Dynamic Chiropractic

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Dynamic Chiropractic Staff

1. Evaluating the Quality of Clinical Practice Guidelines.
Jeffrey Cates,DC; David Young,PhD,DC; David Guerriero,DC; Warren Jahn,DC; Jesse Armine,RN,DC; Alan Korbett,DC,DO; Daniel Bowerman,DC; Robert Porter,MD; Terry Sandman, DC,MPH; and Robert King, DC.

Objective: To review and identify established methods for evaluating the quality of practice guidelines, and to use a selected assessment tool to assess two chiropractic practice guideline documents.

Methods: A search of the medical literature was performed to identify current methods and procedures for practice guideline evaluation. Two chiropractic practice guideline documents, *Vertebral Subluxation in Chiropractic Practice,* produced by the Council on Chiropractic Practice (CCP), and *Guidelines for Chiropractic Quality Assurance and Practice Parameters* (Mercy), were then independently evaluated for validity by 10 appraisers utilizing the identified appraisal tool. The appraisal scores were tabulated and consensus appraisals were generated for the CCP and Mercy guidelines.

Results: *The Appraisal Instrument for Clinical Guidelines* (Cluzeau instrument) was identified as a reliable and valid method of guideline evaluation. Application of this appraisal tool in the assessment of the CCP and the Mercy guidelines resulted in the *Vertebral Subluxation in Chiropractic Practice* produced by the Council on Chiropractic Practice (CCP) scoring notably lower than the *Guidelines for Chiropractic Quality Assurance and Practice Parameters* (Mercy). Based on the results of the guideline appraisals, the *Vertebral Subluxation in Chiropractic Practice* guidelines were not recommended and are not considered suitable for application in chiropractic practice. The *Guidelines for Chiropractic Quality Assurance and Practice Parameters* were recommended for application in chiropractic practice, with the provisions that new scientific data be considered.

Conclusions: The literature reviewed suggests that professional organizations or groups should undertake a critical review of guidelines utilizing available critical guideline appraisal tools. Guideline validity appraisal should be done prior to acceptance by the chiropractic profession. To avoid unwarranted utilization of poorly constructed guidelines, it is strongly recommended that all future guidelines be reviewed for validity and scientific accuracy with the findings published in a medically indexed journal prior to adoption by the chiropractic community.

Key Indexing Terms: appraisal; chiropractic; clinical practice; guidelines; reliability; and validity.

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2. Epilepsy and seizure disorders: A review of literature relative to chiropractic care of children.
Richard Pistolese,DC

Objective: To review currently available literature regarding chiropractic care relative to patients suffering epilepsy, with particular emphasis placed upon those suffering epilepsy as children.

Data Sources: The *Index to Chiropractic Literature* was searched from 1980-1998 using the keywords "epilepsy" and "seizure." MANTIS was also searched from years 1970-2000 using the Medical Subject Heading (MeSH) keywords: chiropractic, epilepsy, seizure, and child/ children. Additionally, a Medline search of the literature using the same subject headings, from 1966-2000 was performed.

Results: The present study reviews 17 reports of epileptic patients receiving chiropractic care. Fourteen of the 17 patients were receiving anti-convulsive medications, which had proven unsuccessful in the management of the condition. Upper cervical care to correct vertebral subluxation was administered to 15 patients, and all reported positive outcomes as a result of chiropractic care.

Conclusions: Chiropractic care may represent a nonpharmaceutical health care approach for pediatric epileptic patients. Current anecdotal evidence suggests that correction of upper cervical vertebral subluxation complex may be most beneficial. It is suggested that chiropractic care be further investigated regarding its role in the overall health care management of pediatric epileptic patients.

Key Indexing Terms: chiropractic; epilepsy; seizure; child /children; pediatrics.

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3. Prevalence of Nonmusculo skeletal Complaints in Chiropractic Practice: Report from a Practice-Based Research Program.
Cheryl Hawk,DC,PhD, Cynthia R. Long, PhD, and Karen Boulangerc.

Objective: To identify patient and practice characteristics that may contribute to people seeking chiropractic care for nonmusculoskeletal complaints.

Design: Cross-sectional study conducted through the methods of practice-based research (PBR).

Setting: Data were collected in 1998-9 in chiropractic offices in the U.S., Canada and Australia, with data managed by the PBR office operating in a chiropractic research center.

Population: New and established patients of all ages who visited the participating offices during a designated data collection week.

Data Analysis: Multiple logistic regression was used to examine factors associated with patients presenting for nonmusculoskeletal chief complaints. Pearson's chi-square was used to examine associations among practice variables and proportion of patients with nonmusculoskeletal chief complaints.

Results: 7,651 patients of 161 DCs in 110 practices in 32 states; two Canadian provinces; two Australian practices were included in totals, but not in the analysis. Nonmusculoskeletal complaints comprised 10.3 percent of chief complaints. Patients under age 14 (adjusted odds ratio [AOR]=6.9, 95-percent confidence interval [CI]=5.2,9.1); female (AOR=1.5, CI=1.3,1.8), presenting in a small town/rural location (AOR=1.9, CI=1.3,2.7); reporting more than one complaint, especially nonmusculoskeletal ones (AOR=4.9, CI=3.9,6.0), having received medical care for their chief complaint (AOR=3.4, CI=2.9,4.1), and having first received chiropractic care prior to 1960 (AOR=1.7, CI=1.1,2.4) were more likely to present with nonmusculoskeletal chief complaints.

Practices with the highest proportion of patients with nonmusculoskeletal chief complaints (>17 percent) were less likely to accept insurance and more likely to be in locations with populations over 100,000. They used the most common chiropractic adjustive techniques less frequently and used more nonadjustive procedures, especially diet/nutrition counseling, nutritional supplementation, herbal preparations, naturopathy, and homeopathy.

Conclusions: Drawing upon practices with the patient and practice characteristics identified in this study in order to conduct outcomes studies on nonmusculoskeletal conditions is a possible direction for future research.

Key indexing terms: chiropractic; practice-based research; visceral disorders.

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4. The Effect of Chiropractic Care on Jet Lag of Finnish Junior Elite Athletes.
William Strauba; Michael Spinoa; Medhat Alattara; Bruce Pflegera; John Downesa; Marco Belizairea; Olli Heinonenb; and Tommi Vasankarib.

Objective: To determine the effect of chiropractic care on jet lag of Finnish junior elite athletes

Subjects: 15 Finnish junior elite athletes.

Methods: Using a table of random numbers, the athletes were assigned, by gender, to one of three groups: chiropractic adjustment, sham adjustment, or control. When needed, the chiropractic adjustment group athletes (n = 5) were adjusted on a daily basis using a toggle/recoil procedure by licensed chiropractors. The sham adjustment group athletes (n = 5) received sham adjustments on a daily basis by licensed chiropractors; the control group athletes (n = 5) were not adjusted or sham adjusted, but participated in all test protocols. Chiropractic, mood (POMS), jet lag, and sleep data were collected daily for 18 consecutive days.

Results: Repeated measures ANOVAs (3 x 2) of total mood disturbance scores and heart rate variables indicated that there were no significant (.05 level) between-group differences. Sleep data were analyzed using a 3 x 2 repeated measures MANOVA. Pillai's trace indicated that there were no between-group differences. Self-assessment of jet lag by participants after traveling to Atlanta and after returning to Finland showed no between-group differences.

Conclusions: It was concluded that chiropractic care did not reduce the effects of jet lag.

Key Indexing Terms: chiropractic; jet lag; mood; sleep.

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5. A Missed Jefferson Fracture in Chiropractic Practice.
Gerritje Regelink,DC, and Annemarie de Zoete,DC.

Objective: To review the case of a missed cervical spine fracture in a patient suffering from neck pain.

Clinical Features: A 21-year-old thatcher (roofer) with neck pain presented to a chiropractic clinic after a fall from a roof four meters high. The hospital x-rays were read as normal. The chiropractor suspected a Jefferson fracture of the atlas after evaluation of the same radiographs.

Intervention and Outcome: The chiropractor retook the AP open-mouth x-ray to confirm the

suspected fracture. The patient was referred for further imaging and underwent neurosurgical treatment after which he recovered well.

Conclusion: Normal radiological reports from the hospital cannot be relied upon for contraindications to manipulative treatment in all instances, as shown in this case of a missed fracture. Therefore the chiropractor should always evaluate radiographs brought to him or her.

Key Indexing Terms: chiropractic; cervical spine; Jefferson fracture; radiography.

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6. An Inquiry into Chiropractors' Intention to Treat Adolescent Idiopathic Scoliosis: a Telephone Survey.
Ronald Feise,DC

Objective: The primary aims of this study are to determine the clinical management approach of practicing chiropractors with adolescent idiopathic scoliosis (AIS) patients, and to measure the response rate of a telephone survey.

Methods: A survey instrument was developed and pre-tested, and a case-specific clinical vignette was generated for a typical 12-year-old female with AIS. The instrument addressed three domains: the specific management of idiopathic scoliosis, elements guiding the general selection of treatment recommendations, and demographics of respondents. The sample frame consisted of 62,000 United States chiropractors, of which 165 were randomly selected for the survey sample. Interviews were conducted by phone using the tested survey instrument.

Results: The response rate was 69 percent (114/165). Of the 51 nonrespondents, 15 did not have a listed business phone number, and 24 were not in active practice. The response rate of those who met the inclusion criteria (practicing chiropractor with a listed phone number) was 90 percent (114/126). The gender, chiropractic college, and years in practice of respondents in this survey were similar to those of respondents in three other national surveys. Overall, the respondents would provide six months of "intensive" chiropractic therapy, then follow the patient for four years (near skeletal maturity). Eighty-two percent of respondents named diversified technique as their primary adjustive treatment; 87 percent would employ exercise, and 30 percent would use electrical muscle stimulation as an adjunct to manual therapy.

Conclusion: The majority of surveyed chiropractors would employ similar methods (frequency and length of treatment, manipulation technique and exercise) in the treatment of AIS patients. A high response rate to a national survey can be achieved employing telephone contact.

Key indexing terms: chiropractic; survey methods; scoliosis.

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7. Intra and Inter-Examiner Reliability for Palpation of the Cranial Rhythmic Impulse at the Head and Sacrum.
Robert Moran,MHSca, and Peter Gibbons,MB,BS,DO,DM-Smedb.

Background: A range of health care practitioners utilizes cranial techniques. Palpation of a cranial rhythmic impulse (CRI) is a fundamental clinical skill used in diagnosis and treatment using these techniques. There has been little research establishing the reliability of CRI rate palpation.

Objective: This study aimed to establish intra and inter-examiner reliability of CRI rate palpation,

and to investigate the "core-link" hypothesis of craniosacral interaction used to explain simultaneous motion at the cranium and sacrum.

Design: Within subjects repeated measures design.

Subjects: Two registered osteopaths with postgraduate training in diagnosis and treatment using cranial techniques palpated 11 normal healthy subjects.

Methods: Examiners simultaneously palpated for the CRI at the head and sacrum of each subject. Examiners indicated the 'full flexion' phase of the CRI by activating silent footswitches that were interfaced with a computer. Subject arousal was monitored using heart rate. Examiners were blind to each other's results and could not communicate during data collection.

Results: Reliability was estimated from calculation of intraclass correlation coefficients (ICC[2,1]). Intra-rater reliability for examiners at either the head or sacrum was fair to good, with significant ICC coefficients ranging from +0.52 to +0.73. Inter-examiner reliability for simultaneous palpation at the head and sacrum was poor to non-existent with ICC coefficients ranging from -0.09 to +0.31. There were significant differences between rates of CRI palpated simultaneously at the head and sacrum.

Discussion and Conclusions: The results fail to support the construct validity of the "core-link" hypothesis, as traditionally held by proponents of craniosacral therapy and osteopathy in the cranial field.

Key Indexing Terms: palpation; reliability; osteopathic manipulation; osteopathy.

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8. Treatment of Cervical Radiculopathy with Flexion Distraction: a Case Presentation.
Ralph Kruse,DC, Frank Im-barlina,DC, and Vincent De Bono, DC.

Objective: To discuss the nonsurgical treatment of a cervical disc herniation utilizing flexion distraction manipulation.

Clinical Features: A case study of cervical disc syndrome with radicular symptoms is presented. Magnetic resonance imaging revealed a large C5/6 disc herniation. Degenerative changes at the affected level were demonstrated on the cervical spine plain film radiographs.

Intervention and Outcome: The patient received treatment in the form of flexion distraction manipulation and adjunctive therapies. A complete resolution of the patients' subjective complaints was achieved.

Conclusion: Flexion distraction has been a technique associated with musculoskeletal conditions of the lumbar spine. Flexion distraction applied to the cervical spine may be an effective therapy in the treatment of cervical disc herniations. While further controlled studies are needed, treatment of cervical disc syndromes with flexion distraction may be a viable form of conservative care

Key Indexing Terms: chiropractic; cervical spine; intervertebral disc hernation.

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9. Ultrasonic Indentation (UI): A procedure for the noninvasive quantification of force-displacement properties of the lumbar spine.

Gregory Kawchuk,DC, O. Rod Fauvel,PhD, and Jan Dmowski Engb.

Background: Alterations in the normal force-displacement (FD) properties of spinal tissues have been associated with specific forms of pathology such as degenerative disc disease. Unfortunately, few current procedures exist which assess spinal FD properties in an accurate, reliable and non-invasive manner. Consequently, the clinical relevance of the relation between spinal disorders and spinal FD properties is not fully understood.

Objective: To investigate the accuracy and reliability of spinal FD measures obtained by a procedure, which employs real-time ultrasonic imaging (ultrasonic indention or UI) during load-controlled external indentation.

Setting: McCaig Centre for Joint Injuries and Arthritis Research, University of Calgary.

Methods: The bench-top accuracy and reliability of UI were assessed by cyclic indentation of a spring-mounted platform. These data were compared to criterion data derived from a materials testing machine. A porcine preparation was then utilized to assess the accuracy of UI-generated estimates of vertebral displacement when compared to a criterion of optically tracked displacement. Additionally, previously unreported parameters relating to indentation accuracy were characterized (frame deflection and off-axis loading).

Results: Reliability of UI ranged between 0.99 and 1.00 (Intra-class Correlation Coefficient). Error in force, displacement and stiffness ranged from 0.81 percent to 13.62 percent over varying experimental conditions.

Conclusion: Ultrasonic indentation is a unique procedure that is capable of assessing, noninvasively, FD properties of spinal tissues including vertebral displacement in the indentation plane. The results of this study suggest that UI is a potentially useful technique for quantifying spinal FD properties in *vivo.*

Key Indexing Terms: ultrasound; spine; stiffness.

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