

Scholarly Article Critique

Student Name: Kelsey Willms

Case & Diagnosis: Pod 7: Chronic Upper Back and Neck Pain

Title of Article: Training Mode-Dependent Changes in Motor Performance in Neck Pain

1. Article title information.

O'Leary, S., Jull, G., Kim, M., Uthairkhum, S. & Vincenzino, B. (2012). Training mode-dependent changes in motor performance in neck pain. *Archives of Physical Medicine and Rehabilitation*, 93, 1225-1233.

2. Describe how this article is pertinent for your topic. Does it provide proof of a clinical concept? Does it explain a procedure that is needed for your topic? What are the implications for your topic?

This article is pertinent for my topic because it demonstrates that doing certain exercises to promote cervical motor performance will also improve the amount of pain and disability that individuals experience with upper neck pain. The implications for my topic are that individuals with upper neck pain should do exercises in order to improve the pain that they experience. The clinical concept that it provides proof for is that improvements in cervical motor performance are dependent on the type of exercise that is performed. Motor performance is the topic I examined in relation to upper neck pain; this article measures and increases motor performance, which relates very well to the topic.

Write a précis of the article, including:

a. Purpose of the study

The purpose of this study was to determine whether changes in cervical motor performance in patients with chronic mechanical neck pain is dependent on the type of exercise demanded of the patient and whether the types of exercises examined decrease neck pain. The three different types of exercises that were examined are endurance training, coordination training and mobility training.

b. Research design of the study

The design of the research study is a randomized control trial, where they compared the three different types of exercise programs on cervical motor performance and experience of neck pain at two different time periods.

c.Data collection and analysis

Data collection in this particular study was performed by obtaining group means of the three exercise groups on the measures of motor performance and disability and pain measures. Group means were established at three time points; baseline, 10 weeks and 26 weeks. The analysis was performed by comparing the motor performance and disability and pain group means with a linear mixed model to the three different data collection times and between the three different exercise treatments.

d.Outcomes of the study

The outcome of the study supported the researcher's hypothesis in that changes in cervical motor performance in patients with mechanical neck pain are specific to the type of exercise performed. Additionally, only small improvements in the types of cervical motor performance that the exercise did not address were seen. More specifically, the endurance trained group had much greater gains in endurance than either of the two groups, with some gains in strength but no gains in coordination. The participants in the coordination exercise group had much greater improvements in coordination compared to the other two groups. There was no difference between any of the groups for the mobility measure, which is likely due to the fact that only small deficits were seen at baseline for this measure. Additionally, all three groups that participated in the different types of exercises experienced the same improvements in pain and disability.

e.Did the author explain why the work was important to, in relation to the work of other researchers?

The findings of this study are in agreement with other studies that conclude neuronal, functional and muscle changes in participants are dependent on the type of exercise performed.

f. What are the conclusions?

Interesting to note is that all three groups had similar improvements in both the pain and disability measure. However, at the 10 week measure, the coordination exercise group reported greater improvements of pain and disability than the other two groups, but not at any other measure. Therefore, it is important for people who have upper neck pain to do exercises in order to decrease the pain they experience.

In light of these outcomes, it is important that clinicians working with patients with mechanical neck pain do not assume that one mode of exercise will address all potential motor impairments in these patients.

g. If you found issues with the article, explain what your concerns are and how that will affect your reliance in the article as a source of good evidence for your topic.

A problem that I have with this article is that their conclusions of the different exercise groups' impact on pain and disability must be used with caution. Their sample included participants with only mild neck pain in order so that the exercise programs would not aggravate their pain and consequently lose participants due to drop out. This is an issue in relation to our topic as many people, as well as our case subject experience more than just mild neck pain.

An additional issue I have with this study is that the exercises were not performed under supervision. Therefore, it is possible that the participants did not always complete the exercises the amount of time required or they may not have done them all correctly. This could impact the results that were found on the cervical motor performance measures and the measures of pain and disability