more females is significant with one question (Do you know what ergonomics/body mechanics is about). Marital status which consists of more married people is significant with one question as well (Do you know/aware that standing for a long time can be hazardous to your health?) out of fourteen questions. Occupation consisting of more doctors was significant with four knowledge questions (Do you know what ergonomics/body mechanics is about?, Back pain is one of the consequences of bad posture while doing procedures?, Sitting for long hours at a stretch can be injurious to your musculoskeletal system and health? and Do you know that foot wears contribute to your musculoskeletal wellbeing?) out of fourteen questions. Working years which had more of 0-10 years was significant with two questions (Do you know what ergonomics/body mechanics is about?, and Do you know/aware that standing for a long time can be hazardous to your health?) out of fourteen, that is the same position with highest educational qualification which had more of first degree (Do you know what ergonomics/body mechanics is about?, and Do you know/aware that standing for a long time can be hazardous to your health?). From the result showed, there is poor relationship between the demographic variables and the questions on the knowledge of ergonomics and body mechanics among health workers in Rivers State as only proved significant. This argument does not stop the fact that average of 84% of the health workers have knowledge or are aware of ergonomics and body mechanics which is a very good one expected as health workers. This result agrees with Shamim [5] who proved that 65% or nurses had fair knowledge of ergonomics and body mechanics when they asses knowledge and practices of body mechanic technique among nurses at Punjab institute of cardiology Lahore. It is also affirming the 68.1% (adequate knowledge) as shown in the study by Sabita [14]. Also, on the study on the knowledge and practice of body mechanics among staff nurses with the result of 50% of good knowledge, 40% very good knowledge and 10% of average knowledge Vidya [15]. This research didn't agree with the study by D'Souza [16] on Knowledge and usage of body mechanics among class IV workers whose result showed nurses with 64% poor knowledge of body mechanics.

Conclusion

Based on the findings of the study, it was concluded that healthcare workers in Rivers State have an excellent knowledge of ergonomics and body mechanics.

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this article

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