

KNOWLEDGE ATTITUDE AND PRACTICE SURVEY RELATED TO ERGONOMIC PRINCIPLES AMONG PHYSIOTHERAPISTS

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ABSTRACT

To investigate the physiotherapist's knowledge, practice, and attitude towards ergonomic principles in order to reduce workplace stress. A cross-sectional study on 196 physiotherapists practicing in public and private clinics and hospitals in division Gujranwala and Lahore between May to August 2022. Participants were selected by non-probability convent sampling technique. Pre tested and semi structured questionnaire was used a data collection tool. Data were entered and analyzed with SPSS version 24. All results were calculated at 95% confidence interval. Chi Square test and ANOVA were used to assess the relationship and comparison after the descriptive analysis respectively. Out of total (n=196), 182(92.90%) participants had age between 25-30 years and females were more 138(70.40), mostly participants 183(93.40) had 5-10 years practical experience and many participants had specialization in orthopedic, MSK, women health, peads and Geriatrics. Out of 196 physiotherapists, 94 (47.96%) participants had very good knowledge of ergonomic principles, and 100 (51%) had positive attitude towards ergonomics, but only 81 (41.3%) were practicing the ergonomics in the field. It was concluded on the basis of findings that knowledge, attitude and practice are positively correlated with each other. A good level of knowledge was found positive attitude related to ergonomics however very little practice of ergonomic principles during physiotherapy practice.

Keywords: Knowledge, attitude, practice, physiotherapy, medical professionals, Ergonomic principles

INTRODUCTION

The specific study of individuals and their working environments is known as ergonomics. Ergonomics is the science that deals with creating tools and procedures that are as safe and effective as possible (American Dental Association 2011) ¹. A portion of the discipline of

ergonomics deals how to correct postural problems and working positions, it is not a branch of rehabilitation². People differ from one another in so many ways that conducting some form of "fitting trial" is advised³. Ergonomics has wide scope and several applications outside of the industrial sector, including the health sector⁴.

The primary goal of ergonomics in the modern day is to eliminate workplace stressors in order to prevent any negative health effects. To enhance the health and wellbeing of both patients and healthcare professionals, a safe workplace is essential⁵. Additionally, the absence of ergonomics has been linked to various health-related outcomes like chemical, biological, and psychosocial risks, cancer, accidents, and sick leave⁶.

Physiotherapists are subject to risks because patient handling techniques are typically carried out without the use of mechanical assistive devices, which puts them at risk for incidents related to this high-risk job⁷. Lack of consideration for human factors and ergonomics (HFE) in workplace design is linked to a variety of patient safety accidents⁸. Acute care therapists are susceptible to getting a WMSD due to the types of interventions they utilize, the complexity of the patient group, and the surroundings⁹. Professionals are put under a great deal of physical strain and can easily lift, move, and reposition patients manually without being able to do so¹⁰. Hence it is proved that work situation and environment both have an impact on WRMDs¹¹. Popular enlightenment associates ergonomics with desks and chairs, and the two fields do overlap when it comes to postural and other musculoskeletal issues¹². The ergonomic risk factors include long workdays, forceful, repetitive tasks, and prolonged, unsupported standing¹³.

We conducted this study to evaluate the physiotherapists' knowledge, attitude and practice in ergonomic principles in order to reduce workplace stress. High productivity, the prevention of illnesses and injuries, and greater worker satisfaction are all guaranteed by the successful use of ergonomics. Only if we talk with authority, which comes from knowledge and understanding, we will be successful. The immediate demand is for physiotherapists with experience and students to have access to occupational health education programs.

METHODOLOGY

This study was carried out as a KAP cross sectional survey on 196 physiotherapists practicing in public and private clinics and hospitals in division Gujranwala and Lahore between May to August 2022.

A four part semi-structured questionnaire was used adapted from previous studies¹⁴. The questionnaire was modified a little to adjust according to our study. The questionnaire was filled by the physiotherapists on duty and the house officers from different teaching hospitals and private setups. The questionnaire has 42 items and was categorized into 4 sections labelled A, B, C and D. Section A has 4 questions that collect the socio-demographic data of the participants. Section B contain 17 questions with options “agree”, “disagree” and “don’t know” to evaluate the knowledge of physiotherapists about ergonomics, whereas Section C has 5 questions about attitude of participants related to ergonomics. Section D contains 16 questions (out of which 2 items has 4 sub-items and 3 items has 3 sub-items) related to practice of ergonomic principles. The answers were awarded as 3 for agree, 2 for don’t know and 1 for disagree.

In Pakistan after graduation physiotherapists have a 2 year specialization in their area of interest. In this study we categorized the physiotherapists on the basis of their specialization. Also the participants were categorized on the basis of their duration of practice in the field of physiotherapy. Associations were checked among all the variables of this study including knowledge, attitude, practice, years of practice in physiotherapy and area of specialization of physiotherapists. Participants were selected by non-probability convent sampling technique. Pre tested and semi structured questionnaire was used a data collection tool. **Statistical Analysis:** After the descriptive statistical analysis, Chi Square test for association and ANOVA was applied for comparison respectively through SPSS version 24. All results were calculated at 95% confidence interval.

RESULTS

Out of total (n=196), 182(92.90%) participants had age between 25-30 years and females were more 138(70.40), mostly participants 183(93.40) had 5-10 years practical experience and many participants had specialization in orthopedic, MSK, women health, peds and Geriatrics shown in **Table 1**.

A sample of 196 physiotherapists was selected and data was collected through a questionnaire included demographics variables, knowledge, Attitude and Practice related items. Distribution of knowledge, attitude and practice of physiotherapists related to ergonomic principles during physiotherapy practice were shown in **Table 2**. Results showed that 94(48%) knowledge level, 100(51%) positive or good attitude whereas in comparison only 81(41.30) participants were used ergonomic principles during physiotherapy practice that is shown in **Table 2**.

Table 3. Shown relationship among knowledge, attitude and practice that indicated that there was positive relation that was statistically significant difference with p-value <0.05 among knowledge, attitude and practice. It implies that knowledge impacted on attitude and practice as well as attitude on practice.

Table 4. Showed comparison of knowledge, attitude and practice with years of practical experience that indicates the statistically significant difference with p-value <0.005 in only knowledge and years of practical experience.

Table 1. Descriptive analysis of participants

Variables	Categories	n(%)
Age of Participants	25-30	182(92.90)
	30-35	14(7.10)
Sex	Female	138 (70.40)
	Male	58(29.60)
Years of Practice	5-10	183(93.40)
	10-15	10(5.10)
	>15	3(1.50)
Area of Specialization	Orthopedic, MSK, Women Health, Peads, Geriatrics	145(74.00)
	Cardiology, Neurology	22(11.20)
	Sports PT, Ergonomic and Occupational Health, Community PT	29(14.80)
Total		196(100)

Table 2: Frequency distribution for knowledge, attitude and practice of physiotherapists related to ergonomic principles during physiotherapy practice

Categories	Knowledge	Attitude	Practice
	No. (%)		
Good	94 (48)	100 (51)	81 (41.30)
Average	56 (28.60)	59 (30.10)	79 (40.30)
Poor	46 (23.50)	37 (18.90)	36 (18.40)
Total	196 (100)		

Table 3: Relationship among knowledge, attitude and practice

Variable	Chi-square	Spearman Correlation	P-value
Knowledge and attitude	10.398	0.069	0.034*
Knowledge and practice	15.27	0.068	0.004*
Attitude and practice	11.49	0.07	0.022*

“*” indicates the statistical significant difference

Table 4: Comparison between years of practice and knowledge attitude and practice.

		Sum of Squares	df	Mean Square	F	P value
Total knowledge	Between Groups	177.172	2	88.586	4.218	.016*
	Within Groups	4052.951	193	21		
	Total	4230.122	195			
Total attitude	Between Groups	1.57	2	0.785	0.271	0.763
	Within Groups	558.43	193	2.893		
	Total	560	195			
Total practice	Between Groups	3.131	2	1.566	0.082	0.921
	Within Groups	3688.313	193	19.11		
	Total	3691.444	195			

*indicates statistically significant value

Table 5: Association between Year of Practice and Knowledge.

Dependent Variable	Years of Practice	Years of Practice	Mean Difference	p-value	95% confidence interval	
	(I)	(J)	(I-J)		Lower Bound	Upper Bound
Total Knowledge Tukey HSD	1 - 5	6-10	-1.98361	0.379	-5.4986	1.5314
		11-15	-6.98361*	.026*	-13.284	-0.6835

*indicates statistically significant value

Table 5. demonstrate the comparison of the Years of physiotherapy practice with knowledge of the ergonomics. It shows that there is only a significant difference for knowledge and the year of physiotherapy practice of 11-15 with 1-5 years of p-value 0.026.

DISCUSSION

This survey investigated at how much physiotherapists in the cities of Gujranwala and Lahore have knowledge about ergonomic principles and how much is their practice and what kind of attitude they have about it. Out of 196 physiotherapists, 94 (47.96%) had very good knowledge, and 100 (51%) had a good attitude toward ergonomics, but only 81 (41.3%) were practicing in the field. It is consistent from the earlier studies that the majority of Nigerian physiotherapists (95.9%) had good knowledge of ergonomics in patient handling, while only (48.6%) had practice¹⁴. But in a study of nurses grasp of ergonomic principles was moderate, and they received low and weak scores for their understanding of working circumstances and occupational injuries¹⁵.

A research that examined the ergonomics knowledge of all physiotherapists employed in Shiraz hospitals in 2015¹⁶ resulted that they have good knowledge of ergonomics. The findings demonstrate that greater ergonomics knowledge reduces risky positions among professionals¹⁷. Also a study evaluated that those students who had poor knowledge of ergonomics are more prone to develop CVS (computer vision syndrome)¹⁸

Our findings are consistent with research¹⁹, who surveyed physiotherapists employed by several physical therapy departments and centers in Izmir. Also a study showed that the ergonomic

awareness training programs should be implemented. Increasing the education professionals can be protected against symptoms that could cause occupational damage²⁰. A research²¹ found that the subjects taught in Australia's entry level physiotherapy training programs includes patient-handling and therapist safety. Due to a theory and practice gap in manual-handling procedures among physiotherapists of Nigeria, this study found a significant prevalence of WRMSDs. Nevertheless, the majority (72.4%) knew the basics of manual handling²².

CONCLUSION

It was concluded on the basis of findings that knowledge, attitude and practice are positively correlated with each other. A good level of knowledge was found and positive attitude related to ergonomics that had specialization in Neurology and Cardiology however very little practice of ergonomic principles during physiotherapy practice. Practical implementation is needed to show the positive attitude related to ergonomic principles during practice. Ergonomic education and awareness should be given in the institutes and trainings are also required.

CONFLICT DECLARATION: No conflict

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