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2008 Prevalence of Chiropractic Use in the U.S. Adult Population

Marc W. Sodat, MS, et al.

Objective: The purpose of this study was to produce prevalence estimates and identify determinants of variability in [chiropractic use](#) in the U.S. adult population.

Methods: The Medical Expenditure Panel Survey was used to estimate prevalence for the adult population and subpopulations according to several sociodemographic, geographic, and health characteristics. Multivariable logistic regression model was used to explore the effects of the independent predictors on chiropractic use.

Results: The 2008 chiropractic prevalence of use was estimated to be 5.2% (95% confidence interval, 4.7-5.6). The adjusted odds of using chiropractic services were approximately 46% less for Asians, 63% less for Hispanics, and 73% less for blacks compared with whites; 21% less for men than women; and 68% higher for those with arthritis compared with those without. Persons from high-income families have greater odds of using chiropractic services compared with those from middle-income (42%) and low-income (67%) families. There was a significant interaction between Census region and urban-rural location. The results showed the prevalence of chiropractic use to be highest in small metro areas in the Midwest (10.5%) and Northeast (10.4%) as well as micropolitan/noncore areas in the West (10.8%) and Midwest (10.1%).

Conclusions: This study validates previous findings showing the prevalence of use is higher for whites, women, and persons with higher family income or reported arthritis. The results of this study also indicate that chiropractic use varies across the urban-rural landscape depending on the region of the country, suggesting that the effect of geographic location may be more complex than previously reported.

Efficacy of Chiropractic Manual Therapy on Infant Colic

Joyce E. Miller, BS, DC, et al.

Objective: The purpose of this study was to determine the efficacy of chiropractic manual therapy for infants with unexplained crying behavior and if there was any effect of parental reporting bias.

Methods: Infants with unexplained, persistent crying ([infant colic](#)) were recruited between October 2007 and November 2009 at a chiropractic teaching clinic in the United Kingdom. Infants younger than 8 weeks were randomized to one of three groups: (i) infant treated, parent aware; (ii) infant treated, parent unaware; and (iii) infant not treated, parent unaware. The primary outcome was a daily crying diary completed by parents over a period of 10 days. Treatments were pragmatic, individualized to examination findings, and consisted of chiropractic manual therapy of the spine. Analysis of covariance was used to investigate differences between groups.

Results: One hundred four patients were randomized. In parents blinded to treatment allocation, using two or less hours of crying per day to determine a clinically significant improvement in crying time, the increased odds of improvement in treated infants compared with those not receiving treatment were statistically significant at day eight (adjusted odds ratio [OR], 8.1; 95% confidence interval [CI], 1.4-45.0) and at day 10 (adjusted OR, 11.8; 95% CI, 2.1-68.3). The number needed to treat was three. In contrast, the odds of improvement in treated infants were not significantly different in blinded compared with nonblinded parents (adjusted ORs, 0.7 [95% CI, 0.2-2.0] and 0.5 [95% CI, 0.1-1.6] at days 8 and 10, respectively).

Conclusions: In this study, chiropractic manual therapy improved crying behavior in infants with colic. The findings showed that knowledge of treatment by the parent did not appear to contribute to the observed treatment effects in this study. Thus, it is unlikely that observed treatment effect is due to bias on the part of the reporting parent.

Determinants of Variation in Chiropractic Episodes of Care for Adults

Joel M. Stevans, DC, et al.

Objective: The primary aim of this study was to report nationally representative estimates of the visit utilization, per visit expenditures, and total expenditures for chiropractic episodes of care in the U.S. adult population. The secondary aim was to identify clinical, demographic, geographic, and payment factors associated with variation in the levels of utilization and expenditures.

Methods: Data from the 2005-2008 Medical Expenditure Panel Survey were used to construct complete episodes of chiropractic care (n = 1,639) for the civilian, noninstitutionalized adult population. Bivariate descriptive statistics were calculated for visit utilization, per visit expenditures, and total expenditures per episode of care by several clinical, demographic, geographic, and payment variables. Multivariable regression models were used to evaluate the effects of the independent variables on each of the three dependent variables.

Results: The unadjusted mean number of visits per episode was 5.8 (95% confidence interval [CI], 5.3-6.4) and varied significantly by race/ethnicity, perceived mental health, urban-rural location, and source of payment. The mean total expenditures per visit per episode were estimated to be \$69 (95% CI, \$65-\$73). There was variation associated with the census region, urban-rural location, and source of payment variables. Total expenditures for an episode of care were estimated to be \$424 (95% CI, \$371-\$477) with variation according to urban-rural location and source of payment. During 29% of the episodes all expenditures were paid with out-of-pocket funds.

Conclusions: Variation in the utilization and expenditures during chiropractic episodes of care is primarily associated with payment source and geographic factors.

Modulation of Pain-Induced Neuromuscular Trunk Responses by Pain Expectations

Charles Tétreau, MSc, et al.

Purpose: The purpose of this study was to investigate the alteration of pain-induced neuromuscular trunk responses by expectations in healthy volunteers.

Methods: Twenty-three asymptomatic participants performed series of flexion-extension movements in three different experimental conditions: innocuous heat stimulation (control) and noxious heat stimulation associated with expectations of low or high pain intensity. These stimuli were administered by a contact thermode placed over the lumbar region (L4 and L5) to assess the modulation of neuromuscular responses and kinematics during the flexion-extension task. Surface electromyography (EMG) of lumbar erector spinae at L2 and L3 and L4 and L5 as well as lumbopelvic kinematic variables were compared across conditions.

Results: Noxious stimulation significantly altered EMG responses, but only in full trunk flexion. Interestingly, this alteration was significant only for muscles where noxious stimulation was applied (L4 and L5) and not for the other segment (L2 and L3). Conversely, expectations significantly altered EMG activity at L2 and L3, but not at the segment where noxious stimulation was applied.

Conclusion: These results confirm previous findings and indicate that experimental pain can alter neuromuscular responses during a trunk flexion-extension task. Furthermore, this study suggests that expectations can alter some of these alterations. Future studies should determine whether neuromuscular changes induced by expectations may contribute to the transition from acute to chronic low-back pain.

Trigger Points, Pain, Disability and Sleep Quality in Neck Pain Patients

Sonsoles Muñoz-Muñoz, PT, et al.

Objective: The purpose of this study was to investigate the presence of active [myofascial trigger points](#) (MTrPs) in a greater number of muscles than previous studies and the relation between the presence of MTrPs, the intensity of pain, disability, and sleep quality in mechanical neck pain.

Methods: Fifteen patients with mechanical neck pain (80% women) and 12 comparable controls participated. Myofascial trigger points were bilaterally explored in the upper trapezius, splenius capitis, semispinalis capitis, sternocleidomastoid, levator scapulae, and scalene muscles in a blinded design. Myofascial trigger points were considered active if the subject recognized the elicited referred pain as a familiar symptom. Myofascial trigger points were considered latent if the elicited referred pain was not recognized as a symptom. Pain was collected with a numerical pain rate scale (0-10); disability was assessed with Neck Disability Index; and sleep quality, with the Pittsburgh Sleep Quality Index.

Results: Patients exhibited a greater disability and worse sleep quality than controls ($P < .001$). The

Pittsburgh Sleep Quality Index score was associated with the worst intensity of pain ($r = 0.589$; $P = .021$) and disability ($r = 0.552$; $P = .033$). Patients showed a greater ($P = .002$) number of active MTrPs (mean, 2 ± 2) and similar number ($P = .505$) of latent MTrPs (1.6 ± 1.4) than controls (latent MTrPs, 1.3 ± 1.4). No significant association between the number of latent or active MTrPs and pain, disability, or sleep quality was found.

Conclusions: The referred pain elicited by active MTrPs in the neck and shoulder muscles contributed to symptoms in mechanical neck pain. Patients exhibited higher disability and worse sleep quality than controls. Sleep quality was associated with pain intensity and disability. No association between active MTrPs and the intensity of pain, disability, or sleep quality was found.

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