[OPINION PIECE]

The need for frailty assessments and intervention as part of holistic occupational therapy practice

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ABSTRACT

Are occupational therapists competent to perform frailty assessments? This opinion piece asserts the argument for including frailty assessments as a routine component for baseline assessments, particularly in older individuals, or those who may be considered to be frail. Some regulatory bodies for occupational therapy, such as the Canadian Occupational Therapy Association have included frailty assessment and intervention as a core competency. Frailty is multidimensional and the risk increases with age. There are numerous risk factors that have been identified in the development of the frailty syndrome, including clinical, biological, lifestyle and sociodemographic factors. This paper offers some suggestions for the assessment of frailty, including questionnaires and informal methods. It is recommended that frailty education be included in the undergraduate curricula of occupational therapists in South Africa, and other undergraduate programmes in Africa. An overview of the advantages and disadvantages of standardized and unstandardized assessment tools should also be included as part of the programme. Frailty can be prevented, with timely screening and interventions. It is concluded that frailty assessments should form part of the baseline assessment package of all aging individuals, and especially those who may have one or more of the risk factors.

Implications for practice
Frailty is a clinical syndrome, particularly in older adults, that is associated with adverse health outcomes. It should be incorporated into occupational therapy practice as it impacts function directly. The authors argue that:

- Frailty adversely impacts on the ability of individuals to care for themselves and perform their daily occupations.
- Frailty measures should form part of a baseline assessment, especially in older adults.
- Frailty assessments need to be conducted in those who display one of more of the risk factors, which includes immobility, incontinence, delirium, and an individual who has had one or more falls.
- Frailty can be prevented by timely screening and focused interventions.

INTRODUCTION

When an individual is more susceptible to a poor recovery of overall body homoeostasis following illness or surgery, such a person may be termed fragile, or medically described as frail. Frailty is a multifaceted syndrome typified by a reduction in physiological and cognitive reserve, which reduces an individuals' capacity to recover from acute stress[1]. Disability is the consequence of frailty, while comorbidities are the precursors of frailty, and frail individuals experience higher rates of adverse outcomes[1]. The multidimensionality of frailty leads to the incremental risk of disability with age. With improved healthcare globally, more people are living longer, and consequently there will be higher numbers of elderly people in different societies. However, it is important to note that frailty can be prevented by timely screening and

targeted interventions, such as nutritional supplementation, exercise, focused on flexibility, resistance and balance training, and cognitive training for people at risk. Numerous risk factors have been implicated in the development of the frailty syndrome, including lifestyle, sociodemographic, biological and clinical factors.

Some of the sociodemographic risk factors have been cited as female gender, advanced age, living alone and loneliness, as well as certain ethnic backgrounds[2]. Lifestyle risk factors include a sedentary lifestyle, poor diet and nutritional status, and smoking or alcohol consumption. Clinical risk factors include multiple morbidities, obesity, malnutrition, polypharmacy, depressive symptoms and impaired cognition. Biological risk factors include impaired immune functioning, neuro-endocrine impairments, micronutrient deficiencies, sarcopenia and oxidative stress[2]. Sarcopenia is a condition associated with aging where there is a loss of skeletal muscle mass and strength, which can begin as prematurely as the fourth decade of life. Elderly people who lead a sedentary lifestyle, have a poor diet or food security issues, and those who have chronic conditions or comorbid conditions are more likely to be at risk for frailty.

Due to the multiple risk factors frailty evaluations are an essential tool for evaluating the health of the elderly. Screening should be undertaken with elderly clients who may have one of more of the risk factors. This is not an occupational therapist's specific role, but a shared role for all members of the multidisciplinary team. The physician or gerontologist may initially come into contact with the client, and flag him or her as being high risk for frailty. He or she may conduct a few physical investigations, such as blood tests or ECG before referral to the occupational therapist.

The clinical instruments used by clinicians to evaluate frailty comprise two categories, namely questionnaire-based methods, such as the Frail Scale[3], and subject performance analysis, such as observation of the client in functional activities. In subject performance analysis, an individuals' turnaround time for a physical task is measured, like walking a certain distance, usually three meters. The survey-based approach is arbitrary, and the performance analysis based on time does not always pinpoint the kinematic motion features and their underlying causes[3]. Effective and timely interventions usually follow the assessment of frailty.

Rehabilitation interventions lack uniform definitions of frailty, and those that do exist typically centre on physical functionality. This has not encouraged uniformity in the focus on frailty assessment and management among rehabilitation professionals, like occupational therapists. Kokorelias et al.[4] also advised rehabilitation professionals to consider a broader definition of frailty that is based on the framework of the International Classification of Functioning, Disability, and Health. This definition should consider body structures and functions, activities and participation in activities, as well as contextual factors, which includes environmental and personal factors. This considers multiple domains in the development of frailty and provides a more holistic picture of the clients' condition. Additionally, for occupational therapists, perhaps these frailty assessments need to be related to the effects of frailty on function, and the performance or non-performance in occupations. The Occupational Therapy Practice Framework[5] may be useful in illuminating the effects of frailty on functioning in the various human occupations, which will provide a nuanced understanding of the restriction of functioning in specific occupations.

Individuals who are perceived to be frail, may present with impairments and disability related to one or more of the aforementioned occupations in terms of their specific client factors. The personal client factors include the body functions and body structures, in addition to the individuals' values, beliefs and spirituality[5]. For example, frail individuals may struggle to perform their self -care or activities of daily living, including bathing and toileting. Others may experience difficulties with instrumental activities of daily living, such as meal preparation, laundry or shopping. When interventions are aligned with the clients' interests, they are meaningful and client-centered. This will ensure that the occupational therapists work collaboratively with clients towards treatment goals. All these domains are encompassed within the International Classification of Function Model (ICF)[6], which can be seen in Figure 1 (below).

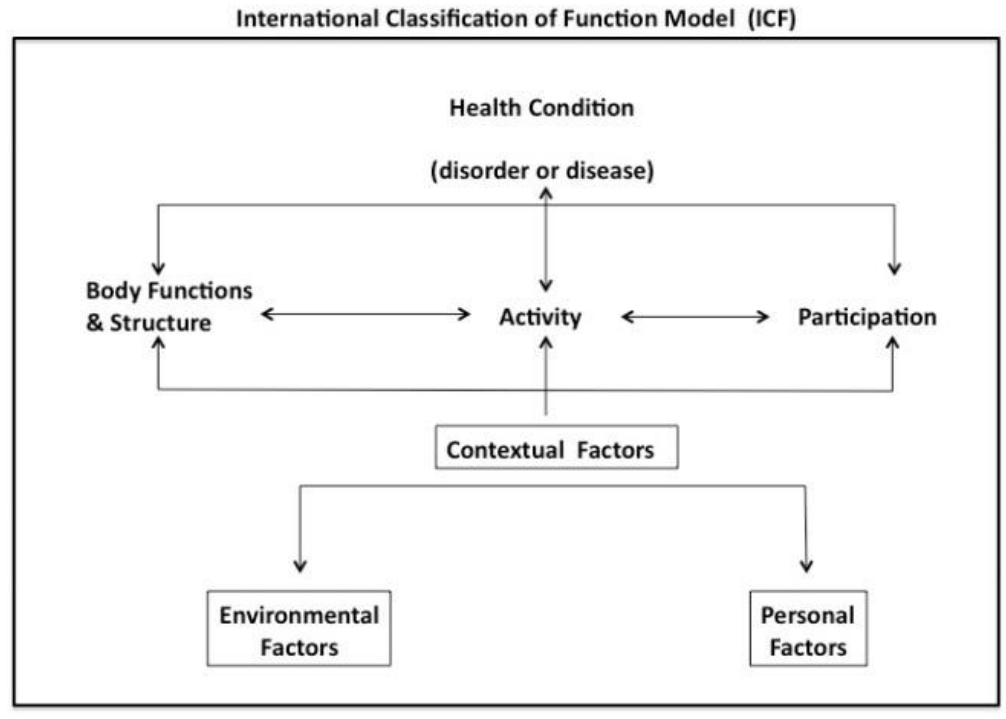

Figure 1: The International Classification of Function Model

Occupations are always performed within a specific context or environment. These environmental factors can either mitigate, constrain or exacerbate the impairments. The clients' habits, routines, roles and rituals will inform the specific assessments and intervention strategies, to ensure the treatment is appropriate and nuanced to the clients' needs and context. Interventions may include developing process and social interaction skills, specifically in those areas that the client has impairments in. Additionally, if the client is actively involved in the process, they will prioritize and give voice to their goals, which ensures commitment to the therapeutic process and outcomes.

However, in South Africa providing holistic care will be challenging. The elderly are cared for in diverse ways, including retirement homes, independent community living and living in their own homes, with a caregiver. Moreover, the country faces a high disease burden, inequitable resource allocation between provinces and other commitments, in terms of developing and maintaining the infrastructure in the country. High levels of crime and violence are pervasive in the country, and Global South. This diverts resources away from healthcare and other basic needs. Moreover, the elderly remain vulnerable and are often the victims of serious crime.

Key points

A mini-review of the literature established evidence of the prevalence of frailty among clients receiving occupational therapy interventions[7,8]. A recent study suggests that frailty is preventable[8], therefore the timely recognition of an individuals' degree of frailty is vital. Frailty has been shown as a risk factor and predictor of adverse health outcomes among the critically ill, which if assessed and treated timeously can possibly be prevented[9]. Empirical arguments on the benefits of frailty assessments lend credence to the occupational therapists' involvement in frailty assessment. This assessment should not be limited to a single event at initial contact but should be repeated at intervals to evaluate the frailty transition status. These assessments can also be used to predict healthcare use and costs[10]. This implies that it is imperative for occupational therapists to know their clients' frailty status to improve health outcomes throughout the intervention phase. Thus, occupational therapy assessments should include a frailty assessment that promotes person-centred rehabilitation, as frailty often leads to restrictions in occupational participation[7].

Occupational therapists in South Africa are not currently provided with the training to be competent in frailty assessments. Occupational therapy assessments, including frailty assessment, is one of the core competencies an occupational therapist is expected to demonstrate[11]. It must be noted that some regulatory bodies of occupational therapy,

including South Africa, have not identified frailty assessment and the management thereof as a direct core competency and practice scope for occupational therapists. Consequently, occupational therapists that practice in these regions do not directly target frailty assessment and management[12]. The inclusion of frailty education into the undergraduate occupational therapy curriculum has been suggested by the authors to ensure a responsive and improved practice, aligned to global health patterns and needs. A recent scoping review of occupational therapy interventions to improve outcomes among frail older adults observed that none of the ten included studies used validated frailty measures to identify frailty in older adults[13]. This may reflect the absence of frailty assessment measures in older adults as a routine assessment or the lack of competence in doing such assessments. It is therefore recommended on first contact with an older adult, that a frailty assessment must be included as part of the holistic occupational therapy assessment.

Assessment tools for frailty

When a clients' assessment fails to capture the frailty risk, this will not only lead to sub-optimal outcomes, but may result in treatment failure or non-adherence. It is therefore imperative for occupational therapists to undertake frailty assessments routinely, especially with regards to older adults. A robust frailty assessment tool that is simple, quick to administer, and able to meet the clients' needs will go a long way to assist OTs' compliance in routine baseline assessments[14]. Examples of such tools include the Clinical Frailty Scale, Edmonton Frailty Scale and the Identification of Seniors at Risk (ISAR) screening tool. Frailty assessments are currently not included in a baseline screening for older adults and must be included as soon as possible. Other standardized tools to assess frailty that have been used internationally are presented below:

- Clinical Frailty Scale (CFS)[15]
- The Frailty Index (FI)[16]
- Edmonton Frail Scale[17]
- The Fried Frailty Phenotype[18]
- The FRAIL Scale[19]

Clinical Frailty Scale

This is not a questionnaire, but a way to summarize information and make clinical decisions from assessing an older person. It is used to quantify an individual's overall health status. It was developed as a tool to classify frailty in people with dementia on 9 levels of health from very fit (1) to terminally ill (9).

The Frailty Index

To quantify the level of frailty of an individual, the frailty index approach focuses first on the number of their health deficits, and then on the nature of those deficits. The frailty index is used in routine care all over the world, including in an electronic form in the National Health Service in England.

Edmonton Frail Scale

This is a questionnaire-based assessment that assesses frailty on nine domains such as cognition, general health status, functional independence, social support, medication use, nutrition, mood, continence, and functional performance. Most domains are scored on a 3-point Likert scale. Scoring can range from 0-5 (not frail) to 12-17 (severe frailty), and the total score is achieved by summing all the scores. It is simple and easy to use.

The Fried Frailty Phenotype

The Fried frailty phenotype (FP) assesses physical frailty through five criteria: unintentional weight loss; weakness or poor handgrip strength; self-reported exhaustion; slow walking speed; and low physical activity.

Frail Scale

Of the aforementioned tools, the Frail Scale was found to be the most prognostically useful for elderly clients 65 years and older, who were hospitalized with Acute Coronary Syndrome in a cardiac care unit[20]. Moreover, the Frail Scale is simple to use and quick to administer, taking about two minutes to complete.

Previous studies have indicated that of the three domains of frailty, including physical, psychological and social aspects, the physical domain is the most reliable predictor of disability[21]. The physical frailty domain includes slow gait speed, reduced physical activity, weak grip strength, weight loss, and poor balance. A systematic review found all of these aforementioned domains predicted future disability in activities of daily living[22], with slow gait speed and reduced physical activity being the strongest predictors. Disability may ensue either as a result of frailty, or as an inherent component of the frailty syndrome.

Recommendations for practice

Screening for frailty should be included as a part of the holistic assessment of the older adult. Moreover, this also needs to be done for younger individuals who may be at risk, or who have a few of the risk factors. The more lifestyle, sociodemographic, clinical or biological risk factors an individual has, the greater the need for the aforementioned screening assessment. In summary, the exposure to the concept of frailty and its assessment in occupational therapy will allow a better understanding of a client's global health risk stratification, and a more individualized management strategy leading to improved health outcomes.

Assessments that would work in the South African context includes a simple frailty questionnaire that is easy to administer and score, such as the Frail Scale. This could be supported by a balance assessment using the Berg Balance Scale[23] and grip strength assessment, using a dynamometer. This could be supplemented by an activities of daily life assessment as well as the Lawton and Brody IADL assessment[24].

The authors' position is that the theory and practice of frailty evaluation and intervention should form part of the undergraduate occupational therapy curricula in South Africa. This should include exposure to various frailty assessments, including the advantages and disadvantages of these tools. The time taken to perform the assessment, as well as the ease of scoring and interpretation will add to the user friendliness of the tool. In a resource constrained context, such as South Africa, the low cost of screening tools will be advantageous.

Conflict of interest

There are no conflicts of interest regarding this work.

Author Contributions

Thavanesi Gurayah and Michael Opeolowa Ogunlana contributed to the conceptualization, writing and editing of the article.
Olufemi Oyeleye Oyewole contributed to the writing of the article and formatted all the references.

REFERENCES

1. Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. Lancet 2013;381:752-62.
2. Feng Z, Lugtenberg M, Franse C, Fang X, Hu S, Jin C, et al. Risk factors and protective factors associated with incident or increase of frailty among community-dwelling older adults: A systematic review of longitudinal studies. PLoS One 2017;12:e0178383.
3. Panhwar YN, Naghdy F, Naghdy G, Stirling D, Potter J. Assessment of frailty: a survey of quantitative and clinical methods. BMC Biomedical Engineering 2019;1:7.
4. Kokorelias KM, Cronin SM, Munce SEP, Eftekhar P, McGilton KS, Vellani S, et al. Conceptualization of frailty in rehabilitation interventions with adults: a scoping review. Disability Rehabilitation 2023;45:117–53.
5. American Occupational Therapy Association. Occupational Therapy Practice Framework: Domain and Process—Fourth Edition. The American Journal of Occupational Therapy 2020;74:7412410010:1–87. https://doi.org/10.5014/ajot.2020.74S2001
6. World Health Organization. International Classification of Functioning, Disability, and Health: ICF. Geneva. 2001.
7. Rand D, Sternberg SA, Gasner Winograd R, Buckman Z, Bentur N. The Contribution of Frailty to Participation of Older Adults. International Journal of Environmental Research and Public Health 2022;19:1616.

8. Trenholm JR, Warner DG, Eagles DD. Occupational Therapy in the Emergency Department: Patient Frailty and Unscheduled Return Visits. Canadian Journal of Occupational Therapy 2021;88:395-406.
9. Fritz H, Hu YL. Habit Formation Intervention to Reduce Frailty Risk Factors: A Feasibility Study. The American Journal of Occupational Therapy. 2022 May 1;76(3).
10. Kim MJ, Lee S, Cheong H-K, Jang SY, Kim H-S, Oh I-H. Healthcare Utilization and Costs According to Frailty Transitions After Two Years: A Korean Frailty and Aging Cohort Study. Journal of Korean Medical Science 2023;38:e191.
11. Association of Canadian Occupational Therapy Regulatory Organizations. Essential Competencies of Practice for Occupational Therapists in Canada (3rd Ed.). Toronto, ON: Association of Canadian Occupational Therapy Regulatory Organizations; 2011.
12. Griffin N, O'Sullivan L, Usher R. Frailty: perceptions of occupational therapists in Ireland. Irish Journal of Occupational Therapy 2024;52:36-43. https://doi.org/10.1108/IJOT-08-2023-0018
13. Fritz H, Seidarabi S, Barbour R, Vonbehren A. Occupational Therapy Intervention to Improve Outcomes Among Frail Older Adults: A Scoping Review. American Journal of Occupational Therapy 2019;73:7303205130:1–12. doi: https://doi.org/10.5014/ajot.2019.030585
14. Kwak D, Thompson LV. Frailty: Past, present, and future? Sports Medicine and Health Science 2021; 3:1-10.
15. Rockwood K, Song X, MacKnight C, Bergman H, Hogan DB, McDowell I et al. A global clinical measure of fitness and frailty in elderly people. Canadian Medical Association Journal 2005; 173(5):489-95.
16. Mitnitski AB, Mogilner AJ, Rockwood K. Accumulation of deficits as a proxy measure of aging. Scientific World Journal 2001; 1:323–36.
17. Rolfson DB, Majumdar SR, Tsuyki RT, Tahir A, Rockwood K. Edmonton Frail Scale (EFS). 2006. APA PsycTests. https://doi.org/10.1037/t69109-000
18. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, et al. Frailty in older adults evidence for a phenotype. Journal of Gerontology Series A. 2001; 56(3): M146–57.
19. Van Kan GA, Rolland Y, Bergman H, et al. The International Association of Nutrition and Aging Task Force on frailty assessment of older people in clinical practice. Journal of Nutrition, Health and Aging 2008; 12:29e37.
20. Nowak W, Kowalik I, Kuzin M, Krauze A, Mierzyńska A, Sadowy E, Marcinkiewicz K, Stępińska J. Comparison of the prognostic value of frailty assessment tools in patients aged ≥ 65 years hospitalized in a cardiac care unit with acute coronary syndrome. Journal of Geriatric Cardiology 2022 May 28;19(5):343-53.
21. Gobbens RJJ, van Assen MALM, Luijkx KG, Schols JMGA. The predictive validity of the Tilburg Frailty Indicator: disability, health care utilization, and quality of life in a population at risk. Gerontologist 2012;52:619–31.
22. Vermeulen J, Neyens JC, van Rossum E, Spreeuwenberg MD, de Witte LP. Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review. BMC Geriatrics. 2011 Dec; 11:1-11.
23. Berg KO, Wood-Dauphinee SL, Williams JI, Maki B. Measuring balance in the elderly: validation of an instrument. Canadian Journal of Public Health 1992;83 (suppl 2):S7–S11. PMID: 1468055
24. Powell Lawton M, Brody, EM. Assessment of Older People: Self-Maintaining and Instrumental Activities of Daily Living, *The Gerontologist*, Volume 9, Issue 3_Part_1, Autumn 1969, Pages 179– 86. https://doi.org/10.1093/geront/9.3_Part_1.179