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ORIGINAL ARTICLE

Subjective health complaints and life satisfaction in older adults: the predictive role of geriatric depression

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Abstract

Background: Given the growing number of older adults, it is crucial to understand geriatric depression and to determine the impact of depression on well-being and health. The aim of this study was to examine the predictive effect of geriatric depression on subjective health complaints and life satisfaction in older adults.

Methods: This cross-sectional study was carried out in two family health centres in a city centre in the northwest of Türkiye. The sample consisted of 257 older adults. Structural equation modelling path analysis was utilised to examine the extent to which geriatric depression predicted subjective health complaints and life satisfaction among older adults.

Results: The study found that geriatric depression was a predictor of both subjective health complaints and life satisfaction. Results showed that as geriatric depression scale score increased, subjective health complaints also increased (Std. $\beta = 0.470$, $P < 0.001$), while life satisfaction decreased (Std. $\beta = -0.573$, $P < 0.001$).

Conclusion: Geriatric depression is a complex health issue that biopsychosocially affects older adults. The findings of this study highlight the importance of identifying, diagnosing, and treating depression in older adults.

INTRODUCTION

The global population is growing older at an unprecedented pace.[1] The percentage of older individuals globally has more than doubled in the last half-century, reaching 10.3% by 2024.[2] Old age often involves physical changes and increased risk of mental health problems.[3]

Geriatric depression is among the most common of mental health problems.[4,5] Although it varies depending on measurement methods and countries, it is stated that the prevalence of geriatric depression worldwide is 28.4%.[6] Geriatric depression is not adequately identified and reported by healthcare professionals and older adults themselves; the normal ageing process or other medical conditions can mask geriatric depression.[7,8]

Geriatric depression has multidimensional risk factors. It is often linked to risk factors such as increasing age,[3] physical dependency,[8] hearing loss, asthma, thyroid illness,[3] and chronic diseases or multimorbidity.[9] Limited access to quality support and services,[5] nutritional insufficiency,[4] and financial dependence[8] may constitute social risk factors for geriatric depression. Furthermore, an unsupportive familial environment can exacerbate these challenges.[8,10]

Subjective health complaints are defined as any health-related symptoms or concerns that are not accompanied by objective pathological signs.[11] Subjective complaints significantly impact the frequency of medical consultations, healthcare utilisation and healthcare policy.[12] Existing studies have examined the relationships between geriatric depression and various subjective complaints, including subjective memory complaints,[13] subjective cognitive complaints,[14] subjective sleep disturbance,[15] and subjective health.[16] However, a dedicated investigation into the direct link between geriatric depression and subjective health complaints remains absent from the literature.

Life satisfaction is a comprehensive evaluation of one's overall life, incorporating judgements across various domains of life.[17,18] It has been stated that life satisfaction in older adults is predicted by health factors such as subjective health assessment, anxiety, and psychosocial factors such as quality of life, self-esteem, sense of coherence, and social support.[19] There are studies in the literature focusing on the relationship between geriatric depression and life satisfaction.[19–22] However, there are limited studies examining the relationship between geriatric depression and life satisfaction in Türkiye.[23,24]

Geriatric depression poses a significant risk to the well-being of older adults.[10] The increasing prevalence of geriatric depression, driven by factors such as challenging living conditions, poor physical health, ageing demographics, and limited access to mental health services, underscores the urgent need for effective intervention strategies.[25] It is recommended to screen for depression in older adults.[3] Given the rapidly ageing population globally and the prevalence of geriatric depression among the ageing population highlights the need for research in this area. This study aims to examine the predictive effect of geriatric depression on subjective health complaints and life satisfaction in older adults. The originality of this study lies in its examination of the multifaceted impact of geriatric depression on both subjective health complaints and life satisfaction. The findings will contribute to the development of more comprehensive interventions.

The structural equation modelling (SEM) depicted in Fig. 1 outlines the hypothesised relationships between geriatric depression, subjective health complaints, and life satisfaction among older adults. This model posits that geriatric depression directly influences both subjective health complaints and life satisfaction. The model comprises three observed variables: two internal variables (subjective health complaints and life satisfaction) and one external variable (geriatric depression). The research questions are as follows.

1 Is there a relationship between geriatric depression, subjective health complaints, and life satisfaction in older adults?
2 Is geriatric depression a predictor of subjective health complaints and life satisfaction in older adults?

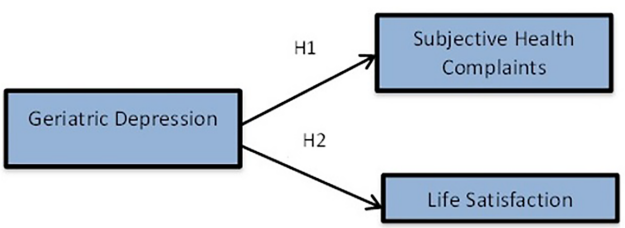

Figure 1 Proposed theoretical model.

METHODOLOGY

This study employed a correlational design and path analysis, a quantitative method within the framework of SEM. Path analysis is a statistical technique used to examine the causal relationships between variables within a theoretical model.[26] The current study investigated the influence of geriatric depression on subjective health complaints and life satisfaction in older adults. Correlation analysis was used to determine the correlations among the scales, and path analysis was conducted to explore the direct and indirect effects of geriatric depression on subjective health complaints and life satisfaction.

Participants

This cross-sectional study was carried out in two family health centres in a city centre in the northwest of Türkiye. The sample consisted of 257 older adults. The inclusion criteria for the present study were as follows: (a) being 60 years of age or older; and (b) having the cognitive ability that allows for informed consent and participation. The distribution of the sociodemographic characteristics of the older adults who participated in the study is given in Table 1.

Screening tools

Screening tools of research were as follows: Sociodemographic Information Form, Geriatric Depression Scale (GDS-15), Subjective Health Complaints Inventory (SHCI), and Satisfaction with Life Scale (SWLS).

Sociodemographic Information Form

Sociodemographic variables, including gender, age, marital status, income level, chronic disease, and difficulties in activities of daily living, were collected using this form prepared by the researchers.

Table 1 Sociodemographic characteristics and scale (GDS-15, SHCI, SWLS) scores

Variables	*N*	%	GDS-15 (mean ± SD)	SHCI (mean ± SD)	SWLS (mean ± SD)
Gender					
Female	152	59.1	6.72 ± 4.39	37.01 ± 16.37	2.73 ± 0.93
Male	105	40.9	6.27 ± 4.64	34.53 ± 18.52	2.81 ± 0.99
t; *P*			0.801; 0.424	1.128; 0.261	−0.703; 0.483
Age group (mean ± SD)	(70.35 ± 7.25)				
a. 60–69 years old	144	56.0	5.35 ± 4.34	33.59 ± 16.53	2.85 ± 1.04
b. 70–79 years old	77	30.0	7.45 ± 4.36	36.27 ± 18.63	2.71 ± 0.86
c. 80 years and older	36	14.0	9.31 ± 3.71	45.03 ± 14.45	2.51 ± 0.77
F; *P*			14.868; **0.000***** a > b,c	6.589; **0.002*** c > a,b	1.962; 0.143
Marital status					
Married	140	54.5	5.44 ± 4.34	33.84 ± 16.50	2.86 ± 0.91
Single (never married, divorced, widowed)	117	45.5	7.85 ± 4.33	38.57 ± 17.92	2.64 ± 1.00
t; *P*			−4.451; **0.000*****	−2.200; **0.029***	1.865; 0.063
Income status					
a. High	53	20.6	3.94 ± 4.03	29.30 ± 16.24	3.29 ± 0.89
b. Average	174	67.7	6.74 ± 4.33	36.47 ± 16.99	2.68 ± 0.89
c. Low	30	11.7	9.93 ± 3.52	45.10 ± 16.60	2.33 ± 1.09
F; *P*			20.195; **0.000***** c > b > a	8.68; **0.000***** c > b > a	13 046; **0.000***** a > c, b
Chronic disease status					
Yes	185	72.0	7.12 ± 4.48	37.79 ± 17.18	2.69 ± 0.93
No.	72	28.0	5.03 ± 4.17	31.39 ± 16.81	2.95 ± 1.00
t; *P*			3.427; **0.001****	2.697; **0.007****	−1.962; 0.051
Difficulties in activities of daily living					
Yes	128	49.8	8.73 ± 4.16	41.48 ± 15.78	2.41 ± 0.82
No	129	50.2	4.36 ± 3.69	30.55 ± 17.05	3.11 ± 0.95
t; *P*			8.924; **0.000*****	5.333; **0.000*****	−6.206; **0.000*****

Abbreviations: SD, standard deviation; *t*=independent sample; *T* test, *F*=one-way analysis of variance (ANOVA); Difference=turkey test; *p*=significance level. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Subjective Health Complaints Inventory

The inventory developed by Eriksen *et al*.[11] was adapted into Turkish by Kalaycıoğlu *et al*.[27] The scale consists of 29 items and five sub-dimensions (musculoskeletal pain, pseudoneurology, gastrointestinal problems, allergies, flu). The severity of each SHCI item was rated on a four-point Likert scale, with scores ranging from 0 (no complaint) to 3 (severe complaint). The minimum and maximum possible total scores were 0 and 87, respectively. While the SHCI allows for the assessment of both symptom duration and severity, the present study focused on symptom severity by weighting the response categories.[27] Reliability and validity of the Turkish version of the SHCI showed acceptable content validity, construct validity, and internal consistency reliability (Cronbach's alpha = 0.905).

Geriatric Depression Scale

The GDS-15 developed by Burke *et al*.[28] was adapted into Turkish by Durmaz *et al*.[29] The scale consists of 15 items. To identify depression, a cut-off score of 7 was adopted in the GDS-15, consistent with the study that conducted the Turkish validity and reliability of the scale. The GDS-15 scale demonstrated adequate internal consistency, supporting its construct validity (Cronbach's alpha = 0.920).

Satisfaction with Life Scale

Diener *et al*.[18] developed SWLS. Dağlı and Baysal[30] adapted and refined the original scale, comprising five items assessing life satisfaction. SWLS demonstrated adequate internal consistency, supporting its construct validity (Cronbach's alpha = 0.88).

Data collection process

Ethics approval came from the Zonguldak Bulent Ecevit University Clinical Studies Ethics Committee on March 8, 2024 (Decision number: 519). Data from the participants were collected by face-to-face interview between April 1, 2024, and August 1, 2024.

No incentives were offered, and interviews were conducted in a private and comfortable setting to foster honest responses. During the data collection process, interviews with participants lasted 15–20 min.

Data analysis

Data analysis was conducted using IBM SPSS Statistics 26.0. Pearson correlation coefficients were calculated to assess the strength and direction of linear relationships between numerical variables. SEM path analysis was utilised to examine the extent to which geriatric depression predicted subjective health complaints and life satisfaction among older adults.

RESULTS

The distributions of the sociodemographic characteristics and scale (GDS-15, SHCI, SWLS) scores of the older adults were initially determined (Table 1). Subsequently, correlation analysis was employed to examine the relationships between scale scores (Table 2). Finally, path analysis, a method of SEM, was utilised to investigate the extent to which geriatric depression predicted subjective health complaints and life satisfaction in older adults (Table 3).

The mean scores of the scales in the study were as follows: SHCS (mean ± SD = 36.00 ± 17.29), SWLS (mean ± SD = 2.76 ± 0.96), and GDS-15 (mean ± SD = 6.54 ± 4.49).

Following the Turkish validity and reliability study of the GDS-15 by Durmaz *et al*.,[29] a cut-off score of ≥7 was adopted for our study. This threshold showed a sensitivity, specificity, positive predictive value, and negative predictive value of 87%, 99%, 100%, and 91%, respectively. Based on this criterion, 45.91% ($n = 118$) of the elderly participants met the criteria for probable depression.

Correlation analysis (Table 2) indicated that subjective health complaints and geriatric depression scale scores were moderately positively correlated ($r = 0.470$, $P < 0.001$). Subjective health complaints and life satisfaction were weakly negatively correlated ($r = -0.295$, $P < 0.001$), while geriatric depression scores and life satisfaction were moderately negatively correlated ($r = -0.573$, $P < 0.001$) among the older adults.

When examining the correlations among the subscales, a weak positive correlation was found between flu symptoms and GDS-15 score ($r = 0.254$, $P < 0.001$), and a weak negative correlation between flu symptoms and life satisfaction ($r = -0.124$, $P < 0.05$). Similarly, there was a weak positive correlation between musculoskeletal complaints and GDS-15 score ($r = 0.271$, $P < 0.001$), and a weak negative correlation between musculoskeletal complaints and life satisfaction (r = −0.245, $P < 0.001$). Moreover, a moderate positive correlation was observed between pseudoneurological complaints and GDS-15 score ($r = 0.558$, $P < 0.001$), as well as a moderate negative correlation between pseudoneurological complaints and life satisfaction ($r = -0.388$, $P < 0.001$). Additionally, there was a moderate positive correlation

Table 2 Examination of the relationships between subjective health complaints, geriatric depression and life satisfaction

		1	2	3	4	5	6	7	8
1. Total score of Subjective Health Complaints Inventory	*r*	1							
	P								
2. Flu symptoms	*r*	0.593	1						
	P	**0.000*****							
3. Musculoskeletal complaints	*r*	0.830	0.439	1					
	P	**0.000*****	**0.000*****						
4. Pseudoneurological complaints	*r*	0.863	0.427	0.628	1				
	P	**0.000*****	**0.000*****	**0.000*****					
5. Gastrointestinal complaints	*r*	0.798	0.396	0.510	0.619	1			
	P	**0.000*****	**0.000*****	**0.000*****	**0.000*****				
6. Allergy	*r*	0.663	0.400	0.397	0.528	0.373	1		
	P	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****			
7. Total score of Geriatric Depression Scale	*r*	0.470	0.254	0.271	0.558	0.400	0.284	1	
	P	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****		
8. Total score of Life Satisfaction Scale	r	−0.295	−0.124	−0.245	−0.388	−0.201	−0.096	−0.573	1
	P	**0.000*****	**0.047***	**0.000*****	**0.000*****	**0.001****	0.124	**0.000*****	

$^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$. *P*, significance level; *r*, Pearson correlation coefficient.

Table 3 Path coefficients and significance levels of the model

Hypotheses				Regression coefficient (β)	Std. regression coefficient (β)	Std. error	t	*P*
H_1	Geriatric depression	→	Subjective health complaints	1807	0.470	0.212	8513	***
H_2	Geriatric depression	→	Life satisfaction	−0.122	−0.573	0.011	−11 190	***

*** $P < 0.001$.

between gastrointestinal complaints and GDS-15 score ($r = 0.400$, $P < 0.001$), and a weak negative correlation between gastrointestinal complaints and life satisfaction ($r = -0.201$, $P < 0.01$). Finally, a weak positive correlation was found between allergy symptoms and GDS-15 score ($r = 0.284$, $P < 0.001$), but no significant correlation was found between allergy symptoms and life satisfaction ($P > 0.05$).

Path analysis, a method of SEM, was employed to examine the extent to which geriatric depression predicted subjective health complaints and life satisfaction among older adults. Given the proposed model (Fig. 1), two paths were identified for the three observed variables. The proposed model demonstrated an adequate fit to the data, as indicated by the following fit indices: $\chi^2/(df) = [0.338]$, goodness of fit index = [0.999], adjusted goodness of fit index = [0.995], normed fit index = [0.998], comparative fit index = [1.000], root mean square error of approximation = [0.010], and standardised root mean square residual = [0.021]. These values suggest that the model adequately represents the relationships between the latent variables and observed variables.[31]

Figure 2 shows the standardised regression coefficients of the paths on the one-way arrows of the adequately fit SEM.

Table 3 presents the standardised path coefficients and their associated significance levels for the hypothesised relationships. The results indicated that both H1 and H2 were supported by the data ($P < 0.05$). Specifically, H1 showed a positive relationship between GDS-15 score and subjective health complaints (Std. $\beta = 0.470$, $P < 0.001$), suggesting that as GDS-15 score increased, so did the level of subjective health complaints. H2 demonstrated a negative relationship between GDS-15 score and life satisfaction (Std. $\beta = -0.573$, $P < 0.001$), indicating that the increase in GDS-15 score was associated with decrease in life satisfaction score.

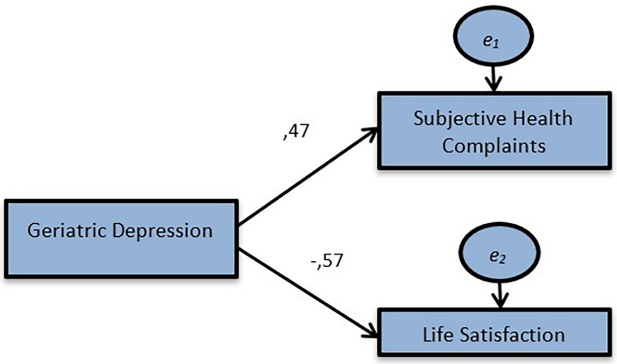

Figure 2 Path coefficients of the structural model.

DISCUSSION

This study aims to examine the predictive effect of geriatric depression on subjective health complaints and life satisfaction in older adults. First, the relationship between geriatric depression, subjective health complaints and life satisfaction was determined. Subsequently, path analysis was employed to explore the extent to which geriatric depression predicted subjective health complaints and life satisfaction in older adults.

The study found a positive correlation between geriatric depression and all subscales of subjective health complaints in older adults. These findings are consistent with previous research indicating a positive correlation between geriatric depression and various health complaints, including flu,[32] musculoskeletal complaints,[33,34] pseudoneurological conditions[35] and gastrointestinal complaints.[33,35] These findings highlight the importance of not overlooking depression in the health assessment of older adults. The presence of depression can lead to more severe courses of other health problems and make treatment more difficult. Additionally, geriatric depression may influence the perception and tolerance of pain in older adults, contributing to somatic

complaints. Therefore, it is important to assess depression when investigating the underlying causes of various health complaints in older adults. Early diagnosis and appropriate treatment of depression in older adults can improve both physical and psychological health.

A negative correlation was found between the subscales of subjective health complaints, including influenza, musculoskeletal complaints, pseudoneurological complaints, and gastrointestinal complaints, and life satisfaction in older adults. The findings of the study are consistent with previous research indicating that a decrease in subjective physical health complaints is associated with increased life satisfaction in older adults.[36,37] Similarly, Kim *et al*.[38] found in a prospective cohort study that older adults with fewer subjective health complaints reported higher levels of life satisfaction. The increase in subjective health complaints may have negatively impacted life satisfaction by limiting older adults' daily living activities, leading them to feel more frail and dependent. Although more research is needed to definitively establish causality in this correlational finding, it is clear that subjective health complaints should be given greater consideration in the structuring of health services to positively impact the life satisfaction of older adults. Specifically, policies such as facilitating access to health care for older adults, developing preventive health services, improving community-based care services, and utilising medical social work practices in symptom management can have a positive impact on the life satisfaction of older adults.

Path analysis revealed that geriatric depression positively predicted subjective health complaints in older adults. This finding underscores the complex interplay between psychological and physical health, suggesting that geriatric depression is not merely a mental health condition but a multifaceted medical issue. Several mechanisms may explain this association, including depression's detrimental effects on the immune system, its negative impact on chronic disease progression, and its role in heightened pain perception.[39] Furthermore, geriatric depression may exacerbate subjective health complaints by reducing adherence to treatment regimens and medication.[40] Sleep disturbances commonly associated with depression can also contribute to increased subjective health complaints in older adults.[41,42] The phenomenon of somatisation may provide another explanation for the heightened subjective health complaints observed in depressed older adults. The fear of stigmatisation or social exclusion may lead older adults to perceive physical ailments as more socially acceptable than mental health issues, thus discouraging them from seeking psychological help. Consequently, they may attribute their symptoms to physical causes, leading to an increased reporting of somatic complaints.[34,43] Findings highlight the critical need for a comprehensive geriatric assessment that considers the multifaceted nature of geriatric depression. Such an assessment should encompass sociodemographic factors, psychological history, medical conditions, and social context.

Path analysis revealed that geriatric depression negatively predicted life satisfaction in older adults. Geriatric depression may have contributed to lower life satisfaction by negatively impacting older adults' subjective well-being, self-esteem, and family relationships.[20] The decreased social participation and social support networks often associated with geriatric depression may also have played a role in reduced life satisfaction.[44,45] Geriatric depression-mediated nutritional deficiencies[46] and declines in physical function[47] may have further exacerbated the negative impact on life satisfaction. Furthermore the increased risk of frailty with geriatric depression may also reduce life satisfaction in older adults.[48] These findings underscore the importance of early detection, intervention, and prevention of geriatric depression.

It is important to note that this study was conducted with a sample population from a specific region of Türkiye. While the findings provide valuable insights into geriatric depression, subjective health complaints, and life satisfaction in older adults in this context, it is important to acknowledge the limitations of generalising these results to larger and more diverse populations. Cultural, socioeconomic, and healthcare access disparities may influence the prevalence and impact of these issues in different settings. Future research is needed to investigate geriatric depression in diverse cultural and geographical contexts to better understand the global burden of this condition and to inform culturally appropriate interventions.

CONCLUSION

Geriatric depression is a complex health issue that biopsychosocially affects older adults. The findings

of this study highlight the importance of identifying, diagnosing, and treating depression in older adults. Increased subjective health complaints should be considered a key indicator for diagnosing geriatric depression. The management of geriatric depression requires comprehensive and multidisciplinary assessment processes, prospective and periodic follow-ups, and preventive, curative, and rehabilitative community-based healthcare services. Coordination models involving professionals from different disciplines should be established to ensure effective and comprehensive depression treatment.

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ETHICS STATEMENT

Ethics approval for the study was obtained before the study from Zonguldak Bulent Ecevit University Clinical Studies Ethics Committee (Decision date: 08.03.2024, Decision no: 519). The study process was carried out in accordance with the principles of the Helsinki Declaration.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

1 WHO. *Ageing and health*, 2022. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health.
2 UNFPA. *Ageing*, 2024. https://www.unfpa.org/ageing.
3 Hossain MK, Islam MN, Uddin MT, Hossain MS. Understanding the impact of socioeconomic and health factors on geriatric depression: a comparative study in rural and urban Bangladesh. *Health Sci Rep* 2024; **7**: e1849. https://doi.org/10.1002/hsr2.1849.
4 Ricciardi E, Spano G, Tinella L *et al*. Perceived social support mediates the relationship between use of greenspace and geriatric depression: a cross-sectional study in a sample of south-Italian older adults. *Int J Environ Res Public Health* 2023; **20**: 1–11. https://doi.org/10.3390/ijerph20085540.
5 WHO. Mental Health of Older Adults, 2023. https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults.
6 Hu T, Zhao X, Wu M *et al*. Prevalence of depression in older adults: a systematic review and meta-analysis. *Psychiatry Res* 2022; **311**: 114511. https://doi.org/10.1016/j.psychres.2022.114511.
7 Krishnamoorthy Y, Rajaa S, Rehman T. Diagnostic accuracy of various forms of geriatric depression scale for screening of depression among older adults: systematic review and meta-analysis. *Arch Gerontol Geriatr* 2020; **87**: 104002. https://doi.org/10.1016/j.archger.2019.104002.
8 Antony A, Parida SP, Behera P, Padhy SK. Geriatric depression: prevalence and its associated factors in rural Odisha. *Front Public Health* 2023; **11**: 1180446. https://doi.org/10.3389/fpubh.2023.1180446.
9 Jiang C, Zhu F, Qin T. Relationships between cronic diseases and depression among middle-aged and elderly people in China: a prospective study from CHARLS. *Curr Med Sci* 2020; **40**: 858–870. https://doi.org/10.1007/s11596-020-2270-5.
10 Alam MR, Karmokar S, Reza S, Kabir MR, Ghosh S, Mamun MAA. Geriatric malnutrition and depression: evidence from elderly home care population in Bangladesh. *Prev Med Rep* 2021; **23**: 101478. https://doi.org/10.1016/j.pmedr.2021.101478.
11 Eriksen HR, Ihlebæk C, Ursin H. A scoring system for subjective health complaints. *Scand J Public Health* 1999; **27**: 63–72. https://doi.org/10.1177/14034948990270010.
12 Schneider G, Driesch G, Kruse A, Wachter M, Nehen HG, Heuft G. What influences self-perception of health in the elderly? The role of objective health condition, subjective well-being and sense of coherence. *Arch Gerontol Geriatr* 2004; **39**: 227–237. https://doi.org/10.1016/j.archger.2004.03.005.
13 Balash Y, Mordechovich M, Shabtai H, Giladi N, Gurevich T, Korczyn AD. Subjective memory complaints in elders: depression, anxiety, or cognitive decline? *Acta Neurol Scand* 2013; **127**: 344–350. https://doi.org/10.1111/ane.12038.
14 Burmester B, Leathem J, Merrick P. Subjective cognitive complaints and objective cognitive function in aging: a systematic review and meta-analysis of recent cross-sectional findings. *Neuropsychol Rev* 2016; **26**: 376–393. https://doi.org/10.1007/s11065-016-9332-2.
15 Maglione JE, Ancoli-Israel S, Peters KW *et al*. Depressive symptoms and subjective and objective sleep in community-dwelling older women. *J Am Geriatr Soc* 2012; **60**: 635–643. https://doi.org/10.1111/j.1532-5415.2012.03908.x.
16 Pinquart M. Correlates of subjective health in older adults: a meta-analysis. *Psychol Aging* 2001; **16**: 414–426. https://doi.org/10.1037/0882-7974.16.3.414.
17 Diener E. Subjective well-being. *Psychol Bull* 1984; **95**: 542. https://doi.org/10.1037/0033-2909.95.3.542.
18 Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess* 1985; **49**: 71–75. https://doi.org/10.1207/s15327752jpa4901_13.
19 Bužgová R, Kozáková R, Bobčíková K, Zeleníková R. Predictors of life satisfaction in elders living at home in The Czech Republic. *PLoS One* 2023; **18**: e0283772. https://doi.org/10.1371/journal.pone.0283772.
20 Lee SW, Choi JS, Lee M. Life satisfaction and depression in the oldest old: a longitudinal study. *Int J Aging Hum Dev* 2020; **91**: 37–59. https://doi.org/10.1177/0091415019843448.
21 Roh S, Lee YS, Lee KH, Shibusawa T, Yoo GJ. Friends, depressive symptoms, and life satisfaction among older Korean Americans. *J Immigr Minor Health* 2015; **17**: 1091–1097. https://doi.org/10.1007/s10903-014-0021-z.
22 Salman A, Khattri PK. Effect of depression on life satisfaction among elderly. *Indian J Health Wellbeing* 2016; **7**: 746–749.
23 Elkin N. Bir aile sağlığı merkezine başvuran yaşlı bireylerde depresyon sıklığı ve yaşam doyumunun değerlendirilmesi. *Mersin Üniv Sağlık Bilimleri Dergisi* 2016; **9**: 9–21.

24 Palabıyıkoğlu R, Haran S, Yüca T, Köse K. Yaşlılarda depresyon ve yaşam doyumu. *Kriz Dergisi* 1992; **1**: 26–31.
25 Wuthrich VM, Dickson SJ, Pehlivan M *et al*. Efficacy of low intensity interventions for geriatric depression and anxiety-a systematic review and meta-analysis. *J Affect Disord* 2024; **344**: 592–599. https://doi.org/10.1016/j.jad.2023.10.093.
26 Fraenkel JR, Wallen NE, Hyun HH. *How to Design and Evaluate Research in Education*. New York: McGraw-Hill, 2012.
27 Kalaycıoğlu O, Kesgin MT, Demir G. Reliability and validity of the Turkish version of the subjective health complaints inventory. *Cukurova Med J* 2022; **47**: 366–376. https://doi.org/10.17826/cumj.1035899.
28 Burke WJ, Roccaforte WH, Wengel SP. The short form of the geriatric depression scale: a comparison with the 30-item form. *J Geriatr Psychiatry Neurol* 1991; **4**: 173–178. https://doi.org/10.1177/089198879100400310.
29 Durmaz B, Soysal P, Ellidokuz H, Isik AT. Validity and reliability of geriatric depression scale-15 (short form) in Turkish older adults. *Northern Clin Istanbul* 2018; **5**: 216–220. https://doi.org/10.14744/nci.2017.85047.
30 Dağlı A, Baysal N. Yaşam doyumu ölçeğinin Türkçe'ye uyarlanması: Geçerlik ve güvenirlik çalışması. *Electron J Social Sci* 2016; **15**: 1250–1262. https://doi.org/10.17755/esosder.75955.
31 Kline RB. *Principles and Practice of Structural Equation Modeling*. New York: Guilford Publications, 2011.
32 Soiza RL, Scicluna C, Bilal S. Virus infections in older people. In: Harris JR, Korolchuk VI, eds. *Biochemistry and Cell Biology of Ageing: Part IV, Clinical Science*. Singapore: Springer, 2023; 149–183. https://doi.org/10.1007/978-3-031-26576-1_8.
33 Thygesen E, Lindstrom TC, Saevareid HI, Engedal K. The subjective health complaints inventory: a useful instrument to identify various aspects of health and ability to cope in older people? *Scand J Public Health* 2009; **37**: 690–696. https://doi.org/10.1177/1403494809344104.
34 Triolo F, Vetrano DL, Sjöberg L *et al*. Somatic disease burden and depression risk in late life: a community-based study. *Epidemiol Psychiatr Sci* 2024; **33**: e6. https://doi.org/10.1017/S2045796024000064.
35 Karlsson S, Edberg AK, Hallberg IR. Professional's and older person's assessments of functional ability, health complaints and received care and service. A descriptive study. *Int J Nurs Stud* 2010; **47**: 1217–1227. https://doi.org/10.1016/j.ijnurstu.2010.03.003.
36 Fastame MC. Life satisfaction in late adult span: the contribution of family relationships, health self-perception and physical activity. *Aging Clin Exp Res* 2021; **33**: 1693–1698. https://doi.org/10.1007/s40520-020-01658-1.
37 Serra L, Silva L. Cognitive functioning and life satisfaction as predictors of subjective health complaints in elderly people. *Qual Ageing Older Adults* 2024; **25**: 83–91. https://doi.org/10.1108/QAOA-08-2023-0055.
38 Kim ES, Delaney SW, Tay L, Chen Y, Diener ED, Vanderweele TJ. Life satisfaction and subsequent physical, behavioral, and psychosocial health in older adults. *Milbank Q* 2021; **99**: 209–239. https://doi.org/10.1111/1468-0009.12497.
39 Silva MRD, Ferretti F, Pinto SDS, Tombini Filho OF. Depressive symptoms in the elderly and its relationship with chronic pain, chronic diseases, sleep quality and physical activity level. *Br J Pain* 2018; **1**: 293–298. https://doi.org/10.5935/2595-0118.20180056.
40 Schönenberg A, Heimrich KG, Prell T. Impact of depressive symptoms on medication adherence in older adults with chronic neurological diseases. *BMC Psychiatry* 2024; **24**: 131. https://doi.org/10.1186/s12888-024-05585-7.
41 Yu J, Rawtaer I, Fam J *et al*. Sleep correlates of depression and anxiety in an elderly Asian population. *Psychogeriatrics* 2016; **16**: 191–195. https://doi.org/10.1111/psyg.12138.
42 Ok E, Sayılan S. Depression and treatment adherence in elderly individuals with chronic disease. *Gümüşhane Univ J Health Sci* 2022; **11**: 610–616. https://doi.org/10.37989/gumussagbil.975649.
43 Devita M, De Salvo R, Ravelli A *et al*. Recognizing depression in the elderly: practical guidance and challenges for clinical management. *Neuropsychiatr Dis Treat* 2022; **18**: 2867–2880. https://doi.org/10.2147/NDT.S347356.
44 Adams TR, Rabin LA, Da Silva VG, Katz MJ, Fogel J, Lipton RB. Social support buffers the impact of depressive symptoms on life satisfaction in old age. *Clin Gerontol* 2016; **39**: 139–157. https://doi.org/10.1080/07317115.2015.1073823.
45 Tian HM, Wang P. The role of perceived social support and depressive symptoms in the relationship between forgiveness and life satisfaction among older people. *Aging Ment Health* 2020; **25**: 1042–1048. https://doi.org/10.1080/13607863.2020.1746738.
46 Ghimire S, Baral BK, Karmacharya I, Callahan K, Mishra SR. Life satisfaction among elderly patients in Nepal: associations with nutritional and mental well-being. *Health Qual Life Outcomes* 2018; **16**: 118. https://doi.org/10.1186/s12955-018-0947-2.
47 Li A, Wang D, Lin S *et al*. Depression and life satisfaction among middle-aged and older adults: mediation effect of functional disability. *Front Psychol* 2021; **12**: 755220. https://doi.org/10.3389/fpsyg.2021.755220.
48 Kojima G, Walters K, Iliffe S, Taniguchi Y, Tamiya N. Marital status and risk of physical frailty: a systematic review and meta-analysis. *J Am Med Dir Assoc* 2020; **21**: 322–330. https://doi.org/10.1016/j.jamda.2019.09.017.