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ORIGINAL RESEARCH

COMPARISON OF VIDEO-GUIDED, LIVE INSTRUCTED, AND SELF-GUIDED FOAM ROLL INTERVENTIONS ON KNEE JOINT RANGE OF MOTION AND PRESSURE PAIN THRESHOLD: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Background: The use of foam rollers to provide tissue massage is a commonly used intervention by rehabilitation professionals for their patients and clients. Currently, there is no consensus on the optimal foam rolling treatment approach. Of particular interest are the effects of different instructional methods of foam rolling, as individuals ultimately perform these interventions independently outside of formal care. Finding the optimal instructional method may help improve the individual's understanding of the technique, allowing for a safe and effective intervention.

Purpose: The purpose of this study was to compare the effects of video-guided, live instructed, and self-guided foam roll interventions on knee flexion Range of Motion (ROM) and pressure pain thresholds.

Methods: Forty-five healthy adults were recruited and randomly allocated to one of three intervention groups: video-guided, live-instructed, and self-guided. Each foam roll intervention lasted a total of 2 minutes. Dependent variables included knee flexion ROM and pressure pain threshold of the left quadriceps. Statistical analysis included subject demographic calculations and appropriate parametric and non-parametric tests to measure changes within and between intervention groups.

Results: Each intervention group showed significant gains in knee flexion ROM ($p \leq 0.003$) and pressure pain thresholds ($p < 0.001$). An approximate 5 degree increase of knee flexion and a 150 kPa increase in pressure pain threshold was observed at the posttest measure for all groups. There was no significant difference ($p = 0.25$) found between intervention groups.

Conclusion: All three foam roll interventions showed short-term increases in knee flexion ROM and pressure pain thresholds. The two instructional methods (video and live instruction) and the self-guided method produced similar outcomes and can be used interchangeably. Individuals can benefit from various types of instruction and in cases of limited resources video may offer an alternative or adjunct to live instruction or an existing self-guided program.

Key Words: exercise instruction, myofascial rolling, perceived pain, muscle soreness, recovery

Level of Evidence: 2c

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