Research Protocol

Frailty in Older Populations of Arabic-Speaking Countries: Protocol for a Scoping Review

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Abstract

Introduction: With the globally aging population, the impact of frailty is expected to increase, and frailty has come into focus as a challenging manifestation of aging. Although frailty has been thoroughly investigated in developed countries, it has been understudied in developing countries. Like other countries worldwide, Arabic-speaking countries (ASCs) are experiencing an increase in the aging population; thus, the risk of frailty increases, and it becomes imperative to address the limitations of diagnosis, treatment, and prevention of frailty in this area of the world. **Objective:** This protocol describes a scoping review that will investigate what is known about frailty in older adults living in ASCs. The aim is to synthesize and map the literature addressing the concept of frailty, its association with other geriatric conditions, and measurement tools used to identify or assess frailty among this subpopulation in this part of the world. **Methods:** This review will employ Joanna Briggs Institute guidelines (JBI). Studies considered for this review must involve the concept of frailty among older adults living in the Arabic-speaking world. **Conclusion/Discussion:** This scoping review protocol outlines the specific methodologies to improve the overall quality of the finalized scoping review. The finalized scoping review will present an overview of the current literature on frailty in older adults living in ASCs and summarize the knowledge gaps in frailty assessment and interventions.

Frailty is not a natural consequence of aging; it is a multi-dimensional construct incorporating biological, social, and psychological factors associated with many poor outcomes (National Institute on Aging, n.d.). Although there is no consensus on a definition of frailty, many geriatricians and gerontologists view frailty as a syndrome (referred to as the frailty phenotype approach), which is the presence of three or more of the five criteria: unintentional weight loss, low energy, slow gait, reduced grip strength, and reduced physical activity (Fried et al., 2001). Frailty can also be viewed as an age-associated accumulative decline in tissue and organ function (referred to as the frailty index approach), which typically leads to an increased vulnerability to stressors (e.g., infection, acute illness, surgery; Rockwood & Mitnitski, 2007). It is not only a significant risk factor for premature mortality and morbidity in

older adults, but it is also associated with a broad range of adverse outcomes such as falls (Cheng & Chang, 2017), disability (Makizako et al., 2015), depression (Brown et al., 2014), lower quality of life (Rizzoli et al., 2013), dementia (Gray et al., 2013), and hospitalization (Fried & Mor, 1997).

Given frailty's complex nature, interventions that mediate biological, socio-economic, and environmental factors contributing to frailty should be considered for pre-frail and frail older adults. Thus, measuring and screening for frailty is essential. With no international standard measurement for frailty, multiple frailty measurements exist and exhibit varying levels of quality. Currently, there is no consensus on which frailty measurement tool is the most accurate or reliable.

With the globally aging population, the impact of frailty is expected to increase as a challenging manifestation of aging (Howlett et al., 2021). Health care providers and decision-makers in developed countries recognize that frailty will likely become a problematic concern even with a highly advanced and supportive health care system (Hajek et al., 2018; Han et al., 2019; Hoogendijk et al., 2019; Kojima, 2019; Mitnitski et al., 2005). In addition to the health care burden of caring for frail people, there is an individual burden on frail older adults and their caregivers, including low quality of life, depression, and loneliness (Gale et al., 2018). Strategies to prevent and slow the progression of frailty are crucial (Chan et al., 2012; Kim & Lee, 2013; Takano et al., 2017). However, in low- and middle-income countries, frailty is less acknowledged. Many health care providers may not address or may misdiagnose a patient's frailty level during a clinical investigation (Siriwardhana et al., 2018). Such shortcomings are likely because more research is needed to investigate, identify, and measure frailty among older adults in these countries. Despite the expected increase in life expectancy requiring more comprehensive health care services, most primary care providers in developing countries receive little to no training on health conditions associated with aging and late-life challenges (Nguyen et al., 2015). Moreover, in most developing countries, health care systems are not publicly funded, and patients must pay for most health care services. Additionally, there may be an underestimation of the importance of identifying or predicting frailty compared to other chronic diseases or emergencies (Sibai & Yamout, 2012). With the increase in the aging population, the risk of frailty increases, and it is imperative to address the limitations of diagnosis, treatment, and prevention of frailty in these areas of the world.

Like other developing countries, Arabic-speaking countries (ASCs) are experiencing a demographic transition and are facing challenges in relation to caring for an aging population (Obermeyer, 1992). By 2050, the proportion of older adults (aged 60 years or more) in ASCs is estimated to be 19%, almost triple the average in 2010 (Yount & Sibai, 2009). These countries, where Arabic is the official language, are located in the region of the Middle East and North Africa (MENA). Precisely 12 countries, namely Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Lebanon, United Arab Emirates (UAE), Syria, Yemen, and Tunisia (Omri et al., 2015) will be considered for this panel analysis. Although these countries have a shared history, religion, and culture, there is a great variety within this history, climate, and culture that can affect the health care and health of aging people. Moreover, the concept of culture in ASCs reflects a medium level of the Human Development Index, which examines life aspects such as education and life expectancy (Kabasakal & Bodur, 2002). This index articulated that life expectancy for people living in ASCs was low compared to other parts of the world. Therefore, this scoping review will consider publications investigating frailty for people aged 60 years or more living in the ASCs.

Reviews have yet to articulate the frailty measurements used to identify or screen for frailty in ASCs, which could reliably predict these subpopulation outcomes. Furthermore, knowing which tools have been used to measure and/or screen for frailty in this part of the world and among different nations will support what has been established in international studies.

Based on an initial search of the

Cochrane Database of Systematic Reviews, PROSPERO, and *JBI Evidence Synthesis*, no reviews are underway or have been conducted. A scoping review will elucidate the current gaps in what has been known about frailty in ASCs. The objective of the proposed protocol is to improve the quality of the final manuscript, improve examination quality, and minimize author bias.

Methodology

This is a scoping review protocol of literature commentary on frailty among older adults living in ASCs. The review aims to outline what is known about frailty in ASCs. The updated JBI scoping review methodology will guide the proposed protocol review (Peters et al., 2015). This protocol details the review's inclusion and exclusion criteria and identifies which and how data will be extracted and presented in alignment with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR; Peters et al., 2021). The following scoping review will highlight and explain deviations from the protocol. A quality appraisal will not be done, as this review aims to map all research activities in this concept.

Research Question

The review will address the following questions:

1. What has been reported on frailty and its related domains (e.g., prevalence, sex differences, association with comorbidities or other health) among people aged 60 years and older who live in ASCs?

2. What frailty tools are used to identify or measure frailty among older adults in ASCs?

Inclusion Criteria

Participants
The review will include studies involving frail older adults (aged 60 years and above) diagnosed or assessed for frailty by a researcher or health care professional in ASCs.

While frailty can occur in younger adults, researchers selected the specific age criterion because geriatric research is not as comprehensive in ASCs (Hussein & Ismail, 2017). Researchers plan to highlight gaps in the literature to guide future research. Further, an aged population is often considered to be 65 years or above; however, on average, individuals living in ASCs have a lower life expectancy, and, as such, an older adult is defined as 60 years or older (Sweed & Maemon, 2014). The studies should include participants who were investigated, evaluated, or assessed for frailty independently or in association with other syndromes, conditions, or diseases.

Concept
The concept of the review is to summarize the information about frailty in ASCs. This includes any studies that describe or assess frailty and tools used for assessment within any settings in ASCs. Included studies may present but are not limited to qualitative, quantitative, diagnostic, and clinical data.

Context
This review will consider publications that include the term "frailty" and recruited participants from ASCs. Study cohorts of participants from the Middle East and North African regions (MENA) will be considered—specifically, from the countries Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Lebanon, United Arab Emirates (UAE), Syria, Yemen, and Tunisia. Studies recruiting participants from MENA countries where Arabic is not the sole official language (e.g., Algeria and Morocco; Fishman, 2017) or countries located outside of the MENA region (e.g., Iran, Turkey, Niger, Senegal, Mali and Cyprus) will not be considered for this scoping review. The review will only consider reports published in English or Arabic. The review will consider the investigation, assessment, correlations, and interventions performed in any setting (e.g., community-dwelling, acute care, hospital, primary care) in any stated country.

Exclusion Criteria

Studies focusing on other aging conditions and not frailty, such as studies looking at geriatric medicine, treatment of diseases, or aging aspects that do not involve "frailty" will be excluded.

Types of Sources

The research will be conducted on published studies and grey literature. The review will include experimental and quasi-experimental study designs, randomized controlled trials, non-randomized controlled trials, pre-post studies, and interrupted time-series studies. Observational study designs such as descriptive, analytical, case study, and cross-sectional studies will be included. Researchers will seek to contact the authors of the included studies if more information is required.

Methods

This proposed review will use the *JBI Manual for Evidence Synthesis* (Peters et al., 2015). Based on a pilot search conducted on July 25, 2022, there are at least 27 reports that meet the inclusion criteria.

Search Strategy

A comprehensive search strategy was developed in collaboration with a research librarian at Dalhousie University and followed JBI's three-step search strategy. The search strategy followed the Peer Review of Electronic Search Strategies (PRESS) guidelines to generate keywords (McGowan et al., 2016). The strategy is presented in Appendix A. The keywords be used to search for unpublished studies and grey literature.

Information Sources

Researchers will use the electronic databases MEDLINE (Ovid), Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycInfo, and Scopus to search for relevant sources. Additionally, researchers will use Google Scholar to consider journals and websites in the Middle East, such as the *Middle East Journal of Age and Ageing* and *Geriatrics & Gerontology International*. The search will be restricted to the English language using words that can be used interchangeably and keywords (Appendix A).

Study/Source of Evidence Selection

The first author conducted the initial search, and the second author imported the search results into Covidence (www.covidence.org; see Appendix B for the electronic database search table). Two reviewers will independently screen the titles and abstracts from the retrieved studies and assess the acquired full-text publications for eligibility. Any disagreements regarding eligibility will be resolved by discussion among the two reviewers, and a third reviewer will resolve disputes if needed. The recommendations of the PRISMA-ScR (Page et al., 2021) checklist will be followed in the selection process.

Data Extraction

A data charting form will be used to electronically capture relevant information from each included study. The extracted data will include the following fields: authors, year of publication, aim, population, setting, design, data collection method, data analysis, conclusion, study outcomes, and relevant findings (Appendix C).

Data Analysis and Presentation

The results will be mapped using the PRISMA-ScR reporting guidelines for scoping reviews (Tricco et al., 2018). This review aims to present an overview and a narrative interpretation of all studies included to identify the evidence gaps. The results will be presented in two ways. Firstly, a narrative summary of the studies' extent, nature, and distribution is included. This analysis will provide an overview

and point to significant knowledge gaps about the term "frailty" in ASCs. Results will be classified under specific conceptual categories: study characteristics including, for example, country of origin, study population, setting, and study design. Secondly, content analysis will be conducted to map the different tools used to measure or identify frailty, interventions to improve frailty, and reported outcomes (e.g., assessment strategies, recommendations, and results).

Conclusion

This protocol will map the current literature regarding what has been known about frailty in ASCs. The protocol will improve the final scoping review manuscript by increasing the methodologies' transparency. The final review intends to identify the prevalence, measurement tools, risk factors, and type of interventions for the frail older population in these countries and make recommendations for future research. The review will follow the JBI guidelines and use the PRISMA-ScR reporting guidelines. Researchers believe the review results will identify gaps in the frailty field, thus improving awareness of frailty in ASCs.

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Appendix A

Search Strategy

1	(Frailty* OR Frail* OR Aging* OR Vulnerable*)
2	(Elderly* OR Older Adult* OR Over 60* OR Senior* OR Aged* OR Old*)
3	1 AND 2
4	(Frailty measurement* OR Frailty Tool* OR Frailty Index* OR Frailty Assessment*)
5	(EFS OR 'Edmonton Frailty*') OR (mFI OR 'modified Frailty Index*') OR (FP OR ' Frailty phenotype*') OR (FI OR 'Frailty Index*') OR (MFC OR 'Modified Fried Index*' OR 'Modified Fried Criter*') OR (REFS OR 'Reported Edmonton Frail') OR (MFST-HP OR 'Maastrich Frailty*') OR (CFS OR 'Clinical Frailty Scale*') OR (CSHA-CFS OR 'Chinese-Canadian Study of Health and Aging Clinical Frailty Scale') OR FRAIL scale OR 'PRISMA-7' OR (GFI OR 'Groningen Frail*') OR 'Comprehensive Geriatric Assessment*' OR 'Rockwood Geriatric Frail*' OR 'Winograd Index*' OR 'Simplified Frailty Index*' OR (Hip-MFS OR 'Hip-Multidimensional Frailty Score')
6	3 AND 5
7	(Arab* adj2 (World* OR language OR speaking OR countr*)) OR ((Middle East OR Gulf) adj2 countr*) OR Arabic* OR North Africa* OR Yemen OR Iraq OR Egypt OR Bilad Al-Sham OR Syria OR Lebanon OR Jordan OR Palestine OR United Arab Emirates* OR Bahrain OR Oman OR Saudi arabi* OR Kuwait OR Qatar OR Libya OR Tunisia OR Algeria OR moroc*
8	6 AND 7

Appendix B

Electronic Database Search Table

Date of search	Electronic database	Keyword used to search	Number of studies retrieved	Number of studies selected

Appendix C

Data Collection Charting Form

Study information	
Study Author(s) and date	
Title of the study	
Publication	
Aim of the study	
Study setting	
Study population	
Study design	
Data collection method	
Data analysis	
Conclusion	
Study outcomes/recommendations	
Most relevant findings/comments	