

How Winback therapy application changes trapezius pain and physiological characteristics in work-related musculoskeletal disorders



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Purpose

The purpose of this study was to find out how trapezius pain and physiological characteristics change when Winback therapy is applied in cases of work-related musculoskeletal disorder (WMSD).

Methods

Subjects

The study included 30 subjects, each of whom was randomly assigned to either the experimental (Winback therapy) group (EG) or the control (instrument assisted soft tissue mobilization (IASTM)) group (CG).

Measurement

Before the intervention, participants in both the EG and CG underwent tests of their trapezius muscle tone (MT), muscle stiffness (MS), pressure pain threshold (PPT), and VAS, and the same tests were conducted after the intervention.

Winback therapy

This therapy was performed for 15 minutes. For the first 7 minutes, the capacity electric transfer (CET) mode (figure 1) was applied to relax tense superficial muscles through heat transfer. For the remaining 8 minutes, the resistive electric transfer (RET) mode (figure 2) was applied to transfer heat to the deep tissues.



Figure 1. capacity electric transfer (CET) therapy



Figure 2. resistive electric transfer (RET) therapy

Statistical Analysis

The data obtained from the study were analyzed using SPSS 22.0 software for the Windows operating system. A paired t-test was used to compare the difference in dependent variables before and after intervention in each group. An independent t-test was used to determine the differences between the groups for each variable for each measured test. The statistical level of significance α was set at 0.05.

Results

All 30 study participants were females. Their mean age was 22.06 years, their mean height was 157.38 cm, and their mean weight was 60.23 kg. There was a statistically significant difference in MT between the groups ($p < 0.001$). After the intervention, the EG's value changed by $1.92 \pm .98$, and the CG's by $.57 \pm .54$. There was also a statistically significant difference in PPT between the groups ($p < 0.001$). After the intervention, the EG's value changed by 16.81 ± 9.39 , and the CG's by 2.59 ± 2.57 . In addition, there was a statistically significant difference in MS between the groups ($p < 0.001$). After the intervention, the EG's value changed by 40.01 ± 18.87 , and the CG's by 11.66 ± 17.67 . However, there was no significant difference in VAS between the groups ($p = 0.508$). After the intervention, the EG's value changed by $2.73 \pm .79$, and the CG's by $2.53 \pm .83$ (Table 1).

	Experimental group	Control group	t	P
Muscle tone	1.92±.98	0.57±.54	4.64	<.001*
Muscle stiffness	40.01±18.87	11.66±17.67	4.24	<.001*
Pressure pain threshold	16.81±9.39	2.59±2.57	5.65	<.001*
VAS	2.73±.79	2.53±.83	.67	.508

Table 1. The comparison of all variables between groups

Conclusion

This study investigated the effects of Winback therapy on trapezius muscle tone, muscle stiffness, pressure pain threshold, and pain in cases of WMSD. Winback therapy decreased muscle tone and stiffness, increased pressure pain threshold, and reduced pain as much as the IASTM technique. The results of this study showed that Winback therapy effectively decreases pain and improves the physiological characteristics of the trapezius in cases of WMSD. We propose a future study to investigate the long-term effects of Winback therapy on the trapezius in cases of WMSDs using a larger sample size and a longer study period.