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RESEARCH REPORT

Frailty among Older Adults

Netta Bentur ✦ Shelley Sternberg ✦ Jennifer Shuldiner

The study was funded by the Maccabi Institute for Health Services Research

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[1] Myers-JDC-Brookdale Institute
[2] Maccabi Healthcare Services

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Editor: Raya Cohen
English translation: Evelyn Abel
Print Design and Production: Leslie Klineman

Myers-JDC-Brookdale Institute
P.O.B. 3886
Jerusalem 91037, Israel

Tel: (02) 655-7400
Fax: (02) 561-2391

Web site: www.jdc.org.il/brookdale

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Executive Summary

Background

Frailty is a geriatric syndrome that manifests as functional deterioration due to the systemic decline of physiological resources. It causes a heightened incidence of negative outcomes such as hospitalization, disability and even mortality. This decline gradually drains the body's reserves so that even minor stressor events may produce significant health changes. Frailty in older adults is a major topic today, engaging service providers and policymakers involved in the care of older adults. One focus of interest is the trajectory of the development of frailty. If identified, it could lead to the detection of groups of older adults who are at risk of fairly imminent negative outcomes, which, in turn, could lead to the planning of interventions and care for them. Despite the importance of the topic, to date it has not been studied in Israel.

To meet clinical and research requirements, approaches and tools have been developed around the world to define and measure frailty. The Vulnerable Elders Survey (VES) is a common tool used to detect risk of frailty and predict functional deterioration and mortality among older adults living in the community. It takes into account age, self-appraisal of one's health, functional disabilities, lifting ability in terms of load, fine motor skills, mobility, and the ability to perform tasks outside the home. The measure ranges from 1 to 10 with the higher scores being a greater indication of frailty. A score above 3 on the VES identifies about a third of the candidates for frailty, functional decline, and mortality within two years of the examination in contrast to a score of 3 or less.

Study Goal

The study examines the course of frailty among older adults over six years, and the relationship between frailty in 2008 and the use of health services in 2014, as well as between frailty and mortality in this period.

Study Design

The study utilizes data from a 2008 survey of insurees aged 65+ in a large health plan. The survey consisted of 608 older adults living in the community. The current study, conducted in 2014, revisited those same people. Between 2008 and 2014, 183 (30%) of them passed away, and another 144 (24%) were omitted from the current study for the following reasons: their telephone lines had been cut off (76 people, 13% – who were known to be among the living since they did not appear in the Population Registry of the deceased); they refused to be interviewed (36, 6%); they had moved to a nursing home (14, 2%); or other reasons (18, 3%).Of the 2008 target population, 281 people (46%) were ultimately included in the current study. The average age of the study population in 2008 had been 79 (SD=6), 62% of them were women, 27% lived alone.

The study was conducted by telephone interviews, based on a closed, structured questionnaire, with the older adults themselves. When it was not possible to interview the subject directly a relative

was interviewed instead. Frailty was examined in the two studies by the VES measure. To examine if, and to what extent, frailty had developed and progressed over the six-year period, we compared the individual VES scores of the 281 older adults interviewed in both 2008 and 2014.

Findings

- In 2008, of the 608 people surveyed:
  - 24% scored 3 or lower on the VES measure, i.e., they were not frail;
  - 74% scored higher than 3, i.e., they were frail.
- Changes in the state of frailty between 2008 and 2014:
  - In 2014 – among those who were not frail in 2008:
    - 30% remained non-frail
    - 39% became frail
    - 14% passed away
    - 17% were not located.
  - In 2014 – among those who were frail in 2008:
    - 1% were not frail (they might have had an acute illness in 2008 which affected the degree of their frailty at the time)
    - 37% were frail
    - 36% had passed away
    - 24% were not located.

Trajectory of Frailty

A comparison of the individual VES scores for the 281 people interviewed in 2008 and in 2014 showed that:

- 19% were not frail in either survey
- 22% were not frail in 2008 but had become frail by 2014
- 22% were frail in both surveys to the same or a similar degree
- 37% were frail in 2008 and frailer in 2014.

Use of Health Services, by Trajectory of Frailty

A multivariate analysis six years after the first study showed that:

- The ***chances of hospitalization*** in the previous year – of older adults who had become or remained frail (whether or not the condition stayed stable or worsened) – were 3 times those of older adults who had remained non-frail.

- The ***chances of receiving homecare*** – of older adults who had become or remained frail (whether or not the condition stayed stable or worsened) were 6 and 15 times, respectively, those of older adults who had remained non-frail.
- The ***chances of having a personal caregiver*** – of older adults who had become frail, remained frail, or become frailer – was 10 times, 17 times, and 31 times respectively that of older adults who had remained non-frail.

Mortality, by Trajectory of Frailty

As mentioned above, 183 older adults (30%) of the 608 in the target population of the study had passed away between 2008 and 2014. According to the bivariate analysis, among the deceased in this period the rate of frail older adults had been higher than of the non-frail, and the rate of men – higher than the rate of women, though no correlation was found with other demographic characteristics. The Cox proportional ratio showed that 86% of the non-frail in 2008 were alive six years later vs. 52% of the frail; the hazard ratio stood at 3.5 (CI 2.2-5.4).

Conclusions and Policy Directions

The study findings showed that changes in the condition of frailty among older adults are common, and any deterioration that distances them from non-frailty increases both their reliance on health services and their rate of mortality. It is thus important to confront this complex topic from the level of policymakers to that of service providers and individual physicians. To do so:

a. The presentation of the topic should be expanded to policymakers in the medical system, especially within the community, so that they may become acquainted with it, understand its significance, importance and implications, and encourage its prominence. To this end, the topic would benefit from its presentation at numerous forums and from discussion of its tools and methods for the sake of sustainability.

b. Community physicians should make more effort to identify and deal with frailty. In particular, steps should be taken to ensure that family doctors are familiar with the tools to identify frailty and the means to approach and treat it.

c. It is important to present and raise the topic for discussion at forums of clinicians from various professions caring for older adults, namely, orthopedics, neurology, rehabilitation, and even intensive care, and to introduce them to simple, easy tools to check for frailty.

d. Consideration should be given to the use of VES, a validated, simple, easy tool to identify frailty, and its institution among family doctors. This step should be taken in order to detect frailty as early as possible and offer older adults interventions to cope with symptoms and prevent deterioration.

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