



# TOPICS-MDS



# Frailty index

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*This is a data brief from The Older Persons and Informal Caregiver Survey Minimum DataSet (TOPICS-MDS). TOPICS-MDS is an excellent resource on the health and wellbeing of a large number of frail older persons and their caregivers across the Netherlands, collected within the National Care for the Elderly Programme (NPO). TOPICS-MDS data briefs provide updates on TOPICS-related research findings to health professionals, policy makers and other relevant agencies, thereby contributing to the evidence base for health services programmes.*

## Frailty in older persons

Older adults often are more prone to diseases than younger adults. Frailty refers to a state of increased vulnerability to adverse health outcomes in older persons. By an accumulation of several (minor) deficits of physical, psychological and/or social nature a growing population is increasingly vulnerable to serious health problems. Trying to avoid, reduce or delay vulnerability, increases the quality of life and life expectancy of older persons. This calls for a proactive, early identification and intervention. Identification of frailty on an individual level can, for instance, result in more effective case management, while on a population level, it can lead to improved distribution of health services.

Senior citizen organizations, care providers, health care institutions, municipalities and the central government want to help frail older adults. Unfortunately, early

identification of this particular group of older people is not so easy. This TOPICS-MDS data brief discusses a possibility to estimate vulnerability levels in older adults based on questionnaire data on the health and welfare of a large group of older people.

## The identification of frailty Using TOPICS-MDS

There are many proposed methods to measure frailty, and one such measure is the frailty index. To calculate a frailty index, the number of health problems observed in older persons is divided by the total number of health problems assessed in a survey or by a clinician. This proportion theoretically ranges from 0 (no indication of frailty) to 1 (extreme frailty), though frailty index scores typically culminate at approximately 0.7.

$$FI = \frac{\text{number health problems in older person}}{\text{number health problems investigated}}$$

Within the National Care for the Elderly Programme (NPO) in the Netherlands, a large number of Dutch older persons completed a questionnaire with questions on their health and well-being (see TOPICS-MDS Data Brief No. 1 for more information). This has resulted in the TOPICS-MDS database with data from more than 37,000 older persons and 4,000 caregivers across the Netherlands, from which a frailty index can be derived.

Given the public health and clinical relevance of measuring frailty, it is important to ensure that a frailty index derived from TOPICS-MDS produces accurate estimations of frailty levels. To validate a frailty index derived from TOPICS-MDS, data were used from 587 older persons recruited from a primary care setting.

These older persons completed the TOPICS-MDS questionnaire, and a 46-item frailty index (TOPICS-FI) was constructed. In addition, a clinical frailty index (clinical FI) was constructed using 45 health problems assessed by a geriatrician.

The clinical FI was compared to the TOPICS-FI to determine if the two frailty indices were correlated, i.e. produced similar scores. The distribution of TOPICS-FI was examined by age group (70–74, 75–79, ≥80) and sex, (male, female) because these characteristics have been shown to influence frailty levels.

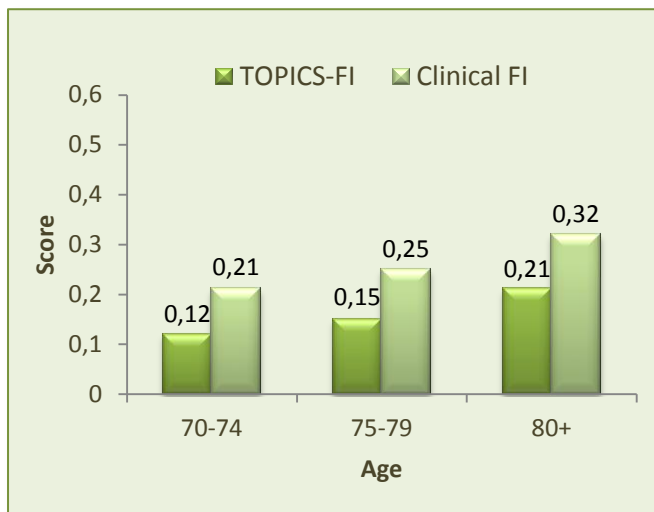


Figure 2. Average scores for TOPICS-FI versus a clinically derived frailty index stratified by age group (N = 587)

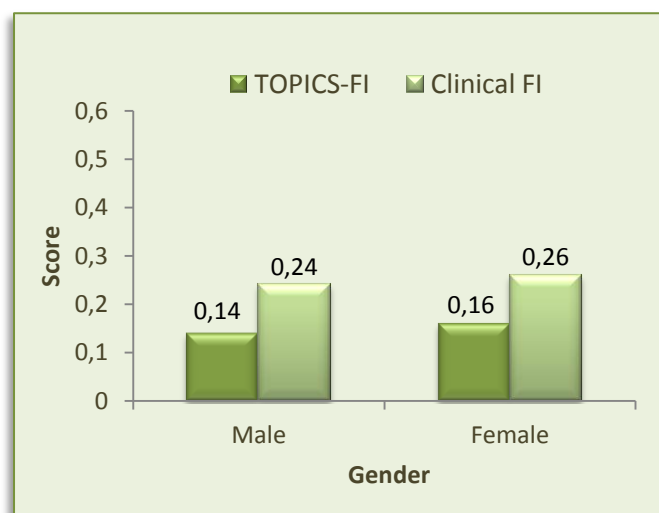


Figure 3. Average scores for TOPICS-FI versus a clinically derived frailty index stratified by sex (N = 587)

The maximum scores recorded for the clinical and TOPICS frailty indices were 0.58 and 0.52 respectively. There was a significant correlation between the clinical FI and TOPICS-FI ( $r = 0.75$ ,  $p < 0.0001$ ). TOPICS-FI scores were significantly higher among participants 85 years and older ( $p < 0.001$ ) and women ( $p = 0.003$ ), which is similar to previous studies.

This study supports that TOPIC-MDS frailty index measures frailty with reasonable accuracy. This finding provides critical baseline information for professionals who wish to apply TOPICS-MDS to monitor frailty over time, identify geographical regions of vulnerability or perform detailed analyses of frailty.

For more information on this topic, please refer to: **Lutomski JE, Baars MAE, Buurman BM, den Elzen WPJ, Jansen APD, Kempen GIJM, Krabbe PFM, Steunenbergh B, Steyerberg EW, Olde Rikkert MGM, Melis RJF. (2013). Validation of a frailty index from The Older Persons and Informal Caregivers Survey Minimum DataSet. *J Am Geriatr Soc.* 6(9):1625-7.**

*Given the size of the database, the distribution of participating older persons across the Netherlands, and the validated TOPICS-FI, TOPICS-MDS could be a valuable data source for you*

**Access to TOPICS-MDS data**

Are you interested in using TOPICS-MDS data? Please visit [www.topics-mds.eu](http://www.topics-mds.eu) for more information on available data and details about the TOPICS-MDS data application procedure.

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