International survey among Osteopathic Practitioners and General Public defining Priorities in Research for Osteopathic Care

The PROCare Survey

# - Framework and questionnaire development -

Principle author: Paul Vaucher<sup>a</sup>

**Oversight committee:** Dawn Carnes<sup>b</sup>, David Hohenschurz-Schmidt<sup>b,c</sup>, Oliver Thomson<sup>b</sup>, Steve Vogel<sup>b</sup>, Jerry Draper Rodi<sup>b,d</sup>

#### Affiliations

- a. Foundation COME Collaboration, Pescara, Italy
- b. Research Department, University College of Osteopathy, London, UK
- c. Pain Research, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, UK
- d. National Council for Osteopathic Research, London, UK

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#### Methods for developing the survey framework

In place of a mixed design including a qualitative round to establish a master list of priorities, an umbrella literature review was done to identify current published lists and reach and then reach an agreement with a panel of experts and patient representatives on the list to be used for this survey. This approach is believed to be sufficient in view of limitations in time and funding[1].

Pubmed was searched for publications from 1998 to 2023 using the keyterms "research priorities", "Delphi" or "Survey", "Primary care" or "General practice" or "Chiropractic" or "Physiotherapy" or "Osteopathic" or "Sport medicine" OR "Patients" or "Stakeholders", by a single researcher. Inclusion criteria were publication after 1997, the survey had to concern priorities in research in public health, primary care, physiotherapy, osteopathic or chiropractic care, or sport medicine, and the study had to investigate priorities globally and not specifically for a condition. On May 28.05.2023, PubMed listed 136 articles of which 12 were retained[2–13]. Forward and backward tracking identified an additional four studies[14–17]. From these 16 studies, data was extracted on the methods used to define the master list of priorities, on the surveyed population and on the categorisation used for listing research domains and subdomains within each study (**Table 1**). Content interpretative thematic analysis[18] was then used to identify underlying taxonomy for organising research priorities. Data analysis was done on Taguette 1.4.1.

Within the literature, there seems to be two overlapping systems of classification for health research priorities: one is more person/service related, the other is more health condition/disease related. Given osteopathic care is person-centred rather than disease centred, it was chosen to focus on the first system. This made it possible to label and categorise 246 known priorities into seven principal research domains, 28 subdomains, and 66 examples of research topics. Research priorities were summarized into a model called the PROCare Eye (**Figure 1**). Five experienced researchers in osteopathic care reviewed the first classification and improved the labelling and classification. A group of 19 researchers validated the taxonomy after adding a seventh principal research domain. Missing examples were initially completed using ChatGPT to suggest associated terms and then revised and completed by all expert osteopath researchers.

The survey was constructed from the model and comprised five main sections:

- Principal Research Domains Priority Assessment: Participants are presented with a list of sub-domains derived from the literature review and are asked to rate the importance of each sub-domain within on a Likert scale, ranging from 0 (not important at all) to 4 (absolutely essential). Participants are asked to rate the importance of each of the six Principal Research Domains: Process of care, Healthcare management, Population Health, Education, Basic science, and Methodology.
- 2. Research Sub-domain Priority Assessment: Using the same method, participants are presented with a list of sub-domains derived from the literature review and are asked to rate the importance of each sub-domain within each of the six principal research domains.
- 3. Topic priorities and Open-Ended Questions: This section aims to capture nuanced perspectives and emerging themes that may not have been covered in the umbrella review. Participants are asked to select three relevant topics within each Principal Research Domain and eventually add any other suggestions.
- 4. Assessing criteria used to set priorities: Participants are asked to report what importance they assigned to different criteria when expressing their views on research priorities.
- 5. Demographic Information: Participants were asked to provide demographic details, including age, gender, country with most experience with osteopathic care, and feelings of belonging to different representation groups (patients, practitioners, policymakers, educators, researchers).

A panel of experts was invited to assess construct and content validity. Fifteen osteopaths with links to research and 15 English speaking public representatives were invited to go through the

survey and assess comprehensibility, completeness, coherency, representativeness, and applicability of each section. Questions were adapted from their comments and tested using a "think-aloud" approach with three general public representatives that were naïve to healthcare jargon.

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#### UCO

#### **Table 1**Summary of publications on research priority domains and topics published from 1998 to 2023

Publication	Field	Methods for creating list	Surveyed population	Master list of priorities
Hubbard et al,. 2022[3]	Primary care	Categorisation of 1274 suggestions by researchers following a survey	512 Scottish responders including nurses, midwives, occupational therapists, physiotherapists, physicians, pharmacists, educators, specific disease networks	<ul> <li>Disease and illness</li> <li>Access <ul> <li>Availability and presence of services</li> <li>Utilisation and service barriers</li> <li>Relevance and effectiveness of services</li> <li>Equity</li> </ul> </li> <li>Workforce</li> <li>Multi-disciplinary team</li> <li>Integration</li> <li>Health inequalities</li> </ul>
Bélanger et al., 2022[15]	Sport and physical activity research	In depth discussion during a workshop with stakeholders	24 Canadian experts from governmental and non-governmental organisations, healthcare providers, educators, social science, and sport specialists	<ul> <li>Community knowledge development</li> <li>Sociocultural factors</li> <li>Interventions</li> <li>Policies, resources, and training</li> </ul>
Amorin-Woods et al., 2022[2]	Chiropractic care	Self-administered online questionnaire based on principal research domains defined from international research agendas.	33 Australian chiropractic academics and 340 practitioners	<ul> <li>Basic science         <ul> <li>Spine-related biomechanical mechanism</li> <li>Spine-related soft tissues mechanisms</li> <li>Neurophysiological spinal mechanisms</li> <li>Neurophysiological effects of stress</li> <li>Technologies assessing spinal structure/function</li> </ul> </li> <li>Conditions</li> <li>Patient subgroups</li> <li>Clinical interventions</li> <li>Public health / Health services         <ul> <li>Epidemiology of spinal disorders</li> <li>Access / barriers to chiropractic</li> <li>Cost-benefit analysis of chiropractic services</li> <li>Quality evaluation of chiropractic</li> <li>Clinical practice guidelines</li> <li>Workforce demands, supply, and service gaps</li> <li>Integrative care models</li> </ul> </li> </ul>

Publication	Field	Methods for creating list	Surveyed population	Master list of priorities
Lee et al., 2021[4]	Sport chiropractic field	Semi-structured interviews using an interpretivist approach was used to identify themes. Focus group interviews were also used following the analysis of the previous interviews.	20 international (8 countries) sports chiropractic researchers and 12 sports chiropractic leaders from Canada	Clinical research     Consensus & Position statements     Consensus & Position statements     Consensus & Position statements     Consensus & Position statements     Diagnosis research (ex. Clinical predictive rules, functional assessment,     orthopedic assessment)     Epidemiology     Guidelines & Evidence-based Care Pathways     Intervention & Clinical Efficacy     Prognostic research (ex. Illness prevention, injury prevention, risk factors)     Research & Development of Outcome Measures     Chiropractic research in sports     Comparing Sports Chiropractors to other Practitioners     Competency of Sports Chiropractors     Competency of Sports Chiropractic research     Integration of Sports Chiropractic research     Surveillance of Professional Activity in Sports Chiropractic     Surveillance of Professional Activity in Sports Chiropractic     Utilisation of Sports Chiropractic Patient     Utilisation of Sports Chiropractic Services     Specific sport conditions and topics     Health services research     Athletic Field Services     Cost-effectiveness     Interprofessional dynamics     Knowledge Translation     Sports Healthcare Teams     Utilization of Sport Healthcare Services     Basic science and mechanism research     Fields of study (ex. Biomechanics, physiology, exercise)     Interventions (ex. SMT, acupuncture, rehabilitation, etc.)     Population health     Physical activity     Public awareness & Education     Specific Conditions and Topics in Sports
Heal & Roberts, 2019[14]	General practice	Literature review and two round Delphi survey	83 Australian panel experts including practitioners, educators, professional organization representatives, allied health representatives, consumer organisations, community, and philanthropic organisations	<ul> <li>Disease related priorities</li> <li>Process of care priorities</li> <li>Population health priorities</li> <li>Healthcare management priorities</li> <li>Other General practice issues</li> </ul>

Publication	Field	Methods for creating list	Surveyed population	Master list of priorities
Synnot et al., 2018[6]	Health communication and participation	Open-question survey identified 200 research ideas. Inductive thematic analysis grouped them in 21 priority topics	48 consumers, 75 healthcare providers, and 25 who identified as both from 12 countries.	<ul> <li>Health service-level issues         <ul> <li>Communication and coordination of care between and within health services</li> <li>Implementing patient-centred care</li> <li>Holism, quality of care and patient safety</li> <li>Consent</li> <li>Quality of communication between health professionals and patients</li> </ul> </li> <li>Health professional-level issues         <ul> <li>Investigating preferences and priorities</li> <li>Providing information to patients</li> <li>Support for patient decision-making</li> <li>Two-way barriers to adequate participation and communication</li> <li>Evaluating patient understanding</li> </ul> </li> <li>Consumers and carer issues in their own care         <ul> <li>Understanding health problems, treatment options and rights</li> <li>Knowing about all the options or services that exist</li> <li>Active participation in one's care</li> <li>Health literacy and decision making</li> <li>Information overload and important information retention</li> <li>Understanding key medical information</li> </ul> </li> <li>Issues for broader consumer and carer involvement         <ul> <li>Involving patients in health research and sharing findings</li> <li>Involving consumers and carers in health service planning and design</li> </ul> </li> </ul>
O'Neil et al., 2018[5]	Primary care	James Lind Alliance Priority Setting Partnership process with primary care stakeholders to identify top ten priorities	Primary care/family medicine global health organizations with representatives from 131 individuals from 27 countries.	<ul> <li>Social determinants of health and health equity</li> <li>Financing, organizing, and staffing primary care</li> <li>Universal health coverage</li> <li>Measuring primary care performance</li> <li>Knowledge transfer</li> <li>Identifying effective interventions to improve functional abilities and quality of life in people with multimorbidity</li> <li>Involving patients in the design and delivery of primary care</li> <li>Integrating Indigenous communities' knowledge</li> <li>Promoting healthy behaviour in the population</li> <li>Effects of electronic communication in delivery of primary care</li> </ul>
French et al., 2017[7]	Chiropractic care	Modified Delphi consensus study with three-rounds and one face-to-face workshop	57 Canadian stakeholders and researchers from Chief Executive Officers, President/Chair, and Board Members of Canadian chiropractic professional associations and student associations, and Canadian chiropractic researchers (chairs, PhD students and active researchers).	<ul> <li>Health system research         <ul> <li>Integration in multidisciplinary settings</li> <li>Cost effectiveness of chiropractic care</li> <li>Effects of chiropractic care on reducing medical services</li> </ul> </li> <li>Clinical research         <ul> <li>Effects of chiropractic care</li> <li>Safety and side effects of chiropractic care</li> <li>Chiropractic care and older adults</li> </ul> </li> <li>Basic science         <ul> <li>General mechanisms and effects of spinal manipulative therapy</li> <li>Neurophysiological mechanisms and effects of spinal manipulative therapy</li> </ul> </li> </ul>

Publication	Field	Methods for creating list	Surveyed population	Master list of priorities
Nast et al., 2015[16]	Physiotherapy	Mixed methods with 18 focus group discussions, 23 semi-structured interviews and a two- round Delphi survey to identify top 10 fields of research priority.	134 Swiss stakeholders among physiotherapists (PTs) researchers, PT practitioners, PT educators, representatives of patient organizations, public health organizations, health insurers, physicians, occupational therapists, nurses, other health professionals and physical educators	<ul> <li>Physiotherapy treatment</li> <li>Physiotherapy assessment and diagnosis</li> <li>Prevention</li> <li>Physiotherapist-patient interaction</li> <li>Physiotherapy professional education</li> <li>Development of physiotherapy profession</li> <li>Advanced scope physiotherapy: direct access</li> <li>New technologies</li> <li>Physiotherapy higher education and continuing education</li> <li>Physiotherapy in multidisciplinary networks</li> </ul>
Rushton et al., 2014[9]	Osteopathic care	Three-round Delphi survey first identifying potential research priorities and then rating their importance and finding a consensus. Round 1 made it possible to identify themes from 610 suggested research priorities.	136 UK osteopaths and 9 UK service users.	<ul> <li>Professional identity and scope of practice</li> <li>Effectiveness and cost-effectiveness         <ul> <li>Disease or condition related priorities</li> <li>Cranial osteopathy</li> <li>Visceral osteopathy</li> <li>Sport injury and rehabilitation</li> </ul> </li> <li>Adverse events</li> <li>Clinical diagnosis</li> <li>Outcome measurement</li> <li>Underlying physiological mechanisms</li> <li>Education and continuous professional development</li> </ul>
McKenna et al., 2014[8]	Allied health care	Three round Delphi consensus study	180 experts from Northern Ireland including stakeholders and service users from Chiropody/Podiatry, Dietetics, Occupational Therapy, Orthoptics, Physiotherapy and Speech and Language Therapy	Practice evaluation     Health promotion     Service organisation     Clinical academic training     Service user perspective     Cost-effectiveness of services     Epidemiology
Kaur et al, 2014[10]	Stakeholders in state health officials	Survey using semi- structured open questions on the five leading public health research priorities	35 Indian State officials and 17 researchers	<ul> <li>Reproductive/maternal health including family planning</li> <li>Child health problems for under five age group</li> <li>Adolescence health</li> <li>Undernutrition including micronutrient deficiencies</li> <li>Infectious diseases</li> <li>Non-communicable diseases including injury</li> </ul>

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Publication Field	Methods for creating list	Surveyed population	Master list of priorities
Stevens et Ovretveit, 2013[11] Stakeholder view on quali improvement healthcare research priorities	Three stages: 1) Topics	560 USA Healthcare experts including researchers, academic faculty members, administrators, clinical educators, consultants, frontline clinicians, midlevel managers, attending a quality improvement conference event.	Process improvement in clinical care         Celection of best practices into clinical routines         Checklists and other care improvement tools         Process improvement techniques and tools         Systems and microsystems         Workplace environment and quality improvement         Climates for change and learning organizations         Migh-reliability organization concepts in acute care settings         Patient safety         Culture of patient safety         Prevention of targeted patient safety incidents         Patient safety         Prevention of targeted patient safety incidents         Patient centred care         Patient centred care and patient advocacy         Care coordination         Handoffs and transitions <i>across</i> healthcare settings         Quality indicator sets         Reliable metrics for measuring improvement         Reports to the public on quality and safety (transparency)         Feedback and dashboards to guide performance         Baseline and follow-up measures to assess impact of improvement         Measurement of total system processes         Policy, regulation, and recognition programs         Impact of healthcare of improvement processes         Policy, regulation, and recognition programs         Impact of healthcare of improvement processes         Porograms of excellence impact on patient outcomes         Subort of improvement processes         Porograms of excellence impact on patient outcomes         Subort of improvement processes         Programs of excellence impact on patient outcomes         Subort of improvement processes         Programs of excellence impact on patient outcomes         Subort of improvement processes         Programs of excellence impact on patient outcomes         Subort of the provament processes         Programs of excellence impact on patient outcomes         Subort of chealthcare regulations on costs and outcomes         Subort of chealthcare regulations on costs and outcomes         Subort or proprine staffing levels         Teah moe

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Rankin et al., 2012[12]	Physiotherapy	Three-round Delphi study with four expert panels each dedicated to core area of physiotherapy practice: musculoskeletal, neurology, cardiorespiratory rehabilitation, and mental and physical health and wellbeing.	204 stakeholders in the UK with expertise in clinical practice, research, education, management/service provision, service commissioning/planning/purchasing, policymaking, guideline panel membership, and user representation.	<ul> <li>Musculoskeletal         <ul> <li>Adherence to exercise programmes</li> <li>Exercise prescription for long-term conditions</li> <li>Effectiveness and cost-effectiveness of physiotherapy for patellofemoral pain</li> </ul> </li> <li>Neurology         <ul> <li>Post stroke effectiveness of patient management</li> <li>Parameters of intervention (intensity, frequency, and duration)</li> <li>Effectiveness of self-management strategies</li> </ul> </li> <li>Cardiorespiratory         <ul> <li>Service provision (on-call physiotherapy services)</li> <li>Service provision (7-day working)</li> <li>Early mobility programmes for critically ill patient management</li> </ul> </li> <li>Wellbeing         <ul> <li>Change physical activity behaviour for people with long term conditions</li> <li>Collaboration with exercise providers</li> <li>Education/continuing professional development</li> </ul> </li> </ul>
Rushton et Moore, 2010[13]	Physiotherapy care	Three round modified Delphi process to define priority themes for physiotherapy postgraduate theses	91 experts (i.e., postgraduate course tutors or expert clinicians) nominated by 20 member countries of the IFOMT.	<ul> <li>Professional development</li> <li>Epidemiology</li> <li>Normative data collection</li> <li>Reliability of assessment tools</li> <li>Validity of assessment tools</li> <li>Outcome measures</li> <li>Examination, assessment, and diagnosis</li> <li>Classification/subgroups/profiling of common syndromes</li> <li>Mechanism of action of treatment</li> <li>Evidence based practice</li> <li>Patient focused research</li> </ul>

Figure 1 The Priorities in Research for Osteopathic Care Eye. The content of the inner circles is directly derived from the taxonomy used by the literature investigating research priorities in healthcare. The outer circle contains examples. Those with an \* were added as they were not directly drawn from the literature.

