Utilisation of pain counselling in osteopathic practice: Secondary analysis of a nationally representative sample of australian osteopaths

Observational Studies

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Abstract

Objectives: Advice, reassurance and education are recommended as first line treatments for musculoskeletal pain conditions such as low back pain. Osteopaths are registered primary contact allied health professionals in the Australian healthcare system who primarily manage acute and chronic musculoskeletal pain conditions. This study aimed to investigate the proportion of Australian osteopaths who do and do not utilise advice, reassurance and education (pain counselling) in their clinical practice, and determine the characteristics associated with the frequency of using pain counselling in clinical practice.

Methods: A secondary analysis of practice characteristics from a nationally representative sample of Australian osteopaths was undertaken. Participants completed a 27-item practice characteristics questionnaire between July-December 2016. Bivariate analyses were used to identify significant variables for inclusion in a backward multiple logistic regression model. Adjusted odds ratios (OR) were calculated for significant variables.

Results: Responses were received from 991 Australian osteopaths, representing 49% of the profession. Of these 264 (26.64%) indicated *often* utilising pain counselling, and 727 (73.36%) reported *not often* utilising pain counselling. Those who utilised pain counselling were more than twice as likely to report research evidence had a high impact on their clinical practice (OR 2.11), and nearly twice as likely to discuss physical activity with their patients (OR 1.84).

Conclusions: Pain counselling is under-utilised by nearly three quarters of the Australian osteopathic profession as a management strategy. Future studies are required to explore the reasons why most in the profession comprised in this sample are infrequently utilising this guideline recommendation. Given the frequency of chronic musculoskeletal pain conditions presenting to Australian osteopaths, strategies appear to be needed to advance the profession via professional development in accessing and using evidence-based care for pain conditions.

Keywords: back pain; osteopathic medicine; pain education; practice based research network.

Introduction

Pain is a multifactorial experience that affects an individuals' quality of life, and cost the health system in Australia more than $AUD12 billion in 2018 [1]. Chronic pain is defined as pain that recurs or persists longer than three months [2], and is a leading global cause of disability that affects one-third to one-half of the population [3–6]. The International Classification of Diseases (ICD-11) recently developed a new coding system that recognises chronic pain conditions (CPC) as a centrally important condition requiring individualised treatment in primary care [2]. In all CPCs, the individual experiences pain with substantial contribution (in some cases primary contribution) from biopsychosocial factors in addition to the actual or perceived site of tissue damage or impairment [7].

System-level guidelines [8, 9], policy recommendations [10] and calls-to-action [11] highlight the increasing

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trend of disability that is associated with musculoskeletal pain, and the increased likelihood of developing non-communicable diseases [12]. Appropriate assessment and management of CPCs is important to reduce negative impacts on individuals and health systems [13].

Pain educational interventions aim to reduce the severity of perceived pain by explaining the biological processes of underlying pain mechanisms [14]. This pain education approach aims to improve function and reduce pain intensity and related disability by encouraging graded activity and exercise as part of multimodal pain management.

Osteopaths are government registered primary contact allied health professionals in the Australian healthcare system. Adams [15] reported that the most common presenting conditions to Australian osteopaths are low back pain (98.7), neck pain (98.0), and thoracic pain (91.7%). This is corroborated by other Australian data that suggests the most common presenting complaint regions were the cervical, lumbar and pelvic regions, with 36.4% of clinical encounters identified as chronic (greater than 12 weeks duration) [16]. As such, osteopaths in Australia would likely be expected to incorporate pain education aligned with clinical practice guidelines into their management plans. For example, when managing non-specific low back pain (NSLBP), patient education and advice to remain active are recommended as first line strategies for both acute and chronic NSLBP [11]. Pain counselling is a term referenced in several Australian allied health practice characteristics publications from the practice-based research network ORION (Osteopathy Research and Innovation Network) [15, 17–19]. In this context, "pain counselling" refers to cognitive and affective reassurance [20], advice to maintain activity and avoid bed rest, and pain education [11, 21].

No studies appear to have investigated the proportion of osteopaths who engage in pain counselling as part of patient care, or the practice characteristics of these osteopaths. Such data would enable improved understanding of the contemporary practice of osteopaths and inform targeted practitioner professional development with the potential to improve patient outcomes. Therefore, the primary aim of this study was to determine the number of Australian osteopaths who do and do not engage in pain counselling. The secondary aim was to investigate the practice characteristics of those osteopaths who do and do not engage in pain counselling.

Methods

This work is a secondary analysis of data from the Osteopathy Research and Innovation Network (ORION) Project (http://www.orion-arccim.com/). ORION is a practice-based research network (PBRN) established for the Australian osteopathy profession and hosted by the University of Technology Sydney. PBRN's refer to a collaboration of practitioners, practices and academic institutions to facilitate research projects designed to answer clinical questions and support translation of research into practice [22]. ORION was established to provide a research framework to explore the contribution of osteopathy to the Australian healthcare system. Ethics approval was granted through the University of Technology Sydney (# 2014000759) and osteopaths who chose to participate in the PBRN provided informed consent.

Sample

Registered Australian osteopaths were invited to participate in ORION via email through the national professional association (Osteopathy Australia) and word-of-mouth recruitment. Responses were received from 992 osteopaths who represented 49% of the profession at the time of completion in December 2016. Adams, Sibbritt [15] have demonstrated that respondents to the ORION questionnaire represent a nationally representative sample with respect to practitioner age, gender and primary practice location when compared to Australian osteopathy registration data.

Data collection

Participants were invited to complete a 27-item questionnaire to collect demographic characteristics, practice characteristics, and a description of the clinical management of their patient population. The development of items is described by Adams, Sibbritt [15], and was developed from previous cross sectional studies of the osteopathy profession to elicit practice profile characteristics [16, 23, 24].

Demographic characteristics including age, gender, highest level of osteopathy professional qualification, number of practice-based hours per week and number of patient visits per week were included in the current study. Practice characteristics included practice location (urban/rural/remote), details about other health professionals working in same practice location, referral relationships with other health professions (receiving and sending) and use of diagnostic imaging. Clinical management characteristics included frequency of presenting complaints by body region, patient populations encountered (e.g. under 18 years, non-English speaking), frequency of manual therapy technique use, and use of adjuncts (e.g. TENS, sports taping). A copy of the questionnaire can be found in supplementary file 1.

Participants were asked how often they utilise pain counselling discussions with patients with response options on a 4-point Likert-type scale (never/ rarely/ sometimes/ often). To explore the practice characteristics of participants who did or did not utilise pain counselling, those indicating *never*, *rarely* or *sometimes* were combined to create a binary outcome variable (not often/often).

Data analysis

Descriptive statistics were collected for participants' demographics, practice characteristics, and clinical management characteristics. Unadjusted odds ratios (and 95% confidence interval) were calculated for each of the questionnaire items with respect to the outcome variable (practice of providing pain education). For continuous variables, independent t-tests were used with alpha set at $p<0.05$ and effect sizes

calculated where relevant. Variables that demonstrated a p<0.20 were then included in a multiple logistic regression model. Backward stepwise elimination was used to identify those variables that were significantly associated with frequency of pain counselling. Alpha was set at 0.05 for the modelling. Adjusted odds ratios (OR) and their associated 95% confidence interval were calculated. JASP (version 0.9.2) was used to generate descriptive statistics and the backward regression model analyses were performed using SPSS version 25. This data analysis strategy is consistent with similar investigations [19, 25, 26].

Results

Data were available from 991 participants as 1 participant did not respond to the item about frequency of engaging in pain counselling. Responses to the item are presented in Figure 1.

Demographic characteristics

Twenty-seven percent (27%) of Australian osteopaths reported often using pain counselling. Collectively, those who did not often report using pain counselling (Never, Rarely, Sometimes) comprised 73%. There were no significant differences identified for any demographic variable, including gender, age or years in practice with respect to frequency of use of pain counselling. The demographic characteristics of those who often or do not often utilise in pain counselling are presented in Table 1.

Practice characteristics

There were no significant differences for practice characteristics e.g. practice location, located with other healthcare providers (HCP) between osteopaths who often or not often used pain counselling identified in unadjusted bivariate analyses. The practice characteristics of Australian osteopaths often using pain counselling in patient management are presented in Table 2.

Table 1: Demographic characteristics of those Australian osteopaths who utilise pain counselling discussions with their patients.

	Often (n=264)	Not often (n=727)	p-Value
Gender			
Male	156 (59.1%)	420 (57.8%)	0.71
Female	108 (40.9%)	307 (42.2%)	–
Age, years			
Mean (±SD)	38.8 (±11.2)	37.7 (±10.7)	0.18
Years in clinical practice			
Mean (±SD)	11.9 (±9.8)	11.2 (±8.7)	0.32
Patient care hours per week			
Mean (±SD)	28.0 (±12.2)	27.7 (±12.0)	0.71
Patient visits per week			
Mean (±SD)	36.2 (±18.6)	36.5 (±18.6)	0.79
Qualification, n, %			
Diploma	21 (8.0%)	41 (5.6%)	0.64
Advanced diploma	1 (0.4%)	8 (1.1%)	–
Bachelor degree	54 (20.5%)	164 (22.6%)	–
Master's degree	183 (69.3%)	497 (68.4%)	–
PhD	1 (0.4%)	4 (0.6%)	–
Other	4 (1.5%)	13 (1.8%)	–
Involved in as an osteopath			
University teaching	29 (11.0%)	87 (12.0%)	0.67
Clinical supervision	38 (14.4%)	112 (15.4%)	0.69
Professional organisations	30 (11.4%)	77 (10.6%)	0.73
Research	14 (5.3%)	40 (5.5%)	0.90
Volunteer	46 (17.4%)	113 (15.5%)	0.48

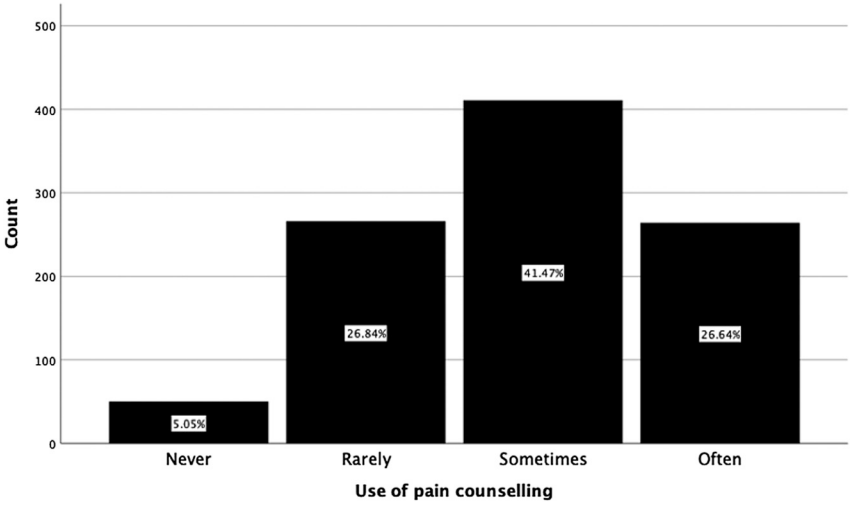

Figure 1: Frequency of pain counselling by reported Australian osteopaths.

Table 2: Practice characteristics of Australian osteopaths based on their use of pain counselling in patient management.

	Often (n=264)	Not often (n=727)	p-Value	OR [95% CI]
Practice location				
Urban practice	217 (82.2%)	602 (82.8%)	0.82	–
More than one practice location	86 (32.6%)	261 (35.9%)	0.33	–
Co-located with other health professionals ('yes')				
Osteopath	162 (61.4%)	480 (66.0%)	0.17	–
General practitioner	15 (5.7%)	57 (7.8%)	0.25	–
Specialist medical practitioner	8 (3.0%)	23 (3.2%)	0.91	–
Podiatrist	38 (14.4%)	109 (15.0%)	0.81	–
Physiotherapist	29 (11.0%)	115 (15.8%)	0.05	–
Exercise physiologist	24 (9.1%)	100 (13.8%)	0.05	–
Occupational therapist	8 (1.5%)	11 (3.0%)	0.12	–
Psychologist	47 (17.8%)	144 (19.8%)	0.48	–
Massage therapist	130 (49.2%)	370 (50.9%)	0.64	–
Acupuncturist	53 (20.1%)	135 (18.6%)	0.60	–
Naturopath	51 (19.3%)	142 (19.5%)	0.94	–
Dietician	14 (5.3%)	58 (8.0%)	0.15	–
Nutritionist	21 (8.0%)	57 (7.8%)	0.95	–
Send referrals to other health professionals ('yes')				
Osteopath	137 (51.9%)	369 (50.8%)	0.75	–
General practitioner	230 (87.1%)	648 (89.1%)	0.38	–
Specialist medical practitioner	120 (45.5%)	323 (44.4%)	0.77	–
Podiatrist	170 (64.4%)	480 (66.0%)	0.63	–
Physiotherapist	84 (31.8%)	247 (34.0%)	0.52	–
Exercise physiologist	106 (40.2%)	291 (40.0%)	0.97	–
Occupational therapist	29 (11.0%)	77 (10.6%)	0.85	–
Psychologist	95 (36.0%)	254 (34.9%)	0.76	–
Massage therapist	183 (69.3%)	487 (67.0%)	0.48	–
Acupuncturist	129 (48.9%)	322 (44.3%)	0.20	–
Naturopath	125 (47.3%)	352 (48.4%)	0.76	–
Dietician	46 (17.4%)	121 (16.6%)	0.77	–
Nutritionist	30 (11.4%)	99 (13.6%)	0.35	–
Receive referrals from another health professionals ('yes')				
Osteopath	166 (62.9%)	448 (61.6%)	0.72	–
General practitioner	233 (88.3%)	652 (89.7%)	0.52	–
Specialist medical practitioner	72 (27.3%)	165 (22.7%)	0.13	–
Podiatrist	127 (48.1%)	343 (47.2%)	0.79	–
Physiotherapist	69 (26.1%)	197 (27.1%)	0.76	–
Exercise physiologist	69 (26.1%)	189 (26.0%)	0.96	–
Occupational therapist	15 (5.7%)	46 (6.3%)	0.71	–
Psychologist	34 (12.9%)	120 (16.5%)	0.16	–
Massage therapist	203 (76.9%)	550 (75.7%)	0.69	–
Acupuncturist	100 (37.9%)	270 (37.1 %)	0.83	–
Naturopath	111 (42.0%)	289 (39.8%)	0.51	–
Dietician	9 (3.4%)	30 (4.1%)	0.61	–
Nutritionist	10 (3.8%)	45 (6.2%)	0.14	–
Diagnostic imaging				
Referral for imaging ('often')	23 (8.7%)	50 (6.9%)	0.33	–
Investigation of unknown pathologies	192 (72.7%)	549 (75.5%)	0.37	–
Investigation of suspected diagnosis	221 (83.7%)	613 (84.3%)	0.82	–
Investigation of potential fractures	190 (77.7%)	559 (74.8%)	0.06	–
Rule out risk factors prior to treatment	205 (77.7%)	544 (74.8%)	0.44	–
General screening of the spine	10 (3.8%)	22 (3.0%)	0.55	–
Patient assessment ('yes')				
Orthopaedic testing	255 (96.6%)	712 (97.9%)	0.22	–
Clinical assessment algorithm	124 (47.0%)	344 (47.3%)	0.92	–
Neurological testing	245 (92.8%)	672 (92.4%)	0.84	–
Screening questionnaire	172 (65.2%)	461 (63.4%)	0.61	–
Cranial nerve testing	176 (66.7%)	495 (68.1%)	0.67	–

Clinical management characteristics

Australian osteopaths who often use pain counselling in clinical patient management were nearly twice as likely to discuss physical activity with their patients. Additionally, they were 46% less likely to treat compensable traffic injury patients compared to those osteopaths who do not often utilize pain counselling (Table 3). Unadjusted odds ratios for a variety of clinical management characteristics are presented in Table 2.

Variables associated with using pain counselling 'often'

Australian osteopaths who often utilise pain counselling were: 2.3 times more likely to discuss physical activity with patients; 2.1 times more likely to treat non-compensable traffic injury patients; 1.94 times as likely to agree that research evidence has a strong impact on their practice. In addition, this group was seven times more likely to report treating Aboriginal and Torres Strait Islander (ATSI) patients and 1.5 times more likely to treat musculoskeletal wrist pain. Patient and practice variables that were statistically significant for Australian osteopaths who often use pain counselling in the backward regression model are presented in Table 4.

Discussion

This is the first study that has investigated the proportion of Australian osteopaths who utilise advice, reassurance and education (pain counselling) in their clinical practice, and determined the characteristics associated with the frequency of using pain counselling.

The most prominent outcome of this exploratory study is that only 27% of Australian osteopaths reported utilising pain counselling *often* in their clinical management. This is an unexpectedly low proportion, given that pain counselling is recommended by best practice guidelines and Australian osteopaths are frequently involved in the care of people with pain conditions.

The results of this study suggest a significant proportion of the Australian osteopathy profession is not frequently engaging with research to inform their practice. As such, clinicians may not be accessing or applying current practice guidelines for these common clinical presentations. Although the impact of these practices on the health outcomes of the Australian public is unclear, our findings suggest that targeted education and training is required to upskill Australian osteopaths. Thus, further research into the potential reasons for these observations appears justified.

Osteopathy-based literature provides some insight into why osteopaths may oppose engagement with, and incorporation of, clinical practice guidelines into practice. In the United Kingdom (UK) a qualitative study of osteopaths revealed a central theme of 'precedence of osteopathy' over medicine. The respondents suggested that osteopathic patients did not 'fit' into these guidelines and required a unique 'osteopathic approach' [27]. Another UK qualitative study explored attitudes and beliefs of both osteopathic educators and students at a British osteopathic education institution [28]. The five educators and seven students all rejected guideline recommendations for managing NSLBP. A central theme was reported as participants detailing a strong professional 'osteopathic' identity that may be threatened by imposition of guidelines and research. This data suggests challenges may exist related to the threat to 'osteopathic identity' and needs to be considered when attempting to support capability and capacity building towards integrating practice guidelines in practice. The extent to which these beliefs are similar in the Australian osteopathic population requires further investigation. Our data provides a foundational basis for future research, with a focus on professional development to address these perceived challenges to identity.

In the current study, Australian osteopaths who reported *not often* using pain counselling were also significantly less likely to discuss physical activity with patients. Undertaking physical activity to improve health and wellbeing is a consistent public health message in Australia [29]. However, our results suggest many Australian osteopaths are not frequently engaging in physical activity discussions with patients in the context of pain counselling. This finding is consistent with Fernandez, Moore [25] exploring the characteristics of Australian chiropractors, albeit that physical activity discussions are often had in Australian osteopathy [15] and chiropractic practice [17].

These outcomes support the need for professional development to ensure that pain counselling includes the resumption of normal activity and exercise, particularly as current guidelines support their inclusion in clinical management for common musculoskeletal pain conditions like NSLPB [11]. Specifically, the professional development should be developed by consulting with a representative group from the osteopathy profession, in consultation with pain curricula experts. The content could be based on the recommendations of the IASP Physical Therapy curriculum [30], adapted for and aligned with the relevant domains of the Capabilities of Osteopathic Practice 2019 [31].

Table 3: Clinical management characteristics of Australian osteopaths based on their use of pain counselling in patient management.

	Often (n=264)	Not often (n=727)	p-Value	ORc [95%CI]
Discuss with patients ('often')				
Diet/nutrition	102 (38.6%)	273 (37.7%)	0.78	–
Smoking and drug use	52 (19.7%)	127 (17.5%)	0.43	–
Physical activity	246 (93.2%)	640 (88.2%)	0.02	1.84 [1.08, 3.11]
Occupation health & safety	133 (50.6%)	372 (51.3%)	0.83	–
Stress	118 (44.7%)	371 (51.2%)	0.07	–
Nutritional supplements	65 (24.6%)	187 (25.8%)	0.72	
Medication	104 (39.4%)	286 (39.4%)	0.99	
Patient subgroups (treat 'often')				
Up to three years of age	38 (14.4%)	118 (16.3%)	0.48	–
4–18 years of age	68 (25.8%)	202 (27.8%)	0.52	–
Over 65 years of age	141 (53.4%)	430 (59.2%)	0.10	–
Aboriginal & torres strait islander peoples	4 (1.5%)	3 (0.4%)	0.07	–
Pregnancy	91 (34.5%)	253 (34.8%)	0.91	–
Non-English speaking	10 (3.8%)	23 (3.2%)	0.62	–
Sport injuries	127 (48.1%)	373 (51.4%)	0.35	–
Worker injury (compensable)	26 (9.8%)	77 (10.6%)	0.72	–
Work injury (non-compensable)	94 (35.6%)	247 (34.0%)	0.64	–
Traffic injury (compensable)	8 (3.0%)	46 (6.4%)	0.04	0.46 [0.21, 0.99]
Traffic injury (non-compensable)	39 (14.9%)	75 (10.4%)	0.05	–
Post-surgery	28 (10.6%)	51 (7.0%)	0.07	–
Patient presentations ('often')				
Neck pain	257 (97.3%)	713 (98.2%)	0.39	–
Thoracic pain	243 (92.0%)	665 (91.6%)	0.82	–
Low back pain	262 (99.2%)	714 (98.5%)	0.35	–
Hip musculoskeletal pain	206 (78.3%)	537 (74.0%)	0.16	–
Knee musculoskeletal pain	141 (53.4%)	349 (48.3%)	0.15	–
Ankle musculoskeletal pain	92 (34.8%)	241 (33.3%)	0.64	–
Foot musculoskeletal pain	84 (31.8%)	210 (29.0%)	0.38	–
Shoulder musculoskeletal pain	207 (78.4%)	593 (81.9%)	0.21	–
Elbow musculoskeletal pain	70 (26.6%)	180 (24.9%)	0.60	–
Wrist musculoskeletal pain	59 (22.3%)	129 (17.8%)	0.11	–
Hand musculoskeletal pain	34 (12.9%)	86 (11.9%)	0.70	–
Postural disorders	190 (72.0%)	485 (67.0%)	0.14	–
Degenerative spine conditions	163 (61.7%)	436 (60.2%)	0.66	–
Headache disorders	232 (87.9%)	659 (90.9%)	0.16	–
Migraine disorders	296 (40.9%)	104 (39.5%)	0.70	–
Spine health maintenance	134 (51.1%)	323 (44.6%)	0.07	–
Chronic or persistent pain	173 (65.5%)	457 (63.1%)	0.48	–
Tendinopathies	108 (26.4%)	301 (73.6%)	0.85	–
Temporomandibular joint disorders	51 (19.4%)	132 (18.2%)	0.70	–
Non-musculoskeletal disorders	34 (13.0%)	92 (12.8%)	0.93	–
Manual therapy (use 'often')				
Counterstrain	116 (44.3%)	303 (41.7%)	0.46	–
Muscle energy technique	199 (75.7%)	588 (80.9%)	0.07	–
High-velocity, low-amplitude manipulation	173 (65.8%)	458 (63.0%)	0.42	–
Joint manipulation	110 (42.0%)	282 (38.8%)	0.37	–
Soft tissue technique	224 (85.2%)	623 (85.8%)	0.80	–
Myofascial release	167 (63.5%)	444 (61.2%)	0.50	–
Visceral techniques	30 (11.4%)	68 (9.4%)	0.34	–
Lymphatic pump	22 (8.4%)	62 (8.5%)	0.93	–
Autonomic balancing	39 (14.8%)	118 (16.3%)	0.59	–
Biodynamics	36 (13.7%)	119 (16.4%)	0.30	–
Functional technique	65 (24.7%)	205 (28.2%)	0.27	–
Balanced ligamentous tension	86 (32.7%)	263 (36.2%)	0.31	–
Chapman's reflexes	6 (2.3%)	18 (2.5%)	0.87	–

Table 3: (continued)

	Often (n=264)	Not often (n=727)	p-Value	ORc [95%CI]
Trigger point therapy	72 (27.5%)	186 (25.6%)	0.55	–
Osteopathy in the cranial field	60 (22.8%)	173 (23.8%)	0.74	–
Facilitated positional release	52 (19.8%)	113 (15.6%)	0.11	–
Dry needling	63 (24.0%)	171 (23.5%)	0.86	–
Exercise prescription	204 (77.6%)	528 (72.7%)	0.12	–
Shockwave therapy	6 (2.3%)	12 (1.7%)	0.50	–
Ultrasound	9 (3.4%)	18 (2.5%)	0.41	–
TENS	6 (2.3%)	13 (1.8%)	0.61	–
Instrument manipulation	0	2 (0.3%)	0.39	–
Instrument soft-tissue	3 (1.1%)	9 (1.2%)	0.90	–
Sport taping	37 (14.1%)	85 (11.7%)	0.30	–
Expanded practice scope ('definitely')				
Prescribing rights	69 (26.2%)	188 (25.9%)	0.99	–
Referral rights to orthopaedic surgeon	193 (73.4%)	509 (70.0%)	0.30	–
Referral rights to paediatrician	145 (55.1%)	395 (54.3%)	0.82	–
Referral rights to sports medicine specialist	213 (81.3%)	576 (79.2%)	0.47	–
Referral rights to rheumatologist	172 (65.4%)	456 (62.7%)	0.44	–
Referral rights to other medical specialist	0	1 (0.1%)	0.55	–
Expanded diagnostic imaging rights	217 (82.5%)	604 (83.1%)	0.83	–

Australian osteopaths who do *not often* use pain counselling were also significantly less likely to report *often* treating patients involved in non-compensable traffic accidents, rather than compensable traffic accidents and musculoskeletal wrist pain. One might expect the compensable traffic accident group to also require pain counselling strategies as part of the treatment plan, given compensation has been identified as a biopsychosocial contributor to longer-term complaints [32]. This outcome would be of interest to explore, given that osteopaths play a role in managing compensable traffic patients, and the role of professional development with respect to pain counselling in the patient groups receiving osteopathy care would be of value.

We also observed Australian osteopaths who do *not often* utilise pain counselling were less likely to report working with ATSI (indigenous) patients. This result may be the result of the low rate indigenous patients that access osteopathic care (0.7% of the time) [15]. The raw data shows the number of ATSI patients seen in osteopathic practice is low, which may be due to under-identification by patients and practitioners or the geographic location and access to osteopaths in Australia. This finding may provide an avenue for future evaluation of the number of ATSI patients in osteopathic practice as musculoskeletal complaints within the population are prevalent [33].

There are several limitations in the current study including the cross-sectional and self-report nature of the ORION practice questionnaire. Such studies are susceptible to response and acquiescence biases that may skew the data. The previous ORION study did not provide definitions for the survey questions (e.g. a definition of pain counselling) in the publications. Therefore, the respondents may have interpreted the meaning within the context of their own understanding of this practice. Differing conceptions may lead to alternative conclusions being possible. Further research would be beneficial to explore and further validate the definition of pain counselling in the context of Australian osteopathy practice. Future work should clarify the terminology in the practice questionnaire to ensure that is it clearly understood by the participants and determine what level of advice, reassurance and education is being utilised in clinical practice for pain assessment and management. Education in pain, including its psychological and neurophysiological basis, also form part of the practice standards for Australian osteopaths [31]. As such, there is the potential for further work to develop an understanding of how osteopaths develop their pain education skills and knowledge and maintain and enhance these competencies through professional development. Given the reported low use of frequent (often) pain education by osteopaths who teach preregistration osteopaths at universities (11%), this may be a starting point to develop pain education skills in osteopathy as a profession in Australia. Inclusion of a nationally representative sample in an Australian context is strength of this study.

In summary, nearly three quarters of the Australian osteopathic profession report not often using pain counselling as a patient management strategy. Future studies

Table 4: Statistically significant variables and their associated odds ratios for Australian osteopaths who *often* utilise pain counselling discussions with patients.

95% confidence interval	Odds ratio (ORa)	Lower	Upper	p-Value
Multidisciplinary health practice (yes)				
Work in same practice location with a physiotherapist	0.60	0.42	0.91	0.048
Work in same practice location with an occupational therapist	3.17	1.15	8.71	0.025
Receive referrals from a psychologist	0.62	0.39	0.99	0.049
Patient education (often)				
Discuss physical activity with patients	2.31	1.28	4.17	0.005
Discuss stress management with patients	0.70	0.51	0.97	0.030
Patient groups (often)				
Treat patients 65 years of age or older	0.70	0.51	0.97	0.032
Treat aboriginal & torres strait islander patients	6.99	1.20	40.57	0.030
Treat traffic injury patients (compensable)	0.30	0.12	0.74	0.020
Treat traffic injury patients (non-compensable)	2.08	1.26	3.42	0.004
Frequency of treating patients with wrist pain	1.51	1.01	2.26	0.045
Interventions (often)				
Muscle energy technique	0.63	0.43	0.93	0.020
Research in practice				
Research is useful to help patients understand the benefits of osteopathy for their health (strongly agree).	1.38	1.01	1.90	0.045
What impact does evidence from research have on your current practice? (high impact)	1.94	1.37	2.75	<0.001

would be beneficial to confirm this finding and clarify why those in this sample are not often utilising this guideline recommendation. Chronic musculoskeletal pain conditions are frequent in Australian osteopathic practices and the costs of chronic pain in Australia are high. Therefore, strategies are needed to support the profession in undertaking professional development to build confidence and competence in accessing and using evidence-based care for all pain conditions.

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