Pain Knowledge and Its Association with Physical Activity and Cervical Proprioception in Physiotherapy Students with Neck Pain: A Preliminary Study

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Summary

The aim of this preliminary study was to investigate the relationship between pain intensity, pain knowledge, physical activity, and cervical proprioception in physiotherapy students with neck pain. Thirty students with neck pain, scoring ≥3 on the Numerical Pain Rating Scale, were included. Pain intensity, pain knowledge, physical activity levels, and cervical proprioception were assessed. The results showed significant relationships between pain intensity, pain knowledge, physical activity, and cervical proprioception. Students with higher pain knowledge demonstrated better cervical proprioception. Additionally, physically active students demonstrated improved proprioceptive control in cervical extension. These findings highlight the importance of pain neurophysiology education in physiotherapy training. Future studies with larger samples are recommended to validate these findings.

Introduction

Neck pain is a common musculoskeletal problem among university students, often associated with prolonged sitting and postural imbalances[1]. Pain knowledge plays a crucial role in understanding and managing musculoskeletal health. However, the relationship between pain knowledge, physical activity, and cervical proprioception remains unclear. This study aims to examine the correlation between these factors in physiotherapy students with neck pain. The findings may highlight the importance of pain neuroscience education in physiotherapy training.

Methods

This preliminary study was conducted with 30 students from the Physiotherapy and Rehabilitation Department at Karabuk University. Pain intensity was assessed using the Numerical Pain Rating Scale (NPRS), pain knowledge with the Revised Neurophysiology of Pain Questionnaire (rNPQ) and the Knowledge and Attitudes of Pain (KNAP). Physical activity level was measured via the IPAQ-Short Form, and cervical proprioception using the Cervical Range of Motion (CROM) instrument. Spearman correlation test was used for statistical analysis.

Results and Discussion

A significant correlation was found between rNPQ and class (r=0.368*, p=0.046), suggesting that senior students had greater pain knowledge. Neck pain negatively correlated with KNAP (r=-0.489**, p=0.006), indicating that better pain attitudes were associated with lower pain intensity. rNPQ and KNAP showed a positive correlation (r=0.391*, p=0.033), linking higher pain knowledge to more positive pain attitudes. Cervical proprioception in flexion (r=-0.418*, p=0.021) and extension (r=-0.435*, p=0.016) correlated with pain knowledge, suggesting better awareness with higher knowledge. Physical activity negatively correlated with cervical proprioception in extension (r=-0.368*, p=0.045), implying improved proprioceptive control in active individuals.

Conclusions

These findings highlight the importance of pain neurophysiology education in physiotherapy curricula and suggest that increased pain knowledge may contribute to better pain management and motor control. Future research with larger samples is recommended to validate these findings.

References

[1] Caromano, F. A., de Amorim, C. A. P., de Fátima Rebelo, C., Contesini, A. M., Fávero, F. M., Frutuoso, J. R. C., ... & Kawai, M. C. V. (2015). Prolonged sitting and physical discomfort in university students. *CEP*, ***5360*****(000)**.

Table 1: Correlation Between Pain Intensity, Knowledge and Attitudes of Pain, Physical Activity, and Cervical Proprioception

Variable 1	Variable 2	r	p
rNPQ	Class	0.368*	0.046
NPRS	KNAP	0.489**	0.006
rNPQ	KNAP	0.391*	0.033
KNAP	Cervical Proprioception (Flexion)	-0.418*	0.021
KNAP	Cervical Proprioception (Extension)	-0.435*	0.016
IPAQ-Short Form	Cervical Proprioception (Extension)	-0.368*	0.045