CAA Annual Conference Abstracts

Does an online psychological intervention improve self-efficacy and disability in people also receiving Multimodal Manual Therapy for chronic non-specific low back pain compared to Multimodal Manual Therapy alone?

Petrozzi MJ, Leaver A, Jones MK, Ferreira PH, Rubinstein SM, Mackey MG

Background: Despite extensive research on the management of chronic low back pain (LBP), effective strategies for its prevention and treatment remain elusive [1].

An integrative biopsychosocial treatment approach incorporating cognitive behavioural therapy in managing pain and disability has been advocated [2], but its implementation in primary allied health practices, such as chiropractic, physiotherapy and osteopathic clinics remains challenging in terms of costs, access to and training of allied health providers in these settings.

This study explores patient centred outcomes resulting from the addition of an accessible, free self-directed internet-delivered cognitive behavioural therapy program (MoodGYM) to usual care for the treatment of chronic low back pain [3].

Methods: A randomized controlled trial evaluated the effects of providing chronic LBP patients with a cognitive behavioural therapy program (MoodGYM) and multimodal manual therapy (usual care) compared to usual care alone on patient self-efficacy and disability.

Participants diagnosed with chronic non-specific low back pain at medium risk of ongoing disability were recruited. Participants were randomly allocated into two treatment groups: both groups received up to 12 multimodal manual therapy sessions over a period of 8 weeks; the intervention group were additionally asked to complete five weekly modules of MoodGYM. MoodGYM is a no-cost, easily accessible and ready-to-use psychoeducation tool for improving psychological resilience. Usual care was delivered by experienced chiropractors and physiotherapists across five treatment centres in Australia. MoodGYM was delivered exclusively by self-directed use with weekly telephone reminder.

The primary outcomes – self efficacy and disability – were measured by the Patient Self- Efficacy Questionnaire (PSEQ) and Roland Morris Disability Questionnaire (RMDQ) respectively. Secondary outcomes – pain, catastrophizing, depression, anxiety, stress and work ability – were measured with validated questionnaires. Assessment was conducted at baseline, post-treatment, 26- and 52- weeks by intention to treat using a linear mixed model for each outcome.

Results: There was no statistically significant difference between the two groups for the primary or secondary outcome measures at post treatment, 26 or 52 weeks. Both groups showed similar statistically significant rates of improvement at post treatment for

most outcome measures which were sustained at 26 and 52 weeks ($p < 0.0001$). Although both groups improved significantly on the primary outcomes, we do not know whether this was a treatment effect or natural rate of recovery.

Discussion/ Conclusions: Further research is required to investigate patient acceptability and expectations of using internet-delivered CBT for building self-efficacy in people at risk of ongoing LBP.

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Student perceptions of a clinical placement within a therapeutic community

Cascioli V, Parkin-Smith G, Amorin-Woods LG

Background: Chiropractic programmes adopt service-learning outreach placements to facilitate, among other traits, student communication and interaction skills, social responsibility and a philosophy of caring (1). This study describes the extent to which students believed a service-learning clinical immersion placement met these objectives.

Aims and Objectives: The aim of this study was to assess students' perceptions of the utility of a therapeutic community clinical immersion service-learning outreach placement.
The objectives of the study were:

1. Collect quantitative and qualitative data from student participants;
2. Analyse and evaluate the data with a view to provide insight into the outcomes and results of the study; and
3. Offer general recommendations on future research into delivery of community service placements for chiropractic students

Methods: mixed methods data transformation study (2).

Results: Students (n=42) in the fifth and final year of a five year chiropractic undergraduate program spent at least ten afternoon sessions per trimester at a residential therapeutic community outreach placement. Most of the students (91%) completed the Service Experience Questionnaire (SEQ), a survey instrument consisting of a number of closed-ended items, as well as open-ended qualitative reflections after their experience (3,4). A majority (92%) felt that the experience was educational. This placement also enhanced students' awareness of others in need (92%), that the placement highlighted the importance of respect for all people (95%), empathy for the disadvantaged (84%), and provided them with an opportunity to improve their communication skills (87%).

Discussion/Conclusions: To the authors knowledge this is the first study conducted in Australia to report the perceptions of chiropractic undergraduate students of a therapeutic community clinical immersion placement. These results support the utility of a therapeutic community outreach clinical placement to help meet the educational objectives of the chiropractic undergraduate programme.

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Mechanisms for Reducing Low Back Pain: A mediation analysis of a multifaceted intervention in eldercare workers

Stevens ML, Boyle E, Hartvigsen J, Mansell G, Søgaard K, Jørgensen MB, Holtermann A, Rasmussen CDN

Background: A multifaceted workplace intervention consisting of participatory ergonomics, physical training, and cognitive–behavioural training (CBT) has shown effectiveness for reducing low back pain (LBP); however, the mechanisms of action underlying these intervention components are not well understood. Our aim was to investigate whether changes in fear avoidance beliefs, muscle strength, physical exertion at work or use of assistive devices had an indirect (mediating) effect of these components on LBP outcomes.

Methods: This was a mediation analysis of a cluster-randomised controlled trial of a multifaceted workplace intervention in 420 nurses' aides. Mediation analysis was carried out via structural equation modelling. Potential mediators investigated were: fear avoidance beliefs, measured using two items from the Örebro Musculoskeletal Pain Screening Questionnaire; perceived muscle strength; use of assistive devices at work; and perceived physical exertion at work using a modified Borg CR10. LBP outcomes assessed were: days with LBP, LBP intensity and LBP bothersomeness.

Results: There were no significant indirect effects of the intervention on LBP outcomes. There were significant effects of the intervention on both fear avoidance measures (β=0.63, p=0.039; β=1.03, p=0.003) and the use of assistive devices (β=0.55, p=0.032), but not on perceived muscle strength (β=0.18, p=0.256) or physical exertion (β=0.05, p=0.805). The only potential mediator with a significant effect on LBP outcomes was physical exertion, which had a significant effect on LBP intensity (β=0.14, p=0.008).

Conclusion: A multifaceted intervention consisting of participatory ergonomics, physical training, and CBT was able to change fear avoidance beliefs and use of assistive devices in the workplace; however, these changes did explain the effect of any of the intervention components on LBP outcomes. Further research into other potential mediators, and in other populations, is required.

Is lumbar spinal stiffness, assessed using a novel rolling mechanical device correlated with anthropometric factors in a normal sample of participants?

Pagé I, Breen A, De Carvalho D, Descarreaux M, Funabashi M, Kawchuk G, Swain M, Wong A

Objective: The objective of the current study was to compare the relations between individuals' characteristics and spinal stiffness as measured by three different spinal stiffness testing devices in three separate cross-sectional studies.

Methods: We conducted a secondary analysis of data collected in a cross-sectional study, which assessed a novel rolling mechanical device, VerteTrack (1). Data collection involved an online questionnaire and a physical assessment. The online questionnaire sought information about participant's gender, age, and recent low back pain frequency, intensity, and burden. The physical assessment included free-standing height (cm), seating height (cm), weight (kg), waist circumference (cm), waist posterior-to-anterior diameter (cm) and spinal stiffness measured by VerteTrack, a mechanical indentation device. Independent samples t-test was used to evaluate the relationship between (1) gender and low back pain in the past week, and (2) spinal stiffness at L1, L3 and L5. Correlation coefficients were calculated to quantify the strength of associations between participant characteristics, anthropometrics, and spinal stiffness.

Results: The sample comprised 84 participants (64.3% male). The median age of participants was 23 years (IQR = 3). Low back pain was experienced by 76.2% in the

past week. Mean anthropometric values for the sample were: Free-standing height 171.6±9.5 (cm), seated height 90.8±5.4 (cm), standing-seated height 80.9±5.8 (cm), weight 72±15.8 (kg), waist circumference 84.2±10.4 (cm), waist P-A diameter 18.7±3.4 (cm), BMI 24.3±3.9 (kg/m2), and waist-to-height ratio 0.4913±0.055. Mean terminal stiffness at L5, L3 and L1 were 1.003 N/mm (SD = 0.152), 1.019 N/mm (SD) = 0.157), and 1.039 N/mm (SD = 0.171), respectively. Mean global stiffness at L5, L3 and L1 were 1.156 N/mm (SD = 0.203), 1.140 N/mm (SD = 0.214), and 1.139 N/mm (SD = 0.220), respectively. There was no association between gender, ≥1 day of low back pain in the past week, and spinal stiffness as measured via the VerteTrack system. In general, none of the anthropometric factors were associated with either terminal stiffness or global stiffness, with the exception for BMI and waist-to-height ratio, and stiffness at the level of L5.

Discussion/Conclusion: Males and participants with low back pain in the last week obtain higher spinal stiffness values than females and people without low back pain, respectively. However, these differences are not statistically significant. In general, individual characteristics and anthropometric factors are not associated with spinal stiffness in a normal population. The meaningfulness of correlations at L5 are currently unclear and remain an area for future research.

References

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Appropriateness of imaging for low back pain: a systematic review and meta-analysis

Jenkins H, Hancock M, Downie A, Moloney N, Maher C, John Magnussen J

Objectives: To determine the proportion of inappropriate imaging for low back pain (LBP), and the various criteria used to assess imaging appropriateness.
Methods: MEDLINE, EMBASE, and CINAHL were searched from 1995 to 2016 and studies screened for inclusion by two independent reviewers. Cohort, cross-sectional, and intervention studies assessing the appropriateness of imaging for LBP were included. Two independent reviewers extracted data and assessed risk of bias. Raw data on the rates of inappropriate imaging decisions and the criteria used to assess appropriateness were extracted. Meta-analysis was performed for studies with homogeneity in: summary outcome measures; and criteria used to assess imaging appropriateness.

Results: After duplicate removal, 4473 studies were screened, resulting in 28 included studies. Criteria used to determine imaging appropriateness were varied but could largely be divided into four groups, with inappropriate imaging indicated by: 1) imaging performed in the first four to six weeks in patients with non-specific LBP; 2) the

presence of no red flag symptoms (including age greater than 50); 3) the presence of no red flag symptoms (including age greater than 70); and 4) no clinical suspicion of pathology or trauma. In studies assessing LBP patients presenting for care but not meeting imaging appropriateness criteria, the pooled proportion of inappropriate referral for imaging ranged from 7.0% (95%CI:1.8,2.3) to 32.6% (95%CI:22.3,45.0). In studies assessing LBP patients already referred for imaging, the pooled proportion of inappropriate referrals ranged from 26.4% (95%CI:17.6,37.5) to 38.8% (95%CI:28.9,49.7). In studies assessing LBP patients presenting for care and meeting criteria for imaging referral, the pooled proportion of inappropriate non-referral for imaging ranged from 52.8% (95%CI:23.9,79.9) to 75.8% (95%CI:66.2,83.4). Discussion and Conclusions: This review highlights two different problems in imaging for LBP: failing to refer when imaging is indicated, and referring when imaging is not indicated. Rates of inappropriate imaging decisions varied depending on the criteria for determining imaging appropriateness. Criteria assessing for the presence of red flag symptoms were associated with lower levels of inappropriate imaging referral, and higher levels of inappropriate non-referral for imaging when compared to other criteria. The results of this review indicate that inappropriate imaging decisions occur commonly in the management of LBP, with insufficient adherence to current guidelines. Decreasing the rate of inappropriate imaging decisions would help to improve LBP management. Agreed criteria to assess appropriateness of imaging would be beneficial to allow ongoing assessment of imaging appropriateness and improve consistency of clinical management.

Headache management by chiropractors: A cross-sectional analysis of a nationally representative survey of chiropractors.

Moore C, Leaver A, Sibbritt D, Adams J

Background: A recent World Health Organisation global headache report identified how little is known about how headaches are managed; the effectiveness of headache management or how headache related health-care resources are utilized [1]. Chiropractors are a significant healthcare provider for common recurrent headache sufferers (cervicogenic headache, migraine and tension headache) [2-6].

Objective: To conduct a cross-sectional survey of a national sample of Australian chiropractors to describe the prevalence of headache and the current state of chiropractic headache practice.

Methods: A national online cross-sectional survey was distributed to chiropractors via the Australian Chiropractic Research Network (ACORN). Continuous descriptive data are presented using means and standard deviations and categorical data using numbers and percentages. All survey questions were dichotomous (yes/no) or on a Likert scale.

Results: One in five new patients presenting with a chief complaint of headache and one in four present with a secondary complaint of headache. Treatment for headaches (<3mths) was most often 2x/week, 5-10 visits, over 2 – 4 weeks

Chiropractors use ICHD criteria for primary (84.6%) and secondary (90.4%) headaches. Strongest agreement that ICHD criteria were easy to follow for primary 4.0(0.76) and secondary headaches 3.88(0.76) and least agreement patients easily fit into ICHD criteria for primary 3.29(0.76) and secondary headaches 3.39(0.76).

Headache referral was most often to CAM providers (66%), followed by GP's (60%) to investigate headache red-flags (83.4%) and help acute headache pain 224(57.1%). Headache referrals from GP's was low (29.6%).

Chiropractic treatment was most often for headache prevention and recovery. The most popular advice for migraine and tension headache was for headache triggers 94.1% and 90.9% and stress management 89.4% and 90.1% respectively. The most popular treatment was non-thrust spinal mobilisation (88.4%) for migraine; soft-tissue therapy (88.1%) for tension headache and neck exercises (91.7%), spinal manipulation (90.6%) for cervicogenic headache.

Discussion: A significant percentage of new and routine patient consultations are for headache management. This may be due to patient dissatisfaction with medical drug treatments [5].

While most chiropractor's agreed diagnosis influences management more research is needed to understand what aspects of management are impacted. The low use of outcome instruments raise concerns about effective management. Future research needs to explore headache types, level of disability and chronicity to direct future chiropractic research.

The small percentage of chiropractors receiving headache referrals from GPs may be influenced by the lack of high-quality evidence to support manual therapies [7] and an unfavourable attitude by many Australian medical doctors [8].

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Student and new graduate perception of hospital versus traditional institution clinic in clinical educational experience.

Haworth N, K Jones LK

Objective: To explore final year students and new graduates from two North American Chiropractic Colleges regarding perceptions of the clinical educational experience in a hospital versus the institution clinical setting.

Methods: A qualitative exploratory descriptive design was used for this research. Students and new graduates were invited to participate. Semi structured interviews were conducted with 49 students and 13 new graduates lasting 60 minutes.

Results: The patient case mix tended to be varied and more complex in the hospital versus the institutional setting, challenging the clinical skills of the students. Reports of more varied interprofessional opportunities, learning and collaborative patient-centred care were noted in the hospital setting, whilst limited in the institutional clinic. Patient-centred care facilitated in the hospital with easy access to other health professionals, diagnostic testing and shared electronic records. The perception of being more and less like real life clinical practice was noted of both facilities. Each environment was considered a unique clinical learning experience; neither of these experiences prepared them well for business practice skills.
Achievement of confidence and competence was considered in some aspects more within the hospital setting with the degree of patient complexity, varied case mix and intense pace, and the sense of feeling more prepared clinically.

Conclusion: The hospital clinical rotation was profoundly seen as a benefit to the clinical experience by those who had the opportunity. Access and opportunity to both clinical environments is considered optimal in regards to providing a broad and varied

student clinical experience, exclusivity to one may not provide the best preparation for the professional context. Interprofessional engagement was more opportunistic in the hospital environment. As most graduate opportunities are private practice, the institutional clinical environment will provide a sufficient clinical teaching and learning environment to support the professional needs. A combination of these environments considered ideal for the graduate.