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# EXAMINATION OF DEPRESSION AND DISABILITY IN AGED PEOPLE STAYING IN KAYSERI AGED CARE CENTERS

## *Kayseri Yaşlı Bakım Merkezlerinde Kalan Yaşlılarda Depresyon ve Yeti Yitiminin İncelenmesi*

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**ÖZET**

**Amaç:** Bu çalışma yaşlı bireylerde sağlık sorunlarından dolayı oluşabilecek yeti yitimi ile depresyon arasındaki ilişkiyi saptamakla birlikte yeti yitimi ve depresyonu tetikleyen risk etmenlerini belirlemek için planlanmıştır. **Yöntem:** Kesitsel tanımlayıcı tipteki bu çalışmada yaşlı bireyleri değerlendirmek için tanımlayıcı bilgileri içeren sorular, Dünya Sağlık Örgütü Yeti Yitimi Değerlendirme Çizelgesi 2.0 (WHODAS 2.0) ve Geriatrik Depresyon Ölçeği (GDÖ) kullanılmıştır. Araştırmaya toplamda 348 kişi katılmıştır; toplam kişi sayısının %53,7'si kadın (187 kişi) ve %48,3'ü erkek olmak üzere 161 kişi olarak belirlenmiştir. **Bulgular:** Geriatrik bakım merkezine gitmeyen yaşlılar, geriatrik bakım merkezindeki yaşlılara göre anlama iletişim kurma, insan ilişkileri, toplumsal yaşama katılım, yaşam aktiviteleri ve hareketlilikte daha fazla zorluk yaşadıkları görülmüştür. Hareket etmede çekilen zorluğun ise kadınlarda erkeklere göre daha yüksek olduğu belirlenmiştir. Kadınların ve bakımevine gitmeyen bireylerin yeti yitimi puanı anlamlı olarak daha yüksek bulunmuştur. Bakımevine gitmeyen, destekli yaşayan, ekonomik durumu kötü olan, eğitim seviyesi düşük olan, bekar olan ve kronik hastalığı olan bireylerde depresyon daha sık görülmekteydi. Kadınların depresyon puanları, erkeklere göre anlamlı olarak daha yüksek bulunmuştur. Yeti yitiminin tüm alt boyutları ile depresyon arasında pozitif yönde orta düzeyde anlamlı ilişki tespit edilmiştir. GDÖ puanı ve WHODAS 2.0 puanı arasında orta düzeyde pozitif ($r=0.601$) ve anlamlı ($p<0.05$) bir ilişki olduğu saptanmıştır. Yaşlı bireylerde yeti yitimi ve depresyonun birbirine yol açabilen durumlar olarak çok yönlü ele alınması ve bu ilişki tedavi ve bakım süreçlerini etkileyeceği için yaşlı bireylerin sıklıkla depresyon ve yeti yitimleri açısından değerlendirilmesi gerekliliği sonucuna varılmıştır. **Tartışma:** Yaş ile yeti yitimi arasında ve yeti yitimi ile depresif belirtiler arasında pozitif bir korelasyon bulunmuştur. Depresyon ve yeti yitimi kadınlarda, düşük gelirli yaşlı bireylerde ve kronik hastalıkları olan yaşlı bireylerde yaygındır ve literatürle benzerlik göstermektedir.

**Anahtar Kelimeler**: Depresyon, Yaşlı Bakım Merkezi, Yaşlı Yetişkinler, Yeti Yitimi

**ABSTRACT**

**Objective:** This study aimed to explore the correlation between disability and depression in aged individuals due to health issues, and identify predisposing factors. **Methods:** Utilizing a cross-sectional descriptive approach, the study employed questionnaires including the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0), and the Geriatric Depression Scale (GDS), to evaluate aged participants. A total of three hundredand forty-eight people participated in the study; 187 people, 53.7% of whom were female, and 161 people, 48.3% of whom were male. **Results:** Elderly individuals who did not reside in geriatric care centers exhibited greater difficulties in understanding communication, human relations, social participation, daily living activities, and mobility compared to those residing in geriatric care centers. The women faced more movement difficulties. Disability scores were notably higher in women and non-geriatric care center residents. Depression prevalence was higher among those without geriatric care center residency, with support, poor economic status, low education, single status, and chronic diseases. The women had significantly higher depression scores. Positive correlations were found between disability sub-dimensions and depression, as well as between GDS and WHODAS 2.0 scores. Comprehensive assessment of disability and depression in aged individuals is crucial, given their mutual influence. Regular evaluations are vital for effective treatment and care procedures. **Discussion:** A positive correlation has been found between age and disability, and between disability and depressive symptoms; as age increases, disability increases, and as disability increases, depressive symptoms also increase. The smilar to previous studies that depression and disability are more prevalent among women, elderly individuals with low income, and elderly individuals with chronic illnesses.

**Keywords**: Aged Individuals, Depression, Disability, Elderly Care Center

## INTRODUCTION

Aging is an unavoidable process encompassing biological, chronological, and social dimensions. Presently, aging has gained significance owing to the extension of human lifespan and the rise in the aged population (Dziechciaz & Filip, 2014).

Aging is the gradual accumulation of various harmful changes over time which heighten the risk of illness and mortality. Broadly, aging is characterized by structural damage, functional decline, depletion, typical phenotypic changes or their causes, and an escalating likelihood of death. Anything categorized as 'aging' must exhibit one of these traits (Lemoine , 2020). The rising average age of the population has also reinforced the association between old age and disability (Pan, et al., 2021).
When examining the risk factors for disability in old age, it is observed that they are categorized into two groups: those that can be modified and those that cannot be modified. Factors such as age, gender, and heredity are among the unmodifiable factors.

The modifiable factors are categorized as personal factors (age-related conditions, various disorders, limitations, ineffective coping strategies, sedentary lifestyle and unhealthy routines) and environmental factors (such as social support systems). In addition to all these factors, the quality and quantity of social support systems have also become important in cases of disability (Hairi et al., 2013; Kulkarni & Rodrigues, 2014). For this reason, it has been suggested to evaluate an individual's physical condition, psychology, social life situation, as well as cultural and environmental factors in order to identify risk factors (Hairi et al., 2013).

Disability is a complex, multidimensional, and multifaceted concept that has recently transitioned from a medical and individual perspective to a structural and social perspective. Hence, the social model of disability has begun to replace the medical model, emerging as the predominant perspective. People no longer perceive disability as solely a physiological issue but rather as a social phenomenon that impacts the entirety of humanity (Metzler, 2011). When examined from a public health perspective, it has become evident that aged individuals are the most vulnerable to disability, a situation of significant importance.

With aging, a stage of loss has emerged, characterized by the deterioration of individuals' physical and cognitive functions, decline in health, productivity, sexual life, income level, role, status, independence, and social life, among other factors, leading to numerous challenges. Depression stemming from all these losses in old age, which is often referred to as the period of losses, has become a significant mental health issue that is increasingly prevalent worldwide (Sjölund et al., 2015; Subramaniam et al., 2016). In addition to these losses, disability directly impacts an individual's independence and necessitates costly care and support, both socially and economically. It has been demonstrated that disability can evoke feelings of dependency and worthlessness in individuals, contributing to low self-esteem and depression (Softa & Karaahmetoğlu, 2016). As a result, it has been reported that disability and depression mutually influence each other, impacting older adults in various ways (Hairi et al., 2013).

This study was designed to investigate the relationship between disability and depression, which may arise due to health issues in older adults, and to identify the risk factors that contribute to the onset of disability and depression. Furthermore, the study illuminated the management of older adults' health and the implementation of protective and preventive measures to mitigate the disability resulting from depression. It was envisaged that the study could serve as a guide for older adults to lead healthier lives.

## METHODS

This cross-sectional study was designed to investigate depression and disability among older adults in Kayseri province. According to the 2022 Turkish Statistical Institute (TUIK) population data, the number of individuals aged 65 and over in Kayseri was 135,142. A sample calculation was performed using the EpiInfo program. Considering that the rate of depression in Kayseri was 30%, and based on the worldwide prevalence of geriatric depression

which varies between 5.3% and 56%, we calculated the sample size to be 322 with a 5% margin of error and a 95% confidence level (Obuobi-Donkor et al., 2021). For the research, a total of 348 individuals were included in the study, taking into account the inclusion and exclusion criteria of aged adults receiving daytime services at the Uluçınarlar Elderly Life and Solidarity Center affiliated with the Kayseri Metropolitan Municipality Department of Social Services, as well as other aged adults residing in Kayseri province. The questionnaire and interviews for the research were carried out using face-to-face survey methods between October 2022 and March 2023.

Questions that include descriptive information created by the researcher, the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) was utilized to evaluate disability among the older adults surveyed, and the GDS was employed to assess the degree of depression. The responses provided for the inquiry regarding the existence of chronic illnesses were organized and assessed by the researcher. Diabetes mellitus was assessed within the autoimmune and metabolic diseases category, asthma within the respiratory system diseases category, and coronary heart disease and hypertension within the cardiovascular diseases category. Written permission was obtained from the Kayseri Metropolitan Municipality to conduct the study at the Uluçınarlar Elderly Living and Solidarity Center. Subsequently, the purpose of the study was explained to the older adults, and their verbal consent was obtained.

WHODAS 2.0: It is a tool developed by the World Health Organization (WHO) that enables the assessment of health and disability in clinical practice and the general population. It comprises six domains encompassing activities deemed significant across various cultures, aiming to ascertain the degree of difficulty individuals face in performing specific activities. These domains are structured under the following headings: 1) Understanding and communication, 2) Mobility, 3) Self-care, 4) Getting alone, 5) Life activities, and 6) Participation. Aslan Kunt et al. conducted a study examining the validity and reliability of the Turkish translation of the WHODAS among both psychiatric patients and healthy controls (Aslan Kunt & Dereboy, 2018). In this study, participant responses were coded from 0 to 4 (0=None, 1=Very little, 2=Quite a lot, 3=Very much, 4=Excessive) using the complex assessment method, and overall disability scores or domain-specific disability scores were computed. A computer program accessible on the WHO website was utilized to compute overall or domain-specific disability scores.

GDS: It is expressed as a scale consisting of 30 self-report-based questions designed to allow older adults to easily answer yes or no, with reverse wording in questions 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 16, 17, 18, 20, 22, 23, 24, 25, 26, and 28. In the assessment of the scale, 1 point was assigned to responses indicating depression, while 0 points were assigned to all other responses, and the overall depression score was calculated accordingly. When assessing the scale, a score of 0 to 10 is categorized as “not depressed,” a score of 11 to 13 is categorized as “possibly depressed,” and a score of 14 or higher is categorized as “definitely depressed”. Written permission to use the scale was obtained from Ertan, who conducted the validity and reliability study of the scale, and the Cronbach’s alpha value of the sample in this study was found to be 0.93 (Ertan et al., 1997).

This article is derived from the thesis study titled “Investigation of Depression and Disability in the Elderly Residing in Nursing Homes in Kayseri.”. Statistical analysis was conducted using the SPSS 24.0 program, with mean and standard deviation utilized for continuous data, and frequency and percentages used for discrete data as descriptive statistics. The Kolmogorov-Smirnov/Shapiro-Wilk test was employed to evaluate whether the data were normally distributed. When comparisons were made between two groups, the Chi-square/Fisher’s exact test was applied for discrete data. When comparing two independent groups, the Mann-Whitney U test was utilized due to the data not demonstrating normal distribution. The Kruskal-Wallis test was utilized for variables that did not display normal distribution when comparing more than two independent groups. The relationships between quantitative vari-

ables were analyzed using Pearson correlation test since the data did not fit the normal distribution. The statistical significance level in this study is set at $p < 0.05$. This study was approved by the Erciyes University Faculty of Medicine Ethics Committee on October 12, 2022, with protocol number EÜT-F-BAEK 2022/695.

The total number of participants included in the study was 348. Out of the total number of participants, 28.7% (n=100) attended the day care center regularly during the day. The sociodemographic characteristics of the participants are presented in Table 1. Among the participants, 53.7% were female and 48.3% were male.

## RESULTS

**Table 1:** Distribution of Sociodemographic Characteristics of Participants (n=348)

| | | n | % |
|---|---|---|---|
| **Gender** | Male | 161 | 46.3 |
| | Female | 187 | 53.7 |
| **Age (Years)** | 65-74 | 251 | 72.1 |
| | 75-89 | 93 | 26.7 |
| | 90 ve 90+ | 4 | 1.2 |
| **Marital Status** | Married | 172 | 49.4 |
| | Single | 176 | 50.6 |
| **Economic Status** | Poor | 12 | 3.4 |
| | Average | 146 | 42.0 |
| | Good - Very good | 190 | 54.6 |
| **Education Status** | ≤8 years | 223 | 64.1 |
| | >8 years | 125 | 35.9 |
| **Chronic Illness** | Yes | 210 | 60.3 |
| | No | 138 | 39.7 |
| **Car Use Status** | I have never used it. | 170 | 48.9 |
| | I am using it. | 110 | 31.6 |
| | I used to use it, but I'm not using it now. | 68 | 19.5 |
| **Smartphone Usage** | I have never used it. | 93 | 26.7 |
| | I am using it. | 231 | 66.4 |
| | I used to use it, but I'm not using it now. | 24 | 6.9 |
| **Lifestyle** | Independent living within the community | 272 | 78.2 |
| | Supported living | 64 | 18.4 |
| | Hospitalized | 12 | 3.4 |
| **Living Together** | Alone | 98 | 28.2 |
| | With family | 246 | 70.7 |
| | With caregiver | 4 | 1.1 |
| **Type of Chronic Illness** | Cardiovascular diseases | 98 | 46.4 |
| | Autoimmune and metabolic diseases | 88 | 41.7 |
| | Respiratory system diseases | 21 | 10.0 |
| | Cancer diseases | 4 | 1.9 |
| **Total** | | 348 | 100 |

Individuals aged 65 years and over participated in the study, with an average age of 72.03±5.88 years. Among the individuals who participated in the study, the mean and standard deviation of the years of employment for those who had a past or ongoing working life were calculated as 34.99±9.48 (Table 1).

**Table 2:** Distribution of Participants' Disability Impairment and Its Sub-Dimensions Scores According to Gender and Geriatric Care Center Attendance

| Dimension | Category | N | Med | %25 | %75 | P |
|---|---|---|---|---|---|---|
| **Cognition** | Female | 187 | 1.20 | 0.3 | 1.8 | 0.454 |
| | Male | 161 | 1.00 | 0.22 | 1.8 | |
| | Geriatric Care Center | 100 | 1.0 | 0 | 1.7 | **0.015** |
| | Others | 248 | 1.3 | 0.3 | 2.0 | |
| **Self-care** | Female | 187 | 0.5 | 0 | 1.8 | 0.094 |
| | Male | 161 | 0.5 | 0 | 1.8 | |
| | Geriatric Care Center | 100 | 0 | 0 | 0.8 | **<0.001** |
| | Others | 248 | 0.8 | 0 | 2.3 | |
| **Getting Alone** | Female | 187 | 0.8 | 0.8 | 1.6 | 0.228 |
| | Male | 161 | 0.8 | 0.2 | 1.6 | |
| | Geriatric Care Center | 100 | 0.8 | 0.4 | 1.1 | **<0.001** |
| | Others | 248 | 0.8 | 0.6 | 1.9 | |
| **Participation** | Female | 187 | 1.6 | 1.1 | 2.4 | 0.134 |
| | Male | 161 | 1.4 | 0.6 | 2.3 | |
| | Geriatric Care Center | 100 | 1.1 | 0.5 | 1.5 | **<0.001** |
| | Others | 248 | 1.8 | 1.1 | 2.8 | |
| **Mobility** | Female | 187 | 1.4 | 0.6 | 2.4 | **0.006** |
| | Male | 161 | 0.8 | 0.4 | 2 | |
| | Geriatric Care Center | 100 | 0.6 | 0.2 | 2.8 | **<0.001** |
| | Others | 248 | 1.4 | 0.6 | 0.8 | |
| **Life Activities** | Female | 187 | 1 | 0.6 | 1.6 | 0.207 |
| | Male | 161 | 0.9 | 0.5 | 1.5 | |
| | Geriatric Care Center | 100 | 0.6 | 4 | 1.1 | **<0.001** |
| | Others | 248 | 1.1 | 0.6 | 1.9 | |
| **Disability** | Female | 187 | 33.0 | 20.6 | 51.5 | **0.037** |
| | Male | 161 | 26.2 | 15.1 | 50.0 | |
| | Geriatric Care Center | 100 | 20.8 | 11.9 | 35.0 | **<0.001** |
| | Others | 248 | 36.1 | 20.1 | 58.9 | |

The comparison of the disability scores of the participants according to their gender and geriatric care center attendance status is presented in Table 2. Participants who did not attend a geriatric care center exhibited significantly higher levels of difficulty in cognition, getting alone, participation in social life, life activities, and mobility compared to those who attended. It was found that the difficulty in mobility was higher in female participants than in male participants. The disability score of women and participants who did not attend a geriatric care center was found to be significantly higher.

**Table 3:** Examination of Depression Levels of Participants According to Some Characteristics

| | | Level of Depression | | | | |
|---|---|---|---|---|---|---|
| | | **No Depression n (%)** | **Potential Depression n (%)** | **Definite Depression n (%)** | $x^2$ | **P** |
| **Gender** | Female | 54 (28. 9) | 32 (17. 1) | 101(54) | 10.128 | **0.006** |
| | Male | 59 (36. 6) | 42 (26. 1) | 60(37. 3) | | |
| **Age (Years)** | Elderly(65-74) | 89 (35. 5) | 54 (21. 5) | 108(43) | 4.597 | 0.331 |
| | Advanced Age (75-89) | 23 (24. 7) | 19 (20. 4) | 51(54. 8) | | |
| | Old age (90 and above) | 1(25) | 1 (25) | 28(50) | | |
| **Geriatric Health Care** | Yes | 60 (60) | 22 (22) | 18(18) | 57.015 | **<0.001** |
| | No | 53 (21. 4) | 52 (21) | 143(57. 7) | | |
| **Lifestyle** | Independent within the community | 107 (39. 3) | 67 (24. 6) | 98(36) | 54.848 | **<0.001** |
| | Supported living | 5 (7. 8) | 5 (7. 8) | 54(84. 4) | | |
| | Hospitalized | 1 (8. 3) | 2(16. 7) | 9(75) | | |
| **Living Together** | Alone | 30 (30. 6) | 20(20. 4) | 48(49) | 0.872 | 0.967 |
| | With family | 82 (33. 3) | 53(21. 5) | 111(45. 1) | | |
| | With caregiver | 1(25) | 1(25) | 2(50) | | |
| **Economic Status** | Poor | 1(8. 3) | 0(0) | 11(91. 7) | 10.408 | **0.028** |
| | Average | 45 (30. 8) | 35(24) | 66(45. 2) | | |
| | Good - Very good | 67(35. 3) | 39(20. 5) | 84(44. 2) | | |
| **Education Status** | ≤8 years | 54 (47. 8) | 45(60. 8) | 124(77. 5) | 25.948 | **<0.001** |
| | >8 years | 59 (52. 2) | 29(39. 2 ) | 36(22. 5) | | |
| **Marital Status** | Married | 69 (61) | 46(62. 2) | 57(35. 4) | 23.587 | **<0.001** |
| | Single | 44 (39) | 28(37. 8) | 104(64. 6) | | |
| **Chronic Illness** | Yes | 56(40. 6) | 29(21) | 53(38. 4) | 7.690 | **0.021** |
| | No | 57 (27. 1) | 45(21. 4) | 108(51. 4) | | |

The examination of some characteristics of the participants according to their depression status is presented in Table 3. Depression was more prevalent among individuals who did not attend a geriatric care center, lived with support, with a poor economic status, with a low level of education, were single, and with chronic diseases. The depression scores of women were found to be significantly higher than those of men.

**Table 4:** Correlation of Geriatric Depression Scale and Disability Scale Subscales

| | **r** | **p** |
|---|---|---|
| **Cognition Score** | 0.468 | **<0.001** |
| **Mobility Score** | 0.519 | **<0.001** |
| **Self-care Score** | 0.545 | **<0.001** |
| **Getting alone Score** | 0.436 | **<0.001** |
| **Life activities Score** | 0.452 | **<0.001** |
| **Participation Score** | 0.527 | **<0.001** |

In Table 4, the relationship between the depression status of the participants and the sub-dimensions of disability is examined. A positive and moderately significant relationship was observed between all sub-dimensions of disability and depression.

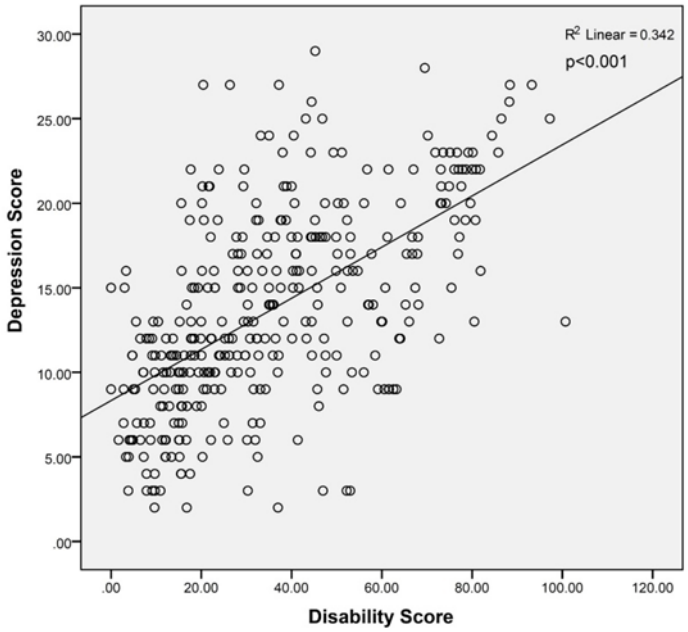


**Figure 1:** The Relationship Between Geriatric Depression Scale Score and Disability Scale Score

There was a moderate positive correlation (r=0.601) that was statistically significant (p<0.05) between the GDS score and the WHODAS score (Figure 1).

## DISCUSSION

Due to the normal physiological effects of aging and chronic diseases seen in old age, it has been found that elderly individuals experience inability to maintain self-care, inability to fulfill activities of daily living, increased dependence on others and individuals experience different levels of disability (Çivi & Tanrıkulu, 2000). A study examining disability loss and depressive symptoms in older adults with chronic physical illness is similar to the literature, There was a positive correlation between age and disability and between disability and depressive symptoms; disability increased with increasing age and depressive symptoms increased with increasing disability (Havva, 2014). Although depression can be seen at any age, it can be said that elderly individuals are more at risk for depression, as it is expected to see a decrease in physical abilities, decline in cognitive functions, weakening in maintaining daily activities and social relations, and deterioration in economic status with the advancement of age. The findings of the current study support this explanation. The findings of the current study, determined that as the scores of disability increased, depression scores also increased.

It has been observed that as people getting age, their appearance, roles, and status deteriorate, leading to an increase in disability and physical illness.Studies have shown that depression escalates with age (Havva, 2014; Softa & Karaahmetoğlu, 2016). Tell et al. (2014) found significant relationships between age and disability and between age and depression in a study conducted on aged adults with chronic illnesses (Havva, 2014). According to the findings of another study, it was determined that the mean depression scores increased with age, with the highest increase observed in the 73-76 age group (Softa & Karaahmetoğlu, 2016). The findings of the current study was determined that depression scale scores

did not significantly differ according to age groups, contrary to the literature.

It is a know that depression is more prevalent in women, and this finding has been supported by numerous studies (Ağırman et al., 2017; Albert, 2015; Kuehner, 2017; Sengupta & Benjamin, 2015; Yanardağ & Şahin, 2019). The findings of the current study corroborate these results, indicating that the depression scores of female participants were significantly higher than those of male participants. It is believed that this could be explained by the fact that women are subjected to more stress due to juggling multiple roles such as mother, wife, homemaker, and career woman simultaneously. Additionally, they tend to be more emotional, detail-oriented, and have a lower pain threshold.

It is a common finding that depression is more prevalent in older adults with chronic diseases, and this finding has been supported by many studies (Acharya & Agius, 2018; Calderón-Larrañaga et al., 2016; Mendes et al., 2017; Polat & Geçici, 2020). The results of the current study align with this; when analyzing participants without depression based on the presence of chronic diseases, it was observed that the proportion of participants without chronic diseases was higher than the proportion of participants with chronic diseases. Among the participants with definite depression, the proportion of participants with chronic diseases was higher than the proportion of participants without chronic diseases. Chronic diseases have led to various issues such as lack of personal care, pain, insomnia, and loss of social life. These and similar problems have often required seeking medical assistance. For the aged individuals who already have to adhere to a protocol, the additional restrictions imposed by hospitalization can exacerbate coping difficulties and increase the risk of depression.

Older adults may struggle to communicate meaningfully with others, and it has been observed that they may even refuse to communicate and gradually withdraw into their own shells. This has been observed to impact the subjective well-being of the individual and increase the inclination towards depression, a finding supported by numerous studies (Bekhet & Zauszniewski, 2012; Eryilmaz & Atak, 2011; Klug et al., 2014; Sertel et al., 2016). The findings of the current study corroborate this; a moderate positive and significant ($p<0.05$) relationship was observed between the cognition score, the getting alone score, and the GDS score. In other words, it was observed that the depression scores of the participants increased as their cognition skills, as well as their skills in getting alone, deteriorated.

It was found that there was a statistically significant difference between the lifestyles of older adults and their mean scores of loneliness and depression, as well as their perceptions of aging. These results indicated that older adults who lived with their spouses and children experienced less loneliness and depression (Ağırman et al., 2017; Ağırman & Gençer, 2017; Parlar Kılıç et al., & Korhan, 2014). When examining the depression scores of individuals with depression based on their living arrangements, it was found that the highest score was observed in the aged group living alone (Softa & Karaahmetoğlu, 2016). In contrast to all these, the findings of the present study indicated that depression levels did not significantly differ according to cohabitation status. It is believed that older adults who are able to live independently are expected to experience relatively fewer physical, psychological, and social issues. However, aged individuals often seek social environments and support within their family settings or through participation in social activities at geriatric care centers, care facilities, etc. Taking into account that the feelings of loneliness among older adults living in geriatric care centers were found to be relatively low due to the influence of social service factors, it may help to explain why depression scores could decrease in older adults living alone (Ağırman & Gençer, 2017; Parlar Kılıç et al., 2014). The findings of the current study support this explanation, as it was found that the depression scores of the participants increased as their ability to participate in social life deteriorated.

A Chinese study has demonstrated that depression in older adults is strongly correlated with lifestyle (Hua et al., 2015). Previous studies align with the literature; given that older adults residing in geriatric care centers are already estimated to experience physical, psychological, and social problems, it is

considered a natural occurrence for the incidence of depression to increase (Yilmaz, 2018). On the contrary, in our current study, participants who regularly attended the geriatric care center were found to experience less difficulty in participating in social life compared to others, and the rate of depression among those who regularly attended the geriatric care center was lower than those who did not attend. This was thought to be due to various reasons. It has been observed that aged individuals from various backgrounds and different social circles can come together at the geriatric care center, engage in conversations, find someone to share their problems with, and have a better chance of making friends. This supports the findings of the current study that the difficulty in human relations is lower in participants who regularly attend geriatric care centers compared to other participants. While medical services related to aged care can be easily provided thanks to the healthcare workers in the geriatric care center, it was determined that access to medical services may not be as quick and easy for older adults living alone or with family members. It has also been observed that older adults can find support through social activities in the care home. It has been argued that aged residents in geriatric care centers have certain advantages over elderly individuals living with their children. This is because their ages are similar, their worldviews, perspectives on life, and emotions align more closely, and there is no environment where intergenerational conflicts may occur. Because it has been determined that aged individuals may experience difficulties in communicating with their children and grandchildren due to intergenerational conflicts, and consequently, they may feel excluded (Ağırman et al., 2017). This helped to explain the high rate of depression observed in the group of older adults who did not regularly attend geriatric care centers in the present study.

Many more potential causes have been identified for the prevalence of depression in older adults. In a study, depression in older adults was found to be associated with decline in cognitive function, functional impairment, slowing of psychomotor movement, weakened cognitive function, and decreased ability to initiate any task (Kvelde et al., 2015; Sertel et al., 2016). The findings of the current study align with other studies; a moderate positive and significant ($p<0.05$) relationship was observed between the participants' cognition, mobility score, self-care score, life activities score, and GDS score.

The scores for disability and depressive symptoms were found to be higher among illiterate individuals, working-class individuals and older adults living in extended families. Studies have shown that inadequate income levels predispose individuals to depression (Softa & Karaahmetoğlu, 2016). In another study, a significant relationship was found between income level and disability and depressive symptoms, with low-income aged individuals having high mean scores of disability and depressive symptoms (Havva, 2014; Softa & Karaahmetoğlu, 2016). Studies have shown that income level is a significant variable affecting depression (Softa & Karaahmetoğlu, 2016; Yanardağ & Şahin, 2019). The results of our study align with the literature, as it was observed that the economic status of the participants significantly differentiated their levels of depression. It was observed that individuals with poor economic status had the highest level of depression. It was found that participants with moderate economic status did not significantly differ in depression scale scores compared to participants with very good and good economic status ($p>0.05$).

The studies conducted are consistent with the literature, and it was determined that there was a statistically significant difference between the scores of disability and depressive symptoms of older adults according to their educational status (Havva, 2014; Saltan, 2017; Yanardağ & Şahin, 2019). When examining the effect of educational status on depression level in the current study, it was determined that the participants' educational status significantly differentiated their levels of depression. When a comparison was made between the participants who were determined to have definite depression according to the GDS, it was found that this rate was higher in individuals with 8 years of education or less. We can say that educational status has a positive impact on individuals' sense of well-being.

The studies were consistent with the literature, and it was found that being widowed or divorced was

associated with higher dependency on daily life activities, depression, and disability scores in aged individuals (Havva, 2014; Yanardağ & Şahin, 2019). When the marital status of participants who were found not to have depression according to the GDS was analyzed, it was observed that the highest rate was among married individuals. The depression scale scores of married participants were found to be significantly lower than those of single participants. It is believed that spending old age alone may increase the propensity for depression as it could make life more challenging.

The results of a study were consistent with the literature, indicating that disability was higher in women than in men (Chaoping et al., & Wang, 2023). In a study, no significant relationship was found between gender and disability (Ören & Önal, 2016; Yiğitbaş & Deveci, 2016). One study found higher levels of disability in men with the disease (Afsar et al., & Akkaya, 2012). Another study indicated that functional disability was lower in men with the disease (Karadağ et al., 2016). In the findings of the current study, it was observed that the disability scores of female participants were significantly higher than those of male participants.

According to the study findings, there was a statistically significant ($p<0.05$) moderate positive correlation ($r=0.601$) between the GDS score and the WHODAS (Figure 1). Accordingly, as the average disability scores of older adults increased, there was a significant increase in their average depression scores. The study revealed associations between disability and depression with gender, economic status, educational level, marital status, and the presence of chronic diseases in the aged. It was observed that depression and disability scores were higher in women, single or widowed individuals, those with chronic diseases, and individuals with low income and education levels. Additionally, the depression and disability scores of those who regularly attended geriatric care centers were found to be lower.

The conclusion drawn was that older adults need to be regularly assessed for depression and disability. Disability and depression in older adults should be approached from a multidimensional perspective, recognizing that they can mutually influence each other. This understanding of their relationship will impact treatment and care processes. The disability and depressive symptoms of older adults need to be evaluated, and strategies should be developed to prevent or minimize their impact on the individual's life. It is crucial to provide support for older adults and acknowledge any issues they may face, regardless of their magnitude. Ensuring that they have access to social services for education and rehabilitation is essential. Moreover, it is important to recognize that the primary objective when working with older adults with disabilities is to promote their independence to the greatest extent possible. Family members and others in their environment should be mindful of this goal and work towards raising awareness accordingly. Considering the beneficial effects of regular attendance at geriatric care centers on disability and depression, it is recommended to implement remedial interventions aimed at expanding and increasing the number of geriatric care centers.

## Limitations

The calculation of the WHODAS-2 scale score was helpful in determining the impact of an existing disability on the individual's life. However, no clear information on score evaluations was found. In addition, the WHODAS-2 scale has been used in previous studies, especially in psychiatric populations, and since there was no cut-off point in the evaluation, a complete distinction could not be made and only the total score was used. This may be considered as a limitation in understanding the results of the study.

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