

# **The Management of Headache in Chiropractic Care: A Health Services Research Investigation**

**Craig Shane Moore**

Australian Research Centre in Complementary and Integrative Medicine, Faculty of  
Health, University of Technology Sydney

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Craig Shane Moore, declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Australian Research Centre in Complementary and Integrative Medicine, Faculty of Health at the University of Technology Sydney. This thesis is wholly my own work unless otherwise reference or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution. This research is supported by the Australian Government Research Training Program.

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Craig Shane Moore

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## Published works by the author incorporated into the thesis

Of the five manuscripts contained in the thesis, four were published or accepted for publication and one was under review when the thesis was submitted. The manuscripts contained in this thesis are:

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2. Moore, C., Adams, J., Leaver, A., Lauche, R. & Sibbritt, D. 2017, 'The treatment of migraine patients within chiropractic: analysis of a nationally representative survey of 1869 chiropractors', *BMC Complementary and Alternative Medicine*, vol. 17, no. 519, pp. 1-10.
3. Moore, C., Leaver, A., Sibbritt, D. & Adams, A. 2018, 'The management of common recurrent headaches by chiropractors: a descriptive analysis of a nationally representative survey', *BMC Neurology*, vol. 18, no. 171, pp. 1-9.
4. Moore, C., Leaver, A., Sibbritt, D. & Adams, A. 2019, 'Prevalence and factors associated with the use of primary headache diagnostic criteria by chiropractors', *Chiropractic & Manual Therapies*, vol. 27, no. 33, pp. 1-15.
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2. Adams, J., Lauche, R., Peng, W., Steel, A., Moore, C., Amorin-Woods, L. & Sibbritt, D. 2017, 'A workforce survey of Australian chiropractic: the profile and practice features of a nationally representative sample of 2,005 chiropractors', *BMC Complementary and Alternative Medicine*, vo. 17, no. 14, pp. 1-8.
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Pohlman, K., Swain, M., Wong, A. & Hartvigsen, J. 2018, 'Leadership and capacity building in international chiropractic research: introducing the chiropractic academy for research leadership (CARL)', *Chiropractic and Manual Therapies*, vol. 26, no. 5, pp. 1-6.

6. Adams, J., Steel, A., Moore, C., Amorin-Woods, L. & Sibbritt, D. 2016, 'Establishing the ACORN National Practitioner Database: strategies to recruit practitioners to a national practice-based research network', *Journal of Manipulative and Physiological Therapeutics*, vol. 39, no. 8, pp. 594-602.
7. Amorin-Woods, L., Moore, C. & Adams, J. 2018, 'How does a practiced-based research network facilitate evidence-informed practice within the chiropractic profession in Australia? A commentary', *Chiropractic Journal of Australia*, vol. 46, no. 2, pp. 173-85.

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1. Moore, C., Adams, J., Leaver, A., Lauche, R., Sibbritt, D. 2017, 'Treatment of migraine by Australian chiropractors: a secondary analysis of the ACORN national cross-sectional survey', *World Federation of Chiropractic 14th Biennial Congress* (podium), Washington, DC. Conference abstract: *Journal of Chiropractic Education*, vol. 1, no. 1, p. 41.
2. Moore, C., Sibbritt, D. & Adams, J. 2017, 'A critical integrative review of manual therapy use for headache disorders: prevalence, profiles, predictors and communication', *World Federation of Chiropractic 14th Biennial Congress* (poster), Washington, DC. Conference abstract: *Journal of Chiropractic Education*, vol. 1, no. 1, p. 69.
3. Moore, C., Adams, J. & Leaver, A. 2017, 'Chiropractic management of common recurrent headaches: a descriptive analysis of a nationally representative survey of chiropractors', *Chiropractors' Association of Australia (CAA) Annual conference* (podium), Canberra, Australia. Conference abstract: *Chiropractic Journal of Australia*, vol. 46, no. 2, p. 203.

## **Statement of contributions to jointly authored works contained in the thesis**

The results presented in this thesis by compilation were or will be submitted for publication in peer-reviewed journals as five discrete manuscripts (one literature review paper and four original articles), presented in Chapter 2 and Chapters 4, 5, 6 and 7. For each of these manuscripts, I was primarily responsible for determining the research question, undertaking the analysis and drafting the manuscript.

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I take full responsibility for the accuracy of the findings presented in these publications and this thesis.

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Craig Shane Moore

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## Abstract

**Aim:** To explore Australian chiropractors' management of headache disorders and the profile and headache characteristics of those seeking headache management from chiropractors.

**Method:** The study samples were obtained from the Australian Chiropractic Research Network (ACORN) database (n=2005) and member practitioners (n=1680). The three distinct phases for this study project include a detailed literature review (Phase One), to examine the prevalence and features of those who seek help from manual therapy (MT) providers for headache management. This was followed by survey information collected from Australian chiropractors (Phase Two), enabling measurement of the proportion of chiropractors who 'often' manage migraine and the factors associated with this practice (n=1,869), followed by the analysis of the features of headache management provided by chiropractors and specifically of chiropractors who utilise International Classification of Headache Disorders (ICHD) primary headache classification criteria (n=381). A subsequent survey of patients (n=224) enabled analysis of the profile and headache features of those seeking help from ACORN practitioners (Phase Three).

**Results:** Phase One: Review of the international literature indicated the use of MT providers averaged 15.9% for those with migraine and 17.7% for those with non-migrainous headache disorders. Phase Two: A majority of surveyed chiropractors reported high migraine caseloads (n=990; 53.0%). Chiropractors with high migraine caseloads were more likely than other chiropractors to treat non-musculoskeletal disorders and multi-region spine pain. One in five new patients (21.1%) presented to

chiropractors with a chief complaint of headache. Most chiropractors use ICHD criteria for the diagnosis of primary (84.6%) and secondary (90.4%) headaches. Chiropractors reported most often collaborating with complementary and alternative medicine providers and general practitioners for headache and to provide advice on headache triggers and lifestyle, stress management and utilise manual therapies for headache management. Chiropractors who utilise primary headache classification criteria were more likely to believe this practice improves decision-making about primary headache patient referral/co-management. Phase Three: Approximately one in five headache patients who seek help from chiropractors have discrete features of migraine (20.5%), tension-type headache (16.5%), and one in three have features of more than one headache type (33%). Higher levels of headache impact occurred in patients with mixed headache (65.3%) and migraine (61.7%).

**Conclusion:** Internationally, headache management is a substantial within chiropractic practice in many western countries. The findings of this study provide insights for healthcare providers, patients and policymakers about the headache management provided by chiropractors. These findings call for further research to ensure the quality and safety of headache management by this provider.

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## Abbreviations

ABS	Australian Bureau of Statistics
ACA	Australian Chiropractors Association
ACORN	Australian Chiropractic Research Network
AHPRA	Australian Health Practitioner Regulation Agency
AHRQ	Agency for Healthcare Research and Quality
AIHW	Australian Institute of Health and Welfare
APA	Australian Physiotherapy Association
APS	Australian Psychological Society
ARCCIM	Australian Research Centre in Complementary and Integrative Medicine
BEACH	Bettering the Evaluation and Care of Health
CAM	Complementary and Alternative Medicine
CBT	cognitive behavioural therapy
CCEA	Council on Chiropractic Education Australasia
EMG	electromyography
ER	Emergency room
GP	General practitioner
HDI	Headache Disability Inventory
HIT-6	Headache Impact Test
HSR	Health Services Research
ICHD	International Classification of Headache Disorders
MIDAS	Migraine Disability Assessment questionnaire
MOH	Medication overuse headache



MT	Manual therapy
NSAIDs	non-steroidal anti-inflammatory drugs
NSW	New South Wales
OR	odds ratio
PBRN	Practice-based research network
SD	standard deviation
US	United States
UTS	University of Technology Sydney
WFC	World Federation of Chiropractic
WHO	World Health Organization
YLD	Years lived with disability