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More than biomechanics: how New Zealand manipulative physiotherapists and osteopaths conceptualise and manage upper back pain—a qualitative study

Kesava Kovanur Sampath ,[1,2,3] Prashant Mishra,[2] Tep Mills,[2] Gary Fryer,[4] Rebecca M Mowat,[5] Oliver P Thomson ,[3] Jerry Draper-Rodi,[3,6] Brett Vaughan [3,7,8]

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For numbered affiliations see end of article.

Correspondence to
Dr Kesava Kovanur Sampath; kesava.kovanur.sampath@rmit.edu.au

ABSTRACT

Objective To explore how physiotherapists and osteopaths who use manual therapy in New Zealand conceptualise, reason about and manage upper back pain (UBP), a clinically relevant but inconsistently defined musculoskeletal presentation.

Design Qualitative study using semistructured interviews and reflexive thematic analysis. The study was conducted and reported in accordance with best-practice qualitative guidance, including Consolidated Criteria for Reporting Qualitative Studies.

Setting Private and public musculoskeletal practice settings across New Zealand.

Participants 17 physiotherapists and osteopaths with a minimum of 2 years' clinical experience, recruited through national professional networks.

Results Data analysis resulted in the generation of four themes: (1) a fuzzy construct; (2) more than biomechanics; (3) hands-on leads to facilitate active care and (4) towards patient-centred care. The analysis revealed an interconnected progression across the key themes, which reflects not only the evolution of clinical practice but also the integration of contemporary evidence, highlighting a shift from intervention-focused to relationship-focused and collaborative care.

Conclusion Clinicians conceptualise UBP as a complex and multifaceted condition, increasingly managed through biopsychosocial reasoning, self-management strategies and patient-centred care. However, definitional ambiguity between UBP and thoracic spine pain, combined with profession-specific patterns, demonstrates the need for clearer terminology and greater interprofessional alignment. Further research incorporating patient perspectives is required to inform guideline development and promote coherent, evidence-informed care for UBP.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study provides in-depth qualitative insight into how New Zealand musculoskeletal clinicians conceptualise and manage upper back pain.
⇒ Methodological rigour was supported by established qualitative reporting and analysis guidance, including Consolidated Criteria for Reporting Qualitative Studies and Braun and Clarke's reflexive thematic analysis.
⇒ Findings are most transferable to private musculoskeletal practice, as participants were drawn from physiotherapy and osteopathy settings rather than hospital, public health or broader multidisciplinary contexts.
⇒ Convenience sampling, variable definitions of upper back pain/thoracic spine pain and the absence of formal between-profession comparison mean profession-specific findings should be interpreted cautiously.
⇒ Findings are most transferable to private musculoskeletal practice and do not capture the perspectives of other professions or formal between-profession comparisons.

BACKGROUND

Upper back pain (UBP) represents a clinically relevant but under-investigated musculoskeletal complaint when compared with low back and neck pain.[1 2] In the broader literature, several overlapping terms are used to describe pain in this region, including thoracic spine pain (TSP) and mid-back pain. In the International Classification of Diseases, TSP is classified as ME84.1. These terms are often used interchangeably, reflecting the lack of consensus regarding anatomical boundaries and diagnostic definitions.[2 3] For the purpose of this study, UBP is used as an umbrella term encompassing the thoracic spine and associated structures, including the rib articulations (costovertebral and costotransverse joints), musculature and surrounding soft tissues.

Epidemiological studies suggest that thoracic and UBP result in functional

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limitations, reduced quality of life and healthcare utilisation.[4] However, the condition remains poorly defined and inconsistently reported across healthcare datasets.[1 5 6] The upper back region encompasses complex anatomical, biomechanical and neurophysiological interactions between the thoracic spine, ribs, scapulothoracic structures and adjacent visceral organs, making it challenging to isolate pain generators or establish clear diagnostic boundaries.[2 7] This diagnostic ambiguity, combined with the limited visibility of UBP in research and clinical guidelines compared with neck or low back pain, has led some authors to refer to the thoracic spine as the 'Cinderella region'—a neglected part of the spine in musculoskeletal research and practice.[2]

Like other spinal and musculoskeletal conditions, the mechanisms underlying UBP are reported to be multifactorial, involving mechanical, postural, myofascial sensitivity and occasionally visceral or referred in nature.[8–12] In clinical practice, the presence of multiple potential mechanisms for the development of UBP requires a multimodal and individualised approach that integrates manual therapy (MT), exercise and patient education.[3] MT, as part of the management of UBP, is used by a range of health professionals such as physiotherapists, osteopaths and chiropractors.[3 13] However, these professions differ in their philosophical foundations, clinical reasoning frameworks and patient communication styles.[14–16] These epistemological differences may lead to variation in how similar clinical presentations are interpreted, labelled and managed.[17 18] Yet, there has been little empirical work exploring these interprofessional differences specifically in relation to UBP.

Existing research provides some insight into how physiotherapists and osteopaths reason about and manage thoracic spine or upper back presentations. Osteopathic clinical reasoning has been shown to involve diagnostic, narrative, collaborative and reflective processes, with differences between novice and experienced practitioners.[19] Physiotherapy studies similarly report variable approaches to TSP management, often involving MT, exercise, education, psychosocial consideration, triage and referral decision-making.[6 20 21]

In our previous national survey, New Zealand manipulative physiotherapists and osteopaths varied in how they defined UBP, but most endorsed multimodal care involving MT, exercise and education.[3] Some professional differences were also evident, reinforcing the need to explore how clinicians explain their reasoning and management decisions in greater depth. Therefore, exploring this ambiguity and understanding the reasoning processes underlying clinical decision-making was considered essential for advancing both evidence-based and patient-centred care in the management of UBP. Qualitative research methods are well suited to exploring ambiguity and reasoning[22 23] allowing for the examination of how practitioners construct meaning, interpret uncertainty and negotiate between competing explanatory frameworks in real-world settings.[24] Such inquiry provides insight into not only what clinicians do, but why they do it.

The current work is a qualitative study designed as an extension of the national survey reported above.[3] Manipulative physiotherapists and osteopaths were selected as the target professions because both are primary contact practitioners with extensive training in manual assessment and treatment of the thoracic spine, making them ideally positioned to provide insight into clinical reasoning for UBP management. The primary aim of this qualitative study was to explore the approaches and decision-making considerations employed by manipulative physiotherapists and osteopaths when assessing and managing UBP.

METHODS

We followed the Consolidated Criteria for Reporting Qualitative Research Checklist when reporting this qualitative research.[25]

Study design

This qualitative study used semistructured interviews to explore clinical reasoning and management approaches to UBP.[26] It was underpinned by a constructivist, interpretivist epistemology,[27] in which knowledge is understood as co-constructed between researcher and participant and meaning as context dependent.

Participants

No fixed a priori sample size was determined. Instead, data collection was guided by the principle of data sufficiency, which considers both the richness of data generated and the rigour of the analytical process.[28 29] Data collection ceased after 17 interviews when sufficiency was judged to have been achieved. Participants were eligible to participate in the study if they were a registered MT (physiotherapist or osteopath) working in any setting (private practice, hospitals, academia) and hold a current annual practising certificate in NZ. Participants were required to have been working as a registered physiotherapist or osteopath for a minimum of 2 years prior to the study. Participants were not eligible to participate if they had not been working in any of the settings for more than 2 years prior to the study. Recruitment occurred via email invitations sent to key professional and educational bodies, including Osteopaths New Zealand, physiotherapy New Zealand, Ara Institute of Canterbury, Unitec/Te Pūkenga, School of Physiotherapy (AUT and Otago University). These organisations distributed the study flyer and information sheet to their members or academic staff with two reminders sent at fortnightly intervals over the recruitment period. A convenience sampling approach was used.

Data collection

Semistructured interviews were selected as the data collection method as they facilitate in-depth exploration of participants' experiences and perspectives, while providing sufficient structure to address the research

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questions. This format also allows participants to raise issues beyond the interview guide (online supplemental file 1), which is particularly valuable when exploring complex clinical decision-making.

Reflexivity

The primary investigator (KKS), a practising osteopath, academic/MT educator with a PhD and experience in qualitative research methods, conducted some of the semistructured interviews via Zoom between June 2024 and May 2025. Two physiotherapy honours students (PM and TM), who were new to qualitative research, conducted several of the interviews. Before data collection, they received structured training that included an introduction to qualitative interviewing, practice with the interview guide, and mock interviews with feedback from a senior qualitative researcher (KKS). Supervisors reviewed the initial interviews to ensure consistency and provided ongoing mentoring throughout data collection. Regular debriefing sessions were held to support reflexivity, address challenges and maintain methodological rigour. An interview guide (online supplemental file 1) was developed based on professional experience of the researchers and findings from our survey.[3] The interview guide consisted of questions about the definition of UBP; clinical reasoning used while treating people with UBP and management strategies for UBP. A pilot interview was undertaken with an experienced physiotherapist (15 years of experience) before data collection to ensure sufficiency and depth to the interview guide. Following the pilot interview, minor amendments, including rephrasing several questions, were made to ensure clarity. No major changes were made to the interview structure or core topics. Field notes were taken, including recording of tone and gestures to facilitate data analysis. All interviews were audio and video recorded via Zoom and transcribed verbatim. The transcripts were sent to all participants for member checking.

Trustworthiness

Trustworthiness was addressed using the criteria of credibility, dependability, confirmability and transferability.[30 31] Credibility was supported through member checking, with transcripts returned to participants for review and researcher triangulation, with three researchers independently coding the data and two additional researchers reviewing the generated themes. Dependability was enhanced through the use of a semistructured interview guide applied across interviews, pilot testing and refinement of the guide, structured interviewer training and regular debriefing between interviewers. Confirmability was supported through reflexive memo writing, documentation of analytical decisions and an audit trail provided as online supplemental file 2. Theme development was also reviewed by researchers who were not directly involved in data collection. Transferability was supported by providing participant demographic information, recruitment context, methodological detail and illustrative quotations to allow readers to assess the applicability of findings to other contexts.

Data analysis

Data sufficiency, that is richness of data that was generated and the rigour of the analytical process (analytical sufficiency),[28 29] determined the number of interviews required. Data were analysed using reflexive thematic analysis (RTA) as described by Braun and Clarke.[27 32] RTA was selected as the analytical approach because it is epistemologically coherent with the constructivist methodology underpinning this study. RTA acknowledges the researcher's active role in theme generation and is well suited to exploring meaning-making in complex clinical contexts.[27 32] The approach influenced data analysis by foregrounding researcher reflexivity at each analytical stage, from initial coding through to theme development and review. Each interview set was initially analysed independently by three investigators (PM, TM and KKS). Initial codes were developed independently by the three investigators and assisted by NVivo V.10 qualitative analysis software. Reading and re-reading the transcripts/memos/field notes looking for patterns in the data (such as differences and commonalities) was undertaken, resulting in category and theme development. Memos written at the time of data collection and throughout the analytical process facilitated researcher reflexivity and highlighted and clarified key points that supported the identification of recurrent codes confirming data sufficiency.[33 34] Category and theme development from the initial codes was an iterative and analytical process[27 32] between the three aforementioned researchers. The themes generated were evaluated by two other investigators (OPT and RMM), both of whom are researchers with qualitative research experience. Themes were evaluated for plausibility and explanatory value. The interconnectedness of themes was identified during the reviewing and defining phases of RTA,[27] as the research team iteratively examined relationships between themes and identified a coherent narrative progression. This higher-order synthesis is consistent with RTA methodology and is represented visually in figure 1.

Data from both professional groups were analysed together to explore the breadth of conceptualisations and reasoning approaches across clinicians who use MT. This approach was consistent with the study aim, which was not designed as a comparative interprofessional study. Where profession-specific patterns were evident, these are noted in the Results and Discussion sections.

Patient and public involvement

Patients or members of the public were not involved in the design, conduct, reporting or dissemination plans of this research. This qualitative study explored clinicians' perspectives on UBP, and therefore the research questions, methodology and interview guide were developed by the research team based on gaps identified in the existing literature. Although patient and public involvement was not incorporated in the current project,

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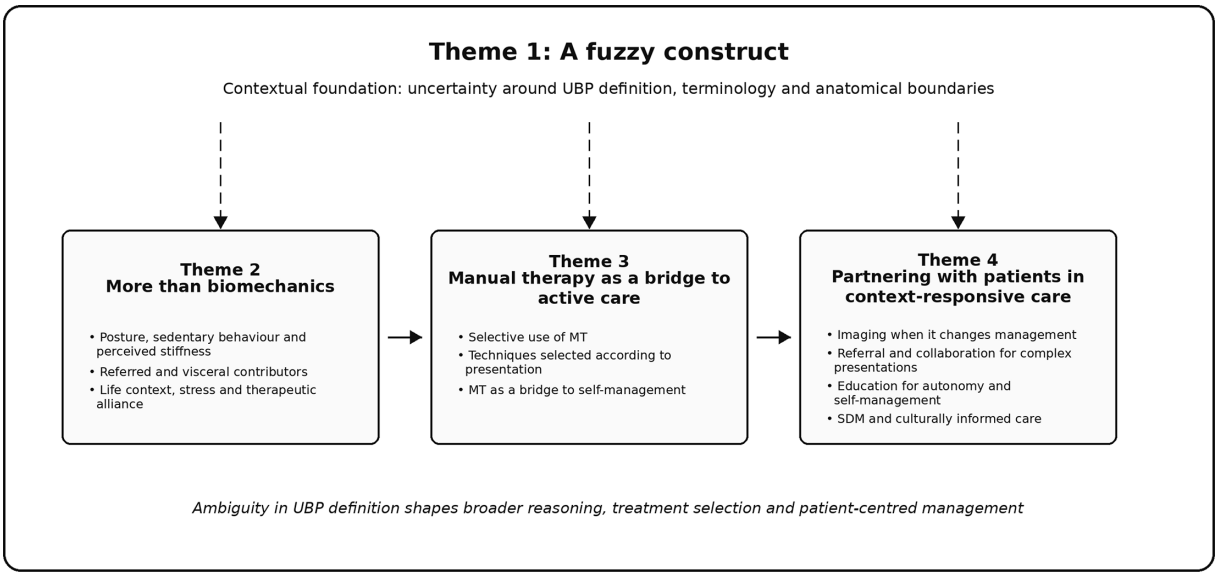


Figure 1 Interconnectedness of key themes. The theme 'A fuzzy construct' is presented as the contextual foundation surrounding the other themes. This reflects how uncertainty around the definition, terminology and anatomical boundaries of UBP shaped clinicians' broader reasoning, treatment selection and movement towards patient-centred management. MT, manual therapy; SDM, shared decision-making; UBP, upper back pain.

future research will seek to integrate patient and whānau perspectives to strengthen the applicability and relevance of clinical and educational recommendations.

RESULTS

A total of 40 individuals responded to the invitation. Of these, 17 met the eligibility criteria and consented to participate. The remaining 23 respondents were ineligible (n=16) or did not proceed to participate (n=7). The main reasons for non-participation included insufficient professional experience (<2 years), lack of availability during the data-collection period and withdrawal of interest after receiving the study information. The demographic information of participants is provided in table 1. Data collection ceased after 17 interviews as sufficiency was achieved. Data sufficiency was determined through ongoing analytical review during data collection. The research team monitored for recurrence of codes across transcripts and the absence of substantively new codes in later interviews, consistent with the principles of analytical sufficiency.[28 29] The average duration of the interviews was 35 min.

Findings

Data analysis resulted in the generation of four themes and several sub-themes which describe the range of views that participants held about the definition, clinical reasoning and management of UBP. These are presented below with quotations to illustrate and support the analytical claims made (online supplemental file 3). In the following section, quotations are labelled with participant number, profession and years of clinical experience. For example, participant 1, a physiotherapist with 3 years of experience, is labelled as (P1, PT, 3 years) and participant

Table 1 Participant demographics stratified by professional group

Characteristic	Manipulative physiotherapists (n=7)	Osteopaths (n=10)	Total (n=17)
Professional group			
Occupation (physiotherapist or osteopath)	7	10	17
Gender			
Male	5	4	9
Female	2	6	8
Location			
North Island	2	8	10
South Island	5	2	7
Years in practice			
<5 years	1	5	6
5–10 years	1	2	3
10–15 years	3	0	3
>15 years	2	3	5
Highest qualification			
PhD	3	0	3
Master's	2	6	8
Postgraduate diploma/ certificate	0	2	2
Bachelor/diploma/other	2	2	4
Practice setting			
Private clinical practice	7	10	17
Additional academia/ research role or area also reported	3	2	5

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2, an osteopath with 32 years of experience, is labelled as (P2, Ost, 32 years). The study was not designed as a formal comparison between professional groups; however, profession-specific patterns are described where evident.

Theme 1: a fuzzy construct

A consistent theme identified in the interviews was the lack of a clear definition and consensus around UBP as a clinical construct. This theme captures the uncertainty and variability in how participants defined, labelled and clinically understood UBP. Rather than describing UBP as a clearly bounded diagnostic entity, participants constructed it as a flexible and sometimes ambiguous clinical region. The two subthemes describe how this ambiguity occurred at the level of anatomical boundaries and terminology, particularly in relation to whether UBP was considered synonymous with TSP.

Subtheme 1.1: variable anatomical boundaries

Participants described the upper back using a range of anatomical landmarks, from the cervicothoracic to the thoracolumbar junctions. Several participants considered specific vertebral levels (T1–T6), while others included ribs and soft tissue structures like the scapula or costochondral junctions. The variability suggests that clinicians rely heavily on personal or clinical heuristics rather than shared anatomical criteria. For example, a participant described the upper back in general terms using the shoulder blade as a term of reference.

> Just below the shoulder blades. You know when patients come in, they say, oh, it's here. I kind of think upper back would be from the bottom of the shoulder blades, right to the base of the neck like the cervicothoracic junction area (P15, Ost, 4 years).

This contrasted with another participant who described the area that defines upper back to include the rib cage.

> The whole rib. So, the posterior lateral anterior, the costochondral. Even the sternum can have an effect on the upper back (P3, Ost, 1 year).

Several participants viewed the upper back as specific segments of the thoracic spine.

> It's pretty mixed, but in my head it you're sort of looking at anywhere from T1 to maybe T5/T6. I consider that really more the upper back (P6, PT, 40 years).

Subtheme 1.2: uncertain terminology: UBP versus TSP

The ambiguity was not only anatomical but also terminological. Participants differed in whether they viewed UBP and TSP as interchangeable terms, overlapping constructs or clinically distinct presentations. Participants revealed that 'UBP' is neither systematically taught nor consistently used as a diagnosis term in practice. The lack of familiarity with the term UBP led to clinicians defaulting to thoracic spine problems or scapular/rib diagnoses.

> Well, generally, it depends on where you define upper back pain. I mean most people would consider upper back pain probably, from the level of the tips of the scapula upwards I've never seen a definition of upper back pain. Is there a definition of upper back pain? (P7, Ost, 27 years).

> No, I don't think so. I mean, as I say, it's not something that I would tend to use as a patients got upper back pain. I think we would almost always default to either you know kind of thoracic spine problem (P9, PT, 1.5 years).

> With some presentations, yes, but generally speaking, no (P6, PT, 40 years).

Many participants highlighted the imprecise or interchangeable use of UBP and TSP. Several participants viewed them as overlapping constructs, while others treated the terms as distinct, primarily based on symptom origin.

> If somebody comes in, they say upper back pain, I'm assuming it's the upper thoracic pain. So I guess as a patient point of view when they say thoracic or upper back, I kind of consider them the same (P2, PT, 35 years).

> No, I wouldn't classify them as the same because upper back pain is certainly not always generated from the thoracic spine. So, no, I'd view them as separate entities. Purely because upper back pain is not always originated from the thoracic (P11, Ost, 41 years).

Theme 2: more than biomechanics

This theme describes how participants moved beyond a narrow biomechanical explanation of UBP. While mechanical stiffness, posture and local thoracic structures were discussed, participants also considered referred pain, stress, emotional well-being, lifestyle and patient context. The subthemes illustrate how clinicians integrated physical, referred and psychosocial contributors into their reasoning rather than treating UBP as a purely structural problem.

Subtheme 2.1: posture, sedentary behaviour and perceived stiffness

Postural issues and lifestyle factors were frequently cited by participants as contributors to UBP. Participants linked sedentary behaviours, computer use and desk work to UBP and the clinical findings in patients presenting with this complaint.

> Probably most commonly for me, it's either postural-related or stiffness-related… especially working in a clinic… staff and students in sedentary lifestyles (P11, Ost, 41 years).

> Upper back pain is definitely more a joint stiffness-based thing… generally speaking those joints aren't moving (P8, PT, 8 years).

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Subtheme 2.2: looking beyond the thoracic spine: referred and visceral contributors

Referred pain from cervical spine or the viscera were frequently acknowledged as sources of UBP. Participants recognised the need to consider systemic and non-musculoskeletal contributors to UBP presentations.

> The most common ones, a lot of it from referred pain from cervical spine, so referred pain from C4/C5. From visceral, from the organs, heart, lung and all that. Obviously, we don't see many of them, thankfully. So, for me personally, most of the things that I come across is referred from the neck (P2, PT, 35 years).

> So, for example, if they [the patient] are suffering of reflux, heartburn or problems more relating the upper digestion, then I can investigate also the headaches. If there are some (P5, Ost, 8 years).

Subtheme 2.3: life context, stress and therapeutic alliance

The psychosocial context of patients including stress, sleep disturbances and emotional well-being was seen by the participants as central to clinical reasoning. Participants did not describe psychosocial factors as a separate checklist but as part of understanding the person and the context in which UBP occurred. Stress, mood, sleep, caregiving roles, work demands and the quality of the therapeutic relationship were described as shaping both symptom experience and management decisions.

> As you get to know them [the patient] more then you're getting more information about the social aspect, emotional aspect, you know, spiritual aspect. So, all this can have a, you know, have a have a huge influence on patients' outcome (P2, PT, 35 years).

> Yeah, I do really consider biopsychosocial issues. So, their life situation, are (you know) they lonely, are they stressed? Are they depressed? Are they looking after three children under 5? You know, what's going on with their life? (P3, Ost, 1 year).

> Stress. Yeah, just checking in on their mental health in general. So, stress, depression. Yeah. I probably think about yellow flags and patients with upper back pain (P16, OST, 32 years).

Theme 3: hands-on leads to facilitate active care

This theme captures how participants positioned MT as part of care but not as the endpoint of care. MT was commonly valued for symptom modulation, rapport-building, reassurance and facilitating movement; however, participants also emphasised the need to avoid patient dependency and to transition towards education, exercise and self-management. Crucially, MT was framed as a transitional tool that enables a shift towards active care strategies and supports the implementation of self-directed management. This transition reflects growing emphasis on empowering patients and promoting long-term self-efficacy for the management of UBP. The subthemes describe the selective use of MT, the types of techniques participants reported using and how hands-on care was framed as a steppingstone towards active management

Subtheme 3.1: selective use of MT

Several participants intentionally avoided extensive use of MT. Instead, these clinicians focused on promoting movement, posture modification and exercises that patients could perform independently. This was important because participants associated excessive reliance on MT with the risk of passive care, reduced self-management or failure to address broader contributors to persistent symptoms.

> So, I try not to use too many tools. I'll get them [the patient] to use something at home. So, for instance, if someone's got a kind of the lumpy bit at the back that they're worried about or concerned about, we'll talk about posture, adaptations. So, practising sitting back upright doing kind of chin tucks with their hands (P14, Ost, 2 years).

> One treatment or a couple of treatments isn't doing the trick that we would need to look further at what might be delaying the healing and why it hasn't resolved and whether that's psychosocial or whether that's repetitive physical habits or patterns or some old injury or an injury in another area that hasn't been addressed (P4, PT, 15 years).

However, this did not mean that MT was viewed negatively by all participants. Some participants continued to describe hands-on techniques as clinically useful when matched to the patient's presentation, particularly for reducing symptoms, improving movement or supporting patient engagement.

Subtheme 3.2: techniques selected according to presentation

Although participants described avoiding over-reliance on MT, they also reported using a range of hands-on techniques when clinically indicated. These included soft tissue techniques, METs, rib mobilisations, low-force interventions and high velocity low amplitude thrust techniques. MT interventions were selected based on clinical judgement and individual patient presentations.

> Passive mobilisation on the table mainly the whole manual therapy of working on the tissue working on the range of motion of joints, but on the table. So, they're completely relaxed, and I basically introduced the movement for that. And then I moved (P1, PT, 11 years).

> Now in actual fact, he [the patient] had about a T10, you know, sort of thoracic facet dysfunction, strain. I released that T10 with a simple traction manipulation technique and he regained full lumbar range of motion (P7, Ost, 27 years).

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Subtheme 3.3: MT as a bridge to self-management

Clinicians viewed MT as a tool for rapport-building and to facilitate patient readiness for self-management. Physical touch was also acknowledged by the participants as an important mechanism for reassurance and comfort. In this context MT was described as a relational and transitional strategy. Participants explained that hands-on care could help establish trust, provide reassurance, reduce threats and create an opportunity to introduce education and self-management. Therefore, MT was not framed as separate from active care but as a potential bridge towards it.

> But initially you probably do less of hands-off strategies until they feel comfortable with you that you can then push them into that consideration for self-management down the line. Can't always happen straight off in the first session (P6, PT, 40 years).

> I think we're good at MT because we're working in a very broad range of both therapeutic and educational elements. We're bringing that together. We want the patient to self-manage eventually (P9, PT, 1.5 years).

Theme 4: towards patient-centred care

This theme captures how participants described care for UBP as a collaborative process shaped by patient needs, clinical uncertainty and broader contextual factors. Participants emphasised that management decisions were not based solely on practitioner preference or structural findings but were negotiated through clinical reasoning, patient education, shared decision-making and referral when appropriate. The subthemes describe how participants used imaging judiciously, involved other health professionals, supported patient self-management and incorporated patient values, autonomy and culturally informed approaches into care.

Subtheme 4.1: imaging when it changes management

Participants generally refrained from using imaging routinely, reserving it for situations involving red flags or inadequate treatment progress. This pattern illustrates how imaging decisions were incorporated into their usual practice. For example, when symptoms failed to improve as expected or when results would meaningfully change management.

> Yeah, but if it doesn't change management, I try to minimise imaging as much as I can to save patients from radiation exposure and for money as well (P10, Ost, 3 years).

> Because that could be TB [tuberculosis], it could be a lymphoma, it could be other cancers. That's in that area. It could be an inflammatory component from ankylosing spondylitis, on their age. It could be a rheumatological factor, so there could be other reasons that you need to X-ray (P12, Ost, 5 years).

Subtheme 4.2: referral and collaboration for complex presentations

Participants reported valuing collaboration with general practitioners, mental health professionals and musculoskeletal specialists. This multidisciplinary approach was particularly important in complex or persistent UBP presentations.

> I would like to say obviously, depending on what those factors are and how much they impact, what they're coming in for, if that would be appropriate for them to see a counsellor or a psychiatrist or somebody in the talking therapies to help with their mental health, I would absolutely refer them (P16, Ost, 32 years).

> Psychosocial stuff going on and we and I've, I'm co-treating her with another practitioner who's very experienced to see if we can get better outcomes (P3, Ost, 1 year).

Subtheme 4.3: education to support autonomy and self-management

Education was seen as a powerful intervention with participants reporting its use to raise awareness, foster autonomy and facilitate long-term behaviour change. Participants often framed education around function, activity, reassurance and helping patients understand how to manage their condition beyond consultation.

> I give more education related to activities and function because if they can see things improving in their every day, I think in general that improves on their quality of life, which then succeeds into improving other things, which reduces the pain response because of the psycho-social factors. Because, you know, they're more likely to do things more likely to participate, socialise all the things that I think keeps people feeling well, regardless of any underlying physiological problem (P6, PT, 40 years).

> Every session will have its psychosocial factor to it, they will increase as I try and get them more into the management of their own condition rather than any sort of reliance on me (P3, Ost, 1 year).

Subtheme 4.4: shared decision-making, autonomy and culturally informed care

Patients were described by the participants as active agents in their recovery and routinely incorporated into decision making about the management of their UBP complaint. Shared decision-making was framed as involving patients from the beginning of care, aligning management with patient preferences and supporting autonomy. Some participants also drew on culturally informed concepts, including Rangatiratanga, to describe care that restored independence and respected patient sovereignty.

> I involve patients in the treatment process right from the start. So they are aware and in agreement with the decisions made (P12, Ost, 5 years).

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I like to empower my patients and this normally involves making shared and informed decisions. If they are onboard with you, then the outcomes often tend to be positive (P17, Ost, 4 years).

I like to go about treatments as wise kaumātua [Māori Elder] once talked to me about Rangatiratanga [sovereignty], which is about sovereignty or restoring independence. So how I like to do it is, after you gone through subjective, you've done your objective. You explain to them what the diagnosis is, after you've explained what the diagnosis is, you can explain why this is happening and what we need to do to get better or reduce the pain. So, then I let them decide if this is the treatment that they would like to partake in (P10,Ost, 3 years).

Interconnectedness of themes: from mechanistic thinking to patient-centred care

The analysis revealed an interconnected progression across the key themes (figure 1). This interconnected framework reflects not only the evolution of clinical practice but also the integration of contemporary evidence, highlighting a shift from intervention-focused to relationship-focused and collaborative care. Together, these themes form a continuum: An expanded clinical reasoning model (more than biomechanics) provides the foundation, which informs how interventions are applied.

MT is used to facilitate patient engagement and transition to active strategies (hands-on leads to facilitate active care) ultimately, these approaches converge in a patient-centred model of care. In this model, clinicians partner with patients, guide them with evidence-informed strategies and foster long-term self-management (towards patient-centred care).

DISCUSSION

This qualitative study was designed as a follow-up to a national survey of New Zealand manipulative physiotherapists and osteopaths that investigated how manual therapists diagnose and manage UBP.[3] The current study explored the underlying reasoning, beliefs and contextual influences that shaped the participants' opinion about the definition of UBP, clinical reasoning and management of UBP. While the introduction acknowledged interprofessional differences documented in the prior survey, the present qualitative analysis revealed broad convergence across themes, with participants from both professions describing similar reasoning frameworks, management priorities and patient-centred orientations. Together, the two studies provide complementary insights into how clinicians conceptualise and deliver care for UBP, offering an integrated understanding of this under-defined but clinically significant musculoskeletal issue.

The first theme—definitional ambiguity surrounding UBP—was evident across participant accounts, consistent with the broader literature. Our findings highlighted the absence of a consistent or universally accepted definition of UBP. This definitional ambiguity is also evident in the literature, where some authors describe UBP as pain or discomfort occurring anywhere between thoracic levels T1–T12, whereas others restrict it to the upper thoracic segments, typically T1–T5 or T1–T7.[35 36] The lack of a standardised definition may stem from differences in research methodologies, populations, geographical areas and pain perception.[5] Further, variability in anatomical boundaries may contribute to inconsistent treatment strategies and documentation in clinical practice. Future research must establish profession-wide consensus as the ambiguity in UBP definition reflects a broader gap in musculoskeletal education and may hinder the development of targeted guidelines or clinical decision tools.

Theme 2—that UBP extends beyond biomechanical reasoning—was reflected in participants' accounts of postural, referred and psychosocial contributors to UBP presentations. Participants were aware of posture, referred pain, stress and lifestyle influences on the development and maintenance of UBP complaints. Further, participants demonstrated active consideration of psychosocial determinants, including emotional well-being, sleep quality and caregiving burdens. This is consistent with global shifts in care models and recognising the multifactorial nature of musculoskeletal complaints and with our recent national survey[3] that identified that most osteopaths and physiotherapists attributed UBP to psychosocial and lifestyle stressors and endorsed multimodal, patient-centred care. Further, New Zealand osteopaths frequently reference psychosocial dimensions of pain in their clinical decision-making, even when working within traditional manual frameworks.[37] Despite increasing alignment with the biopsychosocial (BPS) approach, barriers to its full implementation in clinical care remain[38] challenges such as insufficient training in psychosocial assessment, limited time and uncertainty about reconciling evidence-based methods with osteopathic identity.[39 40] More recent findings from Thomson *et al*[41] indicate that osteopaths are progressively adopting roles as educators and communicators rather than solely as manual practitioners, reflecting deeper cultural change within the profession. Our findings reinforce the need for sustained professional development focused on communication skills, psychological screening and collaborative care to embed the BPS framework consistently in MT practice, not just in the care of UBP complaints.[42–44]

Theme 3—that MT functions as a gateway to active self-management rather than a primary or sustained intervention—was a prominent feature of participant accounts. Participants in our study described using various MT hands-on techniques such as soft-tissue, stretching, Muscle Energy Technique, articulation, spinal and visceral manipulation for managing patients with UBP, which is consistent with previous

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findings.[3 45] Although hands-on MT remains valued for UBP care, participants described it as a gateway used to build rapport, reduce pain and prepare patients for self-directed care. In this context, hands-on approach included manipulative physiotherapy, osteopathy, etc. that mainly used a tissue-based approach in the management of people in pain.[46] Both MT and active approaches may be indicated concurrently across an episode of care: MT engages tissue and neurophysiological mechanisms,[46] while active strategies address pain behaviour, central sensitisation and longer-term self-efficacy.[47] The balance between these approaches shifts in response to individual patient presentation, readiness and progress rather than reflecting a fixed or sequential model.[47]

The 'hands-on leads to hand-off' theme therefore represents a major shift in MT paradigm and supports a strategic use of MT rather than over-reliance. This is consistent with our recent survey findings which found that more than 75% of manual therapists in New Zealand 'strongly agreed' that a multimodal approach is essential in the management of UBP. Our findings are unique and interesting as they reflect the nuanced role of therapeutic touch[48 49] in facilitating patient engagement and trust. While participants described an overall trajectory from hands-on towards active self-management strategies, this should not be read as a binary or sequential model. This is consistent with evidence demonstrating that combined approaches yield superior outcomes to either modality alone[50 51] and with recent findings that neither hands-on nor hands-off approaches are inherently superior in the management of chronic cervical pain.[52]

The fourth theme—towards patient-centred care—encompassed three interrelated dimensions: judicious use of imaging, interdisciplinary collaboration and shared decision-making. Participants in the current study reported judicious use of diagnostic imaging for patients with UBP. Imaging was primarily used when red flags were present, progress was lacking and/or referral was required. Participant responses were aligned with the principles of conservative imaging use in musculoskeletal complaints[42] and consistent with work exploring Italian osteopaths' attitude and beliefs towards the use of imaging while managing people with chronic low back pain.[43] This latter study identified imaging was used only to rule out serious pathology and emphasising patient reassurance and education to minimise over-investigation.[43] Similarly, physical therapists increasingly reserve imaging as an adjunct to clinical reasoning rather than a routine first-line investigation, using it only when findings will meaningfully alter patient management.[44 53] Together, these findings underline the move away from routine or a reliance on structural imaging towards a reasoning-led, biopsychosocial model of care.

Participants framed patients as active decision-makers and highlighted the importance of shared decision making for care of UBP complaints. Shared decision making is defined as 'a collaborative process that involves patients and clinicians making health-related decisions after discussing the available options; the benefits and harms of each option; and considering the patient's values, preferences and personal circumstances'.[54] In the present study, participants from both professional groups described shared decision-making in broadly consistent terms, emphasising collaborative goal-setting, patient involvement from the first consultation and close attention to patient values and preferences. Participants in our study discussed shared decision making as a collaborative process that depends on many factors such as trust, communication, involving patients in every step, understanding patient values and so on. Our findings are consistent with that of wider literature.[55 56] In the wider literature, however, considerable systemic barriers to the meaningful implementation of shared decision-making by physiotherapists in clinical practice have been identified,[56] and future efforts are required to sustain and embed these practices in physiotherapy education and research.[57] In terms of osteopathy, shared decision making remains an area of limited empirical inquiry. Existing evidence, including an observational study of osteopathic students in the UK,[58] suggests that competent shared decision-making behaviours may not yet be consistently embedded in osteopathic training, though this work focused on pre-registration students rather than experienced practitioners. In line with recent evidence,[41] future research is recommended to investigate shared decision-making in osteopathic practice and identify barriers and facilitators for its implementation.

Some participants in our study referred to indigenous models of health designed by tangata whenua (people of the land) in New Zealand including concepts such as Rangatiratanga (sovereignty) and referenced Māori health models such as Te Whare Tapa Wha that comprises four cornerstones (or sides) of Māori health. The four cornerstones include (1) Taha Tinana (physical health); (2) Taha Wairua (spiritual health); (3) Taha Whanau (family health) and (4) Taha Hinengaro (mental health). Although our findings are specific to the New Zealand context, there is increasing recognition of the role of incorporating Māori models of health into BPS care approaches evidenced in previous research with New Zealand osteopaths.[31] Participants described using culturally sensitive practices and educational strategies to enhance autonomy and reduce reliance. Understanding how clinicians' reason about pain, particularly in body regions with complex somatic and visceral relationships, may support the development of culturally responsive and contextually relevant models of care. Moreover, clarifying how professional and cultural frameworks intersect in clinical reasoning may inform interdisciplinary collaboration and improve the consistency of patient communication for care of musculoskeletal complaints. However, our findings provide preliminary evidence of

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cultural responsiveness and shared decision making that may reflect best practice in both indigenous and general healthcare frameworks.[59 60] Future research is required to investigate the exact mechanisms and/or tools used by manual therapists in imparting a culturally responsive practice and educational strategy.

Implications for practice, education and research

These findings have implications for clinical practice, education and future research. The variability in how participants defined and labelled UBP highlights the need for clearer terminology and more consistent communication in clinical documentation, education and research. Participants' reasoning also suggests that UBP should be approached as a multifactorial presentation, requiring consideration of mechanical, referred, psychosocial, lifestyle and patient-contextual factors. MT may remain clinically useful but should be framed as one component of care that can support symptom modulation, rapport-building, movement and transition towards active self-management. Finally, the emphasis on shared decision-making, autonomy and culturally informed care highlights the importance of patient-centred and context-responsive approaches. Future research should explore patient perspectives, clarify professional differences where relevant and develop consensus around terminology, outcome measures and evidence-informed management of UBP.

CONCLUSION

This study highlights variability in how clinicians conceptualise and manage UBP, reflecting ongoing ambiguity around the terminology, anatomical boundaries and clinical reasoning associated with this region. Such variability may be clinically appropriate when management is tailored to the multiple potential contributors to UBP, including mechanical, referred, psychosocial, lifestyle and patient-contextual factors. However, clearer terminology and more explicit reasoning frameworks are needed to support consistent communication, documentation, education and research. Clinicians in this study described UBP management as multifactorial, integrating MT, education, exercise, self-management, shared decision-making and referral where appropriate. Future training should focus on improving consistency in UBP terminology, differential diagnosis, biopsychosocial reasoning, patient communication, shared decision-making and culturally responsive care. Future research should explore patient perspectives on UBP care, including how patients understand the condition, what outcomes matter to them and how they experience different management approaches. This would support the development of more coherent, patient-centred and evidence-informed care for UBP.

Author affiliations
[1]School of Health and Biomedical Sciences, STEM College, RMIT University, Melbourne, Victoria, Australia
[2]Centre for Health and Social Practice, Waikato Institute of Technology, Hamilton, Waikato, New Zealand
[3]Centre for Osteopathic Research and Leadership, Health Sciences University, London, UK
[4]College of Sport, Health and Engineering, Victoria University, Melbourne, Victoria, Australia
[5]School of Nursing, Auckland University of Technology, Auckland, New Zealand
[6]National Council for Osteopathic Research, London, UK
[7]Department of Medical Education, University of Melbourne, Parkville, Victoria, Australia
[8]School of Health & Human Sciences, Southern Cross University, Lismore, New South Wales, Australia

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ORCID iDs
Kesava Kovanur Sampath https://orcid.org/0000-0001-9908-3659
Oliver P Thomson https://orcid.org/0000-0003-3062-9056
Brett Vaughan https://orcid.org/0000-0002-8623-4558

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