

# Frailty in Patients With Hematologic Malignancies and Those Undergoing Transplantation: A Scoping Review

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**PROBLEM IDENTIFICATION:** Although frailty is an important parameter in treatment planning and in predicting prognosis and overall survival among patients with hematologic malignancies and recipients of hematopoietic stem cell transplantation, frailty assessment tools are not standardized in clinical care settings. The purpose of this article is to provide an overview of the literature on frailty assessment tools in these patient populations.

**LITERATURE SEARCH:** A systematic search of CINAHL®, Embase®, MEDLINE®, PubMed®, and Web of Science was performed using keywords and controlled vocabulary for the concepts “bone marrow transplants,” “hematologic neoplasms,” and “frailty.”

**DATA EVALUATION:** Extracted data included study type, diagnosis, transplantation status, frailty tools used, and outcome measures.

**SYNTHESIS:** A systematic search resulted in 24 studies that met the inclusion criteria. There were significant differences in how various groups define and assess frailty.

**IMPLICATIONS FOR PRACTICE:** Addressing the lack of standardized frailty assessments will assist healthcare providers to routinely integrate frailty measures in clinical assessments to identify those at risk for poor outcomes, improving personalized care.

**KEYWORDS** hematopoietic stem cell transplantation; frailty; comorbidity; hematologic cancers

**ONF, 48(3), 291-307.**

**DOI** 10.1188/21.ONF.291-307

Frailty is considered “a medical syndrome with multiple causes and contributors that is characterized by diminished strength and endurance, and reduced physiologic function that increases an individual’s vulnerability for developing increased dependency and/or death” (Morley et al., 2013, p. 392). The progression from being healthy to frail is often silent and typically manifests in the clinical setting as an unexpected decline in an individual’s physical and cognitive state (Searle & Rockwood, 2015; Song et al., 2014); however, there is no clear consensus on how to operationalize the measurement of physical frailty as a vulnerable state (Pel-Littel et al., 2009). Frailty is a common clinical syndrome in older adults that increases the risk for poor health outcomes, including hospitalization, falls, and increased mortality (Perna et al., 2017). Although common in aging populations, the condition of frailty is increasingly being recognized as having a significant impact on clinical outcomes in multiple diseases and disorders such as cancer, diabetes, and heart failure (El Assar et al., 2019; Walston et al., 2018). As such, a number of specific tools have been developed to measure frailty, either as a separate construct or as one of several comorbidities in the context of a particular health state. For example, in the field of hematologic cancers and hematopoietic stem cell transplantation (HSCT), frailty has been defined, studied, and assessed in various ways. The purpose of this scoping review is to chart the state of the science for frailty assessment and describe frailty screening tools used in patients with hematologic cancers, with a focus on recipients of HSCT.

Hematologic malignancies are cancers that are initiated in the blood-forming cells of the body, such as the bone marrow and cells of the immune