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Awareness of Knowledge, Attitude and Practice Towards Ergonomics Hazards in Physiotherapy Students

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ABSTRACT

BACKGROUND AND NEED OF RESEARCH: Ergonomic posture can be defined as neutral positions of the body that is aligned and balanced while either sitting or standing, placing minimal stress on the body and keeping joints aligned. However, MSD cases are the most common health problem among physiotherapists. In workplace, when body is stressed by an awkward posture, extreme temperature, or repeated movement, the musculoskeletal system can be affected. Hence ergonomics play major role in reducing these work-related injuries or illness like computer vision syndrome, neck and back pain, and carpal tunnel syndrome etc.
AIMS AND OBJECTIVE: This study aims to know the Awareness of Knowledge, Attitude and Practice towards Ergonomics hazards in physiotherapy students
METHOD: A link of an online self-questionnaire was sent to physiotherapy students. The questionnaires included questions about Awareness of knowledge, Attitude and Practice towards Ergonomics Hazards questionnaire.
RESULTS: The result was carried out by using Microsoft excel (2007). Results showed that out of 103 sample size, there is positive awareness of Knowledge towards ergonomic hazards in physiotherapy students having score of 57%. 76% students had awareness of attitude towards ergonomics. 61% students had awareness of practice towards ergonomics.
CONCLUSION: This study concluded that there is good Awareness of Knowledge, Attitude and Practice towards Ergonomics hazards in physiotherapy students

Keywords: Knowledge, Attitude, Practice, Ergonomics Hazards

INTRODUCTION

The International Ergonomics Association defines ergonomics as the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and methods to design to optimize human well-being and overall system performance.[1]

Ergonomics is a scientific discipline focused on understanding human interactions with systems and applying this knowledge to improve well-being and performance. It is essential in various sectors, including healthcare, where it helps eliminate workplace stressors and prevent negative health effects. The primary goal of modern ergonomics is to optimize both human well-

being and system performance by designing work environments that prioritize safety and health. The International Ergonomics Association defines ergonomics as a profession that applies theory, principles, and methods to enhance human interactions with systems. [2,3,4]

Work-related musculoskeletal disorders (WMSDs) are highly prevalent among physiotherapists, with a 12-month prevalence estimated at 58-91%. These disorders are mainly caused by the physically demanding nature of the profession, including repetitive movements, lifting heavy patients, manual handling, and maintaining awkward or prolonged postures.

The most commonly affected areas are the lower back, neck, upper back, and thumb. Glover et al. reported that 42% of musculoskeletal symptoms persisted for more than three days within the past year. Given the physical demands of the job, it is crucial for physiotherapists to maintain their own safety and health while also ensuring the well-being of their patients.

Physiotherapists play a vital role in advocating for proper body mechanics and posture, both for their patients and themselves. Manual handling tasks, such as lifting, pushing, pulling, and carrying, can lead to WMSDs, which affect muscles, bones, and joints, causing pain in areas like the elbow, wrist, neck, and back. Therefore, maintaining physical fitness and adhering to safe practices is essential to reduce the risk of injury and enhance both personal health and patient care [5]

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 job[6] Lack of consideration for human factors and ergonomics (HFE) in workplace design is linked to a variety of patient safety accidents.[7] 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 surroundings. Professionals are put under a great deal of physical strain and can easily lift, move, and reposition patients manually without being able to do so. Hence it is proved that work situation and environment both have an impact on WRMDs. Popular enlightenment associate's ergonomics with desks and chairs, and the two fields do overlap when it comes to postural and other musculoskeletal issues. The ergonomic risk factors include long workdays, forceful, repetitive tasks, and prolonged, unsupported standing.[5]

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.

MATERIALS & METHODS

This observational study aimed to assess the Knowledge, Attitudes, and Practice (KAP) toward ergonomic hazards among physiotherapy students. The survey included 103 undergraduate physiotherapy students enrolled in a recognized institution. Data were collected using an online, self-administered questionnaire distributed via Google Forms. The Knowledge, Attitudes, and Practice toward Ergonomic Hazards Questionnaire was adapted from previous studies and was semi-structured, consisting of multiple-choice questions (MCQs) to evaluate the students' knowledge, attitudes, and practices regarding ergonomic hazards.

The questionnaire was divided into four sections:

- **Section A**: Collected socio-demographic data, including name, age, sex, and email address.
- **Section B**: Consisted of 10 questions assessing the students' knowledge of

ergonomic hazards. Each question in this section had specific response options tailored to evaluate the students' understanding of ergonomic concepts and hazards.

- **Section C**: Included 16 questions to evaluate the students' attitudes toward ergonomics, with response options being: "Strongly Agree," "Agree," "Neutral," "Disagree," and "Strongly Disagree."
- **Section D**: Consisted of 5 questions regarding the students' practices related to ergonomics, with response options being: "Yes," "No," and "Neutral."[8]

Inclusion criteria: The study included college-going undergraduate physiotherapy students aged between 21 to 25 years, of both male and female genders.

Exclusion criteria: Physiotherapy teachers, clinicians, and individuals outside the specified age group or academic status were excluded from the study.

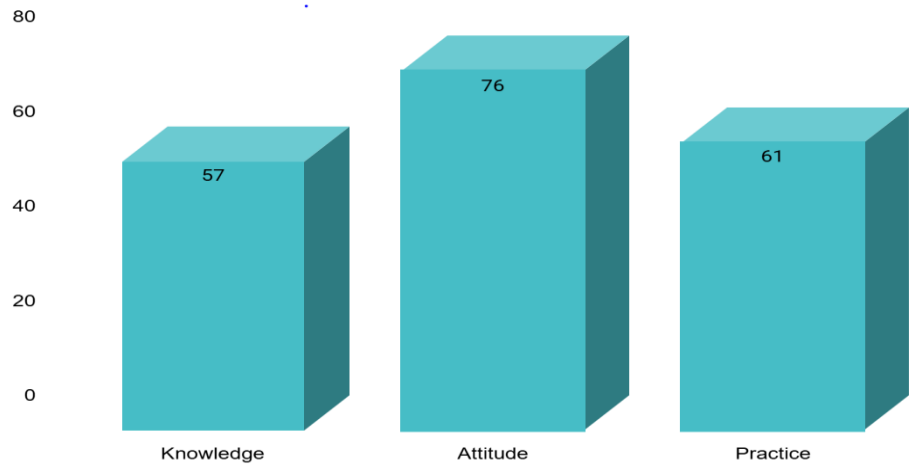
Participation in the survey was voluntary, and informed consent was obtained from all participants before they completed the questionnaire. Participants were categorized based on their year of study, and associations between socio-demographic factors, knowledge, attitude, and practice were analyzed. Descriptive statistics were used to assess the overall awareness, attitudes, and practices, and comparisons were made across different years of study. Ethical approval was obtained to ensure the confidentiality and anonymity of participants' responses. The collected data were analyzed using Microsoft Excel.[8]

STATISTICAL ANALYSIS

Statistical analysis was performed using Microsoft Excel 2007, and the results were represented in the form of tables. An online survey was conducted for the study. Students completed 10 questions related to knowledge, 16 questions on attitude, and 5 questions on practice as part of the Knowledge, Attitudes, and Practice toward Ergonomic Hazards Questionnaire.

RESULT

The data collected from 103 undergraduate physiotherapy students were analyzed using Microsoft Excel 2007. The results showed that 57% of the students had a positive level of knowledge regarding ergonomic hazards, indicating a moderate understanding of key ergonomic concepts. A higher percentage, 76%, demonstrated a positive attitude, recognizing the importance of ergonomics in physiotherapy practice and injury prevention. In terms of practice, 61% of students reported applying ergonomic principles in their academic or clinical routines, such as maintaining proper posture and using correct body mechanics. These findings suggest a good overall awareness, though there remains a noticeable gap between knowledge and consistent practical application.



DISCUSSION

This study was conducted to evaluate the knowledge, attitudes, and practices (KAP) related to ergonomic hazards among undergraduate physiotherapy students. Based on the responses collected from 103 participants, the results revealed that 57% of students demonstrated a positive level of knowledge regarding ergonomic hazards. Furthermore, 76% of students exhibited a positive attitude, while 61% reported engaging in good ergonomic practices.

These findings suggest that while more than half of the students possess an acceptable level of knowledge, a significantly higher percentage have developed a favorable attitude toward ergonomics. This indicates that students recognize the importance of ergonomics in their professional development and daily clinical activities. Similar findings were reported in studies where physiotherapy students showed positive attitudes despite varying levels of knowledge and practice.[9]

However, the gap between knowledge and practice highlights a need for strengthening the practical application of ergonomic principles during training. This pattern has been observed in prior research, which found that although students and healthcare professionals had theoretical knowledge, its translation into clinical practice was often limited due to lack of hands-on training.[10]

Although over half of the students are practicing ergonomics to some extent, the lower percentage compared to attitude suggests potential barriers to implementation. These may include limited clinical exposure, lack of supervised ergonomic training, or insufficient reinforcement of ergonomic techniques during practical sessions.[11]

The results also emphasize the value of incorporating more structured and applied ergonomics education in the physiotherapy curriculum. Practical workshops, supervised demonstrations, and integration of ergonomics into clinical assessments have been shown to enhance both awareness and routine practice.[12]

Overall, the findings of this study highlight that while the foundation of ergonomic awareness exists among physiotherapy students, greater emphasis on hands-on practice and reinforcement is essential to bridge the gap between knowledge and consistent application.

CONCLUSION

This study found that physiotherapy students have good awareness and a positive attitude toward ergonomic hazards, but fewer students regularly apply ergonomic practices. While the knowledge and attitude levels are encouraging, more focus is needed on practical training. Adding hands-on sessions in the curriculum can help students better use ergonomics in real-life situations and prevent future work-related injuries.

Declaration by Authors

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