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

The PROCare Survey

- Framework and questionnaire development -

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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.

References

- 1 Linstone HA, Turoff M. Delphi: A brief look backward and forward. *Technological Forecasting* and Social Change 2011;**78**:1712–9. doi:10.1016/j.techfore.2010.09.011
- 2 Amorin-Woods LG, Woods BL, Moore CS, *et al.* Research Priorities of the Australian Chiropractic Profession: A Cross-Sectional Survey of Academics and Practitioners. *J Manipulative Physiol Ther* 2022;**45**:73–89. doi:10.1016/j.jmpt.2022.03.015
- 3 Hubbard G, Grist F, Pope LM, *et al.* Survey to identify research priorities for primary care in Scotland during and following the COVID-19 pandemic. *BMJ Open* 2022;**12**:e056817. doi:10.1136/bmjopen-2021-056817
- 4 Lee AD, deGraauw LC, Muir BJ, *et al.* A qualitative study investigating research priorities and investigative capacity in sports-focused chiropractic research, part 1 identifying research priorities to inform a Delphi study. *J Can Chiropr Assoc* 2021;**65**:292–317.
- 5 O'Neill B, Aversa V, Rouleau K, *et al.* Identifying top 10 primary care research priorities from international stakeholders using a modified Delphi method. *PLoS ONE* 2018;**13**:e0206096. doi:10.1371/journal.pone.0206096
- 6 Synnot A, Bragge P, Lowe D, *et al.* Research priorities in health communication and participation: international survey of consumers and other stakeholders. *BMJ Open* 2018;**8**:e019481. doi:10.1136/bmjopen-2017-019481
- 7 French SD, Beliveau PJH, Bruno P, *et al.* Research priorities of the Canadian chiropractic profession: a consensus study using a modified Delphi technique. *Chiropr Man Therap* 2017;**25**:38. doi:10.1186/s12998-017-0169-4
- 8 McKenna H, McDonough S, Keeney S, *et al.* Research priorities for the therapy professions in Northern Ireland and the Republic of Ireland: a comparison of findings from a Delphi consultation. *J Allied Health* 2014;**43**:98–109.
- 9 Rushton AB, Fawkes CA, Carnes D, et al. A modified Delphi consensus study to identify UK osteopathic profession research priorities. *Man Ther* 2014;**19**:445–52. doi:10.1016/j.math.2014.04.013
- 10 Kaur P, Chitra GA, Mehendale SM, *et al.* Perceptions of State Government stakeholders & researchers regarding public health research priorities in India: an exploratory survey. *Indian J Med Res* 2014;**139**:231–5.
- 11 Stevens KR, Ovretveit J. Improvement research priorities: USA survey and expert consensus. *Nurs Res Pract* 2013;**2013**:695729. doi:10.1155/2013/695729
- 12 Rankin G, Rushton A, Olver P, *et al.* Chartered Society of Physiotherapy's identification of national research priorities for physiotherapy using a modified Delphi technique. *Physiotherapy* 2012;**98**:260–72. doi:10.1016/j.physio.2012.03.002
- 13 Rushton A, Moore A. International identification of research priorities for postgraduate theses in musculoskeletal physiotherapy using a modified Delphi technique. *Man Ther* 2010;**15**:142–8. doi:10.1016/j.math.2009.09.003

- 14 Heal C, Roberts G. General practice research priority setting in Australia: Informing a research agenda to deliver best patient care. *Aust J Gen Pract* 2019;**48**:789–95. doi:10.31128/AJGP-05-19-4928
- 15 Bélanger M, Carpenter JG, Sabiston CM, *et al.* Identifying priorities for sport and physical activity research in Canada: an iterative priority-setting study. *CMAJ Open* 2022;**10**:E269– 77. doi:10.9778/cmajo.20210114
- 16 Nast I, Tal A, Schmid S, *et al.* Physiotherapy Research Priorities in Switzerland: Views of the Various Stakeholders. *Physiother Res Int* 2016;**21**:137–46. doi:10.1002/pri.1621
- 17 Rubinstein SM, Bolton J, Webb AL, *et al.* The first research agenda for the chiropractic profession in Europe. *Chiropr Man Therap* 2014;**22**:9. doi:10.1186/2045-709X-22-9
- 18 Bradley EH, Curry LA, Devers KJ. Qualitative Data Analysis for Health Services Research: Developing Taxonomy, Themes, and Theory. *Health Serv Res* 2007;**42**:1758–72. doi:10.1111/j.1475-6773.2006.00684.x

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Table 1Summary 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	 Disease and illness Access Availability and presence of services Utilisation and service barriers Relevance and effectiveness of services Equity Workforce Multi-disciplinary team Integration Health inequalities
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	 Community knowledge development Sociocultural factors Interventions Policies, resources, and training
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	 Basic science Spine-related biomechanical mechanism Spine-related soft tissues mechanisms Neurophysiological spinal mechanisms Neurophysiological effects of stress Technologies assessing spinal structure/function Conditions Patient subgroups Clinical interventions Public health / Health services Epidemiology of spinal disorders Access / barriers to chiropractic Cost-benefit analysis of chiropractic services Quality evaluation of chiropractic Clinical practice guidelines Workforce demands, supply, and service gaps Integrative care models

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	 Disease related priorities Process of care priorities Population health priorities Healthcare management priorities Other General practice issues

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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.	 Health service-level issues Communication and coordination of care between and within health services Implementing patient-centred care Holism, quality of care and patient safety Consent Quality of communication between health professionals and patients Health professional-level issues Investigating preferences and priorities Providing information to patients Support for patient decision-making Two-way barriers to adequate participation and communication Evaluating patient understanding Consumers and carer issues in their own care Understanding health problems, treatment options and rights Knowing about all the options or services that exist Active participation in one's care Health literacy and decision making Information overload and important information retention Understanding key medical information Issues for broader consumer and carer involvement Involving patients in health research and sharing findings Involving consumers and carers in health service planning and design
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.	 Social determinants of health and health equity Financing, organizing, and staffing primary care Universal health coverage Measuring primary care performance Knowledge transfer Identifying effective interventions to improve functional abilities and quality of life in people with multimorbidity Involving patients in the design and delivery of primary care Integrating Indigenous communities' knowledge Promoting healthy behaviour in the population Effects of electronic communication in delivery of primary care
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).	 Health system research Integration in multidisciplinary settings Cost effectiveness of chiropractic care Effects of chiropractic care on reducing medical services Clinical research Effects of chiropractic care Safety and side effects of chiropractic care Chiropractic care and older adults Basic science General mechanisms and effects of spinal manipulative therapy Neurophysiological mechanisms and effects of spinal manipulative therapy

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	 Physiotherapy treatment Physiotherapy assessment and diagnosis Prevention Physiotherapist-patient interaction Physiotherapy professional education Development of physiotherapy profession Advanced scope physiotherapy: direct access New technologies Physiotherapy higher education and continuing education Physiotherapy in multidisciplinary networks
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.	 Professional identity and scope of practice Effectiveness and cost-effectiveness Disease or condition related priorities Cranial osteopathy Visceral osteopathy Sport injury and rehabilitation Adverse events Clinical diagnosis Outcome measurement Underlying physiological mechanisms Education and continuous professional development
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	 Reproductive/maternal health including family planning Child health problems for under five age group Adolescence health Undernutrition including micronutrient deficiencies Infectious diseases Non-communicable diseases including injury

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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

Publication	Field	Methods for creating list	Surveyed population	Master list of priorities
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.	 Musculoskeletal Adherence to exercise programmes Exercise prescription for long-term conditions Effectiveness and cost-effectiveness of physiotherapy for patellofemoral pain Neurology Post stroke effectiveness of patient management Parameters of intervention (intensity, frequency, and duration) Effectiveness of self-management strategies Cardiorespiratory Service provision (on-call physiotherapy services) Service provision (7-day working) Early mobility programmes for critically ill patient management Wellbeing Change physical activity behaviour for people with long term conditions Collaboration with exercise providers Education/continuing professional development
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.	 Professional development Epidemiology Normative data collection Reliability of assessment tools Validity of assessment tools Outcome measures Examination, assessment, and diagnosis Classification/subgroups/profiling of common syndromes Mechanism of action of treatment Evidence based practice Patient focused research

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.

