

Frailty in Family Practice: A Survey of Caregivers of Frail Elders

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ABSTRACT

The aim of this study was to evaluate the level of sarcopenia of home-dwelling elderly and the attitudes to frailty by asking their relatives, who applied as patients to a family practice in Antalya, Turkey. A cross-sectional study with 1016 patients were asked if they had a frail elderly person at home. Participants, who gave a positive answer were further asked questions on frailty level (SARC-F) of their elderly and attitudes concerning frailty at home. Descriptive statistics, Chi-square, and Spearman's rho correlation were used. Respondents were 52.1 (SD=12.66; min-max=19-83; n=1016). Most were women (N=762; 74.9%) and married (n=722; 75.1%). One hundred and sixty nine (16.8%) had a frail elder at home. The age of the frail elder was 78.2 (SD=8.21; min-max=55-98). Most were women (n=124; 75.6%). Sarc-F Total Score was found as 5.2 (median=5; SD=1.1; min-max=3-8; n=125). Participants were in agreement with the statement "I feel competent in caring for my frail elder", "I would follow the treatment recommendations of my frail patient", "I would seek appropriate support for my frail elder", "Immobile, frail elders need home health services", "The family plays an important role in the early diagnosis of frailty", "Mobile technologies play an important role in the care of frail elders", and "Family members play an important role in the care of frail elders". The determination of self-perceived health is an acceptable method for

assessment of the person, which might be also useful in caregivers of frail elders. This could certainly help to evaluate unmet health needs of frail elders, who are not able to visit the family physician.

Key words: Aging, frailty, caregiver, self-perceived health status, geriatric assessment, Turkey

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Introduction

The portion of frail people in the community is increasing. Since the definition of this syndrome is in development, the clear numbers of frailty are not well known. A systematic review estimated the prevalence of frailty in the community ranging between 4-59.1% (1), which depended on the definition of frailty. Based on the Fried model it was found as 9.9% and 44.2% for frailty and pre-frailty respectively (2,3).

In Turkey recent studies have reported different frequencies. Akin S et al (4) reported in community-dwelling Turkish elderly a prevalence of frailty, pre-frailty and non-frailty measured with the modified Fried Frailty Index as 27.8, 34.8, and 37.4 %, respectively and 10, 45.6, and 44.4 % with FRAIL scale. Eyigör et al. (5) found 39.2 and 43.3 % of patients attending outpatient clinics of 13 university and training hospitals as frail and pre-frail, respectively. Çakmur H (6) reported in a rural city sample from East Turkey 7.1% frail and 47.3% pre-frail according to Fried Frailty criteria.

Frailty is a difficult process, which affects the patient and the caregivers. Conditions, which develop with aging and disability are a burden to the person and their family. Preventive measures have been recommended in the past to overcome this problem (3). Proper and early intervention might ameliorate the outcomes of this problem, which is proven by evidence (3).

The identification of frailty is important and family practice plays a central role. The family physician can deliver an holistic approach to manage frailty. Low-resourced settings and places with accessibility problems might especially benefit from this (7,8), but established well-developed health care systems also could profit from a person-centred approach.

The detection of frailty could follow an opportunistic pathway, where formal and informal health care and social service professionals could be useful. Further services of professionals, who are not especially trained for this risk group (midwives, mother and child care nurses) could be utilised for this purpose (3). The information retrieved from the caregiver might be an important source for early identification of these patients, who are in need of help and support. A patient-centred approach focusing on self-perceived care needs is a relatively unknown approach of needs assessment in frail elderly. It is as important as the geriatric assessment (9,10).

So far, we are not aware of any study, which is evaluating the contribution of caregivers for the identification of the frail person at home.

This study aims, to investigate by asking attendants to a family practice, the SARC-F scores of frail people at home and the opinion of caregivers on the care of the frail.

Materials and Methods

Research design: This cross-sectional study included 1,016 patients, who consecutively visited a family practice outpatient clinic in Antalya, Turkey and who voluntarily participated in this study. The study took place between March-October 2015. The participants had educational level of at least primary school level.

The questionnaire had two steps. Firstly all participants were asked if they had a frail person at home for whom they were in charge of. The definition of frailty was made according to the definition stated in the document (Frailty is a multidimensional geriatric syndrome characterized by increased vulnerability to stressors as a result of reduced capacity of different physiological systems. It has been associated with an increased risk of adverse health-related outcomes in older persons, including falls, disability, hospitalizations and mortality, and has further been associated with biological abnormalities (e.g. biomarkers of inflammation) regardless of the definition used to assess frailty. This clearly suggests that frailty is influenced by a number of pathophysiological modifications involving the body's diverse physiological systems. <http://www.frailty.net/frailty-at-a-glance>) (11). The participants gave verbal consent.

Instrument development: The questionnaire was developed as follows: Firstly, the literature (1,2,12,13) and short frailty questionnaires (i.e. SARC-F) were evaluated (14). The draft questionnaire was evaluated by independent experts from family practice with a special interest in elderly care and frailty and afterwards pilot-tested with a total of ten patients. The pilot survey was excluded from the final database. This process enabled refined and improved items with clarity in the wording of the survey.

The survey had the following sections:

a. Demographics: 2 open-ended (i.e. age of the participant and frail elder) and 7 closed-ended questions (i.e. gender, marital status, frail elder at home; age, drugs, polypharmacy, and disease of the frail elder);

b. SARC-F items (15,16,17): Strength, assistance walking, rise from a chair, climb stairs, and falls are included in the SARC-F items. Scores range from 0-10. Each item counts for 0-2 points. Total score ranges are between 0 = best to 10 = worst. Outcome of total score was dichotomized to symptomatic (frail) (4+) and healthy (0-3) status. In this study the caregiver was asked "how much difficulty (the older person at home) had lifting or carrying 5 kg" (0 = no difficulty, 1=some, and 2 = a lot or unable to do); "how much difficulty (the older person at home) had walking across a room" (0 = no difficulty, 1=some difficulty, and 2 = a lot of difficulty, use aids, or unable to do without personal help); "how much difficulty (the older person at home) had transferring from a chair or bed" (whether they used aids or needed help to do this) (0 = no difficulty, 1=some difficulty, and 2 = a lot of difficulty, use aids, or unable to do without help); "how much difficulty they had climbing a flight of 10 steps" (0 = no difficulty, 1=some, and 2 = a lot or unable to do), and falls was scored a 2 for respondents who reported falling four or more times in the past year, 1 for respondents who reported falling 1-3 times in the past year, and 0 for those reporting no falls in the past year.

c. Attitudes and Perception on the Care of their Frail Elder:

Participants were asked to rate the following questions on a five-point Likert scale (strongly disagree to strongly agree, scored from "1" to "5"): "I feel competent in caring for my frail elder", "I would follow the treatment recommendations of my frail patient", "I would seek appropriate support for my frail elder", "Immobile, frail elder need home health services", "The family plays an important role in the early diagnosis of frailty",

"Mobile technologies play an important role in the care of frail elders", and "Family members play an important role in the care of frail elders".

Statistical analysis: Data of this study were analysed with descriptive statistics; chi-square for categorical variables and Spearman's rho correlation. The level of significance was set at $\alpha=0.05$.

Results

The age of caregivers of frail people were 52.1 (SD=12.66; min-max=19-83; n=1016). Most were women (N=762; 74.9%; men n=256; 25.1%) and married (n=722; 75.1%; divorced/widowed, n=165; 17.2%; single, n=74; 7.7%; missing value, n=57, 5.6%). One hundred and sixty nine (16.8%; n=14 missing values, 1.4%) patients indicated to have a frail person at home.

The age was 78.2 (SD=8.21; min-max=55-98; n=170). Most were women (n=124; 75.6%; male, N=40; 24.4%; n=854, 83.9 missing values). Disease of the frail elderly is shown in Table 1 (median= 1 disease; min-max=0-4).

Table 1

Disease	n
Hypertension	127
Hyperlipidemia	72
Osteoporosis	69
Diabetes	67
Sleep Disorders	51
Cataract	43
Congestive Heart Failure	42
Cognitive Impairment	40
CAD	37
Depression	34
Arthritis	34
COPD	27
Cerebrovascular Disease	20
Thyroid Disease	17
Cancer	17
Dysrhythmia	10
Glaucoma	9
Hearing Impairment	6
Parkinson	5
Atrial Fibrillation	4
Epilepsy	4
Other	34

Most frail persons (84%) used more than four drugs a day. The drugs used by the frail patient are shown in Table 2 (median 6 drugs; min-max=0-14). One hundred and twenty nine (75%) patients used four and more drugs.

Table 2

Drugs	n
Analgesics	135
Antihypertensives	110
Oral Antiaggregants	99
Vitamin B12	75
Heart Drugs	66
Antidiabetics	51
Osteoporosis	42
Antihyperlipidemics	39
Constipation	39
Stomach Drugs	33
Antidepressants	30
Urinary Incontinence	28
Antiarrhythmics	25
Insulin	22
Vitamin D	20
Antidementia Drugs	22
Asthma Drugs	12
Neuropathic Pain Drugs	12
COPD Drugs/ Bronchodilators	8
Eye Drugs	7
BPH Drug	6
Antiepileptics	5
Warfarin	5
Antiparkinson	4
Other	29

Sarc-F Total Score was found to be 5.2 (median=5; SD=1.1; min-max=3-8; n=125) (Figure 1). The frequency distribution of the SARC-F values of frail people are shown in Figure 2 (SARC-F Score $\geq 4=99.8\%$; 4-6=85.2%). SARC-F ≥ 4 was prevalent in 123 elderly, which was 12.1% of all participants in this study.

The attitudes of caregivers of frail people are shown in Figure 3 (page 8).

The gender of the participants showed no difference between their age, their frail elders' age and SARC-F total score ($p>0.05$). The gender and the number of medicaments used did not have an effect on the SARC-F total score ($p>0.05$).

Total SARC-F score correlated at medium level with the falls item ($r=0.70, p<0.05$), walking item ($r=0.46, p<0.05$), transfer item ($r=0.44, p<0.05$), and stairs item ($r=0.66, p<0.05$).

Attitude of competency to provide care item, correlated at medium level with following treatment recommendation item ($r=0.49, p<0.05$), at low level with seeking appropriate care item ($r=0.33, p<0.05$), and at low level with family members play important role item ($r=0.17, p<0.05$); following treatment recommendation item showed medium level correlation with seeking appropriate care item ($r=0.51, p<0.05$), and low level with the role of mobile technology item ($r=0.21, p<0.05$); the seeking appropriate care item showed low level correlation with the early diagnosis item ($r=0.19, p<0.05$) and with the role of mobile technology item ($r=0.22, p<0.05$); the home health care item showed low level correlation with role of mobile technology item ($r=0.25, p<0.05$); the early diagnosis item showed low level correlation with role of mobile technology item ($r=0.23, p<0.05$) and the important contribution of the family item ($r=0.32, p<0.05$).

The falls item of SARC-F showed low-medium level correlation with the competency to provide care item ($r=0.34, p<0.05$); the power item of SARC-F showed low level correlation with the competency to provide care item ($r=0.18, p<0.05$); total SARC-F score correlated at low-medium level with the competency to provide care item ($r=0.31, p<0.05$) and low level with the following treatment recommendation item ($r=0.18, p<0.05$).

Figure 1: Frequency of Total SARC-F Values

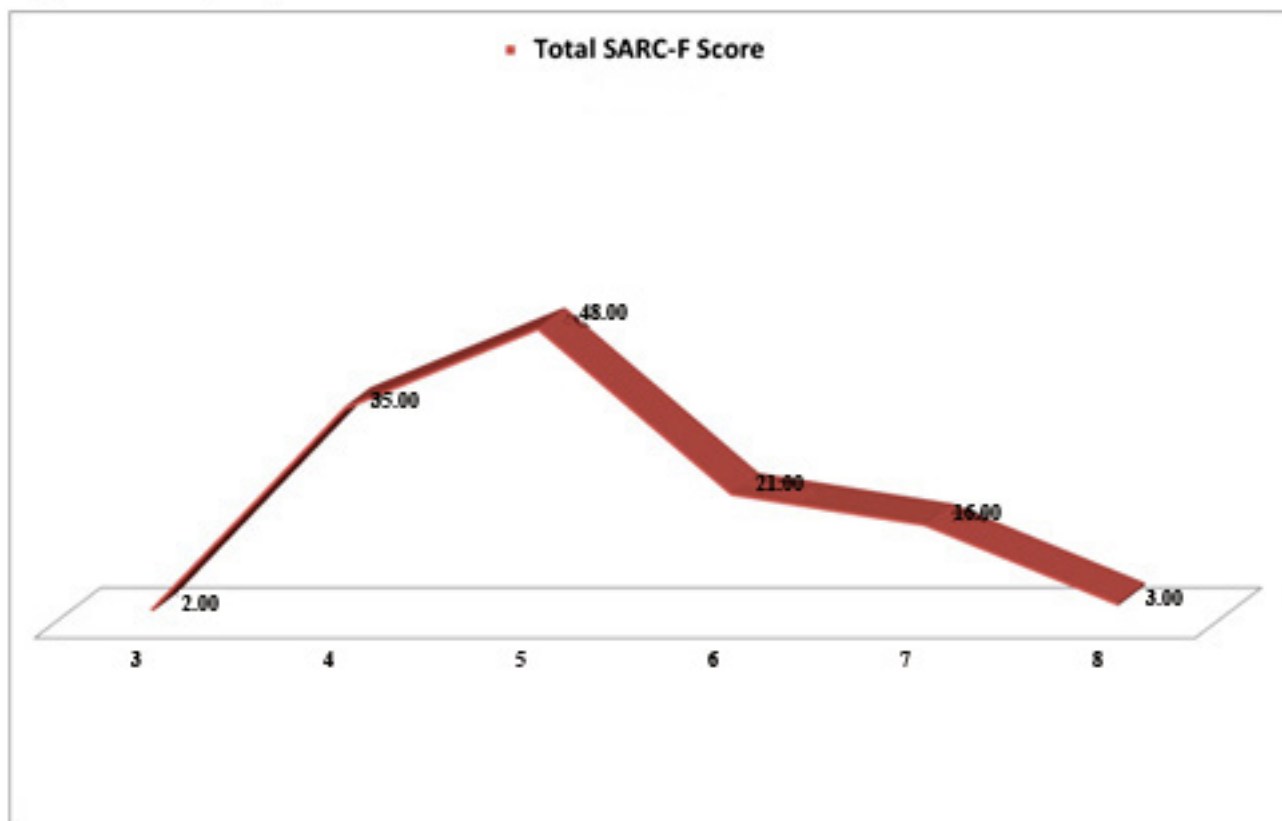


Figure 2: SARC-F Values of the frail elder

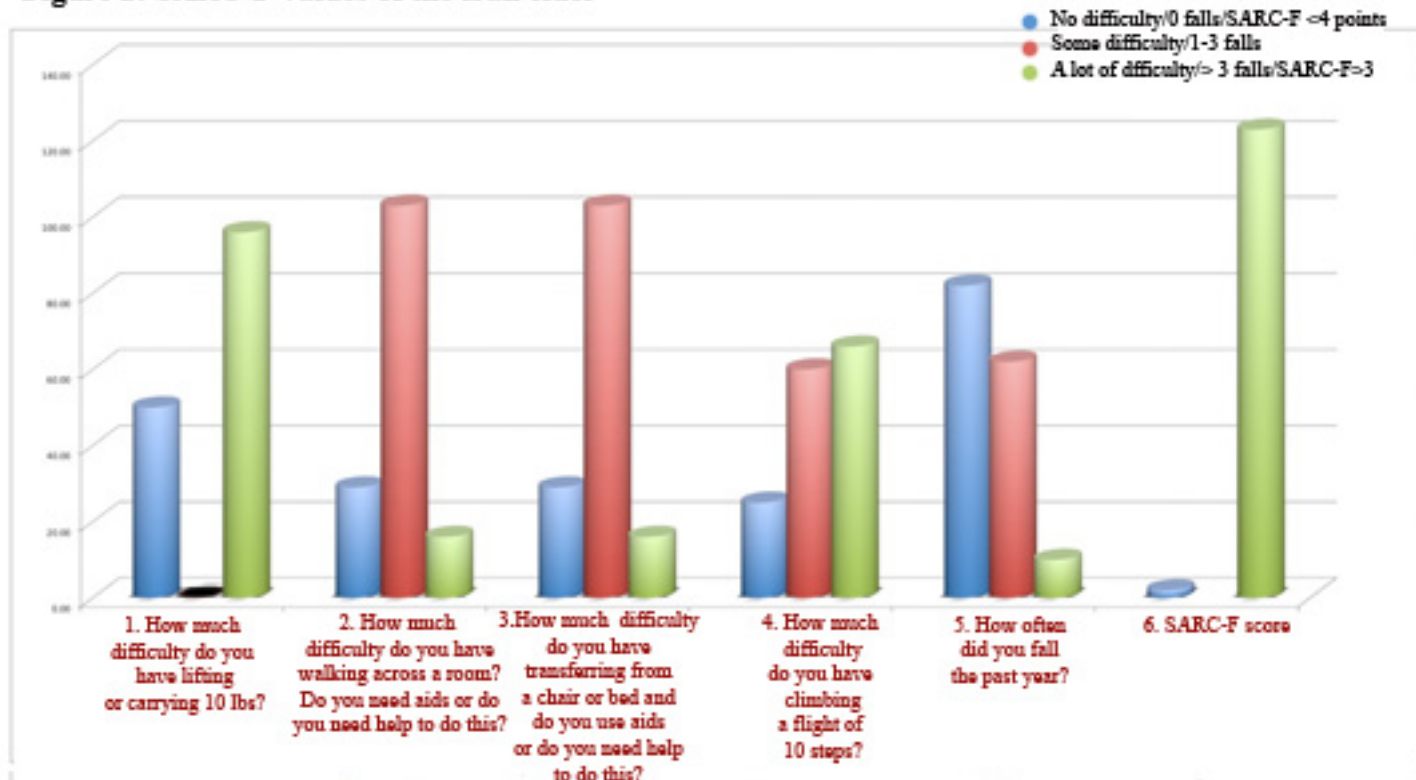
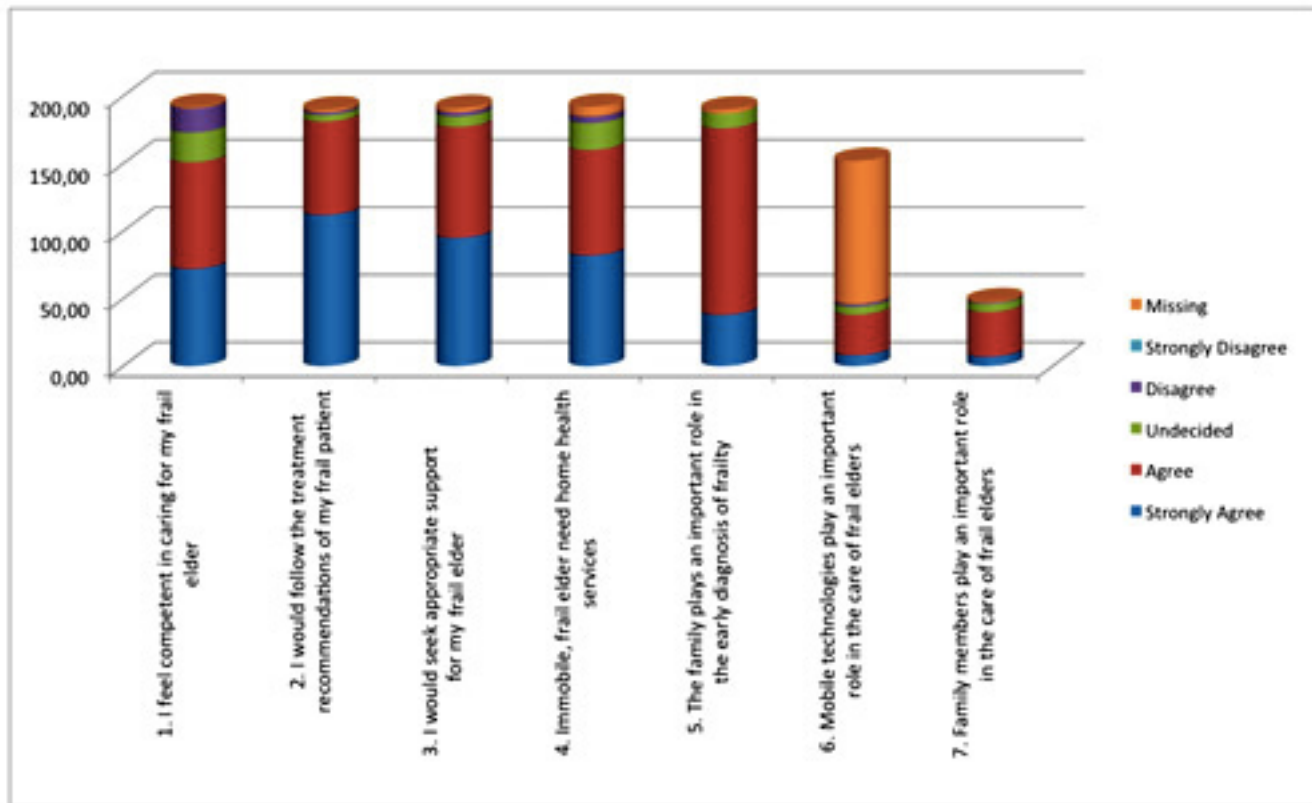


Figure 3: Attitudes of caregivers of frail patients



Discussion

This study showed that the majority of frail people at home were suffering from at least one (0-4) chronic condition and 75% used more than four drugs (polypharmacy). According to SARC-F evaluation most were at pre-frail level. The domains on upper extremity strength and climbing stairs were the weakest, which could be improved with exercise. Short distance walking, transfers and falls were better. Participants were in agreement with the statement “I feel competent in caring for my frail elder”, “I would follow the treatment recommendations of my frail patient”, “I would seek appropriate support for my frail elder”, “Immobile, frail elder need home health services”, “The family plays an important role in the early diagnosis of frailty”, “Mobile technologies play an important role in the care of frail elders”, and “Family members play an important role in the care of frail elders”. Participation in the last two items was low.

The multi-morbidity of our patients in the study was not high. Cesari et al. report that multimorbidity might show a moderating effect on related health-care utilisation, than patients who are not diagnosed with multimorbid conditions (1). In this case, patients without multi-morbidity might be at risk of being undetected for frailty condition. But even if the patient is having a disability or comorbid condition the diagnosis of frailty does not take this into consideration. The more the number of chronic conditions the higher the risk of frailty has been observed (18). Heart failure, COPD, chronic kidney disease, urinary incontinence, and cognitive impairment might present higher prevalence of frailty (19).

But the relation of frailty to aging and chronic conditions is not clear (18).

According to SARC-F evaluation most were at pre-frail level. SARC-F has been shown to be a good predictor of poor muscle function, which has a good correlation with knee strength and grip strength. It also shows good correlation with FRAIL scale, which is a self-administered tool (17). In our study, the domains on upper extremity strength and climbing stairs were the weakest, which could be improved with exercise. Short distance walking, transfers and falls were better.

Our study showed a predominance of women with frailty, but this observation did not reveal any significant difference concerning SARC-F score, therefore indication that the level of frailty was equal in both genders. A higher prevalence of frailty in women has been also observed in the literature (1,19).

Most frail people at home were at pre-frail level (SARC-F Score 4-6=85.2%). In a study, which performed home care assessments 21.3% were found prefrail and 26.9% frail (20).

Caregivers were confident, compliant and empowered concerning the care for their patients. They are aware of home health care services and would also apply for these. Another study reported that caregivers, who cared for the frail were more prone to leave, but caring for pre-frail patients did not provoke this feeling (20), which is supported in our findings.

The determination of care needs of frail people is recommended due to its potential to improve the care of this risk group. The evaluation of self-perceived health needs might be a good starting point (21). The results of our study also provided valuable

information on the situation of patients, who cared for their frail elders at home. These findings have in our opinion two important implications. There is a potential need for interventions to prevent frailty in elderly people at home and a need to follow-up the health and burden of caregivers. Both approaches certainly exceed the capacity of family practice. These need to be managed by a multi-disciplinary healthcare and rehabilitation team, where the family physician should be a member. The family physician and his team could contribute to the management of this problem by screening caregivers, healthy (13,22), and possible frail elders, performing home visits, training caregivers concerning warning signs of frailty, and empowering elderly people concerning their own health (1,23).

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