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Leila S. Hanjani

Sarah Fox

Ruth E. Hubbard

Emily Gordon

Natasha Reid

*See next page for additional authors*

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**Authors**

Leila S. Hanjani, Sarah Fox, Ruth E. Hubbard, Emily Gordon, Natasha Reid, Sarah N. Hilmer, Rosemary Saunders, Danijela Gnjidic, and Adrienne Young

## RESEARCH ARTICLE

# Frailty knowledge, training and barriers to frailty management: A national cross-sectional survey of health professionals in Australia

Leila Shafiee Hanjani<sup>1</sup>  | Sarah Fox<sup>1</sup> | Ruth E. Hubbard<sup>1</sup> | Emily Gordon<sup>1</sup> |  
 Natasha Reid<sup>1</sup> | Sarah N. Hilmer<sup>2</sup> | Rosemary Saunders<sup>3</sup>  | Danijela Gnjidic<sup>4</sup> |  
 Adrienne Young<sup>1</sup>

<sup>1</sup>Centre for Health Services Research, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia

<sup>2</sup>Departments of Clinical Pharmacology and Aged Care, Kolling Institute, Faculty of Medicine and Health, The University of Sydney and Royal North Shore Hospital, Sydney, New South Wales, Australia

<sup>3</sup>Centre for Research in Aged Care, School of Nursing and Midwifery, Edith Cowan University, Joondalup, Western Australia, Australia

<sup>4</sup>Sydney Pharmacy School, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia

## Correspondence

Leila Shafiee Hanjani, Level 2, Building 33, Princess Alexandra Hospital, Woolloongabba, QLD 4102, Australia.  
 Email: [l.shafieehanjani@uq.edu.au](mailto:l.shafieehanjani@uq.edu.au)

## Abstract

**Objective(s):** To understand Australian health professionals' perceptions of their knowledge and previous training about frailty, as well as barriers to frailty assessment and management in their practice.

**Methods:** A cross-sectional online survey was developed and distributed to health professionals (medical, nursing and allied health) engaged in clinical practice in Australia through convenience and snowball sampling techniques from March to May 2022. The survey consisted of five sections: frailty training and knowledge; confidence in recognising and managing adults with frailty; the importance and relevance of frailty; barriers to assessing and managing frailty in practice; and interest in further frailty training. Responses were analysed using descriptive statistics.

**Results:** The survey was taken by 736 health professionals. Less than half of respondents (44%, 321/733) reported receiving any training on frailty, with 14% (105/733) receiving training specifically focussed on frailty. Most respondents (78%, 556/712) reported 'good' or 'fair' understanding of frailty. The majority (64%, 448/694) reported being 'fairly' or 'somewhat' confident with identifying frailty. Almost all respondents (>90%) recognised frailty as having an important impact on outcomes and believed that there are beneficial interventions for frailty. Commonly reported barriers to frailty assessment in practice included 'lack of defined protocol for managing frailty' and 'lack of consensus about which frailty assessment tool to use'. Most respondents (88%, 521/595) were interested in receiving further education on frailty, with a high preference for online training.

**Conclusions:** The findings suggest frailty is important to health professionals in Australia, and there is a need for and interest in further frailty education.

## KEYWORDS

education, frail elderly, health personnel, surveys and questionnaires

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## 1 | INTRODUCTION

Frailty is a complex syndrome characterised by vulnerability to precipitous declines in physical and cognitive health and function.<sup>1</sup> Frailty is associated with adverse health outcomes<sup>1</sup> and can lead to falls, functional dependence, institutionalisation and increased mortality.<sup>2</sup> Affecting approximately 21% of Australians older than 65 years,<sup>3</sup> frailty increases with age, thereby, with an ageing population, identifying an increasingly large group of high-risk older adults.<sup>2</sup> Identification of frailty allows management aimed at alleviating its progression and complications, whilst focussing on shared decision-making to minimise exposure to inappropriate or harmful interventions.<sup>4</sup>

Traditional models of health care typically have an organ- or disease-specific approach, meaning that they are generally not adequate for the needs of frail older adults.<sup>5</sup> It also means that frail adults are managed not only by staff with specialist geriatric expertise, but also across most disciplines in the health-care system, for example, when they require specialist cardiac or surgical care. Therefore, knowledge, confidence and competence in managing frailty are required by most health professionals.

Studies have reported substantial knowledge deficits in relation to ageing and frailty in clinicians without specialist expertise in geriatric care.<sup>6–11</sup> Despite an increasing recognition of the importance of frailty competence across the multidisciplinary team and across specialities, little is known about frailty education at various levels (undergraduate, postgraduate, workplace and continuing professional development).

The Australian and New Zealand Society for Geriatric Medicine has published guidelines on the pathogenesis and prevention of frailty,<sup>12</sup> but there are no Australian guidelines advising on frailty education for the medical, nursing or allied health workforce. A recent systematic review found that there are very few frailty training programs, with only nine programs identified in the published literature.<sup>13</sup> Importantly, only one of these programs was from Australia,<sup>14</sup> suggesting a frailty training gap for Australian health professionals.

To meet the needs of an ageing population, we must understand the degree of frailty knowledge and training amongst health professionals. This will help plan appropriate education and training to equip all health professionals to provide appropriate care. Additionally, to inform the development of future tailored interventions, it is important to understand the barriers of including frailty assessment and management in clinical practice. The aim of this survey of health professionals in Australia therefore was to understand health professionals' perceptions of their knowledge of, and previous training about, frailty and its assessment, as well as barriers to frailty assessment and management in their practice.

### Practice Impact

This is the largest study reporting Australian health professionals' knowledge and training about frailty and barriers to including frailty assessment and management in their practice. Our findings suggest there is a lack of training regarding frailty for Australian health professionals and high interest in online multidisciplinary frailty education programs.

## 2 | METHODS

### 2.1 | Study design

A cross-sectional online survey, created and administered using Qualtrics platform (Qualtrics), was conducted from 29 March 2022 to 10 May 2022 and is reported in compliance with the Consensus-Based Checklist for Reporting of Survey Studies (CROSS).<sup>15</sup> Ethics approval was granted by the University of Queensland Human Research Ethics Committee (Approval 2021/HE002158).

### 2.2 | Questionnaire development

As no existing survey instruments were identified through an initial literature review, a questionnaire was developed for the purpose of this study. The Capability, Opportunity, Motivation (COM-B) model of behaviour<sup>16</sup> was used to underpin the survey (Table S1). The survey was developed by the authors, a team of researchers and clinicians with frailty expertise in the disciplines of geriatric medicine, nursing, pharmacy, dietetics and behavioural science, who all participated in an iterative process of early question development (guided by COM-B), refinement and pretesting to ensure content validity and appropriate scope. Ordinal scales were used with a balance of positive and negative response options. Effort was made to avoid questions with agree/disagree response options as much as possible based on their potential lower quality compared with item-specific questions.<sup>17</sup> Discussion between the researchers enabled consensus agreement on the original version. The original questionnaire was then pilot-tested with a group of five health professionals not part of the study team (medical  $n = 1$ , nursing  $n = 1$ , allied health  $n = 3$ ) who met inclusion criteria for the study to assess readability, face validity and completion time. Pilot participants were also asked to identify any potentially missing questions or responses. The questionnaire was revised based on the feedback from piloting (e.g. question

rewording, additional response items of unsure/not relevant) and was finalised in discussion with all members of the research team.

## 2.3 | Final questionnaire

The online questionnaire started with a short section on respondents' current field of practice to confirm eligibility and identify years of practice. The main body of the survey consisted of five sections, seeking health professionals' views on:

1. frailty training and perceived knowledge;
2. confidence in recognising and managing adults with frailty;
3. the importance and relevance of frailty;
4. barriers to assessing and managing frailty in practice; and
5. interest in further training on frailty.

The survey also included six questions related to demographics including age, gender, employment location, practice area and initial training location.

The questionnaire mainly included multiple-choice responses, with six free-text questions. The final version of the survey can be found in [Table S1](#).

## 2.4 | Population and sampling

The population of interest was health professionals (medical, nursing and allied health) engaged in clinical practice in Australia at the time of the survey, including those trained in Australia or overseas. Convenience and snowball sampling techniques were used for recruiting participants. A total of 15 professional associations and clinical networks, as listed in the Acknowledgements section of the manuscript, helped distribute the online questionnaire to their members, with a reminder email sent approximately 3 weeks later to encourage further dissemination and responses. The link for the survey was also distributed through professional and social media networks of the research team and their colleagues.

## 2.5 | Data management

No personally identifying data were collected in the online survey. No strategies were employed to prevent 'multiple participation'. The authors deemed that multiple responses were unlikely due to the length of the survey, its topic and lack of incentive to participate.

## 2.6 | Consent

The survey introduction described the scope and intent of the study, and informed participants that their response to the survey implied their consent for their deidentified data to be collated, analysed and distributed in research publications and presentations. Due to the anonymous data collected, individuals could not request their survey responses to be deleted after submission.

## 2.7 | Statistical analysis

STATA version 17.0 (StataCorp LLC) was used for statistical analyses. The responses to survey questions were analysed using descriptive statistics. As the number of respondents completing each question varied, proportions are based on valid responses to each question. Only respondents who answered at least one question in the main body of the survey (i.e. Sections 1–5) were included in the analysis. Forced response function (i.e. where respondents must answer a question before progressing to the next question) was not used in this survey, with the exception of the questions related to participant eligibility. All responses provided were used (i.e. no case-wise deletion) and no imputation was carried out.

## 3 | RESULTS

The online questionnaire was taken by 736 health professionals, consisting of allied health (45% of sample,  $n = 329$ ), nursing (35%,  $n = 257$ ) and medical (20%,  $n = 150$ ) professionals. An additional 46 responses were excluded due to: starting the survey but not proceeding to the main body of the survey ( $n = 36$ ) or answering 'no' to the eligibility question: 'Are you a health practitioner (medical, nursing, allied health) currently practicing in Australia?' ( $n = 10$ ). [Table 1](#) displays the characteristics of respondents, who were mostly women (84%, 497/593) with more than 10 years of experience working in their field of practice (67%, 492/736). All Australian states and territories were represented in the study, with most respondents working and/or trained in New South Wales or Queensland ([Table 1](#)). Around half of the respondents (52%, 306/589) have worked in a specialist geriatric ward/team. Most participants reported currently working in a hospital (73%, 431/592).

The most relevant results of the survey have been presented below, with a full analysis of all results from questions with multiple-choice responses presented separately in [Table S1](#). The results of the free-text questions are not presented in this paper.

TABLE 1 Characteristics of survey respondents.

Characteristics	Count (%)
Field of practice ( <i>n</i> = 736)	
Nursing <sup>a</sup>	257 (35)
Registered Nurse	237 (92)
Enrolled Nurse	10 (4)
Nurse Practitioner	7 (3)
Allied Health	329 (45)
Physiotherapy	129 (39)
Occupational Therapy	61 (18)
Nutrition And Dietetics	34 (10)
Speech Pathology	27 (8)
Social Work	22 (7)
Podiatry	16 (5)
Psychology	13(4)
Pharmacy	10 (3)
Other	17 (5)
Medical	150 (20)
Trainee (intern, resident medical officer, registrar)	40 (27)
Geriatrician	35 (23)
General Practitioner	23 (15)
Other speciality <sup>b</sup>	52 (35)
Years practicing in their field ( <i>n</i> = 736)	
<3 years	49 (7)
3–10 years	195 (26)
>10 years	492 (67)
Age ( <i>n</i> = 593)	
<30 years	67 (11)
30–39 years	162 (27)
40–49 years	150 (25)
50–59 years	137 (23)
60+ years	68 (12)
Prefer not to say	9 (2)
Gender ( <i>n</i> = 593)	
Male	82 (14)
Female	497 (84)
Other	1 (<1)
Prefer not to say	13 (2)
State/territory trained in ( <i>n</i> = 593)	
New South Wales	202 (34)
Australian Capital Territory	8 (1)
Northern Territory	2 (<1)
South Australia	10 (1)
Queensland	229 (39)
Tasmania	3 (<1)
Victoria	46 (8)

TABLE 1 (Continued)

Characteristics	Count (%)
Western Australia	45 (8)
Outside of Australia	42 (7)
Prefer not to say	6 (1)
State/Territory currently work in ( <i>n</i> = 590)	
New South Wales	209 (35)
Australian Capital Territory	5 (<1)
Northern Territory	1 (<1)
South Australia	3 (<1)
Queensland	275 (47)
Tasmania	1 (<1)
Victoria	38 (6)
Western Australia	50 (8)
Prefer not to say	8 (1)
Ever worked on specialised geriatric wards/teams ( <i>n</i> = 589)	
Yes	306 (52)
No	283 (48)
Setting currently working in <sup>c</sup> ( <i>n</i> = 592)	
Hospital	431 (73)
Primary care/community	153 (26)
Outpatient clinics	118 (20)
Residential aged care facility	49 (8)
Prefer not to say	1 (<1)
Other <sup>d</sup>	15 (2)

<sup>a</sup>Missing data on qualification/level: *n* = 3 (1%).

<sup>b</sup>Other specialities included intensive care (*n* = 8), nephrology (*n* = 8), surgery (*n* = 6), anaesthesia (*n* = 6), emergency medicine (*n* = 5), palliative care (*n* = 3), rehabilitation physician (*n* = 3), oncology (*n* = 3), paediatrics/neonatology (*n* = 3), general medicine (*n* = 2), psychiatry (*n* = 1), missing (*n* = 4).

<sup>c</sup>Multiple responses allowed, therefore percentages add to >100%.

<sup>d</sup>Other settings included education/research, medical laboratory, health informatics, clinical governance and supply.

### 3.1 | Frailty training and perceived knowledge

Fewer than half of the respondents (44%, 321/733) reported having received any training or professional development about frailty, with only 14% (105/308) reporting that they have received training specifically focussed on frailty.

For those who reported receiving training about frailty, this was most commonly informal 'on the job' education (56%, 173/310), formal seminars or conferences (52%, 160/310) and workplace-based education (40%, 123/310). To a lesser extent, frailty training was provided during entry-level qualifications (24%, 76/310) and during additional formal post-graduate education or specialisation

(28%, 87/310). Training was most often described as ‘fairly adequate’ (42%, 131/311) or ‘somewhat adequate’ (31%, 96/311) to prepare them to undertake frailty assessment (Table S1).

Most respondents reported a ‘good’ (38%, 271/712) or ‘fair’ (40%, 285/712) understanding of frailty. Nearly a quarter of respondents reported that they were ‘not at all’ experienced in undertaking frailty assessment in their practice (Table S1).

### 3.2 | Confidence in recognising and managing adults with frailty

Respondents were ‘fairly’ or ‘somewhat’ confident with identifying frailty, talking with patients/clients and families about frailty, and in referring to/liasing with other health professionals about frailty (Figure 1).

### 3.3 | The importance and relevance of frailty

Many respondents felt that identifying frailty was part of their professional role (Table 2). Almost all respondents (>90%) reported that frailty impacts clinical outcomes and that assessing someone as being frail would influence their clinical decision making about care, treatment or management options (Table 2). Despite this, a similar proportion of respondents (92%) reported that there was ‘always’, ‘often’ or ‘sometimes’ something else of a higher priority than assessing people for frailty. They identified priority groups for frailty assessment as ‘people with history of falls’, ‘oldest old people (>85 years)’ and ‘people with recent functional decline’.

Ninety per cent of respondents (569/635) agreed that there are beneficial interventions for frail people, and only three participants responded that there are ‘no’ beneficial

interventions for frail people. Two-thirds of respondents (65%, 403/624) believed there are many medical procedures/interventions that are very harmful for frail people, while a quarter of respondents were ‘unsure’ if there are many or few very harmful interventions for frail people (Table S1).

### 3.4 | Barriers to assessing and managing frailty in practice

Commonly reported barriers to frailty assessment in practice include ‘lack of defined protocol for managing frailty’, ‘lack of consensus about which frailty assessment tool to use’, ‘current protocols/processes not supporting frailty assessment’, ‘lack of multidisciplinary team to support frailty assessment and management’ and ‘lack of time to complete frailty assessment’ (Figure 2). Respondents reported that the assessment of frailty is ‘very’ (22%, 114/531), ‘fairly’ (27%, 141/531), or ‘somewhat’ (26%, 136/531) important to their supervisor(s) and that senior members included frailty assessment in their practice ‘sometimes’ (31%, 174/554) or ‘rarely’ (30%, 165/554) (Table S1).

### 3.5 | Interest in further training

Most respondents (88%, 521/595) stated they were interested in learning more about frailty, with high interest in a range of topics (Table 3). Online training modules was the preferred format, followed by webinars and printed material, with lower interest in lectures.

## 4 | DISCUSSION

This study of 736 medical, nursing and allied health professionals across Australia was the largest national survey,

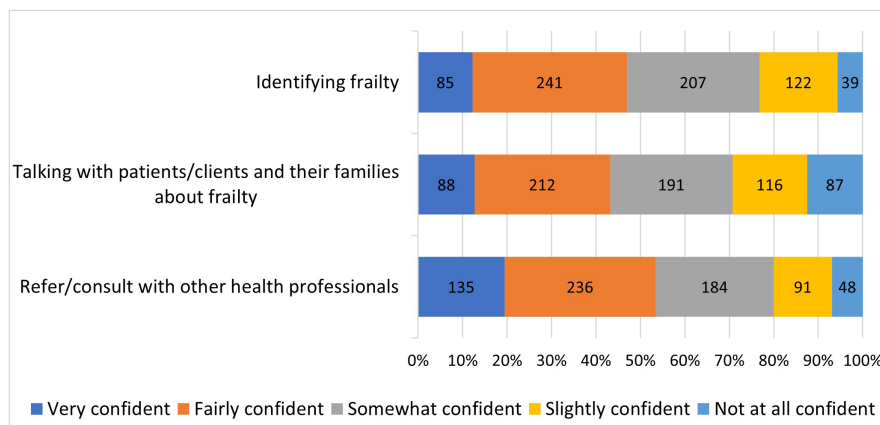


FIGURE 1 Confidence in recognising and managing adults with frailty ( $n = 694$ ).

TABLE 2 Opinions of health professionals about frailty assessment and management in practice.

Statement	Response	Count (%)
To what extent do you feel that identifying frailty is part of your professional role and identity? ( <i>n</i> = 663)	Very great extent	171 (26)
	Great extent	272 (41)
	Some extent	156 (24)
	Little extent	44 (7)
	Very little extent	20 (3)
Generally, in your clinical care, how often is something else a higher priority than assessing people for frailty? ( <i>n</i> = 640)	Always	70 (11)
	Often	329 (51)
	Sometimes	190 (30)
	Rarely	44 (7)
	Never	7 (1)
In your view, to what extent does frailty in people impact their clinical outcomes? ( <i>n</i> = 663)	Very great extent	304 (46)
	Great extent	302 (46)
	Some extent	54 (8)
	Little extent	1 (<1)
	Very little extent	2 (<1)
In your view, are there any particular patient subgroups that should be prioritised for frailty assessment? ( <i>n</i> = 663) <sup>a</sup>	People with history of falls	618 (93)
	Oldest old people (>85 years)	597 (90)
	People with recent functional decline	590 (89)
	People with history of recurrent hospital admissions	566 (85)
	People with history of cognitive impairment	508 (77)
	People with two or more chronic medical conditions	478 (72)
	People living in residential aged care facilities	468 (71)
	People with delirium	417 (63)
	People being referred for a major surgery	357 (54)
	People with an acute medical illness	274 (41)
If you were to assess a person as being frail, to what extent would this influence your clinical decision-making about their care or treatment/management options? ( <i>n</i> = 663)	Very great extent	119 (18)
	Great extent	329 (50)
	Some extent	200 (30)
	Little extent	13 (2)
	Very little extent	2 (<1)

<sup>a</sup>Multiple responses allowed, therefore percentages add to >100%.

in terms of both scope and population, to investigate the knowledge and training of health professionals about frailty and barriers to its assessment and management. The survey developed for this study was informed by the COM-B model of behaviour,<sup>16</sup> which can provide direction for future training and behaviour change interventions to improve frailty management specifically targeted towards Capability, Opportunity and/or Motivation. This survey suggest that the barriers to including frailty identification and management in practice are related to physical opportunity (i.e. contextual factors) and capability (i.e. knowledge and skills).

In terms of capability, participants reported moderate-to-low levels of self-reported knowledge of frailty and

experience in frailty assessment, as well as moderate levels of confidence in frailty identification and management. Consistent with other studies,<sup>7,18–20</sup> respondents reported a lack of adequate training in frailty, with only 14% reporting specific frailty training and most frailty training being provided 'on the job' or as part of broader training programs. Our finding of limited experience in undertaking frailty assessment was consistent with other studies that have reported limited hands-on knowledge of their participants on how to perform frailty assessment, which would also act as a barrier to integrating frailty assessment into routine clinical practice.<sup>22,23</sup> Also consistent with other studies,<sup>8,24</sup> lack of consensus about which frailty assessment to use was identified as a barrier in this sample. This



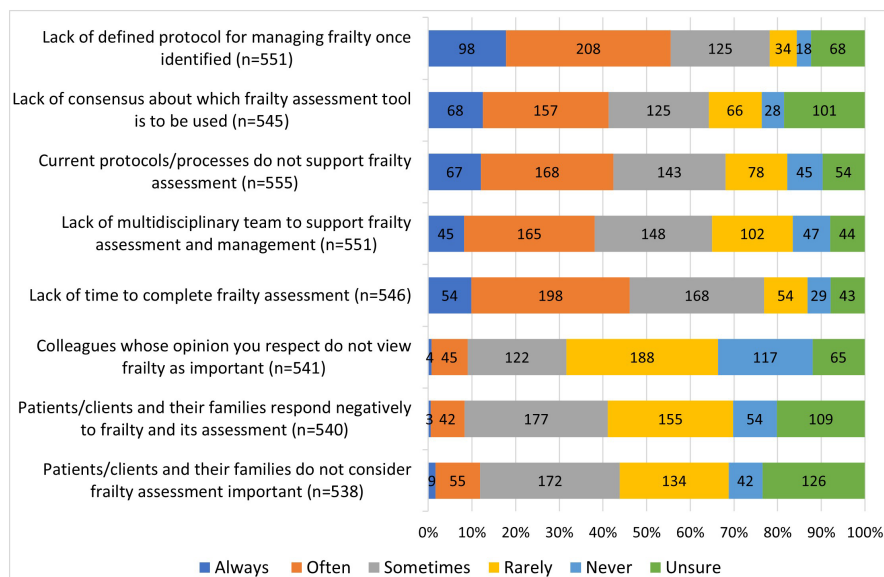


FIGURE 2 Barriers to completing frailty assessments in respondents' current workplace.

TABLE 3 Interest in further training about frailty.

Statement	Response	Count (%)
If interested in learning more, what are you interested to learn more about? <sup>a</sup> (n = 519)	Developing an appropriate care/management plan	422 (81)
	Patient education about frailty	402 (78)
	How to identify frailty	399 (77)
	Family education about frailty	395 (76)
	Mechanisms and risk factors of frailty	344 (66)
	Recommendations for exercise	320 (62)
	Recommendations for nutrition	297 (57)
	Medication prescribing for frail people	253 (49)
	Other	23 (4)
If interested in learning more, in what format would you prefer to receive training? <sup>a</sup> (n = 520)	Online module	416 (80)
	Webinar	314 (60)
	Printed material	221 (42)
	Lecture	155 (30)
	Other <sup>b</sup>	12 (2)

<sup>a</sup>Multiple responses allowed, therefore percentages add to >100%.

<sup>b</sup>Other formats of trainings included: face to face training with multidisciplinary approaches, workshops, conference, in-service or ward-based education, online reading, PDF information documents and recorded webinars.

has been highlighted in the 2018 scoping review by Theou et al., which identified 89 different frailty measures that were used in older inpatients.<sup>25</sup> Although routine screening for frailty in older people is recommended by clinical guidelines for frailty,<sup>26,27</sup> the gap in the evidence base about the optimal frailty measure hinders the integration of frailty assessment in the care of older people.<sup>4</sup> Another common barrier reported by respondents in our study was the lack of a defined protocol for managing frailty. This was also a finding of a qualitative study of Canadian health professions,<sup>24</sup> which identified the need to have

clear 'next steps' after frailty screening to enhance the use of frailty assessment tools.

High interest in training amongst respondents suggests that these capability-related barriers may be easily addressed. Online frailty training has been previously shown to be effective when combined with face-to-face training as part of graduate medical training (e.g. geriatric medicine teaching week for medical students)<sup>28</sup> and for practicing physicians (e.g. 9-month geriatric education program for emergency physicians).<sup>29</sup> A high preference for online training for health professionals has been reported in other

studies<sup>30</sup>; however, one-off training may not be enough to consolidate skills, with health professionals reporting a need for post-training support to help them implement new knowledge and skills in their practice.<sup>30</sup> However, education and training are unlikely to be effective in isolation, given the barriers related to physical opportunity identified in this survey. In order to implement evidence-based frailty-informed care into routine clinical practice, strategies will need to address contextual barriers identified in this study, such as competing priorities for health professionals, lack of time<sup>18,22</sup> and lack of multidisciplinary teams to support frailty assessment and management,<sup>8</sup> also reported in previous studies. In this sample, social opportunity does not appear to be a barrier to frailty assessment and management, with frailty seen to be of importance to their supervisors, peers and patients/clients and their families.

The results of this survey suggest that health professionals in Australia are likely to be motivated to include frailty assessment and management in their practice. This was evidenced through beliefs about consequences (i.e. that frailty is of high clinical importance, impacts clinical outcomes and their decision-making about care, and that there are interventions to manage frailty) and alignment with professional roles and identity. Interestingly, this is in contrast with other international studies where health professionals held beliefs that frailty was synonymous with ageing and therefore non-modifiable.<sup>7,21</sup> Further qualitative exploration of the attitudes of Australian health professionals may provide further insight and confirmation of their motivation to include frailty assessment and management in their practice.

This study is the largest survey of health professionals' knowledge of frailty to date. The sample included health professionals from a range of disciplines, work settings and from all Australian states and territories; future secondary analysis of this data will provide further insight into the knowledge, training and barriers within specific discipline groups. Furthermore, this purpose-built survey is underpinned by a sound theoretical framework (COM-B) that provides a starting point for designing interventions to support health professionals with improving frailty management. The survey was developed through a robust process of preliminary pretesting and pilot-testing, thus maximising face validity.

This study also has limitations. Snowballing sampling technique was used to maximise the number of respondents, meaning that the response rate cannot be accurately known. Results should be interpreted carefully, understanding that they may not be representative of all Australian health professionals due to selection bias. Respondents may have self-selected such that those with more interest and knowledge of geriatric care and frailty were more likely to respond. Higher rates of missing data towards the end of

the survey may indicate respondent fatigue/drop-out due to the length of the survey, and therefore further exploration of barriers to frailty management may be warranted to confirm these findings. Nevertheless, the results provide a sound 'first step' in addressing frailty knowledge gaps.

## 5 | CONCLUSIONS

The findings of this large theory-guided survey suggest that frailty is perceived to be of high importance by health professionals in Australia. Yet, several barriers, such as lack of knowledge and training, as well as time and resources, hinder the inclusion of frailty assessment and management in practice. Rapidly emerging research on assessment and management of frailty can be translated into practice through multidisciplinary frailty education programs. Our findings suggest that education on frailty and its management can address knowledge gaps and should be well-received by Australian health professionals.

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## CONFLICT OF INTEREST STATEMENT

No conflicts of interest declared.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## ORCID

Leila Shafiee Hanjani  <https://orcid.org/0000-0001-7088-9739>  
 Rosemary Saunders  <https://orcid.org/0000-0001-6213-4694>

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### SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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