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Construct validity and reliability of a two-step tool for the identification of frail older people in primary care

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Abstract

Objectives: To study the reliability and construct validity of the EASY-Care Two-step Older persons Screening (EASY-Care TOS), a practice-based tool that helps family physicians (FPs) to identify their frail older patients.

Study Design and Setting: This validation study was conducted in six FP practices. We determined the construct validity by comparing the results of the EASY-Care TOS with other commonly used frailty constructs [Fried Frailty Criteria (FFC), Frailty Index (FI)] and with other related constructs (ie, multimorbidity, disability, cognition, mobility, mental well-being, and social context). To determine interrater reliability, an independent second EASY-Care TOS assessment was made for a subpopulation.

Results: We included 587 older patients (mean age 77 ± 5 years, 56% women). According to EASY-Care TOS, 39.4% of patients were frail. EASY-Care TOS frailty correlated better with FI frailty (0.63) than with FFC frailty (0.52). A high correlation was found with multimorbidity (0.50), disabilities (0.53), and mobility (0.55) and a moderate correlation with cognition (0.31) and mental well-being (0.38). Reliability testing showed 89% agreement (Cohen's κ 0.63) between EASY-Care TOS frailty judgment by two different assessments.

Conclusion: EASY-Care TOS correlated well with relevant physical and psychosocial measures. Accordingly, these results show that the EASY-Care TOS identifies patients who have a wide spectrum of interacting problems.

Keywords: Frailty; Elderly; Assessment; Construct; Reliability; Family physician

1. Introduction

There is international consensus that the care for the increasing population of frail older patients needs improvement [1,2]. Evidence showed that frail older patients would benefit from more proactive care delivery and the integration of multidisciplinary care systems [3,4]. Timely provision of suitable care for frail older patients first demands identification of their health and welfare problems [5−7]. However, the existing identification instruments often have been developed in the research realm and for use in a hospital setting. As a consequence, they have not been validated in a primary care setting or have shown to be impractical for use in primary care [6,7].

The two most often used frailty concepts are the ''accumulation of deficits'' [8] and the ''phenotype of frailty'' [9]. Fried's phenotype of frailty intends to identify physically frail patients [9]. The other frailty concept, the accumulation of deficits, states that the more deficits someone has, the greater the risk on an adverse health outcome and the frailer the person. This concept is operationalized by means of a Frailty Index (FI), which is a ratio of the count of deficits against the total number of deficits screened for [6,8,10]. The aforementioned frailty instruments are extensively studied and validated, also in a primary care setting [11,12]. However, neither is specifically developed for the need with which family physicians (FPs) want to identify frailty, that is, selecting the target population for integrated care [5,13]. This may explain why these instruments for frailty identification are not widely implemented in primary care [6]. Hence, we concluded that the already existing instruments do not correspond with the needs of FPs [7,13,14].

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Ethical approval: The Medical Research Ethics Committee (MREC) of the region Arnhem/Nijmegen, The Netherlands, approved the study. Number of approval is 2009/223. All participants gave informed consent before taking part in the study.

Conflict of interest: None.

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What is new?

- This report is one of the first that demonstrate the validity of a frailty identification instrument specifically developed for and with primary care professionals.
- The results of this study show that EASY-Care TOS has good construct validity as it correlated well with relevant physical and psychosocial measures and other already validated frailty measures.
- This means that EASY-Care TOS identifies patients as frail when they have multiple problems on various domains, which suits the need in primary care to identify patient groups that might benefit from more proactive and integrated care.
- With EASY-Care TOS, family physicians and other primary care professionals have an efficient, practical, and validated frailty identification method for primary care.

Consequently, we developed the EASY-Care Two-step Older persons Screening (EASY-Care TOS) with input of stakeholders [15]. The complete EASY-Care assessment is a tool for geriatric assessment in primary care and is extensively studied [16]. This tool considers frailty in the ''broadest'' sense of the concept as it comprises physical and psychosocial aspects of frailty and aspects of the care context of the patient. The EASY-Care TOS is derived from this EASY-Care assessment tool. Although, it is more efficient because it makes use of available prior knowledge of the FP. Furthermore, using the professionals' appraisal as the frailty decision, instead of a cutoff score, it fits with everyday clinical reasoning of the FP [15]. A feasibility study confirmed that in the Dutch primary care context, with emphasis on longitudinal continuity and a strongly established doctor–patient relationship, only about 10% of the elderly population evaluated with EASY-Care TOS step 1 needed a home visit for the frailty appraisal. The home visits can be conducted by practice nurses. Dutch FPs highly appreciated the two-step approach of EASY-Care TOS and mentioned that it is time saving. Furthermore, the professionals considered their clinical judgment of patients' frailty more important than a numerical score [17].

This report describes the construct validity of the EASY-Care TOS by comparing it with the mostly used other frailty constructs [Fried Frailty Criteria (FFC) and Frailty Index (FI)] and other related constructs: multimorbidity, disability, cognition, mobility, psychosocial functioning, and quality of life. As we hypothesized that the EASY-Care TOS identifies patients as frail when they have multiple problems on various domains, we expected that the overall judgment of frailty according to EASY-Care TOS would correlate stronger with the FI than with the FFC as the latter only measures physical frailty, whereas the FI is a measure for frailty on multiple domains. Because the EASY-Care TOS includes multimorbidity and disability in the frailty judgment, we expected that there would be considerable overlap with these concepts.

2. Methods

2.1. Study population and data collection

Six FP practices (with in total 15 FPs) in and around Nijmegen (The Netherlands) assessed their patients of 70 years and older with the EASY-Care TOS between February 2010 and August 2011 (n = 1,159) and asked these patients to participate in the study. These practices were situated in urban (n = 2), suburban (n = 1), and countryside (n = 3) areas. Patients who were too ill to be assessed (eg, patients in a palliative trajectory) were excluded. Patients were also excluded if they were under the treatment of a geriatrician or underwent a comprehensive geriatric assessment (CGA) in the past 3 months as the information of the geriatrician might influence the frailty judgment of the FP. Of this sample, 587 older patients gave informed consent and were included in the study.

2.2. Measurements

2.2.1. EASY-Care TOS

FPs and primary care nurses received education on frailty and its identification with EASY-Care TOS. They were instructed on using the following conceptual definition of frailty: a frail older person has decreased reserve capacity because of multiple health, mental, or social problems, which make the person vulnerable for changes in the biopsychosocial context, especially when compensations are lacking [13,16,18–21].

In the first step of EASY-Care TOS, FPs made a frailty judgment of their older patients based on prior knowledge, for example, from the patients' record. For this purpose, FPs used a 14-item checklist concerning physical and psychosocial functioning of the patient. At the end, the FP decided whether the patient was frail. This decision was not based on a standardized score but on clinical reasoning and tacit knowledge of the FP. The patients for whom the FP felt that he did not have enough information to make this judgment (''unclear'') were invited for the second step of EASY-Care TOS. This second step was an in-home assessment by a primary care nurse, who assessed functioning and well-being by applying the EASY-Care assessment instrument [22]. Afterward, the nurse discussed the information gathered from the assessment with the FP, and subsequently, they judged functioning of the patient (good, fair, and poor) on eight domains (diseases, medication, cognition, vision and hearing, functional status, mobility, mental well-being, and social context) and decided whether the