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REVIEW

Complex mental health needs in older people living with frailty

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Abstract

Frailty describes a state of health whereby people develop multiple or cumulative deficits in physiological systems over the life course, leading to vulnerability and being less able to respond to acute and/or physiological stressors, which at times may be relatively minor. Mental health should be an important consideration in the assessment and management of frailty in older people. This article provides an overview and clinical perspective on the evidence relating to frailty and mental health assessment and management.

Key words: Frailty; Integrated care; Mental health; Multimorbidity

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Introduction

In older people, multiple and co-occurring mental and physical health problems are common, which leads to a greater need for integrated health and social care services (Reeves et al, 2018). Frailty is increasingly important for the design and delivery of future healthcare services; however, the role of mental disorders and dementia has often been neglected (Sutton et al, 2019), perhaps as a result of a complex interplay of factors.

Frailty, often defined as 'a distinctive health state related to the ageing process in which multiple body systems gradually lose their in-built reserves' (Turner, 2014), is important as the 'cumulative decline depletes homeostatic reserves until minor stressor events trigger disproportionate changes in health status' (Clegg et al, 2013). Around 10% of people aged over 65 years are currently living with frailty, rising to between a quarter and a half of those aged over 85 years (Clegg et al, 2013).

While frailty is common, and associated with significant morbidity and mortality, it is not an inevitable consequence of ageing. There is increasing recognition that mental disorders and dementia are commonly comorbid or associated with worse outcomes with frailty (Soysal et al, 2017). Thus, there is an urgent need to incorporate the assessment and management of mental disorders into the care of people living with frailty in mental and physical health services. This article reviews the evidence from the development of frailty measures, epidemiology and clinical practice, to give a framework for better integrated care of older adults living with frailty.

Current evidence

Approaches to measurement

The presence of frailty is assessed two general ways:

1. A 'cumulative deficits' model where disabilities and diseases are included in an index of age-related deficits
2. A 'phenotype model' where clinical 'frailty indicators' such as weight loss, grip strength, gait, exhaustion and sedentary behaviour are scored.

The cumulative deficits model has informed the development of electronic frailty index scores (Clegg et al, 2016), which estimate health burden attributed to frailty using routine health service data at a population level. Phenotypic approaches are more commonly used in clinical practice.

Although current concepts of frailty are less informed by disease-based approaches, and to an extent cut across diagnostic silos, they continue to neglect social and psychological domains (Gobbens et al, 2010). A systematic review noted that of 48 frailty tools identified, only 20 included psychological domains and no tools considered interactions between frailty and mental health (Sutton et al, 2019).

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Mental disorders may also be systematically left out of clinical assessments of older people. The comprehensive geriatric assessment is a multidimensional and interdisciplinary holistic assessment of older people, designed to optimise a person's functioning across domains (Rubenstein and Wieland, 1990). Completed comprehensive geriatric assessments lead to formulation of a plan of interventions to address issues of concern to the older person and their family and carers, where relevant. As part of the comprehensive geriatric assessment, screening for depression and cognition is recommended, but screening for and consideration of other mental disorders (eg anxiety, alcohol and substance use, or severe mental illnesses) may be excluded (Royal College of Psychiatrists, 2020). Preliminary assessments by the authors indicate that a significant proportion of randomised controlled trials assessing the impact of comprehensive geriatric assessment on outcomes in older adults did not explicitly include an assessment of functional mental disorders and alcohol use (Das-Munshi and Prina, 2019).

Phenomenological overlap

There is increasing evidence that psychological vulnerability and underlying mental health are important components in concepts of frailty, highlighting shared vulnerabilities from social risks such as age, ethnicity and education, as well as substantial correlations between frailty components and depressive symptoms (Lohman et al, 2016).

There is significant conceptual overlap in domains in frailty assessments with depressive symptoms, that is motivation and inactivity (Soysal et al, 2017). The original Fried criteria (Fried et al, 2001) included two questions from the self-report of exhaustion components of the Centre for Epidemiologic Studies Depression Scale (Radloff, 1977), a screening tool for depression, as indicators for poor endurance and energy (Fried et al, 2001). Table 1 gives an overview of shared symptoms from depression, bipolar affective disorder, generalised anxiety disorder and schizophrenia. Sutton et al (2019) gave a detailed comparison of items of specific frailty scales and constructs for DSM-5 diagnostic criteria. For example, the items that assess for memory and cognitive problems, sleep disturbance and weight loss and anorexia in the electronic frailty index (Clegg et al, 2016) overlap with constructs for major depressive disorder and bipolar I disorder. The sleep disturbance and memory and cognitive problems also overlap with diagnostic criteria for anxiety. The items for problems with motivation or communication of the Frailty Index-Comprehensive Geriatric Assessment (Jones et al, 2004) overlap with negative symptoms of schizophrenia. This emphasises the importance of an integrated approach to clinical assessment, which should include a comprehensive physical assessment as well as assessment of mental state and cognition through a detailed clinical history informed by collateral history. Such an approach would help to inform the contribution of underlying psychiatric symptoms to older adults presenting with frailty, and vice versa.

Epidemiology of mental disorders and frailty

Depression and common mental disorders

The most well-established association is between the presence of frailty with depressive symptoms or depression (Vaughan et al, 2015). The authors of a systematic review and meta-

Table 1. Overlap of frailty criteria with mental disorders

Frailty criteria	Depression	Bipolar affective disorder	Generalised anxiety disorder	Schizophrenia
Weight loss or reduced appetite	X	X		
Fatigue	X	X	X	
Reduced concentration	X	X	X	
Slowness	X	X		X
Reduced activity or apathy	X			X
Sleep problems	X	X	X	

Adapted from Sutton et al (2019)

analysis indicated almost two-fold (1.90; 95% confidence interval 1.55–2.32) increased odds of depression in those who were frail, while those who were depressed had 4.07 (95% confidence interval 1.93–8.55) increased odds of becoming frail, suggesting complex bi-directional associations (Soysal et al, 2017). These findings were thought to be the result of increased baseline impairments in gait, grip strength, physical activity and fatigue in those who were depressed (Brown et al, 2014). The presence of depressive symptoms (which may not meet case thresholds for clinical depression criteria) is also associated with declining intrinsic capacity, linked to frailty syndromes and adverse health outcomes (World Health Organization, 2017).

Long-term physical illnesses common in older people are also comorbid with depression (Firth et al, 2019). For example, an elevated prevalence of depression has been noted in patients with diabetes mellitus, heart disease, cancer, asthma, arthritis or osteoporosis (Firth et al, 2019), as well as those with human immunodeficiency virus (HIV)-related illness, cancer, cerebrovascular accident or Parkinson's disease (Katon, 2003).

Increasingly, commentators have focused on the notion of 'multimorbidities' – the co-occurrence of two or more chronic long-term conditions (Barnett et al, 2012). Although multimorbidities and the concept of frailty in older people are not the same, the notion that the risk of mental disorders increases with increasing physical health morbidities (irrespective of diagnostic silo) is well illustrated. A Scottish population data study highlighted that from a list of 40 commonly occurring conditions, a greater presence of physical health conditions (irrespective of diagnosis) was associated with an increased risk of mental disorders, which was in turn strongly associated with increasing age and deprivation (Barnett et al, 2012).

Further, having both major depression and chronic medical illness impacts upon symptom burden, functional impairment, healthcare satisfaction, health behaviours such as diet and exercise, service use and costs, and morbidity and mortality (Katon, 2003). The presence of depression and frailty has similar negative impacts across outcomes, including a higher risk of nursing home admissions, falls and mortality (Lohman et al, 2017). Comorbid depression also impacts on length of stay and results in worse physical health outcomes (Kang et al, 2015).

Frailty is also associated with an increased risk of other common mental disorders; however, this literature is less well established. In a community survey, older adults meeting frailty criteria had an odds ratio of 4.36 (95% confidence interval 1.4–13.8) for case-level anxiety (Ní Mhaoláin et al, 2012). In cross-sectional analysis, the presence of both prefrail and frail statuses in older adults were associated with a higher prevalence of clinical anxiety (Bernal-López et al, 2012). One proposed explanation is that people with anxiety have a greater functional decline as they are less confident and have poorer self-efficacy (Mehta et al, 2007). A study that followed up people for a year showed that anxiety was associated with an increased risk of cognitive decline (Potvin et al, 2011).

Dementia

Frailty is associated with an increased risk of all dementia sub-types, especially vascular dementia (Solfrizzi et al, 2017). A systematic review and meta-analysis found a 32% pooled prevalence for frailty in those with mild to moderate Alzheimer's disease (Kojima et al, 2017). Older adults living with frailty were eight times more likely to have dementia, almost six times more likely to have vascular dementia, and over four times more likely to have Alzheimer's disease than those not living with frailty (Kulmala et al, 2014). Frailty has been identified as an independent risk factor for vascular dementia, independent of all conventional dementia and cardiovascular risk factors (Avila-Funes et al, 2012), and presence of frailty is strongly associated with progression of Alzheimer's disease and functional decline (Wallace et al, 2019).

Mental disorders over the life course and frailty

Some mental disorders may have negative physical health impacts over the life course, leading to an accumulation of adverse physical health effects which are more evident in old age. Standard age cut-offs for clinical services (eg 65 years and over) may not meet the needs of people with long-term debilitating mental disorders, as physical health sequelae may occur earlier.

Severe mental illness

People with severe mental illnesses such as schizophrenia-spectrum and bipolar disorders have an excess risk of death compared with the general population, mostly through common

preventable physical causes such as cardiovascular disease, stroke and respiratory conditions (Das-Munshi et al, 2017). Similar associations exist for moderate to severe depression (Das-Munshi et al, 2019). Although research within this area is scarce, it is likely that frailty may be more common in these populations because of a higher prevalence of multimorbidities, including cardiovascular disease, diabetes mellitus and respiratory conditions occurring at younger ages, and persistent over the life course. A high prevalence of frailty (10.2%) at baseline has been found in patients with chronic schizophrenia, which is associated with an increased susceptibility to falling (Tsai et al, 2018).

Alcohol use disorders

Although alcohol use disorders are not usually systematically assessed in older adults, evidence suggests that older men may be more likely to report more frequent or regular alcohol consumption (Britton et al, 2015), leading to the possibility that alcohol use disorders may be frequently missed in older adult populations (Crome et al, 2011). Alcohol use disorders are frequently hidden or undetected in general medical populations and may lead directly to falls, loss of mobility or confusional states. Although levels of alcohol use may fluctuate over the life course, higher reported levels of use in mid-life is associated with an increased risk of frailty in later life (Strandberg et al, 2018).

Management of mental disorders in older people living with frailty

Integrated clinical management

Emerging evidence suggests that mental disorders often precede, are comorbid with, or directly influence the progression and clinical outcomes of older people presenting with frailty. However, mental disorders may still be systematically left out of clinical assessments. Studies highlight the potential benefits of interdisciplinary approaches, that include psychiatry, psychology or specialist mental health services in supporting the mental health of older people who also meet criteria for frailty (Royal College of Psychiatrists, 2020). Unidentified and untreated mental disorders and/or cognitive impairment may hamper an individual's ability to effectively engage with other recommended interventions (such as physiotherapy or exercise programmes, or dietary or nutritional recommendations). Ng et al (2015) indicated greater benefits in improving frailty and functioning in older adults who received a combination intervention that included cognitive stimulation.

The World Health Organization (2017) guidelines on integrated care for older people recommend a range of interventions from specific therapies such as strength training, to brief psychological interventions for people with depressive symptoms and cognitive stimulation for people with cognitive impairment, to more general measures such as improving nutrition, screening and treating visual and hearing impairments, as well as training and support for family members and other informal caregivers. In the UK, the Royal College of Psychiatrists' (2020) report on frailty and mental disorders highlighted a major shortcoming in the relative absence of systematic mental health provision in services providing care to older adults identified as meeting frailty criteria, and recommended the provision of mental health across services in order to meet the needs of these populations in community or inpatient settings.

Initial assessment

Frailty should be routinely assessed during initial contacts. The British Geriatric Society recommends a 'more proactive, integrated, person-centred and community-based response to frailty' (Turner and Clegg, 2014). A psychiatric exam should be part of the assessment, alongside a comprehensive history, physical exam and functional assessment. The psychiatric exam should screen for common mental health presentations such as depression, delirium and dementia, as well as mild cognitive impairment and the presence of other pre-existing or comorbid problems such as anxiety and alcohol use disorders. Less frequently people may present with severe mental illnesses such as schizophrenia, and their specific needs must be considered (Table 2). The assessment should also consider functioning and the home environment and collect a detailed collateral history from family members or carers, to ascertain potential decline or change in physical, mental or functional state and cognition (Quinn et al, 2011).

Screening tools for depression or anxiety, such as the Geriatric Depression Scale and Hospital Anxiety and Depression Scale, could further inform assessments. These are well validated and rapid self-assessment tools that can be used with ease within general hospital settings. The Alzheimer's Society toolkit guides clinicians in conducting cognitive assessments with brief validated tools such as the Mini Mental State Exam, Montreal Cognitive Assessment or Addenbrookes Cognitive Examination-III (Alzheimer's Society, 2015). The tools are not diagnostic. They should not be used in place of clinical assessment, but used as an adjunct, tailored to the setting and may help in some cases to monitor change over time. Findings should always be interpreted alongside a full history and examination, and other factors (such as the patient's prior education levels) may impact on outcomes, particularly with respect to cognition. If possible, the assessment of cognition (particularly with respect to decline) should be confirmed with a family member or someone else who knows the person well. More complex presentations may require further multidisciplinary input (for example, psychiatry, neuropsychology or neurology). In the UK, people with suspected cognitive impairment are currently referred to specialist memory services.

General principles of management of frailty and mental disorders

In general, the management of people with frailty and comorbid mental health disorders should include a stepped-care approach with access to evidence-based psychological therapies, the safe prescribing of medications for older people, interventions to support strength building and physical activity, and social interventions. More detailed guidance on the management of particular mental disorders for UK practitioners are available in relevant local and National Institute for Health and Care Excellence (2011) guidance.

Recommendations for supporting strength building and physical activity in people with mental disorders

There is robust evidence that resistance exercise (strength training), exercises that challenge balance and increasing physical activity have both physical health and mental health benefits throughout the lifespan and in older age. There are a number of ways this can be achieved from referrals to groups which may also reduce social isolation as well as loss of function, or equipping healthcare professionals with evidence-based advice to help individuals build

Table 2. Additional considerations for people with severe mental illness

Severe mental illnesses frequently comprise long-term relapsing, remitting conditions such as schizophrenia-spectrum and bipolar disorders. People living with these conditions experience a higher prevalence of physical health comorbidities as noted below and may be on long-term psychotropic medication	
Clinicians should assess for additional factors that impact on the health status of people with severe mental illness	Smoking status, because there is a higher prevalence of tobacco use in these populations
	These conditions may be more prevalent: type 2 diabetes mellitus, cardiovascular disease, obesity, hypertension and hyperlipidaemia, which are also associated with an increased risk of dementia
Cognitive impairment (outside of dementia) is a recognised feature of schizophrenia	
Risk of osteoporosis, falls and fractures. Osteoporosis, falls and fractures are more common in younger people with severe mental illness as a result of multiple factors. Falls and fractures are also common in people with frailty and clinicians should ask about a person's history of falls in the past 12 months and any concerns they have about falling (fear of falling). These can be key indicators of future falls and fractures and if identified appropriate interventions should be offered, which may include exercise, review of medications and psychological interventions	
The impact of long-term psychotropic medications and interactions with other commonly prescribed medications, for example:	Lithium (bipolar affective disorders): interactions with other commonly prescribed medications (eg non-steroidal anti-inflammatory drugs) and impact on renal function, increased risk of hypothyroidism
	Antipsychotic medications (in particular first-generation antipsychotic medications): increased risk of extrapyramidal side effects, tardive dyskinesia and dystonia associated with an increased risk of falls
For people managed on long-term psychotropic medication who are otherwise stable in their mental state, be mindful that any changes to medication may result in a relapse of mental state. Changes to psychotropic medications should be discussed with the patient, if appropriate their carers, and also with relevant mental health teams	

strength through activities at home. Evidence has suggested that clinicians with expertise in exercise (eg physiotherapists) that focus on improving functional movements (eg sit to stand, standing balance work) can maximise mobility status and independence.

A scoping review, which looked at a range of interventions to reduce frailty in older adults in the community, including exercise, nutrition, cognitive training, geriatric assessment and management and rehabilitation, found that exercise interventions were feasible with adherence rates of around 70% in most studies, and that a range of exercise frequencies, duration and types of exercise were effective at reducing frailty (Puts et al, 2017). However, it also highlighted a need for further research as studies tended to have heterogenous definitions of frailty and outcomes and only 9 out of 14 studies included reduced the level of frailty overall.

Do psychological interventions play a role?

Evidence-based interventions for the management of depression and anxiety include psychological interventions such as cognitive behavioural therapy, behavioural activation approaches or longer-term psychotherapies (National Institute for Health and Care Excellence, 2011). Life events such as bereavement may be more common, with a specific role for bereavement counselling indicated. Although not widely available, interventions to target a 'fear of falling' may also be effective for some individuals (Zijlstra et al, 2009). Evidence of direct benefits to mental health are less consistent, and more research in this area is needed, particularly for older adults with depression (Sjösten et al, 2008).

Medications and prescribing

Consideration for prescribing in older people, to ensure that treatments are effective and adverse effects minimised, are outlined below. Chapter 6 of the Maudsley prescribing guidelines (Taylor et al, 2018) provides a helpful overview of prescribing in older people.

Older people are more likely to experience side effects from medications (both psychotropic and non-psychotropic) as a result of the physiological changes associated with ageing which change the pharmacokinetics and pharmacodynamics of medications (Taylor et al, 2018). In addition, older people are more likely to have multiple health conditions and be on other medications concurrently, making the possibility of polypharmacy and associated adverse effects more likely, therefore medication lists should be reviewed routinely. Many medications which are commonly used in older adults may be associated with anticholinergic effects, which are particularly implicated in cognitive impairment. Other commonly used psychotropic medications may be associated with adverse effects which may contribute to the presentation (for example falls and confusion) (Table 3).

Anticholinergic medications in older people

Anticholinergic medications are associated with cognitive impairment, sedation, delirium and falls and are known to have more pronounced side effects in older adults with dementia. A high total anticholinergic burden has also been found to be predictive of mortality and cognitive decline (Bishara et al, 2017).

Anticholinergic medications commonly prescribed in older people, include a wide range including oxybutynin, amitriptyline, dothiepin, doxepin, nortriptyline and lofepramine (Bishara et al, 2017). These drugs have anticholinergic effects through a variety of mechanisms, with some blocking muscarinic receptors and others impairing cholinergic function. Anticholinergic medications may also directly oppose acetylcholinesterase inhibitors, prescribed for cognitive impairment in dementia.

Bishara et al (2017) reviewed and scored common medications used in older people based on the Anticholinergic Effect on Cognition (AEC), giving higher scores to medications with greater AEC effects, and recommended:

- In older adults with cognitive impairment, dementia, or delirium, stop or switch individual drugs in those scoring AEC 2–3
- Review medications in older adults with a total AEC score 3+
- Always gradually withdraw anticholinergic medications.

When side effects of psychotropic medication prescribing are encountered, review from a mental health specialist may help to inform the need for mental health treatment against side effects, avoiding abruptly stopping the medication if possible. If considering

Table 3. Some common adverse effects of psychotropic medications
Increased risk of falls through drugs that affect blood pressure such as tricyclic antidepressants
Increased sensitivity to extrapyramidal side effects from antipsychotics such as tremor, slurred speech, akathisia, dystonia and bradyphrenia
Increased sedation from CNS active drugs such as benzodiazepines, and over the counter medications containing diphenhydramine and sedating antihistamines
Increased risk of hyponatraemia associated with selective serotonin-reuptake inhibitors and antipsychotic medications
Increased risk of bleeding with some psychotropic medications (eg selective serotonin-reuptake inhibitors)
Increased sensitivity to cardiac effects, including prolonged QTc and an increased risk of arrhythmias with some psychotropic medications
Increased risk of agranulocytosis and neutropenia with clozapine (clozapine prescription requires mandatory regular blood tests to monitor this)
Greater likelihood of interactions with other drugs from altered pharmacokinetics that can lead to increased toxicity and therapeutic failure

Adapted from Taylor et al (2018)

the withdrawal of a long-term psychotropic medication, the patient should have additional input from a mental health team and changes to medications should be made in consultation with the patient, their family and carers, particularly given the risk of relapse.

Social interventions

Social interventions, such as those which address social isolation in older adults or provide support to caregivers, have an increasing role in the holistic management of people with frailty.

Social isolation is increasingly common in older adults and is associated with increased morbidity and mortality (Pantell et al, 2013). Its association with mental disorders may be further compounded by social frailty which may restrict people's mobility and limit opportunities for social engagement (Bunt et al, 2017). Carers of older adults living with frailty may themselves be living with frailty and cognitive impairment, with associated health declines potentially impacting on the person they care for (Potier et al, 2018). Much of the evidence for caregiving currently relates to dementia, but emerging evidence indicates that caregivers of older people living with frailty also experience high levels of caregiver burden (Ringer et al, 2017).

More research is needed to evaluate interventions that address social isolation (Gardiner et al, 2018) and provide carer support. There is increasing evidence that interventions that target social isolation and loneliness improves mortality and has benefits for mental health and frailty (Pantell et al, 2013). Interventions such as befriending or day centres were found to be beneficial (Mead et al, 2010) but not in all settings, suggesting that further work is needed to identify key components (Siette et al, 2017).

For caregivers, factors such as gender, relationship to the patient, culture and personal characteristics may influence the impact of the caregiving experience. Evidence suggests that individually developed multicomponent interventions that include a diverse range of services may be more likely to decrease burden, improve quality of life and reduce the length of institutional care (Etters et al, 2008).

Conclusions

Mental disorders and frailty are closely interlinked. This article highlights the need to ensure that psychiatric or psychological assessment and management are a key cornerstone in integrated care approaches for older people living with frailty. The systematic provision of mental healthcare remains absent from frailty service provision in the UK. This is a major concern and approaches to managing the needs of older people living with frailty need to place the assessment and management of mental health comorbidities on a par with physical health morbidity. If this gap could be addressed, it could make a significant difference to the lives of older people and their families.

Key points

- Frailty is common with a prevalence of around 10% of people aged over 65 years, rising to between a quarter and a half of those aged over 85 years.
- There is increasing evidence that mental health is an important component to frailty, with shared vulnerabilities from social risks factors such as age, ethnicity and education, as well as substantial correlations between frailty components and depressive symptoms.
- Mental disorders often precede, are comorbid with, or directly influence, the progression and clinical outcomes of older people presenting with frailty.
- Assessment and management of mental disorders are often systematically left out of clinical assessments of older people.
- The management of people with frailty and comorbid mental health disorders should include a stepped-care approach with access to evidence-based psychological therapies, the safe prescribing of medications for older people, interventions to support strength building and physical activity, and social interventions.

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