

DEVELOPING A SIMPLIFIED CLINICAL FRAILTY SCALE FOR ELDERLY PATIENTS

Nguyen Van Tri^{1,2}, *Nguyen Tran To Tran*^{1,3}
*Le Thi Hong Hoa*¹, *Tran Minh Giao*³

ABSTRACT

Background: The Clinical Frailty Scale (CFS) assesses the degree of frailty based on simple clinical observations, comorbidities, functional status, and activity level in elderly patients. However, non-geriatric physicians often face challenges using this scale to evaluate frailty, so simplifying the Clinical Frailty Scale is a necessary problem for implementation and research.

Objective: To develop a simplified clinical frailty scale based on the Clinical Frailty Scale.

Research Subjects and Methods: Twenty medical doctors, including geriatric specialists and other specialists, were surveyed regarding the comprehensibility and applicability of the simplified Clinical Frailty Scale (CFS).

Results: Most medical doctors (90%) agreed with the simplified Clinical Frailty Scale and will use the scale to assess frailty in elderly patients (90%), with no suggestions for editing terminology

Conclusion: The simplified Clinical Frailty Scale used simpler terminology and more concise, and memorable terms than the original Clinical Frailty Scale, therefore, it was highly applicable and allowed non-geriatric physicians to assess frailty easily in elderly patients.

Keywords: Clinical Frailty Scale, CFS, elderly patients, cross-sectional study.

¹Department of Geriatrics, Ho Chi Minh City University of Medicine and Pharmacy

²Faculty of Medicine, Nguyen Tat Thanh University

³ Department of Geriatrics, Gia Dinh People's Hospital

Corresponding author: Nguyen Tran To Tran (nguyentrantotran@gmail.com)

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1. INTRODUCTION

Population aging is a global problem. In Vietnam, from 2009 to 2019, the elderly population increased from 7.45 million to 11.41 million, corresponding to an increase from 8.68% to 11.86% of the total population [1]. Frailty is a significant geriatric syndrome among the elderly. Weakness develops as a result of the aging of the physiological systems in the elderly, leading to vulnerability to environmental changes and difficulty in recovery [2,3]. Frailty is assessed using different methods, so there is still no consensus on assessment tools. However, most frailty screening studies were chosen by clinicians using the Clinical Frailty Scale (CFS). The CFS scale was born in 2005 and researched and developed by Rockwood and colleagues [4].

The Clinical Frailty Scale (CFS), developed by Rockwood et al. in 2005, is widely used. Initially, it only included seven levels of frailty, then was built and completed into 9 levels. Despite the clinical frailty scale being widely and routinely applied by geriatricians to assess frailty, non-geriatric clinicians face many difficulties due to its detailed, because many specific contents and levels need to be evaluated. So, to help medical doctors who are not specialists in geriatrics evaluate the health of elderly people during examination, simplifying the clinical frailty scale is a necessary issue.

Therefore, we conducted this study to develop a simplified clinical frailty scale to assess frailty in the elderly.

2. SUBJECTS AND METHODS

2.1. Research Subjects

Doctors specializing in geriatrics and other specialties who have worked for at least 5 years in the specialties of geriatrics, respiratory, cardiovascular, general internal medicine, and neurology agreed to participate in the study.

2.2. Research Methods

Study Design: Descriptive cross-sectional study.

Participants: 20 doctors specializing in geriatrics and other specialties.

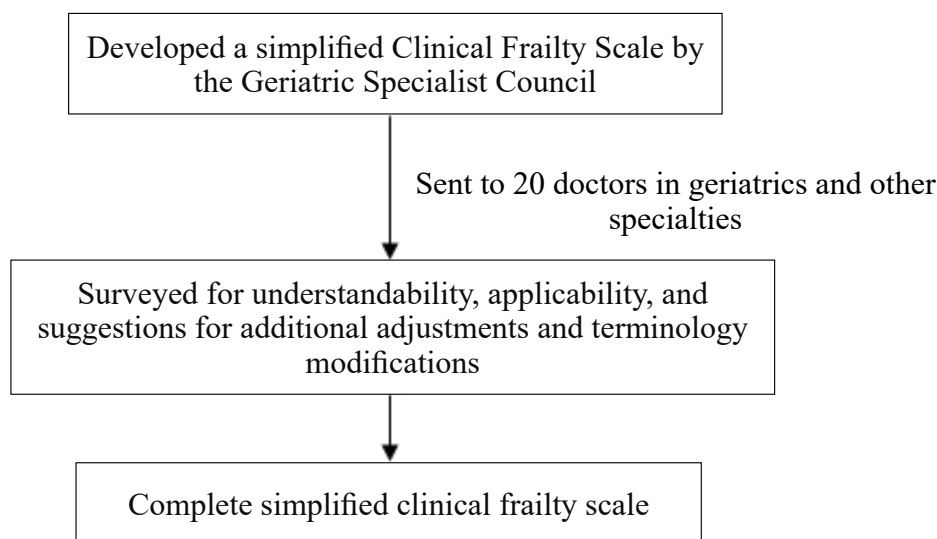
Research Period: From November 2022 to March 2023.

Research Process: The research team developed the simplified Clinical Frailty Scale based on the original Clinical Frailty Scale, simplifying terminology for better understanding and application. The simplified Clinical Frailty Scale focused on basic and daily activities. Reduce interpretations within each taxonomic group. It was reviewed by 20 doctors from geriatrics, cardiology, respiratory, rheumatology, neurology, and general internal medicine to survey its applicability, comprehensibility, and suggestions for

terminology adjustments. After that, the expert council revised it to produce a complete version of the simplified clinical frailty scale. After that, the expert council revised it to produce a complete version of the simplified clinical frailty scale. The professional council included an associate

Professor. Dr. Nguyen Van Tri, Master of Medicine Nguyen Tran To Tran, specialist level 2 doctor Tran Minh Giao, and the research team including Dr. Le Thi Hong Hoa, Dr. Tran Tien Trung, and Dr. Le Trinh Thuy Tien.

The evaluation process follows the diagram below



Definition of research variables

The frequency of using the clinical frailty scale in practice was an ordinal variable, including the values: No, very rarely, sometimes, often, and always. Difficulty using the clinical frailty scale was an ordinal variable, including values: Complex/difficult to understand; lengthy and hard to remember; time-consuming; no difficulties; and other reasons..

Comprehensibility of the simplified clinical frailty scale was an ordinal variable, including the values:

Much harder to understand; harder to understand; normal/neutral; easier to understand; and much easier to understand. Applicability of the simplified clinical frailty scale was an ordinal variable consisting of the following values: very difficult to use; hard to use; normal/neutral; easy to use; and very easy to use. The future application of the simplified clinical frailty scale was an ordinal variable, including values: not; probably not; unsure; will use; and definitely will use. Additional suggestions for terminology adjustments were also collected.

The ease of understanding of the simplified clinical frailty scale is an ordinal variable consisting of the values: very difficult to understand; More difficult to understand; Normal/Neutral; Easier to understand; Much easier to understand. The applicability of the simplified clinical frailty scale is an ordinal variable consisting of the following values: very difficult to use; Difficult to use; Normal/Neutral; Easy to use; Very easy to use. The level of application of the simplified clinical frailty scale in the future is an ordinal variable, including the values: definitely not; maybe not; not sure; will use, and use. In addition, comments on terminology adjustments were also collected.

3. RESULTS

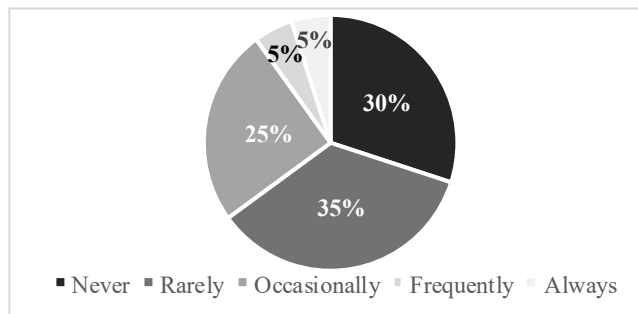


Figure 1. Frequency of Using the Clinical Frailty Scale

The simplified Clinical Frailty Scale included nine groups ranging from very healthy to end-of-life stages. Each group was described using shorter and simpler terminology compared to the original Clinical Frailty Scale.

Frequency of Using the Clinical Frailty Scale

About 90% of doctors participating in the study did not often use the clinical frailty scale in clinical practice (Figure 1).

Data Analysis

Data was entered using EpiData 3.1 software, data was processed using SPSS 26.0 software. Binary and ordinal variables were presented as frequencies and percentages. Continuous variables were presented as mean \pm standard deviation or median and interquartile range.

Ethical Considerations

This study was approved by the Ethics Committee in Biomedical Research of the University of Medicine and Pharmacy at Ho Chi Minh City (No. 957/2022/HĐĐĐ-ĐHYD, dated 28/11/2022) and the Ethics Committee in Biomedical Research of Gia Dinh People's Hospital (No. 159/NDGD-HĐĐĐ, dated 28/12/2022).

Difficulties in Using the Clinical Frailty Scale (CFS)

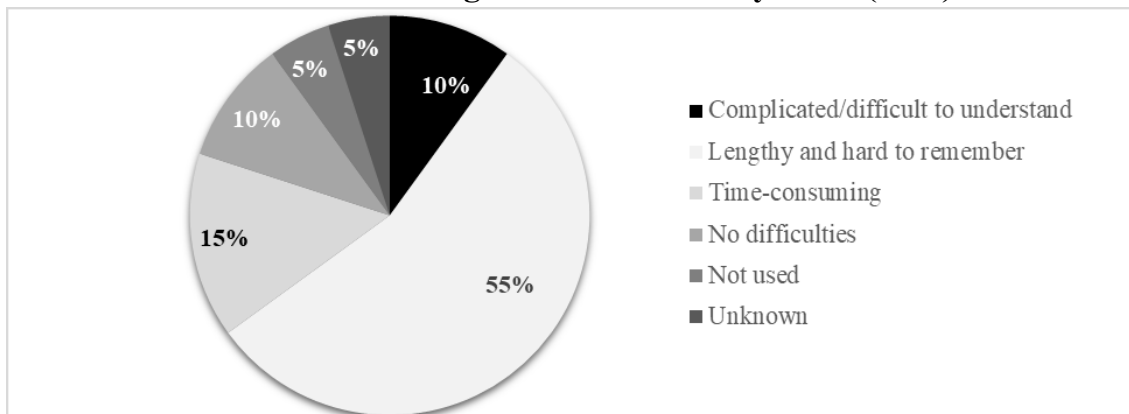


Figure 2. Difficulties in Using the Clinical Frailty Scale (CFS)

Approximately 90% of participants found that the clinical frailty scale was complicated, lengthy, and time-consuming to use (Figure 2).

Comprehensibility and Applicability of the Simplified Clinical Frailty Scale (sCFS)

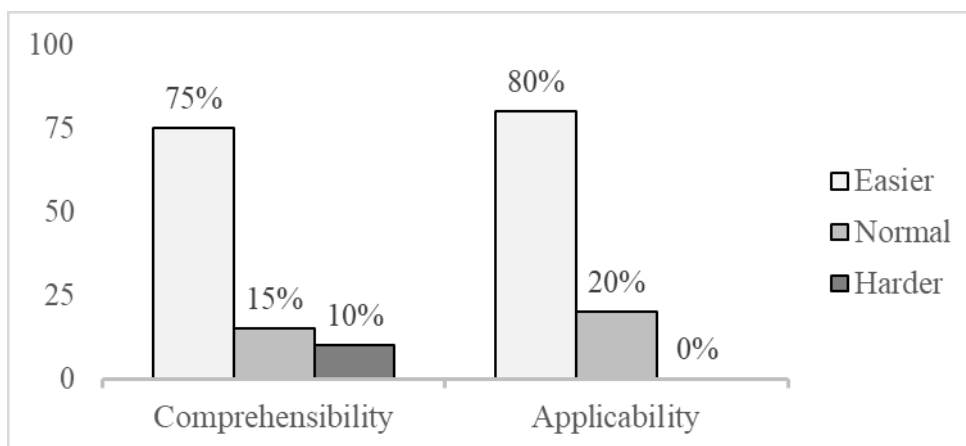


Figure 3. Comprehensibility and Applicability of the sCFS

The survey showed that the assessment of frailty in elderly patients was still limited, with most doctors finding the Clinical Frailty Scale (CFS) too lengthy, hard to remember (55%), and time-consuming to implement (15%). About 75% of physicians believed that the simplified Clinical Frailty Scale was easier to understand, and 80% of physicians agreed that the simplified clinical frailty scale was easier to use than the original frailty scale. All physicians agreed with the simplified clinical frailty scale and indicated they would use it to assess frailty in elderly patients (90%), with no suggestions for terminology revisions (Figure 3).

Table 1: Simplified Clinical Frailty Scale

	GROUPE	CHARACTERISTIC	
Healthy	Very healthy	Very active Exercises regularly	Purpose of assessment: Coordination of + Cognitive ability + Physical abilities: Functional activities: Using the phone, cooking, doing laundry, house-keeping, shopping, using transportation, managing money, and organizing medications. Basic activities: Bathing, grooming, dressing, using the toilet independently, eating independently, moving within the home independently.
	Healthy	Less active Exercises irregularly	
	Fairly well	Low activity levels and/or rarely exercises	
Slightly frail	Vulnerable	Slow-moving Fatigued during the day	
Frail	Mild frailty	Requires assistance with <i>some social activities</i>	
	Moderate frailty	Requires assistance with <i>some basic activities</i>	
	Severe frailty	Requires assistance with <i>all basic activities</i>	
End of life	Life expectancy < 6 months		Regardless of frailty level

4. DISCUSSION

Frailty was a common health issue in the elderly and was a focus of current geriatric research. Early identification of the severity of frailty during hospital admission allowed clinicians to stratify health status and predict patient outcomes. This serves as a basis for planning treatment and interventions to improve future complications and potentially reduce hospital stay durations [5]. Therefore,

assessing frailty was essential. The Clinical Frailty Scale (CFS) was a reliable tool to assess frailty and was widely applied in many countries. For convenience, non-geriatric physicians could easily use it. The Geriatrics Specialist simplified the score scale and created a simplified Clinical Frailty Scale.

The Clinical Frailty Scale assessed frailty through activities of daily living (using the phone, cooking,

laundry, housekeeping, shopping, using transportation, managing money, and medication management) and basic activities (bathing, grooming, dressing, toileting, eating, and moving within the house). Compared to the original Clinical Frailty Scale, the simplified Clinical Frailty Scale had no difference in subgroups, however, the Simplified Clinical Frailty Scale used simpler, more concise, and easier-to-understand terminology. The simplified Clinical Frailty Scale was through functional activities rather than mental health assessment, so the dementia patient group was not included in this study. Several studies worldwide have also simplified this scale to make it easier for non-geriatric doctors to use, such as the study by Zulfiqar et al. in 2022 in France with the Zulfiqar Frailty Scale (ZFS) [6], and the study by E. Chong et al. on 210 patients in the Geriatrics Department with a summarized Clinical Frailty Scale [7]. The study results indicated that most clinicians did not use the original Clinical Frailty Scale due to its complexity, length, and memorization difficulty. Therefore, simplifying the clinical frailty scale was helpful in elderly care practice. Doctors participating in the study believed that

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the simplified clinical frailty scale was easier to understand and remember, and was more likely to be applied clinically. Therefore, the potential for widespread application of this scale in practice for geriatricians and non-geriatric doctors was high, contributing to improving health care for the elderly.

5. CONCLUSION

The simplified Clinical Frailty Scale (sCFS) used simpler terminology, was more concise, and easier to remember than the original Clinical Frailty Scale, making it highly applicable and easier for non-geriatric doctors to assess frailty in elderly patients. This allowed for setting appropriate care goals for the elderly. To evaluate the validity and reliability of the simplified Clinical Frailty Scale, the research team plans to conduct a larger sample study on elderly subjects and present it to a higher professional council before applying it in clinical practice for geriatric patients.

ACKNOWLEDGMENTS

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