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# Demographics and scope of Australian emergency department physiotherapists

Tina Vickery<sup>1\*</sup>, Lindsey Brett<sup>2</sup> and Taryn Jones<sup>3</sup>

## Abstract

**Questions** To provide workforce data on the status of Australian Emergency Department (ED) physiotherapy practice, including physiotherapist demographic data, staffing levels and funding sources. Evaluate the scope of practice currently undertaken by ED physiotherapists and alignment of ED physiotherapy service provision with demand levels.

**Design** Cross sectional survey.

**Participants** Australian physiotherapists working within an Australian ED.

**Outcome measures** Workforce data, scope of practice and alignment of physiotherapy service provision to ED presentations and demand.

**Results** 94 Australian ED physiotherapists completed the survey, 76.9% were working as primary contact clinicians. They had a diverse scope of practice, 100% perform mobility assessments, 89.9% provide care for paediatric patients and 10.1% were involved in administration of medications. 86.2% of participants (75/87) reported working within a service model that provided seven-day per week physiotherapy coverage to ED.

**Conclusion** The sample of ED physiotherapists were found to be experienced and highly trained clinicians with a diverse scope of practice, who are well placed to meet the unpredictable and highly variable patient caseload of Australian EDs.

## Significance

**What this study adds** This study expands on current literature which suggests a much narrower scope of Australian ED physiotherapists. The study demonstrates the full capabilities and scope of ED physiotherapists, and potentially lead to a better understanding amongst the wider healthcare population and greater utilisation of physiotherapists in ED.

**Keywords** Physiotherapy, Emergency department, Emergency physiotherapist

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## Introduction

Emergency Departments (EDs) are essential to meet the spectrum of complexity and urgent care needs of the highly diverse patient population who seek emergency care. However, EDs are faced with rising demands and overwhelming presentation rates, resulting in overcrowding and access block [1]. The consequences of ED overcrowding are substantial and include poorer patient outcomes including increased mortality, and an environment where staff are more likely to experience stress and violence and less likely to adhere to guidelines [2]. Over the past few decades, physiotherapists have been introduced to EDs in a bid to address increased presentation rates, and improve care provision [3–8].

Internationally, the naming convention, role and scope of physiotherapists working in ED is varied and has evolved differently over time [9]. In several countries, ED physiotherapists provide education, mobility assessments, discharge planning, conservative management for low back pain and other musculoskeletal conditions after a referral from a medical officer, commonly referred to as 'secondary contact' roles [7, 8, 10–17]. In Australia, the United Kingdom and Canada, some ED physiotherapists work more autonomously in 'primary contact' roles. Primary contact physiotherapists can decide from a triage list which patients they assess, they may order imaging, and provide management across a wide range of musculoskeletal conditions without a patient seeing a medical officer beforehand [6, 18–31]. More recently, extended scope of practice roles have emerged. Physiotherapists with specialized training can provide care outside the traditional scope however, exactly what constitutes 'extended scope' is dependent on the country and context of the role [9, 32, 33].

In Australian, research has shown that patients treated by ED physiotherapists have shorter wait times and Length of Stay (LoS) [22, 25, 28, 29, 34, 35], have no significant adverse patient outcomes, and equivalent or lower rates of unplanned patient re-presentations compared to those seen by medical staff [6, 21–31]. Despite these benefits, there is no nationally standardised scope, register, training program or specialisation pathway for ED physiotherapists in Australian. The literature has largely been conducted within one state (Victoria), and often focuses only on specific areas of physiotherapy practice. The role of the ED physiotherapists, including their responsibilities, capabilities and scope of practice has not been fully described.

Research of high methodological quality that incorporates a national perspective is needed to evaluate the penetration of physiotherapy into Australian EDs, and to provide a well-defined and detailed description of ED physiotherapy practice in Australia. Therefore, this study aims to:

1. Provide workforce data on the status of Australian ED physiotherapy practice, including physiotherapist demographic data, staffing levels and funding sources.
2. Describe the scope of practice currently undertaken by ED physiotherapists across a range of Australian EDs.
3. Evaluate the alignment of ED physiotherapy service provision with ED demand levels.

## Method

### Survey design

A purpose-built cross-sectional survey was conducted using the REDCap online survey platform, allowing an expansive, efficient, and cost-effective distribution and data collection process [36–40]. The full survey was part of a larger study investigating the role and perceptions of ED physiotherapists.

The preliminary survey was created according to expert and literature recommendations on survey design, implementation, recruiting and reporting [36, 37, 41–46]. An expert consensus panel ( $n=4$ ) was utilised to increase survey relevance and accuracy. Consensus was met on the third version of the survey. A pilot survey utilising a convenience sample of 10 physiotherapists not working in ED was used to verify understanding, accuracy and acceptability of survey questions, survey accessibility, user experience and survey flow.

The final survey contained eight sections, with 58 to 69 closed-answer questions dependent on in-built response logic; 12 closed-answer questions presented as one question on a 5-point Likert matrix table, and 14 to 19 open-answer questions (Appendix 1).

### Participants and recruitment

Australian Health Practitioner Regulation Agency registered physiotherapists currently providing services to patients within an Australian ED were invited to participate. Physiotherapy students were excluded from the study.

Data collection occurred from March to July 2021. Survey invitations were emailed through established networks, posted on various social media sites, and an article published in the Australian Physiotherapy Association's national magazine, *InMotion* [47]. Reminders were sent at four, eight and eleven weeks [41, 43, 44, 48]. Participant consent was gained using an online participant consent and information form on the first page of the survey.

The exact number of ED physiotherapists in Australia was unknown, therefore a power analysis or probability sampling was not possible [36, 37, 41]. Non-probability

sampling methods, specifically snowball sampling, was used in participant recruitment [36, 37, 41].

## Outcome measures

### Workforce data

ED physiotherapy practice questions covered two distinct workforce constructs: (1) a description of the individual providing the service, and (2) the style and structure of service delivery.

Minimum demographic data established age, gender, geographical location of current workplace and length of time spent working in ED. Questions related to

educational history included year of entry into the profession, type of university program for initial professional entry and any further training undertaken by participants to date.

Questions related to the structure and models of ED physiotherapy service delivery included the number of hours worked in ED per fortnight, employment classification, and the ED physiotherapy model of care within which participants delivered care. An overall picture of service provision was formed from questions relating to days of ED physiotherapy provision, start and finish times, funding sources, workload priorities and responsibilities outside of ED.

**Table 1** Participant demographical data

Categorical variable (n)		Percentage of participants (n)
<b>Gender</b> (n = 94)	Male	41.5 (39)
	Female	57.4 (54)
	Prefer not to say	< 5 (less than 5)
	Other	0 (0)
<b>Age</b> (n = 89)	25–29	9.0 (8)
	30–34	25.8 (23)
	35–39	16.9 (15)
	40–44	16.9 (15)
	45–49	12.4 (11)
	50–54	12.4 (11)
<b>State of Work</b> (n = 93)	≥ 55	6.7 (6)
	Australian Capital Territory	3.2 (3)
	New South Wales	35.5 (33)
	Northern Territory	0 (0)
	Queensland	21.5 (20)
	South Australia	2.2 (2)
	Tasmania	3.2 (3)
<b>Years working in ED</b> (n = 94)	Victoria	28.0 (26)
	Western Australia	6.5 (6)
	5 years or less	42.6 (40)
	6 to 10 years	36.2 (34)
<b>Years experience when entering ED</b> (n = 93)	11 to 15 years	16 (15)
	16 or more years	5.3 (5)
	5 years or less	29.0 (27)
<b>Classification of employment in ED</b> (n = 93)	6 to 10 years	35.5 (33)
	11 to 15 years	17.2 (16)
	16 or more years	18.3 (17)
	Permanent Full Time	33.3 (31)
<b>Average time per fortnight spent working in ED in full time equivalent</b> (n = 93)	Permanent Part Time	44.1 (41)
	Temporary Full Time	< 5 (< 5)
	Temporary Part Time	12.9 (12)
	Casual	5.4 (5)
	≤ 0.19	17.2 (16)
<b>Average time per fortnight spent working in ED in full time equivalent</b> (n = 93)	0.20–0.39	14.0 (13)
	0.40–0.59	17.2 (16)
	0.60–0.79	6.5 (6)
	0.80–0.99	7.5 (7)
	1.0	37.6 (35)

### Scope of practice

Two questions, which aligned with Australian Health Practitioner Regulation Agency national workforce classifications phrasing, established participants perceived primary scope of practice and clinical stream [49]. The current scope of ED physiotherapy practice was established through a range of questions which described the level of autonomy and participation of ED physiotherapists when providing care for which they are not well known.

### Emergency Department presentations and demand

Patient presentation data for the time period of the study was sourced from the Australian Institute of Health and Welfare, Emergency Department Care 2020-21 data series [50]. The percentage of participants reporting service provision was mapped against the same time periods and compared across days of the week and time of the day. The comparison was visually displayed in a series of graphs.

### Data analysis

Descriptive statistics were used to analyse all quantitative variables, with presentation of categorical variables given as frequency and proportion, and continuous variables as mean and standard deviation [51]. Data analysis was conducted using SPSS statistics version 26 [52] and Microsoft excel [53].

### Results

One hundred and thirty individuals viewed the participant information page of the survey. Thirty-six did not meet inclusion, consent and minimum demographic requirements and were removed from analysis. Data from 94 Australian ED physiotherapists were included in the analysis, including 16 surveys submitted with some data missing.

**Participant demographics and education**

As described in Table 1, participants had practised as a physiotherapist for an average of 17.1 years (SD 8.9), with most entering the profession via a Bachelor degree (79.8%, 75/94). Fifty participants (53.8%, 50/93) had engaged in formal university education beyond their initial entry degree and 43 participants (46.7%, 43/92) had participated in a formal advanced training program. Thirty-seven different health districts/networks across Australia were represented. A health district/network provides government funded public hospital services to a defined geographical area and are comprised of one or more acute hospitals and/or community centres [54]. Only 9 participants (10.1%, 9/89) reported to be working within a district/network which had an ED classified as outer regional or remote [55].

**Nature and classification of employment**

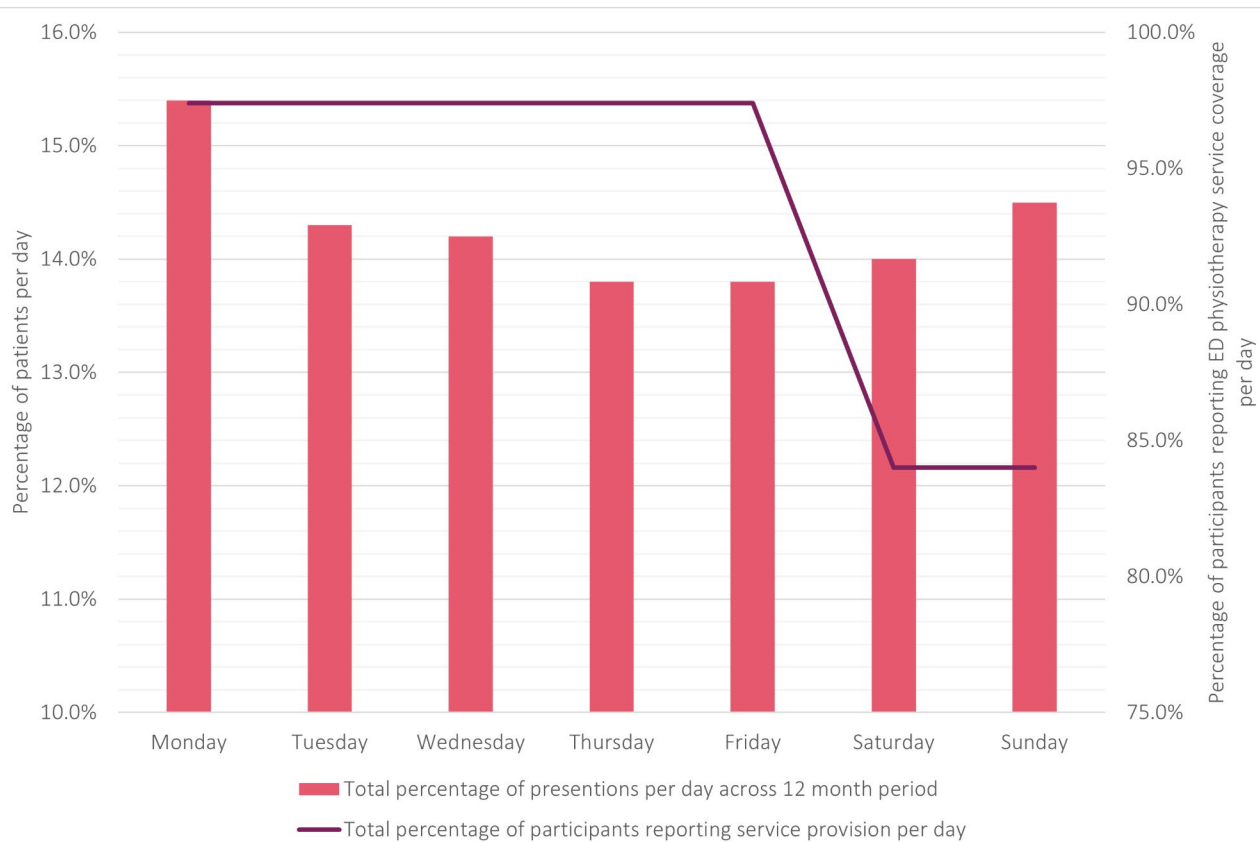
The average length of time participants had worked in ED was 7.3 years (SD 5.8), and almost two-thirds (64.3%, 54/84) reported intending to spend a further 6 years or more working in ED (Table 1). Participants were predominantly employed in permanent roles in ED (77.4%, 72/93), and worked on average 46.1 h per fortnight (SD

23.1). Over half of participants held additional positions external to their role in ED (55.8%, 48/86), predominantly in a clinical physiotherapy capacity (70.8%, 34/48).

**Emergency department service provision and funding sources**

Just over half (56.3%, 49/87) of participants reported their role was funded by the physiotherapy department, while a smaller number reported a combination of physiotherapy and ED and/or Short Stay Unit (SSU) funding (18.4%, 16/87). Participants identified their highest workload priorities as clearing the triage list (51.2%, 44/86) and preventing inpatient admissions (26.7%, 23/86).

ED physiotherapy services ranged from ‘referral only’ to providing up to 15 h per day of coverage. As demonstrated in Fig. 1 [56], the percentage of patient presentation fluctuated by less than 2% per day. In contrast, 86.2% of participants (75/87) reported working within a service model that provided seven-day per week physiotherapy coverage to ED, 13.8% reported service coverage on weekdays only (12/87). Daily service coverage hours were also lower on weekends with a mean of 8.0 h (SD 4.0), weekdays were higher with a mean of 9.8 h (SD 2.6–2.7).



**Fig. 1** The percentage of patients who presented per day across a 12-month period and the percentage of participants reporting physiotherapists service on given day of the week

On weekdays, across a 24-hour period, over half (61.7–62.7%) of patients presented to ED between 10:00am and 7:59pm, with the peak on any given day of the week between 10:00am and 1:59pm [50]. Nearly all participants (92.3%, 72/78) reported there to be physiotherapy service coverage Monday to Friday, across the same peak 4 h period. However less than a third (28.2%, 22/78) reported ED physiotherapy coverage spanning 2:00pm–7:59pm, a time period when no less than 23% of patients presented to ED on any weekday as displayed in Fig. 2 [56].

On the weekends the misalignment between ED physiotherapy service provision and ED presentations was more prominent. As displayed in Fig. 3, Almost half (Saturday, 49.8%; Sunday, 49.9%) of all weekend presentations occurred after 5:50pm and before 10:00am. However, ED service provision during this time frame is minimal with less than a quarter of participants (17.3%) reporting physiotherapy coverage for more than 2 h within this 16-hour period [50].

**Nature and classification of physiotherapy role**

Participants were predominantly working in ED as Primary Contact Clinicians (PCP) (76.9%, 60/78) in an autonomous capacity (55.1%, 43/78) as displayed in Table 2. Most participants classified their principal scope of practice as musculoskeletal (90.0%, 81/90), with over half reporting their clinical stream as acute care (53.3%, 48/90). The majority of participants had no additional

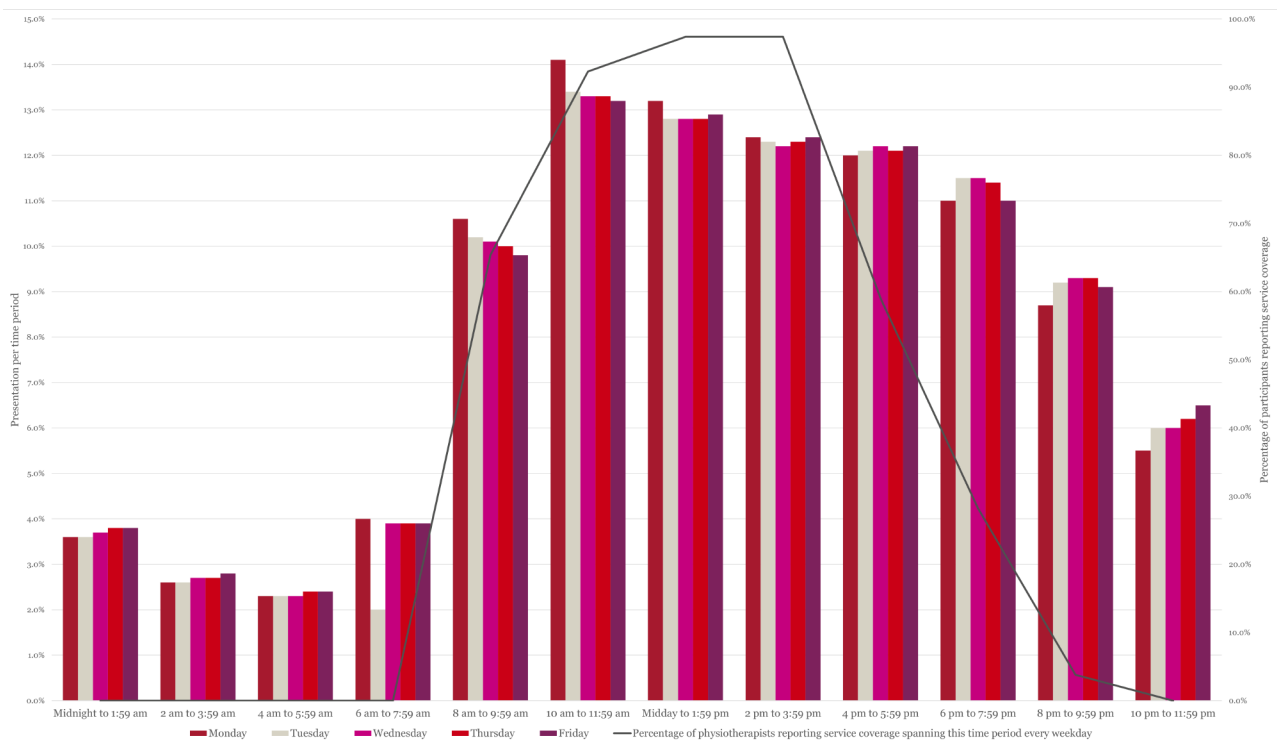
managerial or leadership responsibilities as part of their role (93.5%, 87/94).

**Tasks within scope of practice**

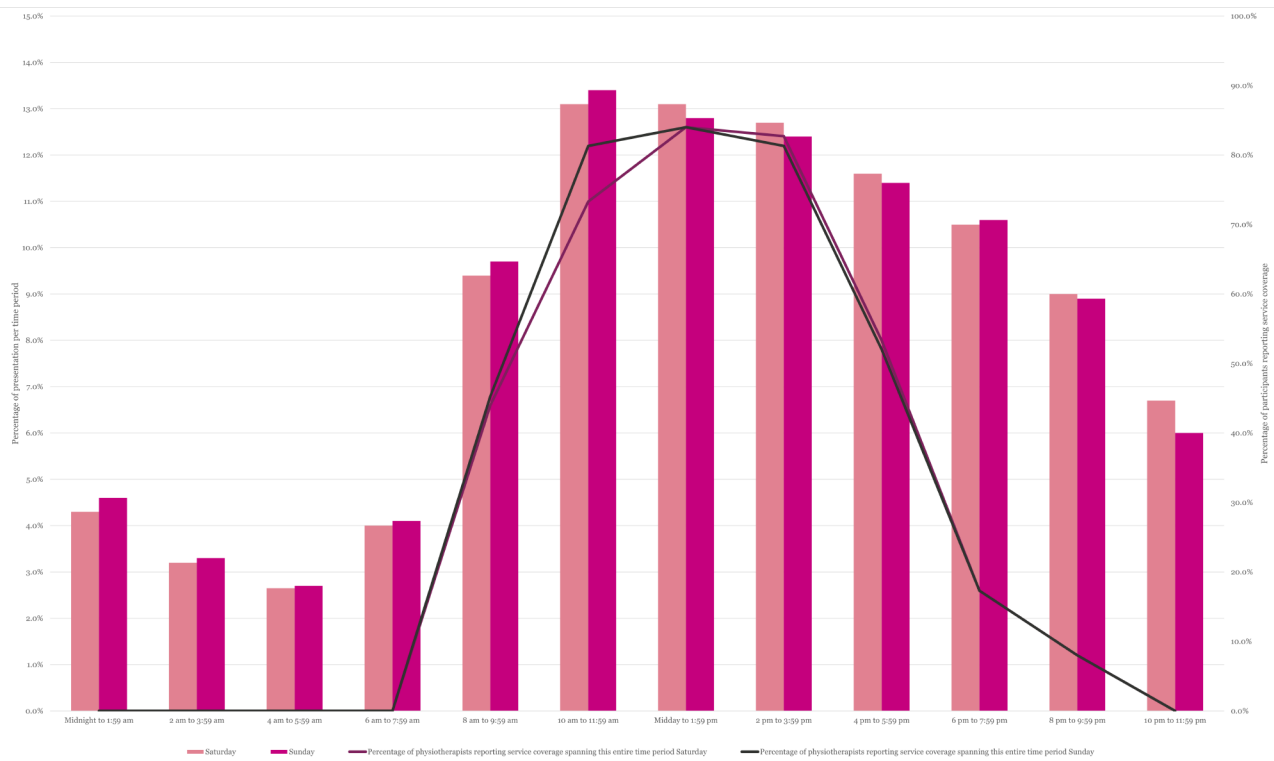
All participants (100%, 89/89) reported involvement in the assessment of mobility, and nearly all reported involvement in the assessment of older and paediatric patients (91.1%, 81/89 and 89.9%, 78/87 respectively). Over half of participants reported having independent discharge decision making capacity (60.7%, 54/89), with a further 27.0% of participants (24/89) able to discharge in consultation with an ED medical officer.

The majority of participants were involved in a secondary contact capacity in the assessment (74.7%, 56/75) and/or management (77.5%, 62/80) of patients with rib fractures and the assessment and management of dizziness (98.4%, 60/61). Similarly, participants who performed joint relocations and/or fracture reductions did so under the supervision of an ED medical officer (58.5%, 31/53 and 74.0%, 37/50 respectively).

Just over half of participants could independently order and/or interpret x-rays for adults (57.3%, 51/89 and 74.2%, 66/89) and/or paediatric patients (52.2%, 46/88 and 60.9%, 53/89). Some participants were able to order (28.4%, 25/88) and/or independently interpret (21.3%, 19/89) peripheral CT scans. Only a small number of participants were involved in ordering blood tests (9.0%, 8/89), and four of these participants (50%, 4/8) able to



**Fig. 2** The percentage of patients who presented during specific time periods of the day on weekdays across a 12-month period and the percentage of participants who reported physiotherapists service which provided coverage every weekday



**Fig. 3** The percentage of patients who presented on Saturdays and Sundays across a 12-month period and the percentage of participants who reported physiotherapists service across a 24-hour period

**Table 2** Classification of participants' ( $n = 78$ ) role in relation to level of autonomy while working as a physiotherapist in emergency department

Classification of role	Percentage of participants ( $n$ )	Classification of PCP role	Percentage of participants ( $n$ )
Primary Contact Clinician	76.9 (60)	Autonomous	71.1 (43)
		Collaborative	28.3 (17)
Secondary Contact Clinical	21.8 (17)		
Assessment of older patients only or combination of PCP and ACAT shifts	1.3 (1)		

Abbreviations: PCP, Primary contact clinician; ACAT, aged care assessment team

interpret blood results within the scope of their role. A small number of participants were involved in the administration of medications (10.1%, 9/89), an even smaller number in the prescription of medications (6.7%, 6/89).

**Discussion**

This study has provided a well-defined and detailed description from a sample of the modern ED physiotherapy workforce and their practice in Australia. Nationally, the participants of the study are experienced ED physiotherapists who operate in both autonomous and collaborative capacities dependent on the care required. They utilise wide and varied skill sets to provide care for a wide

range of patient cohorts with conditions across almost all body systems, beneficially mirroring the variable caseload of an ED [50, 57, 58]. The sampled ED physiotherapy workforce has, on average, four years more experience than the general population of physiotherapists working in Australia [59], with experience levels having the potential to increase in coming years as many participants reported they intend to remain working in ED.

The generalist ED physiotherapist caseload found by this study is not reflected in wider literature investigating ED physiotherapy. Many studies focus on adult, musculoskeletal populations or only the PCP aspect of the ED physiotherapy role [21, 23, 25–27, 30, 34, 35, 60, 61]. This study has shown ED physiotherapists provide care to people of all ages, including children and older adults presenting to ED, which is crucial for ED clinicians as people under 15 or over 64 years of age accounted for 41.0% of total ED presentations in 2020–21 [62]. The perspectives of children and their carers, the quality and safety of care provided, and paediatric health outcomes after receiving care from an ED physiotherapist are yet to be established by the research. The relatively limited focus observed within the literature may contribute to creating a narrow view of the role of ED physiotherapy and has a limited ability to demonstrate the alignment and benefits of ED physiotherapy, particularly for children seeking emergency care.



A greater percentage of the sampled ED physiotherapists are working in ED in a part-time capacity compared to previous workforce profiles. The study did not ascertain if the increased uptake of part-time ED physiotherapy employment was by choice of the participant or due to the structure of the ED physiotherapy service. However, the increased percentage of part-time arrangements aligns with national workforce trends of allied health, nurses, midwives and dental staff since 2013 [63]. A higher number of staff contributing to service provision builds redundancy and capacity into the staffing profile [64], aligns with recommendations to improve equality and sustainability and decrease attrition rates through flexible employment practices [65–67].

ED physiotherapy service coverage generally aligned with the peak times of patient presentations during weekday mornings however, improvements could be made by extending the number of EDs with physiotherapists present after 4:00pm to meet the evening demand [62]. There is a drop in the percentage of ED physiotherapists working in services which provide coverage on Saturday and Sunday, despite the percentage of patients being higher [62]. This suggests the service structure of ED physiotherapy may not align with the demands of EDs across Australia when reviewed across the 7 day week. It is important to note this is reflective of national presentation and service provision patterns, and a more accurate analysis of the alignment of coverage would involve local reviews to determine the alignment of specific ED physiotherapy services and local ED presentation rates per day.

This study has demonstrated the diverse patient cohort who receive care from ED physiotherapists however, there is potential to further increase ED physiotherapists contribution to the health system. Increasing ED physiotherapists ability to autonomously perform a wider range of orthopaedic procedures [68], standardise prescription and administration of medications [68, 69], and increasing interprofessional involvement in a broader range of patients could lead to improved patient outcomes, increased contributions to reducing ED length of stay for a broader range of patients and improve health system sustainability [70–72]. There is also potential for ED physiotherapists to increase their contribution beyond direct patient care by increasing interprofessional training provision and engagement in research activities [56].

### Limitations

This study has described the workforce demographics and scope of practice of 94 Australian ED physiotherapists working in numerous EDs across Australia however, the exact number of physiotherapists working in Australian EDs is unknown. Australia has 292 public hospital EDs, of which, according to Australian

College of Emergency Medicine (ACEM) guidelines, 99 require onsite access to a physiotherapist [55, 57, 73, 74]. Therefore it can be estimated that there are at least 99 ED physiotherapists in Australia. In this context it is reasonable to suggest the sample population is generalizable to the whole. However, despite this estimation, it is unknown what percentage of the population is represented in this study and power analysis is unable to be performed. Physiotherapists working in EDs outside Australia were not included in the study, restricting the studies generalisability in local contexts [9, 32, 33]. Despite the Australian context, providing a national description of Australian ED physiotherapists enables international benchmarking and comparison for use by policy makers and those seeking to expand or implement similar roles.

It is important to note that this study reflects ED physiotherapy service provision from the perspective of the clinicians providing the service. Service provision and presentation patterns are analysed using Australian national data and may not reflect individual hospital demand or service provision internationally. Local ED physiotherapy service provision and the specific scope of local services should be compared with local patient presentation reasons and care needs to fully understand the overall alignment, or misalignment, of ED physiotherapy with local healthcare system needs. National data does not provide details on the periods of access block across times of day, days of the week or patient presentation reasons during periods of diminished patient flow. Nonetheless, the study provides an approach which is transferrable by both managers and researchers to further investigate and improve the alignment of ED physiotherapy service provision to the local context and ED demand, whilst also suggesting there is likely scope to improve the alignment of ED physiotherapy service provision to Australian ED demand.

### Conclusion

This study has provided a detailed description of the largest sample of Australian ED physiotherapists in the research to date. ED physiotherapists were found to be experienced clinicians with a diverse scope of practice, who are well placed to meet the unpredictable and highly variable patient caseload of Australian EDs.

Future research which encompasses and establishes the diverse impact of ED physiotherapy, and investigates the alignment of local ED physiotherapy coverage, scope, funding allocation with specific local service demand is needed to fully understand the overall alignment, or misalignment, of ED physiotherapy with local healthcare system needs. Research which evaluates ED physiotherapy roles in their entirety may support the generalisability of research internationally and increase research translation to further evolve ED physiotherapy models of care that

better meets the needs of the health systems in which they exist.

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#### Author contributions

TV, TJ and LB conceived the idea. TV, TJ and LB critically analysed and interpreted the results. TV wrote the manuscript. TJ and LB provided valuable revisions to the text and critically reviewed and approved the final manuscript.

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#### Data availability

The datasets generated or analysed during this study are available from the author on reasonable request and in accordance with ethical approval and requirements set out in the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018).

#### Declarations

##### Ethics approval

Ethical approval was granted by Macquarie University Human Research Ethics Committee, Reference No: 5202090921827, Project ID: 9098. The study was performed in accordance with the ethical standards laid down in the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018).

##### Consent to participate

The first page of the survey hosted the participant information and consent form and screening questions. All participants provided written and informed consent by checking the consent box on the first page before proceeding to the survey questions.

##### Consent for publication

Not Applicable.

##### Competing interests

The authors declare no competing interests.

##### Dual publication

Some portion of the results/data/figures in this manuscript have been published or are under consideration for publication elsewhere. "The publication contains material that has previously formed part of a Tina Vickery's (TV) Master of Research thesis and has been made publicly available according to the requirements of Macquarie University, the institution awarding the qualification."

##### Third party material

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