

Research priorities for post qualification level dissertations / theses in Orthopaedic Manipulative Therapy

Research priorities are established to address identified gaps and maximise emerging opportunities in developing an evidence base. Numerous post qualification research theses are completed each year, and although some work is published, they possess greater potential for addressing gaps in the evidence base of Orthopaedic Manipulative Therapy (OMT).

An analysis of international research priorities for post qualification theses was developed using a consensual Delphi process. Central to the process were the roles of the researcher and research consumer, and participants (n=91) comprised postgraduate course tutors and expert clinicians nominated by the Member Organisations of the International Federation of Orthopaedic Manipulative Therapy. It was essential to identify research question areas where research is most needed and will have the greatest impact. Both quantitative and qualitative data informed the analysis, with thematic analysis identifying prioritised research themes and associated research questions. The perceived importance and feasibility of the research question areas were subsequently evaluated.

Round 1 requested >10 priorities for theses, and content analysis identified research themes. Round 2 requested participants rank the importance of each theme on a 1-5 scale, and round 3 requested ranking the importance and feasibility of the research question areas within each agreed theme. Descriptive analysis and use of Kendall's coefficient of concordance enabled interpretation of consensus. The response rate of 68% was good, identifying 23 research themes in round 1. Round 2 identified 14 research themes as important. Participant rating of the importance and feasibility of research question areas in round 3 supported 43 agreed priorities demonstrating good face, content and concurrent validity.

The defined research priorities represent dynamic and evolving areas of importance to OMT. The research themes were broad and the prioritised research question areas emphasise preliminary work where post qualification theses will enable further research development. To ensure responsiveness to a changing international context, the plan is to review the priorities on a regular basis. Establishing priorities provides a vision of how theses can contribute to the developing evidence base of OMT to maximise focus and opportunities.

The project has been published in *Manual Therapy*:
Rushton A, Moore A (2010). International identification of research priorities for postgraduate theses in musculoskeletal physiotherapy using a modified Delphi technique, *Manual Therapy*. 15 (2). pp. 142-148.

Table 1 details the 43 priorities agreed by the participants to be valuable for students to address as part of their post qualification level dissertation / theses. The further tables provide the detail of the earlier rounds.

Co-researchers:

Dr Alison Rushton (University of Birmingham, UK) and
Professor Ann Moore (University of Brighton, UK)

Table 1: The 43 research question areas identified as priorities for post qualification level dissertations / theses (where participants agreed that importance and feasibility was good) from round 3

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
Professional development theme						
What are the clinical reasoning processes used in OMT?	4.35	0.89	20.46	3.84	0.99	25.78
What approaches in education assist in the development of clinical reasoning skills?	4.18	0.89	21.29	3.55	0.88	24.79
What is the efficacy of teaching OMT techniques?	4.08	0.99	24.26	3.66	0.98	26.78
What is the patient's experience of OMT?	3.88	0.92	23.71	3.71	0.98	26.42
What is the effectiveness of training to enhance the validity of palpation skills?	3.94	0.99	25.13	3.63	0.89	24.52
What are the existing models of postgraduate education in OMT?	3.67	0.99	26.98	3.84	0.97	25.26
Epidemiology theme						
What are the descriptive patterns of musculoskeletal disorders?	4.14	0.89	21.50	3.52	0.93	26.42
Normative data collection						
What are the effects of stretching?	3.86	1.06	27.46	3.54	0.99	27.97
What is the normal response to a range of examination tests?	3.98	0.88	22.11	3.92	1.02	26.02
Reliability of assessment tools theme						
What is the intra-rater reliability of a broad range of assessment tools?	4.12	1.15	27.91	4.38	0.95	21.69
What is the inter-rater reliability of a broad range of assessment tools?	4.33	1.01	23.33	4.42	0.86	19.46
What is the accuracy of a broad range of assessment tools?	4.37	0.97	22.20	4.27	0.89	20.84
Validity of assessment tools						
What is the face validity of a broad range of assessment tools?	3.92	1.08	27.55	3.94	0.10	2.54
What is the content validity of a broad range of assessment tools?	4.20	1.02	24.29	3.98	1.01	25.38
What is the concurrent validity of a broad range of assessment tools?	4.19	1.03	24.58	3.98	1.03	25.88

What is the sensitivity of a broad range of assessment tools?	4.31	0.93	21.58	4.06	0.97	23.89
What is the specificity of a broad range of assessment tools?	4.33	0.95	21.94	4.10	0.99	24.15
What is the validity of new clinical prediction rules for treatment outcome?	4.10	1.02	24.88	3.65	1.02	27.95
What is the predictive value of a broad range of assessment tools?	4.14	0.92	22.22	3.73	1.00	26.81

Outcome measures

How is patient satisfaction evaluated?	4.06	0.86	21.18	3.88	0.99	25.52
What factors contribute to patient satisfaction?	4.18	1.00	23.92	3.92	0.96	24.49
What is the clinical and linguistic validation of existing questionnaires?	3.77	1.11	29.44	3.57	1.03	28.85
What is the clinical utilisation of various outcome measures?	3.96	0.97	24.49	3.88	0.85	21.91
What performance based outcome measures are most appropriate for mechanical neck disorders?	3.92	1.02	26.02	3.57	0.92	25.77
What is an appropriate functional testing outcome measure for use in LBP?	4.24	0.86	20.28	3.78	0.90	23.81

Examination, assessment and diagnosis

What are the criteria for diagnosis of different presentations?	4.10	0.95	23.17	3.51	0.98	27.92
What are the physical findings in patients with vertigo?	3.85	0.80	20.78	3.60	1.05	29.17
What is the relevance and use of red flags in the management of musculoskeletal disorders?	4.35	0.83	19.08	3.96	1.06	26.77
What is the relevance and use of yellow flags in the management of musculoskeletal disorders?	4.29	0.85	19.81	3.85	0.97	25.19

Classification / subgroups / profiling of common syndromes theme

What are the common physical/subjective/bio-psychosocial characteristics of patient sub groups eg; acute low back pain, chronic low back pain, whiplash associated disorder, tennis elbow, OA hip etc?	4.30	0.86	20.00	3.70	0.97	26.22
What are the characteristics of the subgroup populations responding or not responding to OMT?	4.42	0.86	19.46	3.54	0.95	26.84
What factors appear to predict outcome of care in individual sub	4.36	0.83	19.04	3.70	0.95	25.68

groups?

Mechanism of action of treatment

What are the effects of physical activity and exercise on sub populations with musculoskeletal disorders?	4.08	0.88	21.57	3.66	1.02	27.87
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Evidence based practice

What are the clinical guidelines for the assessment and management of shoulder, knee and ankle problems?	4.00	0.97	24.25	3.98	1.02	25.63
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What is the impact of evidence within OMT?	4.18	1.01	24.16	3.63	1.05	28.93
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What strategies work in helping to integrate evidence into scientific practice?	4.40	0.90	20.45	3.71	0.99	26.68
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Patient focused research

What are patient expectations of OMT service delivery?	3.88	0.90	23.20	3.84	1.04	27.08
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What are the quality of life issues affecting treatment outcome?	4.02	0.84	20.90	3.68	1.00	27.17
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What factors determine patient satisfaction with OMT?	4.06	1.00	24.63	3.92	0.94	23.98
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What are the pain experiences of patients with acute/chronic low back pain?	3.73	0.93	24.93	3.61	1.04	28.81
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What are the patient's experiences of the treatment of chronic pain?	3.82	1.09	28.53	3.63	0.99	27.27
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What is the influence of patient expectations on OMT treatment and outcomes?	3.94	1.01	25.63	3.57	1.02	28.57
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What are the influences of education on patients with acute/chronic low back pain?	4.20	1.00	23.81	3.86	0.94	24.35
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Table 2: Twenty three themes and subthemes of priorities provided by the participants in round 1

Theme	Sub themes
Professional issues	Practitioner models and roles / triage / extended scope / specialist role / consultant role / global issues and variations and barriers / cultural issues / standard terms / perceptions of musculoskeletal physiotherapists / interaction with other professions / treatment environment / first contact v doctor referral / status of musculoskeletal physiotherapy / health issues for musculoskeletal physiotherapists
Professional development	Clinical reasoning / self directed learning / postgraduate education / expertise / skills development / learning approaches / models of postgraduate clinical education
Epidemiology	Cause and effect / contributing factors / effect modifiers / triggers / descriptive patterns / profiles
Description of current practice	Models of care / current caseload
Normative data collection	Anatomy / normal response to testing / physiological responses / physiological effects / muscle activity patterns / structural responses
Biomechanics	Relationships / patterns of movement / normal / abnormal / ageing / pathology / creep response / kinetics / kinematics / function / forces
Reliability of assessment tools	Broad range of tools / Intra-rater reliability / inter-rater reliability / accuracy
Validity of assessment tools	Broad range of tools / face validity / content validity / concurrent validity / sensitivity / specificity
Outcome measures	Refinement across different populations and cultural groups / development of appropriate measures / evaluation of measures / evaluation of the use of measures
Examination, assessment and diagnosis	Diagnostic models / clinical reasoning / evaluation VBI / screening pre sports / screening adolescents / differential diagnosis non MS pathology / red flags / yellow flags / ergonomic evaluation / diagnostic ultrasound / comparison to normative data
Classification / subgroups / profiling of common syndromes	Identification of at risk populations / responders / non responders / biopsychosocial predictive characteristics / predictors of outcome
Parameters of treatment	Dosage / frequency / optimal parameters / progression of treatment / vigour / oscillatory v sustained / grading

Mechanism of action of treatment	Physiological effects of interventions (manual therapy, exercise, electrotherapy) / tissue healing / outcomes of treatment
Health Education / promotion	Role of physiotherapist in prevention / promotion of physical activity / cost effectiveness
Placebo effect	Research / clinical practice
Clinical effectiveness	Comparison between modalities (manual therapy, exercise, electrotherapy, early v late referral / muscle stabilisation exercises / soft tissue mobilisation / exercises / post surgical management / syndromes / neurodynamics
Cost effectiveness	
Patient – therapist relationship	Communication / effect on treatment outcome / psycho-emotional / quality of life / locus of control
Evidence based practice	Implementation / change / evaluation of impact / guidelines / refinement and development of protocols / effectiveness of implementation / audit of protocols and guidelines
Sport	Recovery strategies / warm up / barriers / challenges
Patient focused research	Patient education / patient expectations / patient satisfaction / compliance / communication / patient experiences
Hawthorne effect on participants in trials	
Research methodological approaches	Single case study / multiple case studies / qualitative research / analytical literature reviews / systematic reviews / meta-analysis / models of RCT / Delphi / Cross sectional design / epidemiological studies / cost effectiveness / correlational

Table 3: Participant rating of the importance of each theme of research priorities in round 2 (in order of the mean rating, with themes in bold not demonstrating consensus)

Theme	Mean	SD	CV %
Description of current practice	2.61	1.14	43.90
Hawthorne effect on participants in trials	2.64	1.10	41.52
Placebo effect	2.80	0.95	33.73
Sport	3.03	1.09	36.10
Patient – therapist relationship	3.34	1.22	36.58
Professional issues	3.38	1.17	34.69
Parameters of treatment	3.44	1.03	30.53
Health education / promotion	3.54	1.18	33.24
Professional development	3.57	1.04	29.11
Epidemiology	3.61	1.08	30.07
Biomechanics	3.70	1.01	27.15
Normative data collection	3.77	1.09	28.81
Research methodological approaches	3.82	1.09	28.48
Cost effectiveness	3.84	1.05	27.42
Patient focused research	4.00	0.97	24.15
Mechanism of action of treatment	4.03	0.89	22.16
Evidence based practice	4.20	0.85	20.32
Outcome measures	4.33	0.83	19.20
Reliability of assessment tools	4.34	1.01	23.36
Classification / subgroups / profiling of common syndromes	4.38	0.92	20.92

Examination, assessment and diagnosis	4.39	0.74	16.77
Clinical effectiveness	4.41	0.86	19.59
Validity of assessment tools	4.49	0.83	18.46

Table 4: Consensus of agreement by participants for the importance and feasibility of the research question areas within each theme from round 3

Theme	df	Importance K	p	Feasibility K	p
Personal Development	16	0.175	.000	0.082	.000
Epidemiology	9	0.166	.000	0.135	.000
Normative data collection	14	0.272	.000	0.107	.000
Biomechanics	10	0.178	.000	0.076	.003
Reliability of assessment tools	2	0.063	.049	0.050	.092
Validity of assessment tools	8	0.227	.000	0.268	.000
Outcome measures	12	0.079	.000	0.123	.000
Examination, assessment and diagnosis	12	0.096	.000	0.093	.000
Classification / subgroups / profiling of common syndromes	9	0.198	.000	0.065	.005
Mechanism of action of treatment	6	0.296	.000	0.049	.029
Clinical effectiveness	22	0.192	.000	0.067	.000
Cost effectiveness	2	0.245	.000	0.006	.740
Evidence based practice	4	0.059	.026	0.032	.204
Patient focused research	19	0.162	.000	0.096	.000

Tables 5 – 18 detail the research question areas for each of the themes taken into round 3, and the participants ranking of the importance and feasibility of each research question area. The research question areas in bold reached the required level of importance and feasibility and were retained in the final list of detailed research question areas as research priorities (see Table 1).

Table 5: Participant rating of the importance and feasibility of each research question area for the *Professional Development* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What are the clinical reasoning processes used in OMT?	4.35	0.89	20.46	3.84	0.99	25.78
What approaches in education assist in the development of clinical reasoning skills?	4.18	0.89	21.29	3.55	0.88	24.79
What is the nature of self directed learning in students studying OMT?	3.61	1.08	29.92	3.41	0.98	28.74
What is the efficacy of teaching OMT techniques?	4.08	0.99	24.26	3.66	0.98	26.78
What is the patients perspective of OMT internationally?	3.22	1.10	34.16	3.12	1.07	34.29
What is the patient's experience of OMT?	3.88	0.92	23.71	3.71	0.98	26.42
How has the profile of OMT changed with time?	2.63	1.18	44.87	2.84	1.22	42.96
What is the value of specific approaches to teaching and learning in OMT e.g. use of video?	3.63	1.13	31.13	3.53	1.03	29.18
Is terminology used in OMT generalisable internationally e.g. adaptive shortening?	3.54	1.20	33.90	3.42	1.23	35.96
How does a novice develop into an expert in OMT?	3.86	1.01	26.17	3.30	0.99	30.00
What is the effectiveness of training to enhance the validity of palpation skills?	3.94	0.99	25.13	3.63	0.89	24.52
What are the career pathways of physiotherapists in OMT?	3.20	1.12	35.00	3.53	1.01	28.61
How does undergraduate physiotherapy prepare new graduates for working in OMT?	3.63	1.17	32.23	3.41	0.90	26.39
What is the cost effectiveness of postgraduate education in OMT?	3.71	1.17	31.54	3.08	1.12	36.36
What different models are used for skill development in the education of OMT?	3.63	0.96	26.45	3.39	0.98	28.91
What are the different approaches to learning used in OMT?	3.53	1.01	28.61	3.45	0.94	27.25
What are the existing models of postgraduate education in OMT?	3.67	0.99	26.98	3.84	0.97	25.26

Table 6: Participant rating of the importance and feasibility of each research question area for the *Epidemiology* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What is the prevalence of common musculoskeletal disorders?	3.69	0.99	26.83	3.53	1.16	32.86
What is the prevalence of common musculoskeletal disorders in different populations e.g. different sports / age groups / countries etc?	3.88	0.91	23.45	3.65	1.18	32.33
What is the comparison of prevalence of common musculoskeletal disorders e.g. over different times?	3.00	1.08	36.00	2.88	1.11	38.54
What is the cause and effect of musculoskeletal disorders?	4.14	0.97	23.43	2.82	1.24	43.97
What are the contributing factors to musculoskeletal disorders?	4.29	0.97	22.61	3.16	1.14	36.08
What is the relationship between adolescent LBP and LBP in adults?	3.90	0.96	24.62	3.04	1.13	37.17
What are effect modifiers?	3.83	0.88	22.98	2.95	0.96	32.54
What are the triggers for musculoskeletal events?	3.84	0.96	25.00	3.08	1.05	34.09
What are the descriptive patterns of musculoskeletal disorders?	4.14	0.89	21.50	3.52	0.93	26.42
What are the risk populations and at risk individuals for common musculoskeletal disorders?	4.22	0.79	18.72	3.49	1.01	28.94

Table 7: Participant rating of the importance and feasibility of each research question area for the *Normative data collection* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What exercise recruits Gluteus Medius posterior fibres most effectively?	3.16	1.21	38.29	3.69	1.10	29.81
What are the effects of stretching?	3.86	1.06	27.46	3.54	0.99	27.97
What is the normal resting position of the scapular during different upper limb activity?	3.47	1.04	29.97	3.31	0.98	29.61
What is the effect of taping on SLR range of movement?	2.84	1.11	39.08	3.41	1.10	32.26
What is the effect of taping on muscle strength?	3.24	0.93	28.70	3.54	1.05	29.66
What is the effect of hamstring stretch procedures on SLR?	3.45	1.03	29.86	3.82	0.97	25.39
What are the effects of active and passive mobilisations on heart rate?	2.63	1.09	41.44	3.35	1.49	44.48
What is the dynamic behaviour of articular cartilage?	3.75	0.91	24.27	2.81	1.08	38.43
What is the normal response to a range of examination tests?	3.98	0.88	22.11	3.92	1.02	26.02
Does altered architecture affect muscle performance?	3.50	0.99	28.29	2.90	1.03	35.52
What are the best parameters of interventions, for example frequency of oscillation?	3.56	1.05	29.49	3.02	1.11	36.75
What is the role of the sensorimotor system in the activation of stabilising muscles?	4.33	0.77	17.78	3.24	0.97	29.94
What is the effect on the motor cortex and cerebellar activation during pain perception?	4.00	0.80	20.00	2.84	1.12	39.44
What are the measurement standards for mechanical / neurophysiological / person / population effects?	3.66	1.03	28.14	3.09	0.97	31.39
What is the effectiveness of different interventions in stabilising and generating force through the thumbs?	2.71	0.94	34.69	3.06	1.11	34.27

Table 8: Participant rating of the importance and feasibility of each research question area for the *Biomechanics* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What are the differences in structure of the thoracic compared to cervical and lumbar discs?	3.37	0.85	25.22	3.25	1.25	38.46
What are the existing biomechanical relationships in the body?	3.30	1.11	33.64	2.72	1.19	43.75
What is the effect of static sitting compared to frequent changes in posture?	3.71	1.06	28.57	3.55	1.16	32.68
What are the normal biomechanics of the lumbar spine?	3.58	1.14	31.84	3.42	1.11	32.46
What is the effect of gender on biomechanics?	3.26	1.05	32.21	3.32	1.15	34.64
What is the function and biomechanics of the Serratus Anterior?	3.45	0.97	28.11	3.51	0.95	27.07
What are the effects of ageing on the musculoskeletal system?	4.18	0.87	20.81	3.44	1.07	31.10
What are the effects of pathology?	3.83	1.12	29.24	3.09	1.26	40.78
What is the timing of muscle activation?	3.82	0.96	25.13	3.45	0.88	25.51
What are the patterns of movement for common activities?	4.02	0.92	22.89	3.49	0.92	26.36
What is the creep response?	3.16	1.14	36.08	3.00	1.00	33.33

Table 9: Participant rating of the importance and feasibility of each research question area for the *Reliability of assessment tools* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What is the intra-rater reliability of a broad range of assessment tools?	4.12	1.15	27.91	4.38	0.95	21.69
What is the inter-rater reliability of a broad range of assessment tools?	4.33	1.01	23.33	4.42	0.86	19.46
What is the accuracy of a broad range of assessment tools?	4.37	0.97	22.20	4.27	0.89	20.84

Table 10: Participant rating of the importance and feasibility of each research question area for the *Validity of assessment tools* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What is the face validity of a broad range of assessment tools?	3.92	1.08	27.55	3.94	0.10	2.54
What is the content validity of a broad range of assessment tools?	4.20	1.02	24.29	3.98	1.01	25.38
What is the concurrent validity of a broad range of assessment tools?	4.19	1.03	24.58	3.98	1.03	25.88
What is the sensitivity of a broad range of assessment tools?	4.31	0.93	21.58	4.06	0.97	23.89
What is the specificity of a broad range of assessment tools?	4.33	0.95	21.94	4.10	0.99	24.15
What is the comparison of validity between medical practitioners and physiotherapists for use of a broad range of assessment tools?	3.25	1.18	36.31	3.39	1.20	36.40
What is the validity of new clinical prediction rules for treatment outcome?	4.10	1.02	24.88	3.65	1.02	27.95
What is the predictive value of a broad range of assessment tools?	4.14	0.92	22.22	3.73	1.00	26.81
What is the comparison of validity across different countries for a broad range of assessment tools?	3.31	1.30	39.27	3.00	1.31	43.66

Table 11: Participant rating of the importance and feasibility of each research question area for the *Outcome measures* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
How do outcome measures transfer across different populations and cultural groups?	3.82	1.03	26.96	3.49	1.01	28.94
What are appropriate new outcome measures?	4.00	0.92	23.00	3.39	0.94	27.73
What is the value of various outcome measures?	3.96	0.87	21.97	3.44	0.95	27.62
What is the evaluation of the use of various outcome measures?	3.60	1.06	29.44	3.35	0.97	28.96
How is patient satisfaction evaluated?	4.06	0.86	21.18	3.88	0.99	25.52
What factors contribute to patient satisfaction?	4.18	1.00	23.92	3.92	0.96	24.49
What is the usefulness of clinical tests as an assessment tool in thoracic outlet syndrome?	3.73	0.90	24.13	3.41	0.90	26.39
What is the clinical and linguistic validation of existing questionnaires?	3.77	1.11	29.44	3.57	1.03	28.85
What is the clinical utilisation of various outcome measures?	3.96	0.97	24.49	3.88	0.85	21.91
What performance based outcome measures are most appropriate for mechanical neck disorders?	3.92	1.02	26.02	3.57	0.92	25.77
What is an appropriate functional testing outcome measure for use in LBP?	4.24	0.86	20.28	3.78	0.90	23.81
What are the clinical prediction rules for common musculoskeletal presentations?	4.02	0.91	22.64	3.45	0.96	27.83
Which outcome measures are most appropriate for use in developing countries?	3.33	1.01	30.33	2.73	1.08	39.56

Table 12: Participant rating of the importance and feasibility of each research question area for the *Examination, Assessment and Diagnosis* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What diagnostic models are appropriate in OMT?	4.15	0.82	19.76	3.46	1.05	30.35
What are the criteria for diagnosis of different presentations?	4.10	0.95	23.17	3.51	0.98	27.92
What are the physical findings in patients with vertigo?	3.85	0.80	20.78	3.60	1.05	29.17
What clinical reasoning occurs in the process of examination?	3.96	1.02	25.76	3.37	1.01	29.97
What is the evaluation of VBI?	3.96	1.04	26.26	3.32	1.44	43.37
What is effective screening pre sports?	3.81	1.00	26.25	3.12	0.98	31.41
What is effective screening of adolescents?	3.73	0.99	26.54	3.21	0.99	30.84
What occurs in the process of differential diagnosis of non-musculoskeletal pathology?	3.96	1.10	27.78	3.21	1.07	33.33
What is the relevance and use of red flags in the management of musculoskeletal disorders?	4.35	0.83	19.08	3.96	1.06	26.77
What is the relevance and use of yellow flags in the management of musculoskeletal disorders?	4.29	0.85	19.81	3.85	0.97	25.19
What is ergonomic evaluation?	3.51	1.12	31.91	3.36	0.99	29.46
Can neural tissue mobilisation and function be evaluated using diagnostic ultrasound imaging?	3.77	0.88	23.34	3.19	1.18	36.99
What is the comparison to normative data for common presentations?	3.57	1.19	33.33	3.61	1.22	33.80

Table 13: Participant rating of the importance and feasibility of each research question area for the *Classification / subgroups / profiling of common syndromes* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What are the common physical/subjective/bio-psychosocial characteristics of patient sub groups eg; acute low back pain, chronic low back pain, whiplash associated disorder, tennis elbow, OA hip etc?	4.30	0.86	20.00	3.70	0.97	26.22
What are the characteristics of the sub group populations responding or not responding to OMT?	4.42	0.86	19.46	3.54	0.95	26.84
What factors appear to predict outcome of care in individual sub groups?	4.36	0.83	19.04	3.70	0.95	25.68
What are the mechanism effects of treatment in different sub groups?	4.10	0.88	21.46	3.21	1.05	32.71
What are sub group patients' perceptions of their problems and treatment mechanisms?	3.82	0.94	24.61	3.48	0.99	28.45
How does the patient/therapist relationship differ within different sub groupings?	3.62	1.05	29.01	3.29	0.91	27.66
What is the validity of diagnostic criteria used within individual sub groupings?	4.06	0.94	23.15	3.38	0.97	28.70
What is the reliability and validity of sub grouping classifications in musculoskeletal patients?	4.28	1.03	24.07	3.36	1.10	32.74
What is the role of communication skills and strategies in clinical profiling?	3.94	0.90	22.84	3.27	0.94	28.75
How do OMT classifications relate to ICD categories?	3.51	0.99	28.21	3.48	0.89	25.57

Table 14: Participant rating of the importance and feasibility of each research question area for the *Mechanisms of action of treatment* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
Can spinal joint “stability” be influenced by OMT?	4.10	0.89	21.71	3.35	1.07	31.94
Can peripheral joint “stability” be influenced by OMT?	4.06	0.89	21.92	3.42	1.11	32.46
What are the immediate physical effects of elastic (kinesio) tape on football players?	3.06	1.07	34.97	3.35	1.07	31.94
What are the effects of hamstring stretch procedures on straight leg raise and range of movement in normal subjects?	3.22	1.18	36.65	3.70	0.99	26.76
What are the immediate effects of lumbar mobilisations on abdominal hollowing exercise performance?	3.40	1.11	32.65	3.38	0.90	26.63
What are the effects of physical activity and exercise on sub populations with musculoskeletal disorders?	4.08	0.88	21.57	3.66	1.02	27.87
How is motor learning incorporated into functional rehabilitation and what effects does it have?	4.32	0.89	20.60	3.38	1.09	32.25

Table 15: Participant rating of the importance and feasibility of each research question area for the *Clinical effectiveness* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What effects do different modalities have on individual sub groupings when compared to control groups?	4.02	1.10	27.36	3.58	1.14	31.84
What is the cost effectiveness of OMT for different patient sub groups?	4.18	1.00	23.92	3.38	1.21	35.80
What effects do early and late referrals have on the outcome of OMT?	3.94	1.09	27.66	3.39	1.10	32.45
What is the efficacy of spinal manipulation?	4.08	1.08	26.47	3.40	1.26	37.06
What are the effects of spinal/peripheral manipulations?	4.06	1.02	25.12	3.33	1.14	34.23
What are the effects of scapula adduction training in patients with post traumatic acromioclavicular syndrome?	2.98	1.04	34.90	3.16	0.10	3.16
What are the effects of conservative treatment on sub groups of patients with low back pain?	4.14	1.02	24.64	3.50	1.07	30.57
What is the effectiveness of muscle energy techniques?	3.52	1.05	29.83	3.39	1.13	33.33
What is the role of OMT rehabilitation following injury?	3.98	0.97	24.37	3.50	1.09	31.14
What is the role of compression and mobilisation for articular cartilage repair?	4.10	0.87	21.22	3.10	1.23	39.68
What is the role of mobilisation in restoring muscle function through addressing pain inhibition?	3.96	0.97	24.49	3.24	1.22	37.65
Are soft tissue mobilisations more effective than transverse frictions?	3.36	1.35	40.18	3.26	1.31	40.18
What is the best regime for the prevention of ankle sprains?	3.64	1.14	31.32	3.22	1.17	36.34
What is the efficacy of mobilisation methods designed to alter movement patterns of the knee menisci?	3.00	1.14	38.00	2.74	1.12	40.88
What is the efficacy of therapist directed mobilisations versus self performed mobilisations of the temporo mandibular joint?	3.37	1.07	31.75	3.28	0.95	28.96
What is the efficacy of mobilisations in the treatment of carpal tunnel syndrome?	3.81	0.94	24.67	3.39	1.06	31.27

What is the effectiveness of prevention and treatment strategies for work related musculoskeletal disorders?	4.31	0.92	21.35	3.36	1.08	32.14
What are the effects of physiotherapy compared to no physiotherapy following common operative procedures, for example, total hip replacement and total knee replacement?	4.08	1.08	26.47	3.42	1.37	40.06
What are the effects of post operative regimes versus no treatment at all in post operative hip replacement patients?	3.83	1.04	27.15	3.49	1.26	36.10
What are the effects of deep stabilising exercises versus general back exercises in a low back pain population?	3.84	1.18	30.73	3.47	1.19	34.29
What is the difference between exercise versus OMT in patients following disc surgery?	3.36	1.22	36.31	3.28	1.25	38.11
What is the role of OMT in chronic pain management?	4.04	1.06	26.24	3.45	1.17	33.91
What are the effects of electrotherapy in the management of musculoskeletal disorders?	3.12	1.24	39.74	3.22	1.19	36.96

Table 16: Participant rating of the importance and feasibility of each research question area for the *Cost effectiveness* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What is the cost effectiveness of single modalities in the management of patients in various sub groups?	3.22	1.14	35.40	2.92	1.11	38.01
What is the cost effectiveness of multiple modalities in patients in various clinical sub groups?	3.67	1.12	30.52	3.08	1.00	32.47
What is the most cost effective management of musculoskeletal care for patients profiled into individual sub groups?	3.98	1.16	29.15	3.10	1.16	37.42

Table 17: Participant rating of the importance and feasibility of each research question area for the *Evidence Based Practice* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What evidence exists and how powerful is the evidence to support OMT in a variety of topic areas?	4.14	0.97	23.43	3.84	1.16	30.21
What are the clinical guidelines for the assessment and management of shoulder, knee and ankle problems?	4.00	0.97	24.25	3.98	1.02	25.63
Does evidence exist to support the reliability and validity of physical clinical measures?	4.04	1.06	26.24	3.80	1.22	32.11
What is the impact of evidence within OMT?	4.18	1.01	24.16	3.63	1.05	28.93
What strategies work in helping to integrate evidence into scientific practice?	4.40	0.90	20.45	3.71	0.99	26.68

Table 18: Participant rating of the importance and feasibility of each research question area for the *Patient focused research* theme

Research question area	Importance			Feasibility		
	Mean	SD	CV	Mean	SD	CV
What are the factors associated with patient satisfaction from the therapist's and the patient's perspectives?	3.98	1.10	27.64	3.68	1.20	32.61
What are patient expectations of OMT?	3.88	1.08	27.84	3.78	1.18	31.22
What are patient expectations of OMT service delivery?	3.88	0.90	23.20	3.84	1.04	27.08
What are the quality of life issues affecting treatment outcome?	4.02	0.84	20.90	3.68	1.00	27.17
What factors determine patient satisfaction with OMT?	4.06	1.00	24.63	3.92	0.94	23.98
What is the role of the musculoskeletal physiotherapist's communication / interpersonal skills in patient management?	4.20	0.97	23.10	3.46	1.05	30.35
What are the environmental factors in treatment settings and their importance to patients?	3.53	1.00	28.33	3.50	1.05	30.00
What are the pain experiences of patients with acute/chronic low back pain?	3.73	0.93	24.93	3.61	1.04	28.81
What are the factors affecting patients choice of therapy eg; OMT/osteopathy/ chiropractic in spinal dysfunction?	4.54	4.24	93.39	3.92	0.85	21.68
What are the patient's experiences of pain?	3.72	1.05	28.26	3.46	1.13	32.66
What are the patient's experience of OMT treatment?	3.63	1.15	31.68	3.80	1.14	30.00
What are the patient's experiences of the treatment of chronic pain?	3.82	1.09	28.53	3.63	0.99	27.27
What are the patient's experiences of OMT?	3.56	1.17	32.87	3.71	1.09	29.38
What are the benefits of patient empowerment in OMT?	3.83	1.00	26.11	3.50	1.07	30.57
What are the psycho-emotional aspects of patient/therapist relationships in OMT?	3.59	1.04	28.97	3.12	1.01	32.37
What are the factors influencing patient compliance with OMT treatment?	4.35	0.93	21.38	3.54	1.07	30.23
What is the influence of patient expectations on OMT treatment and	3.94	1.01	25.63	3.57	1.02	28.57

outcomes?

What are the patient experiences of individualised packages of OMT care?	3.28	1.10	33.54	3.31	1.05	31.72
What are the influences of a physiotherapist's communication styles on patients with acute low back pain?	3.94	1.09	27.66	3.25	1.12	34.46
What are the influences of education on patients with acute/chronic low back pain?	4.20	1.00	23.81	3.86	0.94	24.35