Engagement of physiotherapists in cardiology research

Julie Redfern¹,² and Lee Nedkoff³

¹The George Institute for International Health, ²Faculty of Medicine, The University of Sydney, ³School of Population Health, University of Western Australia

Australia

Each year cardiovascular disease is the leading cause of death globally (WHO 2011). An estimated 17.1 million deaths were attributed to cardiovascular disease in 2004, representing 29% of all deaths worldwide. Of these deaths, an estimated 7.2 million were due to coronary heart disease and 5.7 million due to stroke. Cardiovascular disease is projected to remain the single leading cause of death in the future (WHO 2011) and is a priority health area for research and for evidence translation.

The greatest proportion of the burden of cardiovascular disease in Australia is attributable to cardiac conditions, predominantly coronary heart disease and heart failure (AIHW 2011). Myocardial infarctions are a common manifestation of these conditions. People who survive an acute myocardial infarction and those with chronic cardiac disease are at high absolute risk of recurrence and death (Fox et al 2010, Krempf et al 2010). Options for reducing this risk include medications, revascularisation procedures, and secondary prevention and rehabilitation programs (Briffa et al 2009).

The reduction of modifiable cardiovascular risk is an important aim in the management of cardiac patients. Behavioural risk factors such as unhealthy diet, physical inactivity, and tobacco use are responsible for the majority of coronary heart disease, and may contribute to increased blood pressure, raised blood glucose levels, dyslipidaemia, and overweight and obesity (WHO 2011). Despite this, in a recent examination of 18 809 patients after an acute coronary event, only 30% were adhering to diet and exercise recommendations and only 70% had quit smoking (Chow et al 2010). This highlights the vast scope for physiotherapists to join other researchers, clinicians, and policy-makers in improving management of cardiovascular disease.

Clinical role of physiotherapy in cardiac disease management

The potential role for physiotherapists in the clinical management of people with cardiac conditions is extensive and diverse. Interventions span acute and chronic care, involvement in primary and secondary prevention programs, and implementation of strategies aimed at reducing modifiable risk factors (Pryor and Prasad 2008). Physiotherapists are not only skilled in the assessment of physical activity, activities of daily living, musculoskeletal integrity, and quality of life, but they can also assess other cardiovascular risk factors such as blood pressure and body mass index, as well as absolute cardiovascular risk. In addition, physiotherapists’ understanding of multiple body systems allows them to account for the impact of co-morbid conditions when developing cardiovascular management plans, eg, physical activity management plans for patients who have co-existing musculoskeletal conditions or breathlessness.

Cardiorespiratory Physiotherapy Australia is a clinical group of the Australian Physiotherapy Association that aims to promote the role of physiotherapy in the management of both acute and chronic cardiorespiratory conditions (APA 2011). ‘Cardiorespiratory physiotherapists’ manage diverse cardiac and respiratory conditions in a range of inpatient and outpatient clinical areas, from intensive care to outpatient pulmonary and cardiac rehabilitation (APA 2011). These clinicians may work in acute adult and paediatric hospitals, rehabilitation and community health centres, private practice, and academic environments.

The physiotherapy management of cardiac disease is largely focussed on therapeutic exercise. Reviews examining the benefit of therapeutic exercise have found high-level evidence that therapeutic exercise is beneficial for patients across broad areas of physiotherapy practice, including people with coronary heart disease (Taylor et al 2007). Furthermore, individualised exercise programs may be more beneficial than standardised programs (Taylor et al 2007). However, whilst the role of physiotherapy in therapeutic exercise and assessment is widely accepted, the capacity of physiotherapists to participate in and coordinate other behavioural strategies for cardiac disease management is also of key importance. Recent studies relating to physiotherapy strategies for people with diabetes (Ng et al 2010, Irvine et al 2009), chronic heart failure (Hwang et al 2010), and coronary disease (Redfern et al 2009) have also been documented. In addition, other studies highlight the integration of musculoskeletal training with strategies aimed to relieve shoulder (Reeve et al 2010) and sternal pain after thoracotomy (El-Ansary et al 2007).

Overall, physiotherapists are highly trained health professionals, are comfortable working as part of a multidisciplinary team and have extensive training in behaviour modification. This makes physiotherapists well placed to supervise individual health management programs that focus on risk factors for coronary disease and to be involved in and lead high-quality scientific research in cardiac disease.

Cardiac disease research and physiotherapists

Despite the extensive burden of cardiac disease on the health of people across the globe and the ideal training of physiotherapists in the area of prevention and management, our impression is that little Australian cardiology research is being led by physiotherapists. To investigate this more objectively, we examined the engagement of physiotherapists in cardiology research in terms of outputs such as peer-reviewed publication, conference presentation and participation, and level of physiotherapist membership of relevant Australian professional organisations. We reviewed recent abstracts at national meetings and contacted professional organisations to determine membership by physiotherapists.
**Publications:** To obtain a snapshot of physiotherapist engagement in peer-reviewed publications, we obtained a random sample of 100 cardiac-related published trials registered on the PEDro database. We examined each paper in detail to determine the profession of the authors. Where relevant information was not obtained on the paper itself, we searched the Internet or contacted the corresponding author for clarification. Through this process we found that, of the 100 trials reviewed, only one included an author who was identified as having a qualification in physiotherapy. We also reviewed all papers in Australian cardiology journals over the period 2006–2010. During that five-year period, only three papers listed a physiotherapist as an author: one in *Heart Lung and Circulation* and two in the *Medical Journal of Australia*.

**Professional membership:** Another way to assess the engagement of physiotherapists in cardiovascular research is by the number of physiotherapists who are members of professional organisations specialising in cardiology and cardiovascular disease management. We contacted the two major professional organisations of this kind in Australia: the Cardiac Society of Australia and New Zealand (CSANZ) and the Australia Cardiovascular Health and Rehabilitation Association (ACRA). CSANZ is the professional society for cardiologists and those working in the area of cardiology including researchers, scientists, cardiovascular nurses, allied health professionals, and other healthcare workers. ACRA is a peak body that provides support and advocacy for multidisciplinary health professionals to deliver evidence-based best practice across the continuum of cardiovascular care. While both actively promote membership by allied health professionals, including physiotherapists, and both provide numerous benefits, membership in both organisations by physiotherapists is typically very low.

There are currently 1965 members of CSANZ of which 702 (36%) are affiliate or non-cardiologist members. Surprisingly, only 8 (1% of affiliate members) of these identify themselves as physiotherapists. In contrast, 384 (55% of affiliate members) identify as registered nurses. There are currently 460 members of ACRA, with only 43 (9%) identifying themselves as physiotherapists. These data are somewhat disturbing given that most hospitals employ physiotherapists to work on cardiology wards, most cardiac rehabilitation programs include a physiotherapist as an integral member of the multidisciplinary team, and many physiotherapists working in the community would manage patients on a daily basis with, or at risk of, cardiac disease.

**Conference participation:** The respective national annual scientific meetings of CSANZ and ACRA provide for participation and presentation by a variety of health professionals, including physiotherapists. At the CSANZ conferences in 2009 and 2010 there were a total of 2310 and 2062 registrants respectively and a total of 700 and 655 abstracts presented respectively. A review of the registrant database indicates that less than five physiotherapists were identified as registering for each of the annual conferences. A review of the ACRA Proceedings for 2003–2007 found a total of 279 abstracts were presented over the five-year period (Fernandez et al 2011). Detailed analysis of author profession, independent of order listed, found that only 13 (5%) were presented by physiotherapists over the five-year period examined. Of those presented by a physiotherapist, only one was subsequently published in a peer-reviewed journal. In comparison, 107 (38%) abstracts were authored and presented (six subsequent peer-reviewed full manuscripts) by registered nurses.

The biennial Cardiorespiratory Physiotherapy Australia meeting is part of APA Conference and is the major meeting that specifically targets Australian physiotherapists. Therefore, the conference proceedings for the Cardiorespiratory Stream at the conferences in 2007, 2009, and 2011 were reviewed. Of the abstracts presented at the three conferences, only 8% (SD 4%) were related to cardiac conditions. In comparison, 60% (SD 13%) were related to respiratory disease. The difference between cardiac and respiratory abstracts was much less extreme at the recent World Physical Therapy Meeting. In this forum, 31 abstracts related specifically to cardiac disease (among a much larger cohort of abstracts on lifestyle disease prevention generally), compared to 42 abstracts related specifically to respiratory disease.

It is possible that physiotherapy research is being conducted and published outside traditional physiotherapy journals and conferences, or that physiotherapists working in non-clinical roles do not identify physiotherapy as their profession when joining professional organisations. However, this does not appear to provide a solid explanation for the lack of physiotherapy-led presentations at national conferences identified in recent years. It also fails to explain the imbalance between representation of physiotherapists and other health professionals in this arena.

**What can we do**

Physiotherapy organisations, academic institutions, and therapists could develop strategies to increase the engagement of physiotherapists in cardiology research. Some simple strategies could include the implementation of a mentoring system designed to link physiotherapists with established research backgrounds and clinicians working in the management or prevention of cardiac disease. Greater mentorship of postgraduate physiotherapy research on cardiac topics is also needed in physiotherapy schools. The establishment of more frequent communication between clinical and research physiotherapists, via bodies such as Cardiorespiratory Physiotherapy Australia, CSANZ, and ACRA may also inspire clinicians to consider research in this area. Funding and academic opportunities in the area of cardiovascular disease management are extensive. Exploration of these opportunities by physiotherapists would be fruitful for individual physiotherapists, the profession and, ultimately and most importantly, for patients. Research opportunities are widely available and physiotherapists are ideally positioned to take a leadership role in the future evolution of cardiac management.

**Conclusions**

In summary, cardiac disease is a leading international health problem. Despite physiotherapists being ideally trained with relevant clinical experience there appears to be a general lack of engagement with cardiology research. The problem manifests across a range of domains including professional membership, active participation in national conferences, and publication of research in the area of cardiovascular disease. The expertise and capacity of physiotherapists coupled with extensive career opportunities in the area of cardiology research presents a range of opportunities for physiotherapists to explore.
References


Website

PEDro: www.pedro.org.au

Statement regarding registration of clinical trials from the Editorial Board of Journal of Physiotherapy

This journal now requires registration of clinical trials. All clinical trials submitted to Journal of Physiotherapy for publication must have been registered in a publicly-accessible trials register. We will accept any register that satisfies the International Committee of Medical Journal Editors requirements. Authors must provide the name and address of the register and the trial registration number on submission.