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Article

Eliciting Healthcare Professionals' Perspectives on Frailty in Long-Term Care: Perceptions of Frailty-Related Terms

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ABSTRACT

Background: Frailty is widely recognized as a multidimensional condition in long-term care, yet how it is described and prioritized in everyday clinical practice varies across professional groups. Understanding how healthcare professionals interpret frailty-related language is important for effective clinical documentation, interdisciplinary communication, and care planning in aged care settings. **Methods:** A cross-sectional online survey using purposive and snowball sampling was conducted with 51 healthcare professionals working in aged care. Participants rated the importance of 65 predefined frailty-related terms using a five-point Likert scale. Terms were mapped to six frailty dimensions: physical, functional, cognitive, psychological, social, and nutritional. Descriptive analyses were used to examine endorsement patterns by professional role and years of clinical experience. **Results:** Physical frailty descriptors received the strongest and most consistent endorsement, with susceptible to falls, health deterioration, and bed-bound rated among the most important. Cognitive indicators and malnutrition were also widely recognized. In contrast, psychological and social terms showed greater variability in agreement. Endorsement differed by profession, with doctors and nurses emphasizing physical and nutritional indicators, allied health professionals demonstrating more variable patterns, and care workers showing broader recognition across dimensions. Less experienced respondents endorsed a wider range of terms, whereas more experienced clinicians were more selective. **Conclusions:** Frailty in long-term care is most commonly recognized through physical and cognitive indicators, with less consistent attention to psychological and social dimensions. Clarifying how frailty is described and prioritized across disciplines can inform clinical documentation practices, support interdisciplinary communication, and guide future efforts to strengthen frailty recognition in long-term care.

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INTRODUCTION

Frailty is a common and important concern in the care of older adults, contributing to heightened vulnerability, complex care needs, and poorer health outcomes [1–7]. Often coexisting with multiple chronic conditions, frailty accelerates physiological decline and increases the risk of adverse events such as falls, hospitalization, and functional deterioration [1,8–10]. In practice, frailty is not only assessed using formal tools, but is also continuously recognized, interpreted, and communicated through clinical documentation and professional judgement. As a result, a clear and shared understanding of frailty-related terminology is essential for effective identification, communication, and management across healthcare settings.

Frailty is widely conceptualized as a multidimensional syndrome encompassing Physical, Functional, Cognitive, Social, Psychological, and Nutritional domains [3,11–20]. Although these dimensions are conceptually distinct, they frequently overlap in everyday care practice. Physical frailty is commonly reflected in reduced strength, balance, and mobility [3,21–23], while functional frailty relates to limitations in basic and instrumental activities of daily living [16,24,25]. Cognitive frailty includes impairments in memory, insight, or executive function [12,14,26,27]. Social frailty reflects reduced social networks or support [11], psychological frailty involves mood disturbance, stress, or poor emotional wellbeing [15,17,28–30], and nutritional frailty includes weight loss, reduced intake, and malnutrition [13,31,32]. Understanding how these dimensions are recognized and prioritized in practice is critical for supporting targeted interventions and effective interdisciplinary care [33–35].

Despite broad agreement that frailty is multidimensional, applying a consistent definition in routine care remains challenging [36–39]. Different professional groups often emphasize different aspects of frailty based on their clinical roles, responsibilities, and practice environments [40,41]. Medical practitioners commonly prioritize physical indicators such as weakness or fatigue [37,42,43], whereas physiotherapists and occupational therapists tend to focus on functional capacity, mobility, and independence [36,38]. Community-based professionals, including social workers and primary care clinicians, often emphasize psychosocial vulnerability and social isolation [36,37,42,43]. These differences highlight that frailty is interpreted through professional lenses, and that variation in terminology may influence interdisciplinary communication, care planning, and continuity of care.

Frailty is particularly prevalent in residential aged care settings, where residents commonly experience advanced physical, functional, and cognitive decline due to cumulative ageing and chronic disease burden [33,44–47]. Residential aged care also involves frequent documentation and close collaboration among nurses, general practitioners, allied health professionals, and care workers. This makes aged care facilities a critical yet underexplored setting for examining how frailty is understood, described, and communicated in everyday practice across professional roles.

This study addresses this gap by examining how healthcare professionals working in aged care interpret frailty through their ratings of a predefined list of 65 frailty-related terms mapped to six established frailty dimensions. Specifically, the study explores which terms clinicians consider most relevant, how endorsement patterns vary across frailty dimensions, and whether these patterns differ by professional discipline and years of experience. By focusing on the language used to describe frailty in long-term care, this study aims to provide insights into interdisciplinary understanding and documentation practices, with implications for improving communication, care coordination, and future measurement approaches in residential aged care.

METHODS

Study Design and Context

This study used a cross-sectional survey design to examine how healthcare professionals interpret and describe frailty in the context of caring for older adults. The study focused on real-world clinical practice, drawing on clinicians' professional judgement to assess the relevance of frailty-related language commonly encountered in aged care documentation. The approach was designed to prioritize interpretability and transparency, rather than automation or prediction, and to reflect how frailty is understood and communicated across disciplines in routine care.

The study was conducted primarily within residential aged care services in South Australia, Australia, with additional participation from clinicians working in hospital and community settings. The aged care sector in Australia is characterized by a culturally diverse workforce, including clinicians trained across different countries and healthcare systems. Resident populations in aged care facilities also vary in socioeconomic background, cultural identity, and levels of health complexity.

Detailed demographic data on participants (e.g., cultural background, language, or ethnicity) and residents were not collected in this study. However, it is acknowledged that cultural and linguistic diversity may influence how frailty is interpreted, described, and documented in

practice. These contextual factors are important considerations when interpreting the findings and their broader applicability.

Development of Frailty-Related Terminology

Identification of Candidate Terms

An exploratory literature search was conducted in PubMed and MEDLINE using the keywords: ((frailty indicators) OR (frailty terms) OR (frailty descriptions) OR (frailty language)) AND ((clinical notes) OR (unstructured clinical data) OR (electronic health records)) AND (natural language processing). The inclusion of "natural language processing" was intended to identify studies that reported frailty-related terminology extracted from unstructured clinical text, rather than to evaluate NLP methods themselves. The objective of this search was to identify frailty-related language relevant to clinical documentation, not to conduct a systematic review or compare computational approaches.

The search returned 11 articles. Titles and abstracts were screened for relevance to frailty terminology used in clinical text, with particular attention to studies that identified, described, or extracted frailty-related language from unstructured health records. Three studies met these criteria and were reviewed in full [48–50]. Reference lists and citation trails from these papers yielded two additional relevant publications [51,52]. The screening process is summarized in Figure S1. From these five key studies, 22 frailty-related terms were extracted.

Expansion and Refinement of the Term Set

To broaden coverage and capture linguistic variation encountered in practice, the initial list was expanded using ChatGPT-4, increasing the pool to 44 terms. This expanded list was then reviewed by the internal research team, who identified additional candidate terms based on their clinical experience in aged care settings, resulting in a total of 99 terms.

An iterative review process was undertaken to refine the list. Terms judged to be vague, redundant, or not relevant to residential aged care practice were removed. This resulted in a final list of 65 distinct frailty-related terms. To ensure conceptual alignment with established frailty frameworks, the final list was cross-referenced with the Rockwood Frailty Index [53,54], the Fried Frailty Phenotype [3], and the electronic Frailty Index (eFI) [55,56]. The resulting set of 65 terms (Table S1) formed the basis of the survey instrument and were mapped to six established frailty dimensions.

The refinement process was informed by the clinical judgement of the research team, which introduces the possibility of conceptual bias in how frailty was defined and operationalized. Decisions to remove terms considered vague, redundant, or less relevant may have shaped the final representation of frailty domains. For example, certain clinically recognized contributors to frailty, such as polypharmacy or

multimorbidity-related descriptors, were not retained in the final list. While efforts were made to align the term set with established frailty frameworks, it is acknowledged that the selection process reflects the perspectives and assumptions of the investigators and may have influenced the scope of terms evaluated.

Survey Design

An online survey was developed to explore how healthcare professionals from different disciplines and levels of clinical experience rated the relevance of the 65 frailty-related terms. The survey was designed to reflect how clinicians conceptualize frailty in everyday practice rather than to assess formal diagnostic accuracy.

Participants rated each term using a five-point Likert scale ranging from “Very Important” to “No Association”, with higher ratings indicating stronger perceived relevance to frailty. Respondents also reported their professional role and years of clinical experience to support subgroup comparisons. Demographic variables such as age and gender were not collected, as they were not relevant to the study’s focus on professional background and conceptual understanding. This decision also reduced respondent burden and supported participation by busy clinicians. A free-text field was included at the end of the survey to allow participants to suggest additional frailty-related terms not captured in the predefined list. To minimize ordering effects and reduce response bias, all terms were presented in randomized order. Before distribution, the survey was pilot tested by two healthcare professionals, one nurse and one allied health clinician, who were not involved in the study. Feedback from pilot testing informed refinements to term wording, instructions, and formatting to improve clarity, relevance, and usability for the target clinical audience. The full survey instrument is provided as Supplementary Material (Survey S1) to support transparency, replication, and future comparative research.

Participants and Recruitment

Eligible participants were healthcare professionals with direct experience caring for older adults in residential aged care, hospital, or community-based settings. This included doctors, nurses, physiotherapists, occupational therapists, and other allied health professionals.

Recruitment employed purposive and snowball sampling. Initial invitations were distributed through internal professional networks within a large aged care organization in South Australia, with organizational approval. Facility managers, supervisors, and other leadership personnel circulated the survey link to their teams. Additional participants were recruited through professional contacts in other regions of Australia, including collaborators and members of relevant professional associations, who shared the invitation via email and workplace communication channels. This recruitment strategy enabled the inclusion of clinicians actively involved in older adult care across

multiple settings, while maintaining a strong representation of professionals working in residential aged care.

The survey was administered via the QUALTRICS online platform and remained open for eight weeks, with a reminder issued at 30 days to encourage participation.

Ethics, Governance, and Data Management

All study procedures, including the survey of healthcare professionals, were approved by the James Cook University Human Research Ethics Committee (Reference H9557) and conducted in accordance with institutional ethical guidelines. This study was designed and reported in accordance with the STROBE checklist for cross-sectional studies [57].

No identifiable information was collected from participants. All responses were anonymized at the point of collection, and only aggregated data were used in analysis and reporting. Data were stored securely in accordance with James Cook University's data security and confidentiality requirements.

Data Analysis

Quantitative analyses were conducted using the R programming language (version 4.2.3) within the RStudio environment (version 2023.06.1 Build 524). Analyses focused on describing patterns of term endorsement across frailty dimensions, professional roles, and levels of clinical experience, consistent with the study's aim of understanding how frailty is interpreted and described in long-term care practice.

RESULTS

Characteristics of Participants

Access records indicated that 64 individuals opened the survey link, of whom 51 completed all survey items during the data collection period between August and September 2024. Partially completed or unsubmitted responses were excluded from analysis, as respondents were able to exit the survey at any time by closing their browser. Based on link access data, the overall completion rate was approximately 80%. Table 1 presents the distribution of respondents across healthcare roles working in aged care settings, including allied health professionals, nurses, doctors, and care workers. Physiotherapists and nurses constituted the largest professional groups represented in the sample, reflecting the central role of these disciplines in day-to-day resident assessment and documentation within aged care facilities. Most respondents reported substantial clinical experience, with the majority indicating five or more years in practice. A notable proportion reported more than 15 years of experience, suggesting that the perspectives captured in this study largely reflect established clinical practice rather than early-career viewpoints.

Table 1. Participants Roles and Experience.

Professional Role	n	%	Years of Work Experience	n	%
Allied Health Professionals			<1 year	2	3.9%
-Physiotherapists	11	21.6%	[1, 5) years	11	21.6%
-Occupational Therapists	4	7.8%	[5, 10) years	10	19.6%
-Dietitians	2	3.9%	[10, 15] years	12	23.5%
-Exercise Physiologists	2	3.9%	>15 years	16	31.4%
-Psychologists	2	3.9%			
-Speech Pathologists	2	3.9%			
-Social Workers	3	5.9%	**Care Workers/Assistant Roles**	**n**	**%**
-Podiatrists	1	2.0%	-Therapy Assistants	4	7.8%
Subtotal-Allied Health	27	52.9%	-Care Workers	2	3.9%
			-Lifestyle Assistant	1	2.0%
Medical and Nursing	**n**	**%**	-Lifestyle Coordinator	1	2.0%
-Medical Doctors	5	9.8%	**Subtotal-Support/Assistants**	8	15.7%
-Nurses	11	21.6%			
Subtotal-Medical/Nursing	16	31.4%	**Total Participants**	51	

Classification of Frailty Terms by Dimensions

The 65 frailty-related terms identified through the multistep development process were organized into six established frailty dimensions: Physical, Functional, Cognitive, Social, Psychological, and Nutritional. Each term was assigned to the dimension that best reflected its predominant meaning in everyday clinical use within aged care settings.

Several terms were recognized as having relevance across more than one dimension. In these cases, classification was guided by how the term is most commonly used in practice to communicate frailty-related concerns. For example, *slowed movements* was categorized under the Functional dimension, as it is typically used to describe reduced mobility and difficulty with everyday activities, even though it may also reflect underlying physical decline. Similarly, *memory lapses* was assigned to the Cognitive dimension because it primarily signals impairment in cognitive processes, despite its potential impact on functional independence. A one-to-one assignment approach was applied to support clarity and consistency in reporting. Classifications were based on clinical judgement rather than statistical modelling, reflecting the study's focus on how frailty is understood and described in routine care documentation rather than on optimizing analytical categorization. Figure 1 presents the distribution of 65 frailty-related terms across the six dimensions. Physical descriptors accounted for the largest proportion of terms, followed by those related to Functional frailty. The Cognitive, Social, Psychological, and Nutritional dimensions were represented by a smaller number of terms, indicating a more limited range of commonly used descriptors in these areas. Supplementary Table S2 provides the complete list of terms assigned to each dimension.

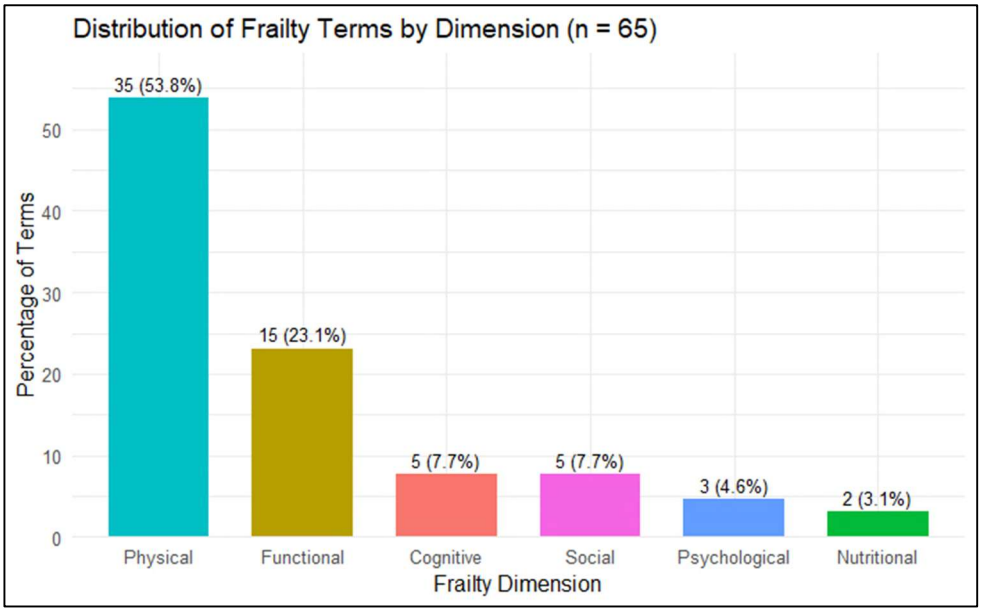

Figure 1. Distribution of frailty-related terms across six dimensions (n = 65).

Importance Ranking of Frailty Terms

To examine which frailty descriptors were most strongly endorsed across professional groups, a simple-majority criterion was applied. A term was classified as highly important if at least 50% of respondents rated it as "Very important". This threshold was used as an indicator of shared clinical importance, allowing identification of commonly valued descriptors without excluding terms that are meaningful in everyday practice.

Using this criterion, the number of highly endorsed terms varied across frailty dimensions (Table 2). The Physical dimension contained the largest number of qualifying terms (n = 14), followed by the Cognitive dimension (n = 4) and the Nutritional dimension (n = 1). The Functional and Psychological dimensions each contained one term meeting the threshold, while no terms within the Social dimension reached the 50% agreement level. Although Physical descriptors accounted for more than half of all predefined frailty terms (53%), endorsement within this dimension was not uniform. Only 40% of Physical terms met the simple majority criterion. In contrast, the Cognitive dimension contained fewer descriptors overall, yet four of the five Cognitive terms (80%) were rated as "Very important" by at least half of respondents. This pattern suggests a high level of shared recognition for a small set of cognitively focused frailty descriptors, despite their more limited representation within the overall term list. The most highly endorsed frailty terms overall were health deterioration (68.6%, n = 35); bed-bound and susceptible to falls (66.7%, n = 34 each); frail and malnutrition (62.7%, n = 32 each); and dementia (60.8%, n = 31). These terms spanned physical, cognitive, and nutritional dimensions, reflecting a convergence of clinical attention on observable decline, risk,

and dependence. Figures S2 and S3 present the full distribution of "Very important" and "Important" ratings across all terms.

Additional patterns were evident. Some descriptors were more frequently rated as "Important" rather than "Very important", such as *gait aids* and *weak grip strength*, suggesting recognition of relevance without strong prioritization. Other terms, including *pain* and *fatigue*, showed more evenly distributed ratings, indicating variability in how these concepts are interpreted as markers of frailty. In contrast, age-related descriptors such as *elderly* and *geriatric* received comparatively lower endorsement, suggesting limited value as standalone indicators of frailty in clinical documentation.

Table 2. Number and proportion of frailty terms rated "Very important" by ≥50% of respondents, with ranked terms listed within each dimension.

Dimension	Total Terms in Survey	Terms with ≥50% Respondent Endorsement as "Very Important"	% Within Category[1]	% of All 65 Terms[2]	Ranking of Terms[3]
Physical	35	14	40.0%	21.5%	Health deterioration (68.6%, n = 35); Bed-bound (66.7%, n = 34); Susceptible to falls (66.7%, n = 34); Frail (62.7%, n = 32); Pressure injuries (60.8%, n = 31); Mobility issues (58.8%, n = 30); Illness (56.9%, n = 29); Weakness (56.9%, n = 29); Chair-bound (54.9%, n = 28); Decline (54.9%, n = 28); Declining physical condition (52.9%, n = 27); Limited mobility [difficulty with walking] (52.9%, n = 27); Difficulty standing (51.0%, n = 26); Loss of balance (51.0%, n = 26)
Cognitive	5	4	80.0%	6.2%	Dementia (60.8%, n = 31); Cognitive decline (56.9%, n = 29); Disorientation (52.9%, n = 27); Confusion (51.0%, n = 26)
Nutritional	2	1	50.0%	1.5%	Malnutrition (62.7%, n = 32)
Functional	15	1	6.7%	1.5%	Decreased functionality (66.7%, n = 34)
Psychological	3	1	33.3%	1.5%	Vulnerability (56.9%, n = 29)
Social	5	0	0.0%	0.0%	-

[1] % within category calculated using the number of terms in that dimension as the denominator. [2] % of all terms calculated using the total of 65 terms as the denominator. [3] Ranking lists only those terms with ≥50% of respondents rating the term "Very important"; percentages are out of n = 51.

Interdisciplinary Variation in Agreement on Frailty Terms

Clear interdisciplinary differences were observed in how frailty-related terms were endorsed across professional groups. Using an agreement threshold in which at least 80% of respondents within a professional group rated a term as "Very Important" or "Important", distinct patterns emerged across the six frailty dimensions. These patterns are illustrated in Figure 2, which summarizes levels of agreement within each professional group.

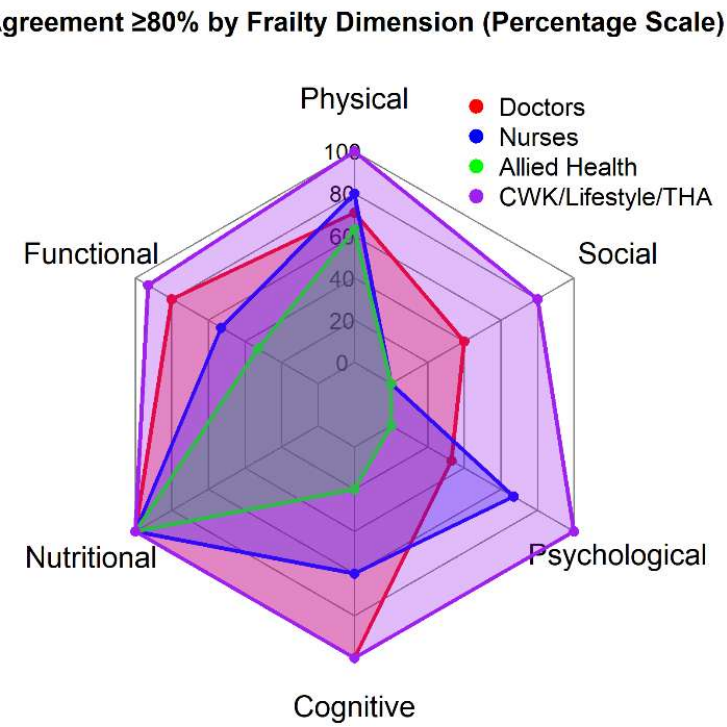

Figure 2. Radar plot showing the percentage of terms rated as "Very Important or Important" (≥80% agreement threshold) by professional group across six frailty dimensions. Each axis represents a frailty dimension scaled from 0% to 100%, with higher values indicating greater agreement among professionals within that group. CWK = Care Worker, Lifestyle = Lifestyle Assistant/Coordinator, THA = Therapy Assistant.

Doctors demonstrated strong agreement for terms within the Physical, Functional, Nutritional, and Cognitive dimensions. In contrast, endorsement of Psychological and Social frailty descriptors was comparatively lower, indicating that these aspects of frailty were less consistently prioritized in medical assessments within the aged care context. Nurses showed the highest level of agreement for Nutritional and Physical frailty terms. Agreement across the remaining dimensions was more variable, with endorsement levels generally lower and fewer terms reaching strong consensus. This pattern suggests a focus on observable physical decline and nutritional risk, alongside more heterogeneous interpretation of functional, cognitive, psychological, and social indicators. Allied health professionals displayed the greatest variability in endorsement across dimensions. While agreement was consistently high for Nutritional terms, endorsement across Physical, Functional, Cognitive, Psychological, and Social dimensions was fragmented. This variability reflects the diversity of allied health roles and the differing professional lenses through which frailty is assessed and described. In contrast, care workers, lifestyle staff, and therapy assistants demonstrated broad and consistent agreement across all six frailty dimensions. Within these groups, nearly all terms were rated as "Very Important" or "Important", indicating a more inclusive understanding of frailty that spans physical, functional, cognitive, psychological, social, and nutritional domains. Detailed

agreement percentages by professional group and frailty dimension are provided in Table S3.

Consensus Patterns on Frailty Terms Across Dimensions

Clear patterns of shared understanding and divergence were observed in how frailty-related terms were endorsed across professional groups. To support comparison of agreement patterns, a high-consensus criterion was applied to summarize strong endorsement within each group. Viewed through this lens, agreement varied substantially by frailty dimension.

Nutritional descriptors showed the strongest and most consistent alignment across all professional groups, with both Nutritional terms endorsed as “Very Important” or “Important” by all groups. This indicates a high level of shared recognition of nutritional risk as a core component of frailty in long-term care practice. Physical frailty indicators were also widely endorsed. More than 70% of Physical terms were rated as “Very Important” or “Important” across professional groups, reflecting broad agreement on the relevance of physical decline in describing frailty. Complete agreement was observed among care support staff, including care workers, lifestyle staff, and therapy assistants, who endorsed all Physical descriptors. This pattern highlights the central role of physical observations in day-to-day care delivery and documentation. In contrast, agreement was more variable across the Functional, Cognitive, Psychological, and Social dimensions. Functional descriptors were consistently endorsed by doctors and care support staff, whereas endorsement was lower among nurses and allied health professionals. Cognitive descriptors showed strong alignment among doctors and care support staff, while endorsement was more selective among nurses and limited among allied health professionals. Psychological frailty descriptors displayed the greatest divergence across professional groups. Care support staff endorsed all Psychological terms, while nurses endorsed most, doctors endorsed fewer, and allied health professionals showed limited agreement. Social frailty descriptors received the lowest overall endorsement. No Social terms were strongly endorsed by doctors, nurses, or allied health professionals, although care support staff endorsed most Social descriptors. Full numerical agreement levels by professional group and frailty dimension are provided in Table S3.

Cross-Occupational Consensus on Highly Endorsed Frailty Terms

A small number of frailty descriptors demonstrated strong and consistent endorsement across all professional groups. Only one term, *susceptible to falls*, achieved unanimous agreement, with all respondents rating it as “Very Important” or “Important”. This reflects a shared recognition of fall risk as a central and universally understood marker of frailty in long-term care settings. Beyond this single term, a broader set of frailty descriptors showed high levels of cross-occupational agreement. Using a high-agreement criterion to summarize shared endorsement, 38

additional terms met this level of agreement across professional groups. These terms spanned five of the six frailty dimensions, with the greatest concentration within the Physical dimension (25 terms), followed by Functional (seven terms), Cognitive (four terms), Nutritional (two terms), and Psychological (one term) dimensions. No Social frailty descriptors reached this level of cross-occupational agreement. Table 3 presents the full list of frailty terms that demonstrated strong agreement across professional groups. The remaining 26 terms, which did not meet this level of shared endorsement, are shown in Figure S2 to provide a complete overview of endorsement patterns.

Table 3. Frailty terms that achieved unanimous (100%) or strong (≥80%) agreement among all respondents.

Unanimous (100%) Agreement	Strong consensus (≥80%) Agreement
Susceptible to falls	Bed-bound, Chair-bound, Cognitive decline, Confusion, Decline, Declining physical condition, Decreased functionality, Dementia, Dependence, Difficulty standing, Disorientation, Exhaustion, Fatigue, Fragile skin, Frail, Health deterioration, Illness, Instability, Limited mobility (difficulty with walking), Loss of balance, Loss of muscle strength, Malnutrition, Mobility issues, Need for assistance, Pain, Physical limitations, Pressure injuries, Reduced capacity, Shortness of breath, Slowed movements, Susceptible to disease and illness, Unsteadiness, Use of gait aids (walking stick or frame), Vulnerability, Weak muscle, Weakness, Weight loss, Worsening health

Variation In Responses by Years of Professional Experience

Differences were observed in how frailty related terms were endorsed according to respondents' years of professional experience. For descriptive comparison, participants were grouped into those with less than five years of experience and those with five years or more. The distribution of respondents across these groups is summarized in Table 4, with a detailed breakdown by professional role provided in Table S4.

Most allied health professionals and all doctors reported five or more years of experience, while care workers, lifestyle staff, and therapy assistants were more evenly distributed across experience levels. The majority of nurses also reported five or more years in practice. Respondents with less than five years of experience tended to rate a larger proportion of frailty terms across all six dimensions as "Important" or "Very Important". This pattern suggests a broader, less differentiated interpretation of frailty among less experienced staff, with many descriptors viewed as relevant indicators. In contrast, respondents with five or more years of experience demonstrated a more selective pattern of endorsement. Within this group, fewer terms received high ratings overall, indicating a more discriminating use of frailty descriptors in practice. Stronger and more consistent endorsement was observed for terms within the Physical, Cognitive, and Functional dimensions, while Psychological and Social descriptors were less frequently prioritized. For completeness, frailty terms most frequently rated as "Neutral", "Less Important", or as having "No Association" with frailty are presented in Figure S4.

Table 4. Distribution of "Very Important or Important" frailty term ratings by professional group and years of experience.

Group	Years of Experience	
	<5 years	≥5 years
Allied Health	20.9%	79.1%
Care Workers/Lifestyle Staff/Therapy Assistants	47.9%	52.1%
Medical Doctors	-	100%
Nurses	28.9%	71.1%

Additional Frailty-Related Terms Identified from Free-Text Responses

In addition to rating the predefined frailty descriptors, respondents contributed free-text responses describing how they recognize and describe frailty in everyday practice. These responses provided further insight into the language used by staff when formal lists are not imposed. The free-text terms were reviewed, standardized, and mapped to the same six frailty dimensions used in the main analysis. To avoid duplication, only unique descriptors not already represented within the predefined list were retained (Table 5).

Many of the additional terms closely aligned with concepts already captured in the original frailty term set, reinforcing the relevance of commonly used descriptors. For example, *immobile* and *non-ambulant* closely reflected the concept of *bed-bound* within the Physical dimension. Similarly, *poor appetite* and *reduced intake* aligned with *weight loss* and *malnutrition* within the Nutritional dimension, while descriptors such as *loss of confidence* and *loss of self-esteem* echoed *social withdrawal* within the Social dimension. Beyond reinforcing existing concepts, respondents also introduced terms that extended the scope of frailty as understood in practice. Within the Physical dimension, additions such as *end of life*, *palliative*/*terminal*/*dying*, *cyanosis*, *respiratory distress*, *chest pain*, and *sepsis* reflected recognition of acute or terminal physiological instability as part of frailty in advanced care contexts. These descriptors highlight how frailty language in long-term care often incorporates markers of deterioration and proximity to end of life, rather than chronic decline alone. Additional terms within the Cognitive and Psychological dimensions, including *lack of insight*, *altered consciousness*, and mental health conditions other than dementia, broadened the range of cognitive and psychological indicators used to describe frailty. Contributions such as *mood fluctuations* and *emotional wellbeing* further distinguished psychological vulnerability from cognitive impairment. Within the Functional dimension, terms such as *verbal*/*non-verbal communication issues*, *vulnerable*, and *transferred to hospital* introduced situational and communicative aspects of dependency that are not always captured in standard frailty descriptors.

Table 5. Free-text frailty-related terms provided by respondents, grouped by the six frailty dimensions used in this study.

Frailty Dimension	Unique Additional Free-Text Terms (not in original 65)
Cognitive	Lack of insight; Altered consciousness
Psychological	Mental illnesses apart from dementia; Mood fluctuations; Emotional wellbeing
Social	Loss of confidence; Loss of self-esteem
Physical	Immobile/non-ambulant; End of life; Palliative/terminal/dying; Cyanosis; Poor perfusion; Abnormal vital signs; Respiratory distress; Chest pain; Sepsis; Malaise
Functional	Verbal/non-verbal communication issues; Vulnerable; Transferred to hospital
Nutritional	Poor appetite; Reduced intake

DISCUSSION

Overview of Key Findings

This study examined how healthcare professionals evaluated the importance of 65 frailty-related terms across six dimensions, providing insight into how frailty is recognized and described in long-term care practice. Several clear patterns emerged. Although frailty is widely recognized as multidimensional, physical descriptors received the strongest overall endorsement. Many of the most highly rated terms reflected observable deterioration, such as *bed bound*, *susceptible to falls*, *frail*, and *health deterioration*, indicating that frailty is often recognized first through visible mobility loss and physical dependency in aged care settings. Cognitive terms, despite being fewer in number, were also consistently prioritized, underscoring the central role of mental status in how frailty is interpreted in practice. These findings align with established frailty models, including the phenotypic and cumulative deficit approaches, while also highlighting how these conceptual frameworks are operationalized in everyday clinical documentation [3,53].

Dominance of Physical and Cognitive Frailty Language

Not all physical terms were equally valued. Only around 40% were rated as “Very Important” by at least half of respondents, suggesting that healthcare professionals differentiate between core clinical indicators of frailty and more general descriptors associated with ageing. Terms such as *weakness*, *mobility issues*, and *susceptibility to falls* were prioritized over broader age-related descriptors such as *elderly*, *geriatric*, or *ageing body*. This distinction reflects an ability to separate age-related change from reduced physiological reserve and vulnerability. This pattern is consistent with studies showing that healthcare professionals tend to conceptualize frailty through observable and functionally limiting decline rather than subtle or nonspecific changes [36,43,58,59]. Context likely reinforces this emphasis. Many respondents worked in residential aged care, where frailty is typically encountered at more advanced stages, making physical dependency a dominant feature of daily care and documentation.

Functional Frailty as Embedded Practice

Functional terms received more limited support, with only *decreased functionality* meeting the threshold for "Very Important". Functional loss is often recognized through physical manifestations, such as immobility, weak grip strength, or dependence in daily activities, rather than through abstract functional descriptors. This may explain the stronger endorsement of concrete physical terms relative to functional labels. This interpretation is supported by evidence that functional capacity is frequently embedded within physical deficit scales rather than treated as a distinct domain [60]. Assessment practices may also contribute, as functional ability in aged care is commonly measured using structured assessment tools rather than narrative clinical language.

Influence of Care Context on Frailty Recognition

Variation in endorsement also reflected the care setting. Age-related descriptors such as *elderly*, *geriatric*, and *ageing body* received lower endorsement compared with markers of advanced frailty, including *bed bound*, *malnutrition*, and *susceptible to falls*. This pattern aligns with evidence that frailty presents differently across settings, with community-dwelling older adults more likely to exhibit early or mild vulnerability, and residents in aged care more commonly displaying advanced physical, nutritional, and functional decline [47,61–63]. These findings highlight the importance of context-sensitive frailty descriptors that reflect where individuals sit along the frailty trajectory and how frailty manifests in long-term care environments.

Professional Experience and Selective Frailty Recognition

Professional experience also shaped how frailty was perceived. Less experienced staff, particularly care workers and therapy assistants, tended to rate a broad range of terms as important, suggesting a more inclusive interpretation of frailty. In contrast, respondents with five or more years of experience, including nurses, allied health professionals, and doctors, demonstrated greater selectivity. This group placed stronger emphasis on core physical, cognitive, and functional indicators, while giving less weight to psychological and social terms. Although this pattern partly reflects occupational composition, it is consistent with evidence that professional experience enhances diagnostic precision and confidence [64,65]. Experienced clinicians may be better able to distinguish central indicators of frailty from peripheral or age-related descriptors and to interpret how different dimensions interact in aged care practice.

Under-Recognition of Psychological and Social Frailty

Despite growing recognition of non-physical domains in frailty theory, psychological and social terms received comparatively low endorsement across professional groups. This may reflect challenges in recognizing

these dimensions, assumptions about their relative importance, or limitations in how such aspects are documented in routine care records. However, a substantial body of evidence highlights the importance of psychological and social frailty in predicting disability, depression, cognitive decline, mortality, and healthcare utilization [28,66–68]. The lower endorsement of descriptors such as *social withdrawal* and *loss of confidence* suggests a gap between conceptual frameworks and operational recognition in long-term care documentation.

Comorbidity vs. Frailty Interpretation

An additional finding of interest is the relatively low endorsement of terms related to comorbidity or multimorbidity. Given the central role of accumulated deficits in models such as the Frailty Index, this pattern may suggest that clinicians conceptually distinguish frailty from the presence of multiple chronic conditions in everyday practice. Rather than equating frailty with disease burden alone, respondents appeared to prioritize observable functional, cognitive, and physiological decline. This divergence highlights an important gap between theoretical models of frailty and how it is operationalized in clinical language, warranting further investigation.

Insights from Free-Text Descriptions of Frailty

Responses to the free-text survey question further illustrated the breadth of clinicians' perspectives on frailty. Some respondents described acute physiological instability using terms such as *cyanosis*, *respiratory distress*, *chest pain*, and abnormal vital signs, suggesting that frailty is sometimes conceptualized through acute deterioration rather than chronic vulnerability alone. Others associated frailty with end-of-life trajectories, using descriptors such as *palliative*, *terminal*, and *dying*. Additional cognitive, psychological, and functional descriptors, including *reduced insight*, *altered consciousness*, *mood changes*, and *communication difficulties*, highlighted the interconnected nature of physical, cognitive, and emotional decline. While several of these terms overlapped with the predefined list, others extended the conceptual scope of frailty. These findings reinforce the need for frailty frameworks that accommodate acute, psychosocial, and communicative indicators alongside established domains.

Implications for Clinical Practice

While this study focuses on how frailty is described, the findings also have implications for how frailty is responded to in clinical practice. The strong emphasis on advanced physical and cognitive indicators suggests that frailty is often recognized at later stages, when decline is already pronounced. This pattern is further supported by free-text responses linking frailty to hospital transfer and end-of-life care, indicating that

frailty may be most readily identified during periods of clinical deterioration or transition.

This raises the possibility that frailty recognition in routine practice may be reactive rather than proactive, with potential missed opportunities for earlier intervention. The comparatively low endorsement of psychological and social descriptors, such as social withdrawal and loss of confidence, further supports this interpretation. These dimensions are increasingly recognized as important early indicators of frailty and may be amenable to targeted interventions, including social engagement, mental health support, and functional rehabilitation.

Improving recognition of these earlier and less visible dimensions of frailty could support more timely and preventative care approaches. In practice, this may involve enhancing clinical documentation frameworks, interdisciplinary communication, and training to encourage a more holistic understanding of frailty across all domains. By aligning clinical language with multidimensional models, there is potential to shift from late-stage identification toward earlier, more proactive management of frailty in long-term care settings.

Cultural and regional differences may also influence how frailty is conceptualized and described. This study was conducted within the Australian healthcare context, and perspectives on frailty may differ in other countries depending on healthcare systems, professional roles, and cultural attitudes toward ageing. Replication of this survey in different international settings would help to determine the extent to which these findings are transferable.

Limitations

The relatively small sample size and uneven representation across professional groups should be considered when interpreting the findings. In particular, the number of medical doctors was limited and may not reflect the diversity of medical perspectives across specialties. Differences between general practitioners, geriatricians, and other specialists could influence how frailty is conceptualized, and this variation was not captured in the current study.

In addition, the use of a predefined list of terms may have constrained responses despite the inclusion of a free-text option. Although the term set was developed through a structured and iterative process, it reflects the clinical judgement of the research team and may not fully capture the breadth of how frailty is conceptualized in practice. Certain clinically relevant constructs, such as multimorbidity or polypharmacy, may therefore be underrepresented.

Cultural, linguistic, and organizational factors influencing frailty perception were not directly measured, which may limit the generalizability of findings across different settings. Given the culturally diverse nature of the aged care workforce, these factors may shape how frailty is described and prioritized in clinical documentation. In addition,

as the study was conducted primarily within the Australian healthcare context, findings may not be directly transferable to other countries with different care systems and professional roles.

These limitations highlight the need for further research using larger, more diverse samples and complementary methodological approaches to better capture the complexity and variability of frailty conceptualization in clinical practice.

CONCLUSIONS

This study demonstrates that frailty in long-term care is most commonly recognized through physical and cognitive decline, with less consistent attention to psychological and social dimensions. Healthcare professionals across disciplines shared strong agreement on a core set of frailty descriptors related to observable deterioration, dependency, and risk, while endorsement of psychosocial indicators was more variable. These patterns reflect both professional role and experience, as well as the care context in which frailty is encountered. The findings highlight the importance of shared frailty language for documentation and communication in aged care settings. Differences in how frailty dimensions are prioritized across professional groups may influence care planning, interdisciplinary understanding, and continuity of care. The clinician-derived terminology identified in this study provides a practical foundation for improving frailty documentation frameworks so that they better reflect how frailty is recognized in everyday practice. Beyond documentation, these findings have relevance for future system-level learning and digital applications. Incorporating authentic, clinician-derived frailty language across all dimensions can support the development of interpretable, practice-aligned analytic approaches, including AI-enabled methods, when combined with structured clinical information [69,70]. Importantly, understanding how frailty is described in real-world care settings is a necessary precursor to any such analytic or technological advances. Overall, this study underscores that frailty language is not merely descriptive but constitutes an integral part of clinical practice in long-term care. Recognizing how frailty is articulated by different members of the workforce is essential for improving communication, supporting person-centered care, and informing future efforts to strengthen frailty recognition and documentation across aged care systems.

ETHICAL STATEMENT

Ethics Approval

This study was approved by the Human Research Ethics Committee of James Cook University (Ethics Approval Number H9557, and date of approval 14/08/2024), Australia.

Declaration of Helsinki STROBE Reporting Guideline

This study adhered to the Helsinki Declaration. The Strengthening the Reporting of Observational studies in Epidemiology (STROBE) reporting guideline was followed.

SUPPLEMENTARY MATERIALS

The following supplementary materials are available online, Figure S1: PRISMA-style flow diagram illustrating the identification and screening of articles informing the development of the frailty term list. This search was exploratory and not conducted as a full systematic or scoping review, Figure S2: Ranking Graph of Frailty Terms by Combined Importance (%), Figure S3: Ranking Graph of Frailty Terms-Very important (%) vs. Important (%), Figure S4: Ranking Graph of Frailty Terms-Neutral (%), Less Important (%) and No Association (%), Table S1: Full List of 65 Frailty Terms, Table S2: Grouping of Frailty Terms by Dimensions, Table S3: Percentage of frailty terms rated as “Very Important or Important” by each professional group, broken down by frailty dimension and level of agreement, Table S4: Distribution of “Very Important or Important” frailty term ratings by professional group and years of experience, Survey S1: Survey Instrument.

DATA AVAILABILITY

The dataset of the study is available from the authors upon reasonable request.

AUTHOR CONTRIBUTIONS

Conceptualization, JK, KT, KH, and CC-MC; Methodology, JK, KT, KH, and CC-MC; Formal Analysis, JK, KT, KH, and CC-MC; Investigation, JK; Data Curation, JK; Writing—Original Draft Preparation, JK; Writing—Review & Editing, JK, KT, KH, and CC-MC; Visualization, JK and CC-MC; Supervision, KT, KH, and CC-MC; Project Administration, JK; All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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