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Editorial Staff

Palpation for muscular tenderness in the anterior chest wall - an observer reliability study.
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Objective: To assess the interobserver and intraobserver reliability (in terms of day-to-day and hour-to-hour reliability) of palpation for muscular tenderness in the anterior chest wall.

Design: A repeated-measures design was used.

Setting: Department of Nuclear Medicine, Odense University Hospital, Denmark.

Participants: Two experienced chiropractors examined 29 patients and 27 subjects in the interobserver portion of the study; and one of the two chiropractors examined 14 patients and 15 subjects in the intraobserver investigations.

Intervention: Palpation for muscular tenderness was done in 14 predetermined areas of the anterior chest wall with all subjects sitting. Each dimension was rated as absent or present for tenderness or pain for each location. All examinations were carried out according to a standard written procedure.

Results: Based on a pooled analysis of data from palpation of the anterior chest wall, we found kappa values of 0.22 to 0.31 for the interobserver reliability. For the intraobserver reliability, we found kappa values of 0.21 to 0.28 for the day-to-day reliability and 0.44 to 0.49 for the hour-to-hour reliability.

Conclusion: Our results indicated great variations between experienced chiropractors palpating for intercostal tenderness or tenderness in the minor and major pectoral muscles in a population of patients with and without chest pain. This may hamper the ability of clinicians to diagnose and classify the musculoskeletal component of chest pain if based exclusively on palpation of the anterior chest wall.

Key indexing terms: observer variation; reliability; tenderness; chest pain.

Reliability of detection of lumbar lateral shift.

Helen Clare, PT, MAppSc; Roger Adams, PhD; Christopher Maher, PT, PhD

Background and Purpose: The poor reliability of lateral shift detection has been attributed to lack of rater training, biologic variation and test reactivity. This study aimed to remove the potential

confounding arising from biological variation and test reactivity and control the level of rater experience/training in making judgments of lateral shift.

Subjects: 148 raters with three levels of clinical physical therapy experience and training in the McKenzie method participated.

Method: The raters viewed photographic slides of 45 patients with low back pain. Slides were judged for presence and direction of a shift on a numerical scale. Intra-rater reliability was evaluated using the ICC and inter-rater reliability using both the intraclass correlation coefficients (ICC) and Kappa statistics.

Results: Reliability of shift judgments was only moderate for all groups (e.g., ICC [2,1]); values ranged from 0.48 to 0.64.

Conclusion: Lateral shift judgements have only moderate reliability, even when trained raters judge stable stimuli. We propose that the photo model employed can be used to explore the source of error in this process.

Key indexing terms: low back pain; lumbar spine; lateral shift; reliability of testing; McKenzie method.

Subjective and objective numerical outcome measure assessment (SONOMA). A combined outcome measure tool: findings on a study of reliability.

B. Timothy Harcourt, DC; Manel Wijesinha, PhD; Gary Harcourt, DC

Objective: To determine the reliability of a combined tool, namely that of "subjective and objective numerical outcome measure assessment" (SONOMA).

Methods: Testing was conducted limited to patients with neck, midback, or lower back pain, with or without radiculopathy, in an outpatient chiropractic office setting. Test-retest reliability of the objective analysis of SONOMA was carried out on the same day (n = 50), with an interval time period of less than 60 minutes. Between-day reliability of the subjective analysis of SONOMA was carried out with an interval time period of 24 hours (n = 50). Individual and combined parameter reliability was established for the tool.

Results: Short-term objective and between-day subjective reliability coefficients were high. The Pearson correlation coefficient for the combined tool was .96, and the coefficient for the individual parameters ranged from .55 to .93. These correlations were statistically significant, with a "p" value of not more than .0001.

Conclusions: The SONOMA combined numerical outcome measure tool demonstrated a high degree of reliability. This outcome tool measures directly, and therefore reflects, patient pain perception, functional status, and provider-driven objective assessment. We feel this tool provides the unique combination of both subjective and objective functional capacity assessment. It should be valuable for day-to-day practical application and considered for future clinical trials and quality-of-care studies. This combined tool shows promise as having a high degree of reliability and, hence, may demonstrate a comprehensive representation of the patient-clinical picture, particularly in regard to functional capacity assessment.

Key indexing terms: outcome measure; functional capacity assessment.

PulStar differential compliance spinal instrument: a randomized inter- and intra-examiner reliability study.

Robert Leach, DC; Patrick Parker; Paul Veal, DC

Objective: To provide an entry-level, new-technology reliability assessment of the PulStar computer-assisted, differential-compliance spinal instrument.

Subjects: Eighteen college students (nine males and nine females), were recruited by way of announcements and personal contacts.

Methods: Following approval of the consent process by the institutional review board of Mississippi State University, a PulStar Function Recording and Analysis System (PulStarFRAS(tm)) device was evaluated for clinical reliability. Two examiners blinded from data collection used the instrument in random order on individual subjects lying prone with their backs exposed, to administer light impulses (viz. u.9 joules, which produced a 3 lb. to 4 lb. force) at each segmental level throughout the cervical, dorsal, and lumbar spine, using probe tips spaced 3 cm apart, straddling the spinous processes, while a computer recorded the findings (resistance on a scale of 0 to 25.5 lbs. force).

Results: Data were analyzed by Exploratory Data Analysis (EDA) with ANOVA testing, and by use of the Intraclass Correlation Coefficient (ICC). In addition, a means test (ANOVA) was conducted to determine if a trend in variation occurred as a result of repeated light thrusts to the spine, independent of variance explained by different examiners. Reliability for the two practitioners was very high, but not perfect. This was confirmed by ICC statistics demonstrating good-to-excellent reliability for both practitioners (0.89 for the experienced practitioner, 0.78 for the newly trained practitioner). Inter-examiner reliability of PulStar was similarly very high, but not perfect, based on EDA/ANOVA analysis, and good to excellent (ICC = 0.87).

Conclusion: The PulStar mechanical adjusting device set to "analysis" mode appears to have good to excellent reliability when used by either an experienced or novice (but trained) examiner. In addition, as a measure for resistance to a light thrust, or spinal compliance, reliability was similarly good to excellent between the two doctors using the PulStar instrument.

Key indexing terms: reliability; chiropractic; new technology assessment.

What do patients think? Results of a mixed methods pilot study assessing sciatica patients' interpretations of satisfaction and improvement.

Roni Evans DC; Michele Maiers, DC; Gert Bronfort, DC, PhD

Background: Little is known about the issues low back pain patients take into account when deciding their satisfaction with care, the importance placed on such satisfaction, or the factors they consider when assessing their overall improvement.

Objective: The purpose of this study was to explore these issues and assess the feasibility of implementing qualitative research methods within a clinical trial.

Methods: Study participants were volunteers taking part in a randomized clinical pilot study comparing nonsurgical treatments for sciatica. Face-to-face interviews were conducted,

transcribed and analyzed using content analysis.

Results: All 31 individuals who participated in the pilot study were interviewed. When asked which issues they considered when deciding their satisfaction with care, the most frequently identified themes were change in pain, personnel, and the treatment experience. When assessing their overall improvement, all participants considered whether their pain had changed. Severity of pain and quality of life were most commonly cited in response to the question asking participants which outcomes they considered most important.

Conclusion: This study demonstrated that a "mixed methods" approach using qualitative research methods within a clinical trial is not only feasible, but can provide interesting and useful information for trial interpretation and future study design. By providing insight to the multidimensional nature of patients' beliefs and perceptions, this technique may not only shape, but also redefine, the focus of patient-oriented research and health care for low back pain conditions.

Key indexing terms: satisfaction; outcome measures; low back pain; qualitative research.

Chiropractic - primary care, neuromusculoskeletal care or musculoskeletal care? Results of a survey of chiropractic college presidents, chiropractic organization leaders and Connecticut-licensed doctors of chiropractic.

Richard Duenas, DC, DABCN; Gina Carucci, DC; Matthew Funk, DC; Michael Gurney, DC

Background: The Connecticut Chiropractic Association authorized an ad hoc committee to study Connecticut chiropractic scope of practice in January 1999. This committee was chaired by Richard Duenas, DC, and included four other Connecticut-licensed doctors of chiropractic who responded to an appeal to participate.

Objective: Committee members investigated the terms primary care; primary care provider (clinician, physician); neuromusculoskeletal care; neuromusculoskeletal care provider (clinician, physician); musculoskeletal care; and musculoskeletal care provider (clinician, physician); to determine which, if any, apply to the practice of chiropractic.

Data Sources: A literature review was performed with in-depth analysis of the definitions of these terms and an interpretation of Connecticut statutes for chiropractic, comparing the legal description of chiropractic practice to the term definitions. The literature review produced several detailed definitions of primary care and/or primary care provider (i.e., "clinician," "physician"); however no accurate description of neuromusculoskeletal care or musculoskeletal care was found.

Results: Two opinion surveys were conducted: One survey included presidents of accredited chiropractic colleges, as well as leaders of chiropractic organizations throughout the world. The other survey was sent to doctors of chiropractic licensed in Connecticut. Survey topics addressed definitions of primary care and PCP, the formulation of these terms, neuromusculoskeletal care and neuromusculoskeletal care provider, individual rights in selecting a PCP and the types of practitioners considered PCPs. The consensus among chiropractic college presidents, organization leaders and Connecticut-licensed doctors of chiropractic was that the doctor of chiropractic is qualified to provide primary care. Most considered any definition of primary care invalid if the chiropractic profession was not involved in its formulation. The overwhelming majority felt the patient should retain the ultimate choice in determining who should be his or her PCP. Mission

statements of accredited chiropractic colleges were reviewed, paying particular attention to educational goals and professional qualifications of graduates. The committee found these institutions strive to train students in all aspects of primary care.

Conclusions: Upon review of the literature and term definitions, interpretation of the statutes pertaining to chiropractic practice, results of both surveys and review of the chiropractic college mission statements, the committee concluded that the Connecticut-licensed DC, by education, licensure, definition and intra-professional consensus, qualifies as a PCP.

Key indexing terms: chiropractic; musculoskeletal care; primary care.

Chiropractic care of a patient with low back pain associated with subluxations and a Malgaigne-type pelvic fracture.

Joel Alcantara, DC; Gregory Plaughter, DC; Richard Elbert, DC; Bryan Gatterman, DC

Objective: To describe the chiropractic care of a patient with a pelvic ring fracture and concomitant subluxations of multiple segments of the spinal column.

Clinical features: A 23-year-old male, after falling down a flight of stairs, was initially hospitalized for fractures of the pelvis. Five weeks post-hospitalization, the patient initiated chiropractic care with complaints of severe low back pain with lower extremity involvement. He also complained of neck pain and occipital headache. The patient had several positive low back orthopedic tests with bilaterally absent Achilles deep tendon reflexes. The anteroposterior radiographic view revealed ununited fractures at the left superior and inferior pubic ramus, noted as a type I Malgaigne fracture. Subluxations were detected at the left innominate (i.e., fracture-subluxation) and at the patient's lumbar, thoracic and cervical spine.

Intervention and outcome: The patient was cared for with contact-specific, high-velocity, low-amplitude adjustments to sites of vertebral and sacroiliac subluxations. The patient's response to care was positive, receiving great pain relief. Less than three months after initiating care, the patient returned to work on regular duty.

Conclusion: There are indications that patients suffering from the injuries described above may derive benefits from chiropractic care. The practitioner must pay careful attention to issues of biomechanical and vascular stability, and adjustment modifications in these types of patients.

Key indexing terms: chiropractic; Malgaigne fracture; low back pain.

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