

Introducing the Collaborative Australian Physiotherapy Research Initiative (CAPRI) project

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Abstract

Physiotherapy is the most popular primary health care choice in Australia with reports of good patient satisfaction for people with acute and chronic disorders. Despite emerging research activity and developments, major gaps in the evidence base of physiotherapy care remain. Worldwide, most physiotherapy research undertaken is initiated locally, by researchers or clinicians. Recruitment of participants remain challenging due to single-center research projects and/or a lack of funding. Collaborations between researchers, clinicians and patients in a practice-based research network (PBRN) would overcome this problem by building a research platform and infrastructure. PBRNs act as 'research laboratories' systematically enabling researchers to answer questions that arise from clinical practice, relevant to clinicians as well as patients.

This commentary identifies the significance of several key features (including a national, coordinated focus, and a rich engagement with practitioners and patients amongst others) arguably important to the future development of research and research capacity within Australian physiotherapy. In addition, the design features, and phases of the Collaborative Australian Physiotherapy Research Initiative (CAPRI) are outlined. CAPRI is a collaborative initiative specifically developed to address physiotherapy's research and research capacity building needs and help grow a broad evidence-base to inform safe, effective patient care.

Keywords: Physiotherapy, Research, Practice-based research networks, Research capacity building

BACKGROUND

Physiotherapy is one of the largest health professions in Australia with 37,316 registered physiotherapists in 2020 and is the most popular primary care health care choice in Australia [1,2]. However, despite emerging research activity and developments, major gaps in the evidence-base of physiotherapy care remain [3,4]. This is because typically contemporary physiotherapy research has several limitations such as it is initiated locally by researchers, not active clinicians, and often suffers from poor recruitment as it is a stand-alone activity in the clinical field [5]. As such, there is a clear need for initiatives to ensure

high-quality large-scale practice and patient centered research. In addition, it is important to significantly invest in research capacity building as there is a risk of substantially limiting the prospects of the profession and its research base for the foreseeable future [6,7]. Therefore, initiatives which address research and research capacity building of Australian physiotherapists are needed. It is essential that these initiatives have clear links with current physiotherapy practice as well as patient needs. In addition, these initiatives need to enforce high quality research and therefore adopt and build upon rigorous health and medical research methods. To be able to align with current research needs,

these initiatives can best be nationally / centrally coordinated, have a broad and multidisciplinary approach and be sustainable for the future enabling short term, as well as long-term outcomes. In addition, successful initiatives need to incorporate practitioner engagement and enables practitioners / physiotherapist to build research capacity within the profession.

A practice-based research network (PBRN) can overcome these problems by building a research platform and infrastructure [8,9]. The Collaborative Australian Physiotherapy Research Initiative (**CAPRI**) is a collaborative initiative which has been designed and launched in direct response to research and research capacity building needs of the physiotherapy profession in Australia. Below we explain the overarching design and phases of CAPRI.

INTRODUCING CAPRI

Given the importance of physiotherapy care in Australia, further research is needed to ensure safe and effective physiotherapy care and provision. CAPRI is the first long-term, national PBRN designed to examine and improve physiotherapy care in Australia. It builds upon a range of previously developed clinician specific PBRNs like chiropractic care [8], complementary and integrative medicine [10], osteopathy research & innovative network [9], general practice [11,12,13], pharmacy [14], and dentistry [15]. PBRN's act as 'research laboratories' as they depart from participating groups of practitioners / practices. This enables researchers, practitioners, and decision makers to answer questions that arise from clinical practice [16] as well as to undertake research of relevance to both practitioners and patients [17]. The notion of a PBRN being sustainable and capacity building has also been highlighted [18,19]. Examples of the type of issues that have previously been investigated using PBRN's include an examination of a range of information sources practitioners draw upon to inform their clinical decision-making processes and the

comparative effectiveness of different models of health care [20,21]. A PBRN is extremely well positioned to help address research questions around professional standards of practice and clinical characteristics and behaviors and can provide an opportunity for more rigorous sub-studies to examine the prevalence of certain conditions, management and effectiveness of interventions or protocols within patient sub-groups [20].

AIM OF CAPRI

CAPRI aims to enable, facilitate, and coordinate high quality practice-based, patient relevant / centered physiotherapy research, with effective engagement of the physio-therapy community. To do so we intend to:

- Foster and conduct research that is practice and patient relevant.
- Make use of rigorous scientific research results to inform patient care.
- Facilitate a sustainable research culture.
- Accommodate research network building.
- Capacity building in early career researchers.
- Facilitate collaborations between patients, physiotherapists, and researchers.
- Establish a sustainable, national database for physiotherapy research in Australia for future applications and funding.

CAPRI is independently led and hosted by the Discipline of Physiotherapy (Graduate School of Health, University of Technology Sydney) and has been designed in collaboration with and the School of Public Health (University of Technology Sydney), Macquarie University, and the University of Sydney. CAPRI is endorsed by the Australian Physiotherapy Association (APA).

CAPRI will provide extensive data collection and analysis as well as develop essential national infrastructure for future research on physiotherapy care in Australia and New Zealand. It draws upon and promotes critical multi-disciplinary, longitudinal investigations based upon rigorous scientific design and methods.

PBRNs like CAPRI strongly encourages (and relies upon) collaborative involvement from across the physiotherapy profession (both in terms of practitioners and researchers). In addition, it allows to introduce a national coordinated agenda for physiotherapy research that is translational in output and reflective of practice realities.

While CAPRI can facilitate a diverse range of research sub-studies and addressing a broad range of distinct but interrelated research questions, the platform focus of CAPRI is upon examining issues around physiotherapy best practice, safety, and cost effectiveness. CAPRI will employ a diverse dissemination strategy to ensure that research findings reach practitioners, patients, researchers, and policy makers.

Dissemination of research findings from CAPRI will include, amongst others, publication in relevant national and international peer-reviewed journals, national and international physiotherapy conferences, as well as a dedicated practitioner-friendly webpage (www.capri-au.com).

CAPRI and its structure

The development of CAPRI consists of three core phases: 1) Preparation phase, 2) Recruitment phase, and 3) Facilitation phase (see figure below). These phases will be implemented over the first three years, with a view to establishing a longer-term, programmatic initiative to be maintained over a much longer period.

Preparation phase is focused upon the design, preparation, and promotion activities.

Recruitment phase involves distribution of a brief baseline practitioner questionnaire and practitioner recruitment, establishing an Australia based physiotherapy database).

Facilitation phase will include the launch of an Expression of Interest (EOI) option and initial approval for nested sub-studies (with priority given to Master's and PhD projects). This final phase will further facilitate additional and

ongoing nested sub-study activity available to senior researchers and their teams and PhD development opportunities alongside maintaining the national physiotherapy database.

In the remaining sections of this paper, we outline the three phases in more detail.

Specially, by providing a general overview of the approach and methods and highlighting how CAPRI incorporates key design features which ensure short-term and long-term critical investigation and evaluation as well as the capacity building necessary to enable the profession and field to develop and prosper.

PREPARATION PHASE

In this initial phase of CAPRI, the Steering Committee responsible for the design, ethics, preparation, and promotion of CAPRI has been established. The CAPRI steering committee members are: Prof Arianne P Verhagen (Head of Discipline, Physiotherapy, UTS), Prof Jon Adams and Prof David Sibbritt (School of Public Health, UTS), Assoc Prof Taryn Jones (Macquarie University), Dr Andrew Lever (Sydney University), Dr Poonam Mehta (Discipline of Physiotherapy, UTS), Mr Rik Dawson (APA representative), Ms Fiona Scott (Consumer representative), and Ms Libby Soderholm (Private Practitioners representative).

Apart from a Steering Committee, we have also established an Advisory Board including representatives from various physiotherapy courses in Australia and New Zealand to emphasize the collaborative nature of CAPRI (www.capri-au.com).

The preparation phase includes a promotion strategy to reach and engage as many of the practicing physiotherapists across Australia and New Zealand as possible. It is imperative for a national-scale PBRN project, such as CAPRI, to attract as high response rate as possible from the target population (*all* practicing physiotherapists) and critical to this is a well-developed promotion campaign. According to the Australian Health Practitioner Regulation

Agency (AHPRA) Annual Report in 2020 a total of 37,316 registered physiotherapists were reported to be on the National Registration and Accreditation Scheme. Approximately 70% of these registered Australian physiotherapists are working in private practice [22].

To attract a high response, an extensive promotion strategy is administered via regional and national events to reach and engage as many of the registered practicing physiotherapists across Australia as possible. To facilitate this, CAPRI senior Chief Investigators (Prof Verhagen & Prof Adams) have presented introductory CAPRI talks at relevant venues and events, including meetings with APA Board members; regional and national Executive and Membership Meetings, such as Council of Physiotherapy Deans Australia and New Zealand (CPDANZ) committee, Clinical Education Managers of Australia and New Zealand (CEMANZ) committee; UTS affiliated Industry Advisory Board (IAB) committee and research-focused events. We are also aiming to keep providing regular updates and information briefings via relevant newsletters (e.g. via APA InMotion magazine) throughout 2021. Further information regarding CAPRI is available via the project webpage: www.capri-au.com.

Drawing upon previous relevant research in Australia and New Zealand [8,9,10], the CAPRI project team has designed, piloted, and finalized a brief questionnaire for the recruitment phase to collect baseline practitioner and practice data. All the initial phase design features of CAPRI were in alignment with ethical review and approved by UTS High Risk Ethics Committee (Human), reference number: ETH19-3327.

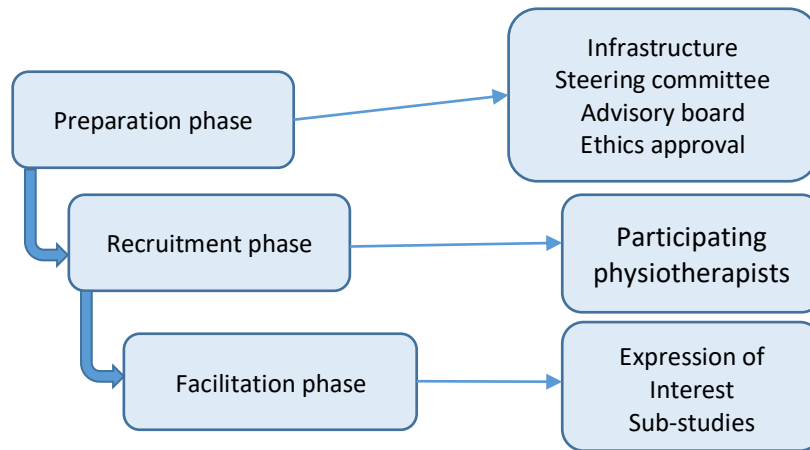
RECRUITMENT PHASE

The initial focus in this phase will be to administer the questionnaire designed and finalized in the preparation phase. The questionnaire is brief to encourage and maximize a high response rate. Initial pilot-testing showed the questionnaire will take approximately 8-10 minutes to complete. The questionnaire includes examination of

practitioner's demographics, their practice characteristics including the frequency of patient types and presentations as well as the techniques and methods of care employed. The survey will be administered online to registered physiotherapists across Australia and New Zealand via a link on the website (www.capri-au.com) and will constitute the first national-scale mapping of physiotherapists' clinical management and patient care undertaken in Australia. In addition, this national mapping of physiotherapy care will also be critical to establishing a broad data resource with which others can build, value-add, examine specific lines of investigation, and address additional research questions. Alongside the questionnaire, physiotherapists receive an additional invitation to participate in CAPRI sub-studies. Contact details (email address) of each consenting physiotherapist will be added to a secure database (housed at Discipline of Physiotherapy, UTS) which will be an ongoing resource for further research investigation via approved EOI applications.

FACILITATION PHASE

This last phase will include an initial call for Expression of Interest(s) (EOI) to be conducted by other interested researchers and practitioners who may wish to access the CAPRI database for the purpose of developing and conducting nested sub-studies. Such EOIs will follow a formal application process and will be peer-reviewed by the CAPRI Steering Committee with a view to ensuring appropriate standards of scientific validity and feasibility and methodological expertise can be offered. Sub-study applications from clinicians will be strongly encouraged. All research groups will be encouraged to seek additional funding to facilitate separate PhD studentships / stipends which can be nested in CAPRI and thereby take advantage of the infrastructure established. Sub-studies suitable for EOI can include a vast array of possible designs, including (but not restricted to): qualitative, quantitative, and mixed-method research designs. The data can be collected via both physiotherapists and their patient, cross-sectional as well as longitudinal.



The CAPRI database provides an ideal platform for nesting future PhD projects and can therefore be harnessed and utilized as a rich and valuable resource for doctoral level studies that will ultimately build physiotherapy research capacity. In addition, the CAPRI Steering Committee research team at UTS will prepare further funding applications and seek input from relevant and interested partners to support applications for Federal Government research funding where possible. With this in mind, the Steering Committee will also explore opportunities to maintain and regularly update the CAPRI practitioner database providing a valuable and ongoing resource for research and research capacity building in physiotherapy care over the three initial years of establishment and beyond.

RESEARCH AND RESEARCH CAPACITY BUILDING VIA CAPRI

As previously outlined, CAPRI has been designed to directly address the key features essential to growing the broad evidence base and research capacity of Australian physiotherapy. These key features are now outlined in more detail below.

ACCOMMODATING MULTIDISCIPLINARY RESEARCH

It is important that physiotherapy research, at this significant juncture in its development, be coordinated and sufficiently broad (both disciplinarily and methodologically) in its focus as to ensure a suitable platform to accommodate as many sub-studies as possible. While increasing

expertise and detailed engagement with specific areas of physiotherapy care is warranted, the immediate task facing the physiotherapy research field is guaranteeing that research activity provides the most efficient use of resources and energy for future endeavors. A PBRN design such as that adopted by CAPRI is an excellent vehicle to ensure this is achieved within the real-life setting of frontline practice. Essential for CAPRI is a multi-disciplinary approach incorporating a wide spectrum of clinical, public health and health services research methods, designs and disciplinary-based perspectives. CAPRI encourages the conduct of a multitude of nested sub-study designs which can include observational studies as well as experimental studies.

FIRST NATIONAL SCALE, LONGITUDINAL PROJECT

It is vital that any serious attempt to build a significant physiotherapy research agenda and culture that will have a substantial influence and impact within and beyond the profession will be of a national scale. CAPRI is the first national physiotherapy database to facilitate evidence-based, research capacity building for the physiotherapy profession in Australia and New Zealand. Through recruitment from registered physiotherapists, CAPRI will be able to provide the first national-scale mapping of physiotherapists' clinical management and patient care undertaken. This also provides excellent opportunity for large scale (national) analyses as well as regionally and locally relevant analysis. The national data collected can also be analyzed in terms of States / Territories, regional areas (i.e. a major urban area)

or based upon urban, rural, regional or remote settings amongst other criteria. Other significance of CAPRI is:

- Establishment of a database of physiotherapists who can be contacted for clinically relevant and patient centred research projects.
- Enable multi-centre collaborative research among Australian clinicians and researchers.
- Establish literature about the current clinical physiotherapy practices in Australia and New Zealand.
- Establish evidence-based research regarding physiotherapy patient care that can be disseminated for policy and practice benefit and development.
- Provides opportunity to develop collaborations with other national research initiatives such as the Australia and New-Zealand Musculoskeletal diseases (ANZMUSC) initiative (developed to improve the number and quality of large-scale randomized clinical trials in musculoskeletal diseases) [23] to develop pilot data with a view to progress to larger studies and grants such as the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC), further progressing physiotherapy research.

SUSTAINABILITY/ RESEARCH CAPACITY BUILDING

Essential to harnessing and promoting a well-developed research culture within physiotherapy is a commitment to ensuring research activity is sustainable for the long-term. It involves developing research training and research careers of those within the physiotherapy profession. CAPRI will act as the vehicle to ensure that relevant research will be undertaken, including building a research agenda and culture that impacts the profession on a national and international scale in close collaboration with patients and clinicians. Using EOIs that are centrally coordinated encourages the conduct of a multitude of sub-studies and sub-study designs relevant for the major clinical questions from the field. Once CAPRI is established, the APA can act as a moderator between CAPRI, researchers, and clinicians to uplift the face of the physiotherapy profession in

Australia and New Zealand. One of CAPRI's visions is "*capacity building in early career researchers*". To achieve this, the CAPRI Steering Committee is responsible to follow a peer-reviewed process on the EOI, ensuring that the study question is relevant, the method is of high quality and the study is feasible. If the application doesn't match the quality standards, an intimate feedback will be provided to the research team to help and assist modifying the study question or methodology as required. In addition, the research undertaken in this project will be published in open-access journals so that it is freely available to all physiotherapists. The publications will also be posted on the CAPRI website for participants to access (www.capri-au.com). Where possible, the findings of the studies will be presented at various national and international conferences.

PRACTITIONER ENGAGEMENT

A PBRN design such as that adopted by CAPRI necessitates that the research perspective be directly linked to and contextualized within everyday practice activity and behaviors. CAPRI draws upon data from both practitioners and their patients, which will be used to examine a range of clinical and practice issues including health outcomes and to describe current physiotherapy practice in Australia and New Zealand. For example: one potential research question will be to find out the frequency of use of recommended and not recommended (based on evidence) interventions for treating patients with acute or chronic pain. CAPRI provides a national platform for practitioners and researchers in the field to directly participate within significant research projects, which can influence the future of the profession in Australia and New Zealand.

RESEARCH NETWORK BUILDING

To maximize and help support the pockets of research excellence and activity already established around physiotherapy, CAPRI houses a fundamentally inclusive research design. The success of the project is significantly dependent upon the engagement and commitment of interested researchers and research teams (which

can, and in many cases should, include key practitioner collaborators) beyond the core CAPRI investigators / collaborators. Using EOI's encourages the conduct of a multitude of sub-studies relevant for the major clinical questions from the field by qualified and interested groups / parties across Australia, New Zealand and on the international stage. CAPRI will be an excellent infrastructure to complement the clinical trials initiative of the ANZMUSC by enabling other longitudinal research designs and fostering clinical trials. Physiotherapists' commitment to research activity within CAPRI ensures their research training and careers, hereby expanding the much-needed pool of physiotherapists with a PhD / research expertise to strengthen the professional development in evidence-based medicine.

CONCLUSION

CAPRI is the first national and sustainable practice-based research network program focusing on physiotherapy practice worldwide. It is designed to help grow the evidence-base and research capacity in Australian physiotherapy, aiming to facilitate research activity to improve physiotherapy care and patient outcomes. CAPRI has the capacity to generate knowledge on a wide variety of physiotherapy related topics for years. This knowledge can be of interest for: a) improvement of health care by improving the evidence base of the profession; b) social and cultural benefits by providing insight in social and cultural (in)equity that can be addressed; and c) economic use by helping the physiotherapy professional body to make important health care and policy decisions

Competing interests

The authors declared that they have no competing interests.

Authors' contributions

PM designed and produced first draft of the paper. PM, AV, JA, DS, TJ and AL all contributed substantial revisions to the manuscript, read and approved final manuscript prior to submission.

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