ARAŞTIRMA MAKALESİ / *RESEARCH ARTICLE*

Effect of Sociodemographic Features, Hopelessness and Anxiety of Death on Frailty Levels of the Elderly: A Cross-sectional Study

Yaşlı Bireylerde Sosyodemografik Özellikler, Umutsuzluk ve Ölüm Kaygısının Kırılganlık Düzeylerine Etkisi: Kesitsel Bir Çalışma

Gonul Gokcay[1], Derya Simsekli[2]

[1]Kafkas University, Faculty of Health Sciences, Kars; [2]Ardahan University Health Services Vocational School, Ardahan, Türkiye

ABSTRACT

Objectives: *This research aims to investigate the effects of sociodemographic characteristics, hopelessness and anxiety about death of elderly individuals on frailty levels in elderly individuals.*

Materials and Methods: *A descriptive cross-sectional study was conducted with 402 elderly individuals between January and April 2023. Research data were collected using the Sociodemographic Features Form, the Beck Hopelessness Scale, the Templer Death Anxiety Scale, and the FRAIL Scale. The data were evaluated using the IBM Statistical Package for Social Sciences (SPSS) program version 26.*

Results: *79.6% of the participants were in the 65–74 age group; hopelessness, death anxiety, and frailty levels were 10.14±4.56, 9.17±2.84, and 0.92±0.87, respectively.*

Conclusion: *The study revealed that the hopelessness and anxiety levels of elderly individuals were at medium levels, and 60.7% of them were prefragile. When sociodemographic features were compared, frailty levels differed statistically significantly by family structure, educational status, employment status, income status, place of residence, and smoking status. It was found that hopelessness and chronic disease status significantly predicted frailty.*

Key words: *anxiety of death; elderly; frailty; hopelessness*

ÖZET

Amaç: *Bu araştırmanın amacı, yaşlı bireylerin sosyodemografik özelliklerinin, umutsuzluk ve ölüm kaygısının kırılganlık düzeyleri üzerindeki etkisini incelemektir.*

Materyal ve Metot: *Tanımlayıcı kesitsel tipte yapılan bu çalışma, Ocak-Nisan 2023 tarihleri arasında 402 yaşlı birey ile gerçekleştirilmiştir. Araştırma verileri Sosyodemografik Özellikler Formu, Beck Umutsuzluk Ölçeği, Templer Ölüm Kaygısı Ölçeği ve FRAIL Ölçeği kullanılarak toplanmıştır. Veriler IBM Sosyal Bilimlerde İstatistik Paket Programı (SPSS) sürüm 26 paket programı ile değerlendirilmiştir.*

Bulgular: *Katılımcıların %79,6'sı 65–74 yaş grubunda yer almaktadır. Katılımcıların umutsuzluk, ölüm kaygısı ve kırılganlık düzeyleri sırasıyla 10,14±4,56, 9,17±2,84 ve 0,92±0,87 olarak bulunmuştur.*

Sonuç: *Araştırma sonucunda yaşlı bireylerin umutsuzluk ve ölüm kaygısı düzeylerinin orta düzeyde olduğu ve %60,7'sinin prekırılgan olduğu belirlenmiştir. Yaşlı bireylerin kırılganlık düzeyleri, aile yapısı, eğitim durumu, çalışma durumu, gelir durumu, yaşadığı yer ve sigara kullanımı gibi sosyodemografik özelliklere göre istatistiksel olarak anlamlı farklılık göstermektedir. Umutsuzluk ve kronik hastalık durumunun kırılganlığı anlamlı olarak yordadığı saptanmıştır.*

Anahtar kelimeler: *kırılganlık; ölüm kaygısı; umutsuzluk; yaşlılık*

Introduction

Old age is one stage of human life. In this stage, individuals may encounter many physical, psychological and social problems. This situation is a result of the physical changes that occur with aging (1). These changes can affect the health status, quality of life and psychological well-being of the elderly. One common problem in old age is frailty. Geriatricians have generally defined frailty as increased vulnerability and reduced ability to maintain dynamic equilibrium (2). Frailty is the reduced capacity of older people to adapt physically or mentally to stressful situations. Frailty can lead to loss of independence, functional impairment, and increased susceptibility to illness and death. It has been reported that frailty in the elderly is not a single factor

İletişim/Contact: *Gönül Gökçay, Kafkas University, Faculty of Health Sciences, Kars, Türkiye* • ***Tel:*** *0544 791 55 49* •
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ORCID: *Gönül Gökçay: 0000-0003-0140-8668* • *Derya Şimşekli: 0000-0002-3904-951X*

but a combination of several factors that together produce negative health outcomes (2). Negative emotional states such as anxiety of death, hopelessness and depression may be more common in older people with high levels of frailty (3).

Death anxiety is a feeling that exists from birth, continues throughout life, underlies all fears, and develops after the person becomes aware that they will no longer exist, that they may lose themself and the world, and that they may become nothing (4). In old age, people evaluate their past, and this evaluation is linked to the meaning they give to their lives. Older individuals who accept their past and give it a positive meaning may be more resilient to the problems that come with aging. According to Erikson, if a person can achieve a sense of satisfaction from all their experiences, whether positive or negative, they achieve ego integrity and do not feel regret or anxiety about death (5). Hopelessness, on the other hand, refers to a person's negative thoughts and beliefs about themselves and their future. It has been stated that this feeling can be linked to the feeling of failure, which is more common in old age and can lead to depression and suicidal thoughts (6).

Frailty refers to a reduced ability to cope with adverse events and is closely associated with death anxiety and hopelessness. Fear and anxiety of death may be more pronounced in frail individuals due to increased feelings of powerlessness and loss of control. Likewise, hopelessness is linked to frailty, as individuals with low hope may struggle to maintain the perseverance needed to overcome difficulties, thereby increasing their vulnerability (7).

Fear and anxiety of death are also common in older people and are among the factors that increase frailty (8). The inevitability and uncertainty of death can cause people to find themselves in a situation they cannot manage. In this situation, people feel more vulnerable due to the fear and anxiety of death and try to control their lives more. Hopelessness can also increase frailty (9). Hopelessness is the mental state that people experience due to the uncertainty of their future, a feeling of hopelessness and helplessness. In this state, people feel more vulnerable because they may perceive they cannot control their lives due to uncertainty about their future (10). As the individual anxiously faces death, they may withdraw from life, weaken their social relationships, and experience psychological problems such as hopelessness and depression. For this reason, it is important to address the effects of individual factors, hopelessness and anxiety of death on the level of frailty in older individuals. Although there are studies in the literature that separately address the levels of hopelessness, fear of death, and frailty in elderly individuals (3,7), no study has been found that addresses the effects of hopelessness and fear of death on frailty.

This research aims to investigate the effects of sociodemographic characteristics, hopelessness and anxiety about death of elderly individuals on frailty levels in elderly individuals.

Research Questions

1. What are the levels of hopelessness, anxiety of death and frailty of the participants?
2. Do the frailty levels of the participants differ according to the sociodemographic features?
3. To what extent do hopelessness, death anxiety, and chronic illness predict frailty?

Materials and Methods

Type of Research

This research was conducted as a descriptive cross-sectional study.

Population and Sample of the Study

The population of the study will consist of 8 million 451 thousand 669 elderly individuals living in Türkiye (11) and the sample consists of individuals who agree to participate in the study. Data were collected between January 5 and April 5, 2023. The sample of the study consisted of 385 elderly individuals who voluntarily agreed to participate, obtained by calculating the sample size using a known descriptive population. The study was completed with 402 elderly individuals.

Data Collection Tools

Sociodemographic Features Form, Beck Hopelessness Scale, Templer Death Anxiety Scale and FRAIL scales were utilized as data collection tools. A convenience sampling method was used in the research, and data were collected online by sending the research link to elderly individuals via WhatsApp.

Sociodemographic Features Form: It consists of questions that inquire about gender, age, marital status, number of children, family structure, education level, chronic disease status, employment status, income

status, with whom the person lives at home, health insurance, smoking status and place of residence (12–14).

Beck Hopelessness Scale (BHS): Developed by Beck et al. (1974), its Turkish validity and reliability were examined by Seber et al. (1993). The scale consists of 20 items scored between 0 and 1. The score range is 0 to 20. An increase in scores is interpreted as a high level of hopelessness in the participant. Cronbach's alpha coefficient of the BHS is 0.80 (12). In this study, Cronbach's alpha was 0.80.

Templer Death Anxiety Scale: The scale was developed by Templer (1970), and its Turkish validity and reliability were examined by Şenol (1989). The 15 statements in the scale, which consists of a single subfactor, can be answered yes/no. The internal consistency coefficient of the scale is 0.86 (13). The Cronbach alpha value for this scale was 0.65.

FRAIL Scale: The FRAIL Scale was developed by Morley et al. (2012). The validity and reliability of Turkish were studied by Hymabaccus Muradi (2017). It is a scale that enables evaluation by questioning patients about their fatigue status, resistance, mobility, weight loss, and chronic diseases. In total, a score of 0 is considered as non-vulnerable, 1–2 points as pre-frail and >2 points as frail. (14). Cronbach's alpha was 0.78 in the scale's validity and reliability study and 0.79 in this study.

Data Analysis

The data were evaluated using the IBM Statistical Package for Social Sciences (SPSS) program version 26.0 for Windows. Skewness and Kurtosis values within the range of ±2.0 were considered indicative of normal distribution. (15). In the data evaluation, mean, standard deviation, number, percentage, chi-square, and hierarchical regression analyses were performed.

Ethics Approval

Consent was obtained from the Ethics Committee of a state university, with Ethics Committee number E-67796128-000-2300000488, dated 04.01.2023. Consent was obtained from the elderly included in the study. The participants' identity information was not obtained, and they were included in the study voluntarily.

Results

Table 1 presents the sociodemographic features of the elderly individuals who participated in the study. Accordingly, 55.2% of the participants were male, 79.6% were in the 65–74 age group, 71.9% were married, 72.6% had 3 or more children, 60.9% lived in extended families, 31.6% were primary

Table 1. *Sociodemographic features of elderly individuals*

Characteristics		n (%)
Gender	Female	180 (44.8)
	Male	222 (55.2)
Age	65–74 years	320 (79.6)
	75–84 years	57 (14.2)
	85 and above	25 (6.2)
Marital status	Married	289 (71.9)
	Single	31 (7.7)
	Widow/divorced	82 (20.4)
Childbearing status	No child	25 (6.2)
	1 child	20 (5.0)
	2 children	65 (16.2)
	3 children and above	292 (72.6)
Family structure	Nuclear family	106 (26.4)
	Extended family	245 (60.9)
	Fragmented family	51 (12.7)
Education status	Illiterate	104 (25.9)
	Literate	93 (23.1)
	Primary education	127 (31.6)
	High school	43 (10.7)
	Associate/undergraduate	22 (5.5)
	Postgraduate	13 (3.2)
Employment status	Employed	99 (24.6)
	Not employed	303 (75.4)
Income status	Income less than expenses	183 (45.5)
	Income equal to expenses	153 (38.1)
	Income more than expenses	66 (16.4)
Other individuals living in the household	Spouse	153 (38.1)
	Children or grandchildren	174 (43.3)
	Relatives	33 (8.2)
	Other	42 (10.4)
Health insurance status	Present	271 (67.4)
	Absence	131 (32.6)
Smoking status	Yes	158 (39.3)
	No	244 (60.7)
Place of residence	City	153 (38.1)
	Township	117 (29.1)
	Village	132 (32.8)

Table 2. *Hopelessness, anxiety of death and FRAIL scale levels of elderly individuals*

Scales and sub-dimensions	Min-Max	Mean ± SD
Feelings about the future	0–5	2.63±1.64
Loss of motivation	0–8	4.09±2.19
Expectations about the future	0–5	2.50±1.37
Hopelessness scale	0–20	10.14±4.56
Anxiety of death scale	0–15	9.17±2.84
FRAIL scale	0–4	0.92±0.87

school graduates, 75.4% were not working, 45.5% had income less than expenses, 43.3% lived with their children or grandchildren, 67.4% had health insurance, 60.7% did not smoke, and 38.1% lived in the province.

Table 2 presents the levels of hopelessness, anxiety of death and frailty of elderly individuals. Accordingly, the mean level of hopelessness and anxiety of death was 10.14±4.56 and 9.17±2.84, respectively.

In Table 3, the FRAIL levels of elderly individuals were compared across descriptive characteristics. Accordingly, the frailty of elderly individuals was compared according to family structure (χ^2=31.790, p<0.001), educational status (χ^2=24.137, p=0.007), employment status (χ^2=6.411, p=0.041), income status (χ^2=11.887, p=0.018), place of residence (χ^2=14.116, p=0.007) and smoking status (χ^2=7.073, p=0.029). It was determined that FRAIL levels did not differ significantly by gender, age group, marital status, having children, number of other individuals living in the household, chronic disease status, or health insurance status (p>0.05).

Table 4 presents the results of a hierarchical regression analysis to identify predictors of frailty. Accordingly, it was determined that hopelessness was a predictor of frailty; hopelessness explained 1.8% of the variance in frailty (Adjusted R^2:0.018). When fear of death was added to hopelessness, fear of death had no significant effect on frailty (β=0.008; p=0.873), and hopelessness continued to be significant (β=0.147; p=0.005). In the third model, having a chronic disease, smoking status and age were added to hopelessness and fear of death. In this case, the third model was not significant; hopelessness (β=0.156; p=0.004) and having a chronic disease (β=-0.165; p=0.001) had significant effects on frailty.

Table 3. *Comparison of frailty levels of elderly individuals according to sociodemographic features*

Characteristics	Non-FRAIL (n=135)	PreFRAIL (n=244)	FRAIL (n=23)	Statistical test* significance
Gender				
Female	43.0	46.3	39.1	χ^2=0.709
Male	57.0	53.7	60.9	p=0.702
Age				
65–74 years	85.2	75.4	79.6	χ^2=7.624
75–84 years	9.6	17.6	14.2	p=0.106
85 years and above	5.2	7.0	6.2	
Marital status				
Married	74.1	69.3	87.0	χ^2=4.459
Single	6.7	9.0	0.0	p=0.347
Widow/divorced	19.3	21.7	13.0	
Childbearing status				
No child	5.9	7.0	0.0	χ^2=4.017
1 child	3.0	5.7	8.7	p=0.674
2 children	15.6	16.4	17.4	
3 children and above	75.6	70.9	73.9	
Family structure				
Nuclear family	16.3	28.3	65.2	χ^2=31.790
Extended family	74.8	56.1	30.4	p<0.001
Fragmented family	8.9	15.6	4.3	
Education status				
Illiterate	28.9	24.6	21.7	χ^2=24.137
Literate	26.7	21.3	21.7	**p=0.007**
Primary education	34.1	32.0	13.0	
High School	6.7	11.5	26.1	
Associate/undergraduate	3.0	7.0	4.3	
Postgraduate	0.7	3.7	13.0	
Employment status				
Employed	27.4	21.3	43.5	χ^2=6.411
Not employed	72.6	78.7	56.5	**p=0.041**
Income status				
Income less than expenses	52.6	43.9	21.7	χ^2=11.887 **p=0.018**
Income equal to expenses	28.9	41.8	52.2	
Income more than expenses	18.5	14.3	26.1	
Place of residence				
City	48.9	32.0	39.1	χ^2=14.116
Township	23.7	30.7	43.5	**p=0.007**
Village	27.4	37.3	17.4	
Other individuals living in the household				
Spouse	38.5	35.7	60.9	χ^2=9.765
Children or grandchildren	47.4	42.2	30.4	p=0.135
Relatives	5.2	10.2	4.3	
Other	8.9	11.9	4.3	
Chronic disease				
Yes	84.4	80.3	69.6	χ^2=3.076
No	15.6	19.7	30.4	p=0.215
Health insurance status				
Present	71.9	63.9	78.3	χ^2=3.787
Absent	28.1	36.1	21.7	p=0.151
Smoking status				
Yes	39.3	36.9	65.2	χ^2=7.073
No	60.7	63.1	34.8	**p=0.029**

Table 4. *Hierarchical regression analysis of frailty on hopelessness and its sub-dimensions, death anxiety, having chronic illness, smoking and age*

		FRAIL scale (dependent variable)				
Predictive variables		B	SD	β	t	p*
Model 1						
(Constant)		0.635	0.105		6.027	**<0.001**
Hopelessness		0.028	0.009	0.144	2.911	**0.004**
R=0.144, R^2/adjusted R^2:0.021/0.018, R^2 change=0.021, F=8.475; p=0.004						
Model 2						
(Constant)		0.607	0.206		2.952	**0.003**
Hopelessness		0.028	0.010	0.147	2.823	**0.005**
Death anxiety		0.003	0.016	0.008	0.161	0.873
R=0.144, R^2/adjusted R^2:0.021/0.016, R^2 change=0.000, F=4.240; p=0.015						
Model 3						
(Constant)		1.011	0.528		1.916	0.056
Hopelessness		0.030	0.010	0.156	2.890	**0.004**
Death anxiety		-0.005	0.016	0.016	0.304	0.761
Chronic disease status	Yes[a]	-0.369	0.111	-0.165	-3.329	**0.001**
	No	0.00	-	-	-	-
Smoking status	Yes[a]	0.078	0.095	0.043	0.813	0.417
	No	0.00	-	-	-	-
Age		-0.002	0.007	-0.019	-0.373	0.709
R=0.220; R^2/adjusted R^2: 0.049/0.037; R^2 change=0.028; F=4.044; p=0.001						

; [a] reference level; β: regression coefficient; SE: standard error.

Discussion

While age is the period from birth to death, old age is the final stage of that period. Every individual knows that they will face the reality of death after they grow old and lead a life accordingly. In addition to being the last period of life, old age brings negative effects on the individual in physical, psychological, social, and economic terms, resulting from the effects of temporal change. Chronic diseases are at the forefront of these negative situations. It was observed that 81.1% of the elderly individuals participating in our study had chronic diseases. It has been reported that chronic diseases increase with age, and the rate of at least one chronic disease in elderly individuals varies between 34.2% and 76.6% from country to country (16,17).

Using a cut-off score of ≥6, the prevalence of hopelessness in our study was 85.1%. This rate is considerably higher than the 6% reported in a study of Mexican immigrants, likely attributable to differences in age groups: our sample consisted of individuals aged 65 and over, whereas the comparison study included participants aged 18–35 (18). In our study, 15.4% of participants experienced severe hopelessness. Similarly, a study conducted among institutionalized older adults reported a severe hopelessness rate of 9.52% (19). Overall, the level of hopelessness in our sample was moderate. The literature includes findings consistent with our results, as well as studies reporting lower or higher levels of hopelessness (20,21). These variations are thought to stem from differences in sample characteristics, measurement instruments, data collection methods, and contextual or environmental factors.

Hopelessness causes negative thoughts about the future and brings death to mind. Death is a situation that is considered to be a must, especially in older individuals who are associated with age. Every living being feels that they are one step closer to death, especially as they get older. They realize that death is an inevitable end. Of course, this awareness brings with it anxiety. In our research, it was determined that the participants' anxiety levels about death were at a moderate level. In support of our study, it was reported that the anxiety of death was at a moderate level (22). In contrast to our study, when the results of a meta-analysis conducted in Iran were examined, it was determined that the death

anxiety of Iranian elderly people was low, and this was due to religious beliefs (23). In a study, it was reported that high death anxiety was associated with poor physical and mental health (4). Given physiological declines in old age, physical health is negatively affected, making the elderly more vulnerable.

In this study, 5.7% of participants were classified as frail and 60.7% as prefrail. Previous studies have reported frailty rates ranging from 6% to 17.1% among older adults, which is consistent with our findings (24,25). In a study of older adults with type 2 diabetes, 16.7% were mildly frail and 8.7% were severely frail; frailty differed significantly by educational level and smoking status, and a negative relationship was found between self-efficacy and frailty (26). The variation in frailty according to education and smoking status aligns with our results. Although some studies report associations between frailty and age, gender, and marital status (26,27), our findings did not support these relationships, possibly due to differences in sample characteristics, measurement tools, or sociocultural factors. In patients with heart failure, moderate frailty was reported, with higher frailty among single individuals, nonsmokers, and those without social security (27). Unlike that study, we found no differences by marital or social security status and observed higher frailty among smokers. Overall, the literature indicates that frailty is associated with factors such as self-efficacy and social vulnerability (24,26).

In this study, regression analysis found that hopelessness and chronic disease status significantly predicted frailty. In a qualitative study, it was reported that participants considered frailty as a consequence of old age and stated that hope and hopelessness are very significant in coping with frailty (28). In another study conducted in Hong Kong, it was reported that frailty increased when considering the future with hopelessness, and wishes for the future were related to being occupied with current life (29). In our study, frailty was associated with chronic disease status. The literature similarly supports our study. Chronic disease status may cause individuals to become vulnerable (30).

Conclusion

This study examined the effects of sociodemographic characteristics, hopelessness, and death anxiety on frailty levels in older adults. The findings showed that 54.5% of older individuals experienced moderate hopelessness, 50% had death anxiety, and 60.7% were classified as prefrail. Frailty levels differed significantly according to family structure, educational level, employment status, income level, place of residence, and smoking status. Hopelessness and the presence of chronic disease were found to be significant predictors of frailty. Overall, the results indicate that frailty levels in older adults are influenced by both psychosocial and sociodemographic factors, highlighting the importance of individualized interventions to increase hope, maintain motivation, reduce death anxiety, and address personal characteristics to reduce frailty.

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