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MASSAGE THERAPY STUDY

Massage therapy plus topical analgesic is more effective than massage alone for hand arthritis pain

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Summary *Methods:* 20 adults were randomly assigned to a massage therapy or a massage therapy plus a topical analgesic application group. Both groups received a weekly massage from a therapist and were taught self-massage (same procedure) to be done by each participant once daily over a four-week period.
Results: The massage plus topical analgesic group as compared to the massage group had greater improvement in hand function as measured by a digital hand exerciser following the first session and across the four-week period. That group also had a greater increase in perceived grip strength and a greater decrease in hand pain, depressed mood and sleep disturbances over the four-week period.

Massage therapy has been effective for several pain syndromes including migraine headaches (Lawle and Cameron, 2006)), lower back pain (Hsieh et al., 2004), fibromyalgia (Kalichman, 2010), neck and shoulder pain (Kong et al., 2013), carpal tunnel syndrome (Elliott and Burkett, 2013), and pain related to upper limb arthritis (Field et al., 2013). The purpose of the current study was to determine whether applying a topical analgesic following massage might be more effective than massage alone in treating pain associated with hand arthritis.

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Introduction

In an earlier study on hand arthritis, massage therapy was noted to reduce pain and enhance function (Field et al., 2007). In that study 22 adults with wrist/hand arthritis were randomly assigned to a massage therapy group or a control group that only received the assessments. The massage therapy group received massage on their affected wrist and hand once per week for a 4-week period. They were also taught to conduct a self-massage using the same protocol but to be done on those days they did not receive a massage by a therapist. The massage therapy group as compared to the control group had less pain and greater grip strength after their first and last sessions as well as lower depressed mood and anxiety scores. The increased grip strength could be related to massage therapy increasing muscle strength. It could also be related to decreased pain. Decreased anxiety and depression are typically associated with the decreased pain that occurs following massage therapy, so those effects were not surprising (see Field et al., 2007a,b for a review).

The massage therapy protocol that was effective in the Field et al. (2007a,b) hand arthritis study was used in the current study. Individuals with hand arthritis pain were randomly assigned to a massage group or a massage group plus a topical analgesic application following the massage to determine any additive effects of the topical analgesic.

Method

Participants

Twenty females with hand arthritis were recruited from a medical school faculty/staff via email announcements, and following informed consent were randomly assigned to a massage alone or a massage plus topical analgesic group. The sample size was determined by a power analysis. The women were on average 47.6 years-old, middle socioeconomic status, and 82% had a college education. Their ethnicity was distributed 48% Hispanic, 28% Black, 12% non-Hispanic white and 12% Asian. Their occupations were distributed 47% administrative, 29% academic, 18% technicians and 6% executives. The groups did not differ on these demographic variables.

Procedure

The participants in both groups were massaged on the affected wrist/hand by a massage therapist once per week for one month. They were also taught the same massage to be done by themselves daily. The participants were called at the end of each week to schedule for the following week and to check on their compliance with the daily massage sessions.

Massage therapy protocol

The 15-min massages were comprised of moderate pressure stroking focused on the fingertips to the elbow (see Table 1 for details of protocol). The massage began with stroking the wrist up to the elbow and back down on each side of the forearm. This was followed by a wringing motion (like milking a cow) that was applied to the same area. Using the thumb and forefinger the therapist then stroked the forearm and hand in a circular or back and forth motion. Finally, the therapist rolled the skin using the thumb and forefinger moving across the hand and up each side of the forearm.

The massage plus topical analgesic group received the same massages but also had a topical analgesic gel consisting of 4% menthol (Biofreeze, Akron, Ohio) applied at the end of the sessions. They were also given packets of the topical analgesic gel to apply at the end of their self-massage sessions.

Both groups were aware of the treatment of the other group insofar as the informed consent covered the random assignment to the different type groups. The demographic questionnaire also requested self-report on the use of any topicals and any other massage or acupuncture treatments.

Pre-post session assessments

Before and after the first and last massage therapy sessions the participants were given the following assessments: 1) Grip strength as measured by a talking digital exerciser (MaxiAids): 2)Perceived grip strength as measured on a 0—10 thermometer-like scale, perceived grip strength being given to check its reliability vis a vis the digital exerciser measure; 3)Perceived pain as measured by the VITAS (a Visual Analog Scale ranging from 0 for no pain to 10 for worst possible pain anchored with 5 faces); 4)Depressed mood as measured by the Profile of Mood States (McNair et al., 1971) which is a 5-point Likert rating scale on how well an adjective describes feelings including helpless and depressed feelings. The scale has adequate internal consistency (r = .95) (McNair et al., 1971); and 5)Sleep disturbances as measured by the Sleep Disturbance Scale which is a 15-item measure rated on a visual analog scale anchored at one end with effective sleep responses (e.g., "Did not awaken", "Had no trouble sleeping") and at the other end with ineffective sleep (e.g. "Had a lot of trouble falling asleep"). The participant placed marks on the answer line (much like a ruler line) at the point that represents last night's sleep from, for example, no trouble sleeping to some trouble sleeping to moderate trouble to great trouble sleeping. This measure was given on the first and last day assessments. Internal consistency for this scale was adequate based on alpha coefficient of .88.

Results

Analyses of variance (group by repeated measures with pre-post massage and beginning-end of treatment days as the repeated measures) were conducted to determine. These ANOVAs were conducted to determine the group differences in the changes that occurred: 1) from pre to post the first day session; 2) from pre to post the last day session; and 3) from pre-session on the first day to pre-session on the last day. Bonferroni t tests were then conducted to determine group by session interaction effects.