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The Impact of Fear of Falling (FOF) on the Quality of Life of the Elderly: A Cross-Sectional Clinical Study in a Regional Health Center

Manolis Mentis[1], Eleftheria Zervakis[2], Eleni Mavroeidi[1] and Georgia Konstantopoulou[1*]

[1]*Department of Education and Social Work, School of Humanities and Social Sciences, University of Patras, Greece*

[2]*Moira Health Center, Heraklion Crete, Greece*

***Correspondence author**
Georgia Konstantopoulou
Clinical Psychologist
Department of Education and Social Work
School of Humanities and Social Sciences
University of Patras
Greece

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Abstract

As life expectancy around the world has been steadily increasing, the geriatric syndrome of Frailty and Fear of Falling (FOF) have emerged as key factors correlating with the physical and mental health of the elderly as well as their quality of life. A number of studies have revealed that gender, age, chronic diseases, polypharmacy, family status, educational level, occupation and comorbidity are domains closely linked to frailty and the feeling of fear of falling, while aging-associated decline and psychosocial factors such as depression, stressful events and anxiety adversely affect the ability of seniors to perform their daily activities. This study investigates how the fear of falling affects the quality of life of the elderly who receive health care services at the Moira Health Centre in Heraklion, Crete, and how FOF correlates with frailty and other biopsychosocial factors. In response to the increasing number of publications on FOF and frailty among the elderly, the evidence-based information of the study attempts to provide useful knowledge regarding the optimal management of the physical and psychosocial needs of the elderly and facilitate the investigative efforts for an active and healthy ageing process.

Keywords: fear of falling (FOF), frailty, elderly, age, quality of life, FES-I, Simple Frail Questionnaire, WHOQOL-BREF

Introduction

The concept of aging is characterized by the gradual and irreversible change that the structure and function of the human body undergoes over time, whereas the aging process differs between people and populations. While the onset of aging is not characterized by biological criteria but is based on the values and standards of each society (Marmaras & Kentrou, 2011), the fact that the population is aging is undeniable. In particular, according to the (United Nations, 2009), for the first time in the history of mankind, the elderly will outnumber the young. Age is also an essential factor in the occurrence of many diseases, such as cancer, cardiovascular diseases, diabetes II, dementia, etc. (McHugh & Gil, 2018). Indeed, there are elderly who experience healthy aging; however, the majority suffer from chronic diseases which render them non-functional, thus affecting their well-being. One of the biggest challenges of the scientific community is dealing with frailty and multimorbidity, which constitute the main consequences of aging in terms of health (Anastasiadou, 2015; Gouvas et al., 2018).

Frailty is an emerging geriatric syndrome associated with the effects of normal aging. The first scientific report of frailty dates back to 1978 in the USA, when it was described as a specific population group, usually over 75 years of age, who due to their multimorbidity were not able to cope with their daily activities and as a result sought support services and health care (Gobbens, 2010). Frailty is defined as a clinical syndrome of increased vulnerability resulting from intense stress, which leads to a decline in physiological reserves, multisystem disorder and reduced ability to maintain the homeostasis of the human body (Gale et al., 2018). Also, the World Health Organization (World Health Organization [WHO], 2017), defines frailty as "*a clinically recognized age-related condition that results in multisystem dysfunction and progressive decline in a person's physiological functions, resulting in a reduced response of the body in various stressful situations*". The identification of the frailty syndrome is based on apparent characteristics (Frailty Phenotype, FP), as proposed by Fried and his team (2001), which are based on the following predefined criteria (Fried et al., 2001):

1. Limited physical activity
2. Slowness (assessed by walking speed)
3. Self-reported exhaustion
4. Weakness (assessed by grip strength, which should be at least 20%)
5. Involuntary weight loss (>5% of weight over a year).

Pursuing this further, a frequent and threatening condition affecting the elderly is falls and the fear of them. Fear of falling (FOF) is the most common public health problem, which can lead to loss of confidence, reducing physical and social activities, depression, loss of mobility, increased risk of falls, physical weakness, and a strong negative impact on the quality of life of the elderly (Birhanie, et al., 2021). A fall is defined as the event in which a person unintentionally lands on the ground or other lower surface with or without injury. A fall can also occur due to loss of consciousness, application of violence, epileptic seizures or sudden onset of paralysis (Dionyssiotis, 2012). Clearly, different environments particularly influence our exposure to health risks (i.e. air pollution, violence), our behavior, our access to services (i.e., health and social care) and the benefits of aging. (Marmaras & Kentrou, 2011). In this respect, a fall, in addition to the adverse effects on the physical health of the elderly, also has a strong impact on their psychological health and social sphere (Dionyssiotis, 2012).

Fear of Falling (FOF) is defined as the feeling of constant worry about an impending fall, which results in a person avoiding to perform even the normal daily activities. Fear of falling has been found to lead to more falls, while it has also been linked to gait altering, reduced mobility, increased frailty, social isolation and mortality. (Auais et al., 2017). Since the beginning of the investigation of the fear of falling, various definitions have been given. Originally fear of falling was described as "post-fall syndrome" and was called "ptophobia". However, subsequent studies found that several older people who had not experienced a fall also displayed a fear of falling (Chang et al., 2016). (Murphy & Isaacs, 1982) were the first to define the post-fall syndrome. They indicated that after a fall, a part of the senior population shows intense fear and anxiety, which affects their ability to walk. In addition, fear of falling is associated with poor quality of life, change in behavior and depression, which affect the health prognosis, i.e., poor cooperation in rehabilitation (Adamczewska & Nyman, 2018).

Nowadays however, fear is not recognized as a post-fall syndrome and the focus is on both fear itself and efficacy, as according to Bandura (1977, op. cit. in Schoene et al., 2019), the loss of confidence to perform certain daily activities is a measure of assessment between efficacy and decline (Schoene et al., 2019). Studies have shown that 3%-92% of community-dwelling seniors have experienced some degree of fear of falling. Also, the prevalence of fear of falling in people who have not experienced a fall is over 50%, while it affects 1/3 of patients who are hospitalized due to a fall (Schoene et al., 2019).

Clearly, every fall episode directly threatens the physical and mental integrity of the elderly patient, since as mentioned above, it causes a variety of injuries, with temporary or permanent limitation of mobility, mental trauma or even death. The negative feelings experienced by the elderly, especially those who have suffered a fall episode, are intense, affecting their daily life and consequently their quality of life. In this respect, the fear of a possible fall magnifies, resulting to increased anxiety and it has a negative impact on the completion of daily activities. Activity limitation has been shown to be a distinct risk factor for falls because it can lead to muscle weakness, balance impairment, decay and social isolation. The purpose of the present study was to investigate the effect of the fear of falling on elderly recipients who received health services at the Moira Health Center in Heraklion. The basic research hypothesis was that the fear of falling negatively affects the quality of life of the elderly. The following were the individual research questions of the study: What is the epidemiological profile of the senior recipients of health services at the Moira Heraklion Health Center from the perspective of chronic diseases? Does having a history of falls and fractures affect fear of falling? What is the impact of frailty on the fear of falling and the quality of life of the elderly?

Methods

The present research is a quantitative study, in which 200 people participated from the wider area of the municipality of Phaistos-Mira, Heraklion, Crete, with a permanent population of 24,466 people (according to the 2011 census). The sample concerned people over 65 years of age and the participants were selected with the method of random sampling upon their arrival at the Moira health center, as this method increases the validity of our research. The research was carried out between August - November 2020. Each participant, after being informed about the purposes and process of the research, consented by answering the respective questions. Those who refused or were unable to complete the questionnaires were not included in the research process. People under the age of 65 and people with serious psychiatric or mental health problems were excluded from the sample. The questionnaires were completed either by the individuals themselves or by the researchers.

This study was approved by the 7th Ministry of Health of Crete, as part of a postgraduate thesis (55681/1-12-2020). The participants were verbally informed in order to ensure absolute anonymity and confidentiality, while the results obtained will be used exclusively for research purposes without any reference to personal data. In addition, the subjects were informed that the process is voluntary, without any commitments and with the possibility of canceling their participation at any time. Those who consented signed the relevant declaration of consent.

Research Limitations

The present study has some limitations that should be noted. One of the limitations was COVID-19. Given the recent pandemic, it was difficult to collect a sample. Secondly, it is worth noting that under different circumstances the sample could have been larger. Nevertheless, the research was conducted in a non-urban area of Heraklion, Crete, where no similar study had been carried out before, while the homogeneity of the population there allowed us to draw safe conclusions.

Instruments

The following questionnaires were used to collect the research data:

1. Questionnaire regarding the demographic data of the participants, including co-morbidities, medication, and self-assessment of their physical and mental health.
2. "The Simple Frail" questionnaire Screening Tool, to investigate frailty (Morley et al., 2012).
3. The FES-I (The Falls efficacy Scale International) questionnaire (Yardley et al., 2005) to assess the fear of falling.
4. The WHOQOL-BREF questionnaire, which assesses the quality of life (Whoqol Group, 1998).

The "The Simple "FRAIL" questionnaire Screening Tool assesses the five domains of: Fatigue, Resistance, Ambulation, Illnesses, and Loss of weight (FRAIL acronym) (Morley et al., 2012). In this regard, specific adapted questions were used to measure each of the five domains and assign scores for each item. The Falls Efficacy Scale International (FES-I) (Yardley et al., 2005) which was validated by the Prevention of Falls Network Europe (ProFaNE), measures the concerns about falling. In the current study, the FES-I Greek translation was used (Billis et al., 2011) containing items about the concern of a possible fall during daily activities such as: Am I concerned "when I clean the house?", "when I prepare a meal?", "when I get dressed?" etc. The FES-I self-report questionnaire contained 16 items scored on a four-point scale (1= not at all concerned, 2= a little concerned, 3= quite concerned, 4 = very concerned) and it was used to provide information on the level of concern about falls regarding a wide range of daily activities.

The WHOQOL-BREF questionnaire is an abbreviated generic Quality of Life Scale developed by the World Health Organization (Whoqol Group, 1998). It is composed of various domains, including physical, psychological, social, family and environmental domains. The WHOQOL-BREF scale was originally composed of 30 questions with 4 subscales for physical and mental health, social relationships, environment and level of independence measuring each item on a Likert scale of 1 to 5 (1= never, 5 = always). For the domain of physical health, the questionnaire included items concerning sleep, mobility, functional capacity, pain and the daily activities of the participants during the past couple of weeks prior to the time of completing the questionnaire. The scale used in the present study was the adapted Greek version by (Ginieri-Coccossis et al., 2009) which contains 4 additional questions in the domains of nutrition, job satisfaction, family and social life, in order to be better adapted to the Greek cultural environment and maintain its validity. (Ginieri-Coccossis et al., 2012). The internal consistency was accepted with values Cronbach's alpha 0,65, 0,77, 0,52 and 0,79 for physical health, mental health, social relationships and healthy environment respectively. In particular, higher scores in the scale indicate a higher quality of life (Ginieri-Coccossis et al., 2009), which is linked to both physical and mental health as well as social networks.

Statistical Analysis

The analysis was done using the IBM SPSS 26.0 program. This was followed by frequency estimates of descriptive characteristics or health characteristics of the study participants. To compare frequency distributions, the 95% confidence intervals (95%CI) were calculated respectively with bootstrap techniques or the $\chi 2$ test on the homogeneity of percentage distribution. Cronbach or Kuder-Richardson reliability coefficients (binary scales) were estimated. The 5 components of the WHOQOL quality of life scale were tested against each other using the Friedman method. Following the Pearson parametric method was used to make a univariate correlation among the Frailty, Fear of Falling & Quality of Life scales of the study participants and among the characteristics of the participants. Finally, the dependence of the quality-of-life components on the levels of the Frailty and Fear of Fall assessment scales of the participants and their special characteristics, were tested on a multivariate level through hierarchical multiple linear regression models. An acceptable level of significance was set at 0.05.

Results

The average age of the 200 participating senior visitors from the Moira Health Centre was around 75.5 years (±7.2) of age. 29.5% of the study objects were 80+ years old, while 59.5% of them were women. Around three quarters of the senior participants (72.5%) were married and the majority of them had children (95.0%), with 15.3% having 4+. Regarding their education, 70.0% reported having attended school, while concerning their past employment, approximately one out of two (42.0%) performed manual labor (i.e. Farmer, Livestock Breeder, Laborer, Builder, Cleaner). About two thirds (2/3 or 67.5%) reported earning sufficient income to cover their needs, while 79.0% reported the wider area of Phaistos Municipality as their place of residence. 182 of the participants (91.0%) had at least one chronic disease, with arterial hypertension (AH) showing the highest frequency of 72.0%, followed by diabetes mellitus (DM) or dyslipidemia (together with hypercholesterolemia) at a lower frequency of 24.7% and 22.0% respectively. Out of the 182 participants with chronic diseases, 98.9% stated that they receive medication. The average duration of chronic diseases was found to be 15.2 years. The median number of medications taken by the participants was 3 (half of the participants), while around 34.6% of those taking medication took 5+ medicine (polypharmacy). Regarding their self-rated health on a scale of 1-10 where 10 is excellent health, a significantly higher mean score was attributed to mental health than physical health (7.0 vs. 6.5, $p<0.001$).

The frailty assessment of the participants was determined by the scale "The Simple "FRAIL" questionnaire Screening Tool" which includes 5 related questions. The percentage of participants who stated that they feel tired (68.5%) was significantly higher (95%CI 62.5-74.5) than the percentage of seniors who reported that they could not walk a block (65.5%, 95%CI 58.5-72 ,0), or that they have no more than 5 diseases (90.0%, 95%CI 85.5-94.0) or no weight loss (87.0%, 95%CI 82.0-91.5) . The "Falls Efficacy Scale-I" scale, which includes 16 items/questions, was also used in the evaluation of the participants' Fear of Falling. In the majority of items (13 items), a significant difference in response distributions was observed ($p<0.005$).

The participants' quality of life was also assessed through 26 questions of the "WHOQOL-BRIEF" scale. A significant difference in responses was observed in all questions ($p<0.05$). Concerning the assessment levels of Frailty, Fear of Falling & Quality of Life Scales of the participants, a good consistency of responses was found in most of them, as the reliability coefficients were estimated at high levels (>0.700), with the exception of the Frailty Scale with R=0.668 and the social relationships in the quality of life found with α=0.602 (poor to excellent/excellent-good). In all scales, a higher score determines respectively higher levels of Frailty, Anxiety or Fear of falling & Quality of life. In the Frailty Scale a median score of 2.0 was estimated (half of the participants), while according to its categorical classification 23.0% were healthy, 49.0% were in a pre-frail state and 28.0% were in a state of frailty. From the Fear Scale, it is estimated that only 11.1% have a low concern about falling, 21.2% moderate and almost 2/3 (67.7%) of the participants have a high concern. The WHOQOL Quality of Life Scale is determined by five components, physical health, mental health, social relationships, environment and overall quality of life / general health. Among them, overall quality of life / general health has a significantly higher score or overall expression of quality of life compared to a lower score in social relationships (14.5 vs. 13.1, $p<0.001$).

Frailty	**Frailty**	**Fear of Falling (FOF)**	**Quality of Life**
		r – Pearson	
Physical Health	-0,583*	-0,495*	
Mental Health	-0,478*	-0,343*	0,768*
Social Relationships	-0,271*	-0,222*	0,543* 0,626*
Environment	-0,373*	-0,388*	0,697* 0,763*	0,593*
Overall Quality of Life/General Health	-0,454*	-0,426*	0,727* 0,733*	0,480* 0,650*

(* $p<0.001$)

Table 1: Correlation of scales for the assessment of Frailty, Fear of Falling and Quality of Life.

The frailty score appears to have a significant association with a parallel increase in the corresponding Fear of Falling ($r=0.375$, $p<0.001$) and a decrease in all five components of quality of life ($p<0.001$) (table 1), with the highest negative correlation being with physical health ($r=-0.583$, $p<0.001$). Similarly, the Fear of Falling score was significantly associated with a decrease in all five components of quality of life ($p<0.001$). All components of quality of life are also significantly related, demonstrating high convergent validity ($p<0.001$). Regarding the particular characteristics of the participants, however, it is found that older ages ($r=0.312$, $p<0.05$), participants whose marital status is "single, divorced or widowed" ($r=0.158$) are significantly associated with increased levels of Frailty, $p<0.05$), with a lower educational level ($r=-0.201$, $p<0.05$) or with comorbidity ($r=0.261$, $p<0.05$). Female gender ($r=0.158$, $p<0.05$), older ages ($r=0.245$, $p<0.05$), the number of children ($r=0.158$, $p<0$) are significantly related to increased levels of Fear of Falling .05) or the lowest educational level ($r=-0.235$, $p<0.05$). Regarding the quality-of-life components, their lower score (and therefore lower quality of life) seems to be related to older ages ($p<0.05$), marital status as "single, divorced or widowed" ($p<0$ .05), the lowest educational level ($p<0.05$), insufficient income ($p<0.05$) and their comorbidity ($p<0.05$).

Physical Health Mental Health

1st model	2nd model	2nd model	2nd model	
Prognostic Factors		standardized beta		
Gender (1: men, 2:women)	-0,092	0,009	-0,097	-0,034
Age (years)	0,346*	-0,161*	-0,211*	-0,090
Family Status. (1: married, 2:single/ divorced /widowed)	-0,075	-0,070	-0,137*	-0,128*
Education(1: yes, 2: no) (1: elementary school, 2:middleschool, 3: highschool 4. post-highschool, 5: University-College)	0,104	-0,002	0,202*	0,132*
Sufficient income	-0,237*	-0,216*	-0,197*	-0,171*
Chronic Diseases (0: none, 1: one, 2: two, 3:three)	-0,238*	-0,164*	-0,310*	-0,252*
Frailty		-0,374*		-0,292*
Fear of Falling		-0,287*		-0,145*
R^2 adjusted	0,27	0,51	0,28	0,39

(* $p<0.001$)

Table 2: Hierarchical linear regression for the scales for physical and mental health in the quality of life, with the levels of scales for the assessment of Frailty and the Fear of Falling of the participants.

Tables 2 & 3 use hierarchical models to show the linear regression of the score levels of the Quality-of-Life components with the Frailty & Fear of Falling scales as well as with the particular characteristics of the participants. According to the 2nd regression model and using the specific characteristics with the Frailty & Fear scales as predictors, it is found that increased levels of Physical Health score are associated with lower levels of Frailty ($b=-0.374$, $p<0.05$) and Fear of Falling ($b=-0.374$, $p<0.05$) (table 15) or increased levels of Mental Health score are also associated with lower levels of Frailty ($b=-0.292$, $p<0.05$) and Fear of Falling ($b=-0.145$, $p<0.05$), increased levels of Social Relationships score are associated with lower levels of Frailty ($b=-0.180$, $p<0.05$) (table 2) or

increased levels of Environment score are associated with lower levels of Frailty (b=-0.219, p <0.05) and Fear of Falling (b=-0.242, p<0.05) and finally increased levels of Global Quality of Life / General Health scores are associated with lower levels of Frailty (b=-0.241, p<0.05) and Fear of falling (b=-0.268, p<0.05) (table 3). Practically speaking, their quality of life is directly related to the better state of frailty and the lower levels of fear they have of falling.

Social Relationships Environment

1st model	2nd model	2nd model	2nd model	
Prognostic Factors		standardized beta		
Gender (1: men, 2:women)	-0,026	0,015	0,014	0,088
Age (years)	-0,152	-0,074	-0,170*	-0,040
Family Status (1: Married 2: single/ divorced/ widowed	-0,201*	-0,197*	-0,142*	-0,143*
Education (1: elementary school, 2: middle school, 3: high school 4. post-high school studies, 5: University-College)	0,068	0,023	0,170*	0,096
Sufficient income (1: yes, 2:no)	-0,220*	-0,214*	-0,356*	-0,337*
Chronic Diseases (0: none, 1: one, 2: two, 3:three)	-0,077	-0,041	-0,146*	-0,103
Frailty		-0,180*		-0,219*
Fear of Falling		-0,101		-0,242*
R^2 adjusted	0,12	0,16	0,25	0,36

(*p<0.05)

Table 2: Hierarchical linear regression for the scales for social relationships and environment in the quality of life, with the levels of scales for the assessment of Frailty and the Fear of Falling of the participants.

Overall Quality of General Health

1st model	2nd model	
Prognostic Factors	standardized beta	
Gender (1: men, 2:women)	-0,043	0,039
Age (years)	-0,266*	-0,123*
Family Status (1: married 2:single/divorced / widowed)	-0,051	-0,053
Education (1: elementary school, 2: middle school, 3: high school 4. post-high school studies, 5: University-College)	0,140*	0,058
Sufficient income (1: yes, 2:no)	-0,218*	-0,196*
Chronic Diseases (0: none, 1: one, 2: two, 3:three)	-0,295*	-0,24
Frailty		-0,241*
Fear of Falling		-0,268*
R^2 adjusted	0,24	0,38

(* p<0.05)

Table 3: Hierarchical linear regression for the scale of overall quality of life/general health in the quality of life, with the levels of scales for the assessment of Frailty and the Fear of Falling of the participants.

Conclusion

The effect of both fear of falling and frailty on all domains of quality of life is significant. Specifically, the results of the regression analysis indicated that poor physical health negatively triggers frailty and fear of falling. On the contrary, a positive correlation was seen between mental health, social relationships, family, self-assessment of the overall quality of life and frailty, fear of falling and how it affects the quality of life of older people. The findings of the present research confirm that the fear of falling has been correctly identified as the strongest predictor of the first fall. According to (Cursio et al., 2020) and (Schoene et al., 2019), in the event that a person experiences any degree of fear of falling, regardless of whether they have suffered a fall or not, it constitutes a strong threat to their autonomy and consequently it negatively affects their quality of life. Clearly, the processing of the data revealed a high prevalence of fear of falling among the participants estimated at 67.7%, while 21.2% reported moderate anxiety. In the literature, this percentage varies between 3% and 92% (Adamczewska & Nyman, 2018; Chang et al., 2016; Cursio et al., 2020; Schoene et al., 2019), while in the present study this percentage may be justified by the fact that the elderly were active both in indoor and outdoor activities during the collection of the research data.

Pursuing this further, the findings of the studies by (Chang et al., 2016), (Drummond et al., 2020) and (Pirrie et al., 2020), corroborate the findings of the present study, with advanced age, gender, comorbidities, polypharmacy and family status being the indisputably determining factors for the onset of the fear of falling (Chang et al., 2016; Drummond et al., 2020; Pirrie et al., 2020). Regarding the gender factor, (Cursio et al., 2020), have found that the female gender is still a prevalent factor for FOF even among people who do not have significant limitations to their functional capacity. Their study also indicated low educational level as the second key precipitating factor after age. In addition, poor socioeconomic and educational status have been found to adversely affect an individual's health, as they are related to behavioral and environmental factors as well as untimely access to health services (Cursio et al., 2020). In this respect, the study of (Pirrie et al., 2020) indicated that low income brings about poor mental and physical health. People with financial constraints seek health care more often, have longer hospitalization time and their well-being is greatly affected after a fall episode (Pirrie et al., 2020). In the current research, most of the participants relied financially on their family, especially on their children (63.1%) for any occasion that needs medical attention. This result is probably justified by the fact that in Greece, the stereotypical and moral perception of intense intergenerational solidarity continues to exist, as the norms of the family institution include the obligation of its members (usually women - children) to provide care to the weakest individuals (Brendas & Robolas, 2019). Similar findings were also present in a previous study by (Dierking et al., 2016) among senior citizens in Mexico. The study showed the importance of social support (family- friends) and its impact on the physical and mental health of the individual which influence the individual's quality of life (Dierking et al., 2016).

Regarding the chronic diseases of the participants in the current study, it was found that 70.5% had two to three years of disease. Out of the 70.5%, 34.6% received 5+ medications per day. This result is comparable to the studies of Patisteas and (Androutsopoulou-Lytra, 2007), (Keramiotou, 2009); (Drummond et al., 2020). The existence of comorbidity shows an increasing trend with age, and according to (Immonen et al., 2020), people with more than 5 chronic diseases together with the fact of the combination of diseases itself increase the risk of repeated falls. For example, the coexistence of certain chronic diseases including AD, DM, stroke, COPD, COPD, depression, etc., interact and lead to an increased risk of falls (Immonen et al., 2020). Clearly, as the geriatric population grows worldwide, so does polypharmacy. A natural consequence of multimorbidity is the multiple use of drugs, which, while it brings significant benefits, it negatively affects the elderly by causing unpleasant instances such as frequent falls, hospitalizations, frailty, and cognitive disorders (Ong et al., 2017). However, as Lekan, Collins and Hayajneh (2021) indicate in their study, not all seniors with comorbidity and chronic diseases experience frailty, which is also present in younger people, while the loose correlation between chronologic and biological age may render age a less reliable indicator for frailty (Lekan et al., 2021).

Concerning the assessment of fear of falling in relation to the FES -I scale, the findings of the study showed strong fear when subjects were exposed to specific circumstances. More specifically, walking on a slippery surface (53%), on uneven ground (40.9%) and using stairs (26.8%) were evaluated as the main fears of the present sample and the triggering factors for falling which affected their quality of life. This finding was also found in previous studies (Lee et al., 2019; Pereira et al., 2017). According to (Kendhapedi & Devasenapathy, 2019) the fear of falling is closely linked to falls. Until now their relationship has not been fully clarified, however there is also a complex causal relationship with frailty. The explanation given by the above researchers lies in the fact that comorbidity in combination with polypharmacy causes anxiety and fear of falling which leads to a disturbance of the balance resulting in the fall. At the same time, they found that in frail people the fear of falling and the risk of falling is greater than in healthy people (1.8 times), thus recognizing frailty as a key trigger of future falls in the elderly (Kendhapedi & Devasenapathy, 2019).

In the present study it is clearly revealed that the majority of the senior participants (67.7%) strongly experienced the feeling of fear of falling regardless of a history in falls. Also, physical and mental health have a negative correlation with fear of falling, while increasing age, female sex, family status (especially the number of children) and low educational level are aggravating factors for the establishment of the fear of falling. To that end, the quality of life of the elderly who experience the fear of falling is adversely affected both by the possibility of a fall and by the performance of their daily activities. With regards to frailty as an emerging geriatric syndrome that most often remains undiagnosed, the present sample revealed that 49% of the participants fall into the category of pre-frailty, while 28% are in the frailty category. The domains associated with frailty are advanced age, living alone (due to loss of partner), low educational level, and comorbidities, while poor physical health is a predictor of frailty. Good mental health is positively associated with frailty, while the role of social relationships also seems to be related with frailty and, by extension, it seems to affect the quality of life. Subjective self-assessment of well-being and physical - mental health are valid indicators for determining a person's quality of life. We find that there is a two-way relationship between frailty and fear of falling, and that they both constitute significant predictors in all domains of the quality of life of the elderly (physical health, mental health, social relationships, environment, and overall quality), with physical health having the highest negative correlation.

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