## RESEARCH

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# Self-neglect, frailty and depression among older women living in Southern Türkiye



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## Abstract

Background This study aimed to assess the association between self-neglect, frailty, and levels of depression in older women.

Methods This cross-sectional study included 393 older women living in Southern Türkiye. The data were collected by face-to-face interview method, through a questionnaire. The guestionnaire included guestions describing sociodemographic and health-related features, Istanbul Medical School Elder Self-Neglect guestionnaire (IMSelf-neglect), Frail Scale and Geriatric Depression Scale-15 (GDS-15).

Results It was determined that the prevalence of self-neglect in older women was 62.6%, the prevalence of frailty was 45.3% and 55% had mild to severe depression. In the correlation analyses, the frailty score was significantly positively associated with depression score (r = 0.624, p < 0.001) and negatively associated with self-neglect (r = -0.724, p < 0.001). Also, self neglect score was negatively associated with depression scores (r = -0.716, p < 0.001).

**Conclusion** The results of this study showed that self-neglect, frailty, and depression were common among older women. Furthermore, as self-neglect increased, frailty and depression levels also increased. Application of appropriate screening tools may help identify individuals at risk and provide timely support and interventions.

Keywords Older, Depression, Women, Frailty, Self-neglect

## Background

The global population aged 65 and over is rapidly growing, leading to an increased frequency of encountering issues associated with old age [1]. Self-neglect, which is among these problems, is defined as "the failure or unwillingness to meet basic needs according to social norms" [2]. Self-neglect has significant consequences on health, quality of life, and public health outcomes [3]. In studies in the literature, self-neglect has been associated

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with lower cognitive function [2, 4], heightened physical health problems [5], lower levels of social networking and social participation [6], including significantly increased risk of premature death [5, 7]. Detecting self-neglect cases early on is challenging, yet crucial. Failing to identify and address self-neglect among older adults promptly can exacerbate preventable or controllable health issues [8].

One of the geriatric syndromes that is predicted to become another major concern in this demographic with the increase in the older population is frailty. Frailty is defined in the literature as the decline in multiple organs or systems, reduced physiological reserve, and heightened vulnerability to stressors [9]. Research indicates that frailty is associated with various negative health issues, including premature death in older adults [10,

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11]. Given the health implications of frailty, it is anticipated that individuals may exhibit self-neglect behaviors, or those who neglect themselves may experience increased frailty [12]. However, there is a limited number of studies exploring the relationship between frailty and self-neglect [12, 13]. Moreover, depression, a common problem among the older population, has been linked to both frailty [14] and self-neglect [15]. Nonetheless, the precise connection among self-neglect, frailty, and depression remains unclear.

With the increase in the older population, geriatric problems such as self-neglect, frailty and depression are expected to place an increasing burden on the health and well-being of older women. It is believed that this study will provide important information about the prevalence and correlation of self-neglect, frailty and depression. Therefore, the aim of this study is to examine the relationship between self-neglect, vulnerability and depression levels in older women.

## Methods

## Study design and participants

The cross-sectional study included a population (N) of 7512 women aged 65 years and older residing in southern Turkey. The sample size was determined using the epi-info 7.2 program, considering an incidence rate (p) of 0.05, a margin of error (d) of 0.05%, and a confidence level of 95.0%. The calculation resulted in a sample size of 365. 393 elderly women who met the inclusion criteria during the data collection process and agreed to participate were included in the study. The inclusion criteria comprised being 65 years of age or older, identifying as female, and having the ability to comprehend and communicate in Turkish. Older adults with hearing or visual impairments that hindered communication and those with severe cognitive impairments were excluded from the study.

## Data collection

Data collection was conducted via a questionnaire form with a simple random sampling method and face-to-face interview between April 30, 2023 and June 15, 2023. The survey included questions on sociodemographic factors (e.g. age, marital status, education) and health characteristics (e.g. self-rated health status, presence and number of chronic diseases). Additionally, it included the Istanbul Medical School Elder Self-Neglect questionnaire (IMSelf-neglect), the Frail Scale, and the Geriatric Depression Scale Short Form.

## Istanbul medical school elder self-neglect questionnaire (IMSelf-neglect)

The IMSelf-neglect questionnaire, developed by İlhan et al. (2020) [16], comprises 11 items that assess personal hygiene, health habits, and social functioning. Each item

is answered with a 'yes' or 'no' response, with a score of 1 assigned for each 'yes' answer. The total test score ranges from 0 to 11 points. Based on calculations, the cut-off threshold for IMSelf-neglect was determined as 7, achieving a sensitivity of 92.1% and a specificity of 70.7%. Scores of 7 and below on the questionnaire indicate selfneglect among the older adults.

## FRAIL scale

The scale was initially developed by Morley et al. in 2012 [17], and its validity and reliability in Turkey were later examined by Hymabaccus et al. (2023) [18]. Each letter in the word "FRAIL" represents the initial letter of the English name of the 5 items in the scale: Fatigue, Resistance, Ambulation, Illness, and Loss of weight. In the FRAIL scale, each item is scored as either 0 or 1 based on the patients' responses. A score of 0 indicates non-frailty, a score of 1–2 suggests pre-frailty, and a score greater than 2 indicates frailty. The original scale reported a Cronbach's alpha reliability coefficient of 1.00.

## Geriatric depression scale-15 (GDS-15)

It was initially developed by Yesavage and Sheikh in 1986 [19], and its Turkish validity and reliability were later examined by Durmaz et al. in 2018 [20]. It is a self-evaluation scale that assesses the individual's experiences over the past week. Depending on the specific question, responses are scored as either "yes" or "no," resulting in a total score ranging from 0 to 15 points. A total score of 5 or less is considered as no depression, 5–8 as mild depression, 9–11 as moderate depression, and 12–15 as severe depression. The Cronbach alpha coefficient for the total scale was 0,92.

## Data analysis

The statistical analysis of the data was performed using IBM SPSS version 25.0 (IBM Corp., Armonk, NY). Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean $\pm$ standard deviation (SD). Univariate analyses between variables were conducted using Pearson correlation, independent t-test, and one-way analysis of variance (ANOVA). In this study, a p-value less than 0.05 was deemed statistically significant.

## Results

The mean age of the participants was  $71.59 \pm 6.3$ . For older women, 58.0% were married (n = 228), 34.9% were illiterate (n = 137), 62.6% were unemployed (n = 246), and 99.0% (n = 389) had at least one child. Further, 3.6% (n = 14) were smokers, and 1.5% (n = 6) used alcohol (Table 1).

Health status of the participants is presented in Table 2. Accordingly, 99.7% (n = 392) of the participants had at

**Table 1** Descriptive characteristics of the participants (n = 393)

Variables		$Mean \pm SD$	Min-Max
Age (year)		71.59±6.32	65-90
		n	%
Marital status	Married	228	58.0
	Single	2	0.5
	Divorced/Widowed	163	41.5
Children	Yes	389	99.00
	No	4	1.0
Education	Illiterate	137	34.9
	Literate	51	13.0
	Primary school	199	50.6
	Secondary school	5	1.3
	High school	1	0.3
Employment	Yes (Farmer, Worker)	147	37.4
	No	246	62.6
Monthly income	Income < expense	72	18.3
perception	Income = expense	231	58.8
	Income > expense	90	22.9
Smoking	Yes	14	3.6
	No	379	96.4
Alcohol	Yes	6	1.5
consumption	No	387	98.5
Regular physical	Yes	177	45.0
activity	No	216	55.0

<b>Table 2</b> Health status of the participa	nts	(n = 39)	3)
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Variables		n	%
Self-rated health status	Very good/good	127	32.3
	Moderate	143	36.4
	Bad/Very bad	123	31.3
Chronic disease	Yes	392	99.7
	No	1	0.3
Number of chronic diseases	0–1	136	34.6
	2~3	178	25.3
	≥4	79	20.1
Presence of chronic medications	Yes	392	99.7
	No	1	0.3
Number of chronic medications	0–4 medications	273	69.5
	5 and upper medications	120	30.5
Depression (score)	No (0-4)	177	45.0
	Mild (5-8)	102	26.0
	Moderate (9-11)	49	12.5
	Severe (12-15)	65	16.5
Frailty	No	93	23.7
	Prefrail	122	31.0
	Frail	178	45.3
Self-neglect	Yes	246	62.6
	No	147	37.4

least one chronic disease. In addition, 55% (n = 216) of the older adults had mild to severe depression, 45.3% (n = 178) had frailty, and 62.6% (n = 246) had self-neglect.

The results of the relationship between some descriptive and health status characteristics of older women and self-neglect are given in Table 3. Accordingly, it is seen that self-neglect is associated with many variables, including depression and frailty.

In the correlation analyses, the frailty score was significantly positively associated with depression score (r = 0.624, p < 0.001) and negatively associated with self-neglect (r = -0.724, p < 0.001). Also, self neglect score was negatively associated with depression scores (r = -0.716, p < 0.001) (Table 4).

## Discussion

The objective of this study was to examine the association between self-neglect, frailty, and depression levels among older women. The findings revealed that 62.6% of the older women in the study exhibited self-neglect. In a systematic review, it was reported that the prevalence of self-neglect among community-dwelling older adults ranged from 18.4 to 29.1% [12]. However, although studies conducted in Turkey are limited, the prevalence of self-neglect among older women was reported as 16.8% in the study by Ilhan et al. (2020) [16] and as 36.6% in the study by Ayaz and Gürsoy (2024) [21]. The notable discrepancy in these reported rates could be attributed to variations in the measurement instruments employed to assess self-neglect. A systematic review that evaluated the psychometric properties of self-neglect measurement tools emphasized the lack of a universally accepted tool [22]. Nonetheless, the high prevalence observed in this study might be attributed to the rural setting in which the research was conducted. Moreover, the study found that 45.3% of the older women included in this study were identified as frail. This rate is higher compared to several studies in existing literature [23-25]. When examining studies conducted in Turkey, the average frailty rate is reported to be 44.5% [26]. Frailty has been associated with executive dysfunction [27], cognitive impairment [28, 29], and a reduced social network [30], which are factors believed to contribute to self-neglect among the older adults [12]. Elevated rates of frailty have been associated with an increased likelihood of self-neglect [16]. In fact, in the correlation analyses conducted in this study, it was observed that as self-neglect scores decreased, frailty levels increased. Since lower self-neglect scores indicate a greater extent of self-neglect, it can be inferred that frailty levels rise with an escalation in self-neglect behaviors among older women. The association between selfneglect and frailty has also been supported by another study [13]. However, in the study by Yu et al. (2023), no direct relationship between frailty and self-neglect was identified [12]. Therefore, it is evident that further research with a robust level of evidence is necessary to fully comprehend the interplay between these factors. Furthermore, public health nurses play a crucial role in the early identification of frail individuals who are at

**Table 3** The relationship between some descriptive and health status characteristics of the older women and self-neglect (n = 393)

Variables	Self neglect		χ²	р	
	Present <i>n</i> (%)	Absent <i>n</i> (%)			
Age (71.59±6.32)					
65–74 years	134 (48.2)	144 (51.8)	84.100	< 0.001	
75–84 years	89 (97.8)	2 (2.2)			
85 years and over	23 (95.8)	1 (4.2)			
Marital status					
Married	116 (50.9)	112 (49.1)	32.238	< 0.001	
Single	2 (100.0)	0 (0.0)			
Divorced/Widowed	128 (78.5)	35 (21.5)			
Children					
Yes	244 (62.7)	145 (37.3)	0.274	0.632	
No	2 (50.0)	2 (50.0)			
Education					
No education	130 (94.9)	7 (5.1)			
Literate	45 (88.2)	6 (11.8)			
Primary school	70 (35.2)	129 (64.8)	144.796	< 0.001	
Secondary school	1 (20.0)	4 (80 0)	1111111111111111111		
High school	0(00)	1 (100 0)			
Employment status	0 (0.0)	. (100.0)			
Yes (Farmer Worker)	77 (52 4)	70 (47 6)	10.465	0.002	
No	169 (68 7)	77 (31 3)	10.105	0.002	
Monthly income	105 (00.7)	77 (51.5)			
perception					
Income = expense	139 (60.2)	92 (39.8)	15.389	< 0.001	
Income < expense	59 (81 9)	13 (18 1)			
Income > expense	47 (53 3)	42 (46 7)			
Regular physical activity		12 (10.7)			
Yes	70 (39 5)	107 (60 5)	73.061	< 0.001	
No	176 (81 5)	40 (18 5)	/ 51001		
Self-rated health status	170 (01.5)	10 (10.5)			
Very good/good	45 (35 4)	82 (64 6)	90 549	< 0.001	
Moderate	86 (60 1)	57 (39.9)	50.515		
Bad//erv bad	115 (93 5)	8 (6 5)			
Chronic disease	115 (55.5)	0 (0.5)			
Vac	246 (62.8)	1/16 (37 2)	1 678	0 374	
No	2-10 (02.0) 0 (0.0)	1+0(37.2) 1(1000)	1.070	0.374	
Number of chronic	0 (0.0)	1 (100.0)			
diseases					
0-1	57 (41 9)	79 (58 1)			
2~3	117 (65 7)	61 (34 3)	53.088	< 0.001	
>4	72 (91 1)	7 (8 9)	55.000		
Number of chronic medi	rations	/ (0.5)			
0-4 medications	150 (54.9)	123 (45 1)	22350	< 0.001	
5 and upper medications	96 (80 0)	723 (13.1) 74 (20.0)	22.550	< 0.001	
Depression (score)	50 (00.0)	27 (20.0)			
	65 (36 7)	117 (62 2)	104 046	< 0.001	
Mild (5-8)	74 (75 5)	112 (US.S)	104.940	< 0.00 I	
Moderate $(0-11)$	1) (85 7)	20 (27.3) 7 (17 2)			
$\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$	HZ (03.7)	/ (14.3) 0 (0 0)			
Severe (12-13)	(100.0)	0 (0.0)			
riality					

Table 3 (d	continued)
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Variables	Self neglect		χ²	p
	Present <i>n</i> (%)	Absent <i>n</i> (%)		
No	16 (17.2)	77 (82.8)	155.246	< 0.001
Prefrail	65 (53.3)	57 (46.7)		
Frail	165 (92.7)	13 (7.3)		

risk of self-neglect [31]. Hence, it is imperative for public health nurses to assess the older adult population in this regard using suitable screening tools.

Depression is a prevalent condition among the aging population and should be carefully assessed in this demographic [14]. In this study, it was found that approximately 55% of older women experienced mild to severe depression. This percentage is significantly higher than the estimates from a systematic review and meta-analysis that evaluated the global prevalence of depression in older populations (31.74%) [32]. The elevated rates of depression observed in this study may be attributed to specific sociodemographic characteristics of the sample, such as being female and residing in rural areas, as well as the high prevalence of self-neglect and frailty. Notably, significant associations were identified between depression and both self-neglect and frailty in this study. The link between depression and self-neglect has been consistently supported by numerous studies [12, 33], as well as the association between depression and frailty [34, 35]. In older adults, depression can either contribute to or result from self-neglect. To gain a comprehensive understanding of the causal relationship between self-neglect and depression, further longitudinal research is warranted [12].

To the best of our knowledge, this study represents the first exploration of self-neglect, frailty, and depression in older women in Turkey, contributing valuable insights to the existing scientific literature and informing future planning in this field. Nonetheless, it is important to acknowledge the limitations of this study. Firstly, the generalizability of the findings may be restricted due to the specific district in Turkey where the research was conducted, emphasizing the need for caution when applying the results to other populations. Secondly, the reliance on self-report measures in the questionnaire raises the possibility of participants underreporting their self-neglect behaviors, potentially influencing the accuracy of the findings. Third, the exclusion of older adults with hearing or visual impairments and severe cognitive impairments may have resulted in the omission of individuals with higher rates of self-neglect, frailty, and depression from the study, potentially impacting the overall prevalence estimates. Lastly, due to the cross-sectional design of the study, it is not possible to establish causal relationships.

		Self-Neglect	Depression
Frailty	Pearson r	-0.724	0.624**
	р	< 0.001	< 0.001
Self-Neglect	Pearson r		-0.716
	р		< 0.001
** p < 0.001			

The findings should be interpreted in light of this information.

## Conclusion

The findings of this study highlight the concerning prevalence of self-neglect, frailty, and depression among older women living in Southern Türkiye. With approximately one in three older individuals neglecting themselves and about half of them being frail, it is crucial to address these issues in a timely manner. The observed association between self-neglect and frailty underscores the importance of early identification and intervention to prevent or mitigate frailty among older adults. Furthermore, the high rates of depression and its association with both self-neglect and frailty emphasize the need for comprehensive evaluations by public health professionals working with older women. Implementing appropriate screening tools can aid in identifying individuals at risk and providing timely support and interventions. By addressing self-neglect, frailty, and depression collectively, public health professionals can improve the overall well-being and quality of life of older women.

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#### Author contributions

S.U.Y. and M.Y.G wrote the main manuscript text. All authors reviewed the manuscript.

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#### Data availability

No datasets were generated or analysed during the current study.

#### Declarations

## Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. Approval was obtained from Ethics Committee of the Çanakkale Onsekiz Mart University (2023-YONP-0192). Furthermore, participants provided their consent through an informed consent form that detailed the purpose and content of the study. In the case of illiterate participants, informed consent was first obtained from legal guardians and then from the elderly individuals. Participants were informed that they could withdraw from the study at any time before or during data collection and were assured that their identity and the information they provided would be kept anonymous and confidential.

#### Consent for publication

Not applicable.

#### **Competing interests**

The authors declare no competing interests.

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