Stress is dominant in patients with depression and chronic low back pain. A qualitative study of psychotherapeutic interventions for patients with non-specific low back pain of 3--12 months' duration

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Abstract (provisional)

Background

There is continuing uncertainty in back pain research as to which treatment is best suited to patients with non-specific chronic low back pain (CLBP). In this study, Gestalt therapy and the shock trauma method Somatic Experiencing(R) (SE) were used as interventions in parallel with the usual cross-disciplinary approach. The aim was to investigate how these treatments influence a patient's capacity to cope with CLBP when it is coupled with depression.

Methods

In this qualitative explorative study, a phenomenological--hermeneutic framework was adopted. Patients were recruited on the basis of following criteria: A moderate depression score of 23--30 according to the Beck Depression Inventory Scale and a pain score of 7--10 (Box scale from 0--10) and attendance at five- six psychotherapeutic sessions. Six patients participated in the study. The data was comprised of written field notes from each session, which were subsequently analysed and interpreted at three levels: naive reading, structural analysis and critical interpretation and discussion.

Results

Three areas of focus emerged: the significance of previous experiences, restrictions in everyday life and restoration of inner resources during the therapy period. The study revealed a diversity of psychological stressors that related to loss and sorrow, being let down, violations, traumatic events and reduced functioning, which led to displays of distress, powerlessness, reduced self-worth,

anxiety and discomfort. Overall, the sum of the stressors together with pain and depression were shown to trigger stress symptoms. Stress was down-played in the psychotherapeutic treatment and inner resources were re-established, which manifested as increased relaxation, presence, self-worth, sense of responsibility and happiness. This, in turn, assisted the patients to better manage their CLBP.

Conclusions

CLBP is a stress factor in itself but when coupled with depression, they can be regarded as two symptom complexes that mutually affect each other in negative ways. When pain, stress and depression become overwhelming and there are few internal resources available, stress seems to become prominent. In this study, Gestalt therapy and the SE-method may have helped to lower the six patients' level of stress and restore their own internal resources, thereby increasing their capacity to cope with their CLBP.

Manual therapy followed by specific active exercises versus a placebo followed by specific active exercises on the improvement of functional disability in patients with chronic non specific low back pain: a randomized controlled trial

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Abstract (provisional)

Background

Recent clinical recommendations still propose active exercises (AE) for CNSLBP. However, acceptance of exercises by patients may be limited by pain-related manifestations. Current evidences suggest that manual therapy (MT) induces an immediate analgesic effect through neurophysiologic mechanisms at peripheral, spinal and cortical levels. The aim of this pilot study

was first, to assess whether MT has an immediate analgesic effect, and second, to compare the lasting effect on functional disability of MT plus AE to sham therapy (ST) plus AE.

Methods

Forty-two CNSLBP patients without co-morbidities, randomly distributed into 2 treatment groups, received either spinal manipulation/mobilization (first intervention) plus AE (MT group; n = 22), or detuned ultrasound (first intervention) plus AE (ST group; n = 20). Eight therapeutic sessions were delivered over 4 to 8 weeks. Immediate analgesic effect was obtained by measuring pain intensity (Visual Analogue Scale) before and immediately after the first intervention of each therapeutic session. Pain intensity, disability (Oswestry Disability Index), fear-avoidance beliefs (Fear-Avoidance Beliefs Questionnaire), erector spinae and abdominal muscles endurance (Sorensen and Shirado tests) were assessed before treatment, after the 8th therapeutic session, and at 3- and 6-month follow-ups.

Results

Thirty-seven subjects completed the study. MT intervention induced a better immediate analgesic effect that was independent from the therapeutic session (VAS mean difference between interventions: -0.8; 95% CI: -1.2 to [MINUS SIGN]0.3). Independently from time after treatment, MT + AE induced lower disability (ODI mean group difference: -7.1; 95% CI: -12.8 to [MINUS SIGN]1.5) and a trend to lower pain (VAS mean group difference: -1.2; 95% CI: -2.4 to [MINUS SIGN]0.30). Six months after treatment, Shirado test was better for the MT group (Shirado mean group difference: -61.6; 95% CI: -117.5 to [MINUS SIGN]5.7). Insufficient evidence for group differences was found in remaining outcomes.

Conclusions

This study confirmed the immediate analgesic effect of MT over ST. Followed by specific active exercises, it reduces significantly functional disability and tends to induce a larger decrease in pain intensity, compared to a control group. These results confirm the clinical relevance of MT as an appropriate treatment for CNSLBP. Its neurophysiologic mechanisms at cortical level should be investigated more thoroughly.

Trial registration

Trial registration number: NCT01496144

Evaluation of the iPhone with an acrylic sleeve versus the Scoliometer for rib hump measurement in scoliosis

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Abstract (provisional)

Background

Vertebral rotation found in structural scoliosis contributes to trunkal asymmetry which is commonly measured with a simple Scoliometer device on a patient's thorax in the forward flexed position. The new generation of mobile 'smartphones' have an integrated accelerometer, making accurate angle measurement possible, which provides a potentially useful clinical tool for assessing rib hump deformity. This study aimed to compare rib hump angle measurements performed using a Smartphone and traditional Scoliometer on a set of plaster torsos representing the range of torsional deformities seen in clinical practice.

Methods

Nine observers measured the rib hump found on eight plaster torsos moulded from scoliosis patients with both a Scoliometer and an Apple iPhone on separate occasions. Each observer repeated the measurements at least a week after the original measurements, and were blinded to previous results. Intra-observer reliability and inter-observer reliability were analysed using the method of Bland and Altman and 95% confidence intervals were calculated. The Intra-Class Correlation Coefficients (ICC) were calculated for repeated measurements of each of the eight plaster torso moulds by the nine observers.

Results

Mean absolute difference between pairs of iPhone/Scoliometer measurements was 2.1 degrees, with a small (1 degrees) bias toward higher rib hump angles with the iPhone. 95% confidence intervals for intra-observer variability were +/- 1.8 degrees (Scoliometer) and +/- 3.2 degrees (iPhone). 95% confidence intervals for inter-observer variability were +/- 4.9 degrees (iPhone) and +/- 3.8

degrees (Scoliometer). The measurement errors and confidence intervals found were similar to or better than the range of previously published thoracic rib hump measurement studies.

Conclusions

The iPhone is a clinically equivalent rib hump measurement tool to the Scoliometer in spinal deformity patients. The novel use of plaster torsos as rib hump models avoids the variables of patient fatigue and discomfort, inconsistent positioning and deformity progression using human subjects in a single or multiple measurement sessions.

Predictors of outcome in neck pain patients undergoing chiropractic care: comparison of acute and chronic patients

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Abstract (provisional)

Background

Neck pain is a common complaint in patients presenting for chiropractic treatment. The few studies on predictors for improvement in patients while undergoing treatment identify duration of symptoms, neck stiffness and number of previous episodes as the strong predictor variables. The purpose of this study is to continue the research for predictors of a positive outcome in neck pain patients undergoing chiropractic treatment.

Methods

Acute (< 4 weeks) (n = 274) and chronic (> 3 months) (n = 255) neck pain patients with no chiropractic or manual therapy in the prior 3 months were included. Patients completed the numerical pain rating scale (NRS) and Bournemouth questionnaire (BQ) at baseline prior to treatment. At 1 week, 1 month and 3 months after start of treatment the NRS and BQ were completed along with the Patient Global Impression of Change (PGIC) scale. Demographic information was provided by the clinician. Improvement at each of the follow up points was

categorized using the PGIC. Multivariate regression analyses were done to determine significant independent predictors of improvement.

Results

Baseline mean neck pain and total disability scores were significantly ($p < 0.001$and $p < 0.008$ respectively) higher in acute patients. Both groups reported significant improvement at all data collection time points, but was significantly larger for acute patients. The PGIC score at 1 week (OR = 3.35, 95% CI = 1.13-9.92) and the baseline to 1 month BQ total change score (OR = 1.07, 95% CI = 1.03-1.11) were identified as independent predictors of improvement at 3 months for acute patients. Chronic patients who reported improvement on the PGIC at 1 month were more likely to be improved at 3 months (OR = 6.04, 95% CI = 2.76-13.69). The presence of cervical radiculopathy or dizziness was not predictive of a negative outcome in these patients.

Conclusions

The most consistent predictor of clinically relevant improvement at both 1 and 3 months after the start of chiropractic treatment for both acute and chronic patients is if they report improvement early in the course of treatment. The co-existence of either radiculopathy or dizziness however do not imply poorer prognosis in these patients.

The effect of spinal manipulative therapy on experimentally induced pain: a systematic literature review

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Abstract (provisional)

Background

Although there is evidence that spinal manipulative therapy (SMT) can reduce pain, the mechanisms involved are not well established. There is a need to review the scientific literature to establish the evidence-base for the reduction of pain following SMT.

Objectives

To determine if SMT can reduce experimentally induced pain, and if so, if the effect is only i) at the level of the treated spinal segment, ii) broader but in the same general region as SMT is performed, or iii) systemic.

Design

A systematic critical literature review.

Methods

A systematic search was performed for experimental studies on healthy volunteers and people without chronic syndromes, in which the immediate effect of SMT was tested. Articles selected were reviewed blindly by two authors. A summary quality score was calculated to indicate level of manuscript quality. Outcome was considered positive if the pain-reducing effect was statistically significant. Separate evidence tables were constructed with information relevant to each research question. Results were interpreted taking into account their manuscript quality.

Results

Twenty-two articles were included, describing 43 experiments, primarily on pain (n = 27) or temperature (n = 9). Their quality was generally moderate. A hypoalgesic effect was shown in 19/27 experiments on pressure pain, in 3/9 on pain produced by temperature and in 6/7 tests on pain induced by other measures. Second pain provoked by temperature seems to respond to SMT but not first pain. Most studies revealed a local or regional hypoalgesic effect whereas a systematic effect was unclear. Manipulation of a "restricted motion segment" ("manipulable lesion") seemed not to be essential to analgesia. In relation to outcome, there was no discernible difference between studies with higher vs. lower quality scores.

Conclusions

These results indicate that SMT has a direct local/regional hypoalgesic effect on experimental pain for some types of stimuli. Further research is needed to determine i) if there is also a systemic effect, ii) the exact mechanisms by which SMT attenuates pain, and iii) whether this response is clinically significant.