

Malnutrition Frequency and its Relationship with the Disease Severity in Geriatric Psoriasis Patients: A Cross Sectional Study

Psöriyazis Hastalarında Geriatrik Yaş Grubunda Malnütrisyon Sıklığı ve Hastalık Şiddeti ile İlişkisi: Kesitsel Bir Çalışma

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ABSTRACT Objective: Whether psoriasis increases the frequency of malnutrition in the geriatric age group and whether malnutrition's frequency or severity and disease severity is related, remains unclear. This study aims to determine the frequency of malnutrition in geriatric psoriasis patients and identify associated factors. **Material and Methods:** Thirty-two patients aged sixty and above treated at Psoriasis Clinic of Ege University Hospital between July 2019 and May 2021 were included in the study, administered survey forms, mini nutritional assessment (MNA), and Psoriasis Area Severity Index (PASI) were reported. MNA score of 24 and above indicate no malnutrition risk, 17-23.5 points suggest risk of malnutrition, and below 17 points indicate malnutrition. PASI score 10 and above categorize the disease as moderate-severe. SPSS 21.0 software was used. Chi-square test, Fisher's exact test for correlation analysis, multivariate logistic regression analysis were used to determine factors associated with malnutrition risk. **Results:** The average age of thirty-two psoriasis patients is 67.4 and 84.4% are male. Among the patients, analysis showed no statistically significant relationship between sociodemographic factors and MNA score, clinical findings and MNA score, or PASI values. According to PASI values, 15.6% of patients had a PASI of 10 or higher, 4 at risk of malnutrition had PASI below 10. Twenty three patients in normal MNA group had PASI below 10. Only normal patients and patients who were at risk of malnutrition were detected. Regression analysis showed that risk of malnutrition was 52.51 times higher in alcohol users (odds ratio: 52.5) (confidence interval=2.514-1096.76, p=0.011). **Conclusion:** No malnutrition cases were detected. As risk of malnutrition is found to be higher among alcohol users of geriatric psoriasis patients, further evaluation of its association with malnutrition will increase awareness for elder health.

ÖZET Amaç: Bu çalışmada, psöriyazisin geriatrik yaş grubunda malnütrisyon sıklığını artırıp artırmadığı ve hastalık şiddetiyle malnütrisyonun sıklığının ya da şiddetinin artırıp artırmadığı henüz aydınlatılmadığından; geriatrik psöriyazis hastalarında malnütrisyon sıklığının belirlenmesi, ilişkili faktörlerin tespit edilmesi amaçlanmıştır. **Gereç ve Yöntemler:** Ege Üniversitesi Hastanesi Psöriyazis Polikliniğinde Temmuz 2019-Mayıs 2021 tarihlerinde izlenen 60 yaş ve üstü 32 hasta dâhil edilmiş olup hastalar anket formu, mini nütrisyonel değerlendirme [mini nutritional assessment (MNA)] testi, Psöriyazis Alan Şiddet İndeksi (PAŞİ) ile değerlendirilmiştir. Malnütrisyon açısından MNA puanı 24 ve üzeriyse risk bulunmamaktadır. 17-23,5 puan riski olduğunu; 17 puan altı ise malnütrisyonu olduğunu gösterir. PAŞİ'den 10 ve üzeri puan alınması hastalığın orta-şiddetli olduğunu göstermektedir. SPSS 21.0 istatistik programı kullanılmıştır. Malnütrisyon riski ile ilişkili faktörleri belirlemek için öncelikle ki-kare testi, Fisher exact test ve korelasyon, çok değişkenli karşılaştırmada lojistik regresyon analizi kullanılmıştır. **Bulgular:** Otuz iki psöriyazis hastasının yaş ortalaması 67,4 olup, %84,4'ü erkektir. Malnütrisyonla, sosyodemografik ve klinik faktörleri arasındaki ilişkiyi değerlendirmek için yapılan korelasyon analizine göre sosyodemografik faktörler, klinik bulgular ile MNA skoru ve PAŞİ değerleri arasında istatistiksel açıdan ilişki anlamlı değildir. Hastaların %15,6'sının PAŞİ değeri 10 ve üstüdür. Malnütrisyon yönünden risk altında olan 4 hasta, MNA'ya göre normal grupta olan hastaların 23'ü, 10 altında PAŞİ değerine sahiptir. Yalnızca normal ve risk altında hasta saptanmıştır. Regresyon analizine göre geriatrik psöriyazis hastalarında malnütrisyon durumuna etki edebilecek faktörler değerlendirildiğinde; alkol kullananlarda malnütrisyon riski 52,51 kat daha yüksek bulunmuştur (göreceli olasılıklar oranı: 52,5) (güven aralığı=2,514-1096,76, p=0,011). **Sonuç:** Çalışmamızda, malnütrisyonlu hasta bulunmamıştır. Alkol kullananlarda kullanmayanlara göre malnütrisyon riski oldukça yüksek bulunduğu; alkol tüketiminin sorgulanması ve malnütrisyonla ilişkisinin daha ayrıntılı değerlendirilmesi ve hastaların bu konudaki farkındalığının artırılması yaşlı sağlığı açısından önem taşıyacaktır.

Keywords: Elderly; psoriasis; malnutrition; disease severity

Anahtar Kelimeler: Yaşlı; psöriyazis; malnütrisyon; hastalığın şiddeti

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Psoriasis is a common inflammatory condition seen in the community (prevalence: 1.5-2%).¹⁻³ It is a chronic condition characterized by exacerbations and remissions, leading to various consequences ranging from physical disability to emotional disorders such as depression and decreased self-esteem. It can even lead to social stigmatization. Although the onset of psoriasis typically occurs under the age of 40, it can start at any stage of life. The disease usually experiences its first onset peak between the ages of 30-39, followed by a second peak between 50-59 or 60-69.⁴ The gender distribution of psoriasis is generally equal between men and women.⁵ Clinical types of psoriasis include plaque, scalp, palmoplantar, pustular, inverse, erythrodermic, arthropathic, and nail psoriasis. Psoriasis can coexist with other diseases, with the most common associations being psoriatic arthritis, anxiety, and depression. Currently, the associations of psoriasis, now recognized as a chronic inflammatory systemic disease, with other diseases are being investigated.⁶ Malnutrition is a condition where energy, protein, and other essential nutrients are insufficient, imbalanced, or excessive due to inappropriate dietary intake or nutritional disorders resulting from illnesses. Regardless of the cause of hospitalization, malnutrition in a patient negatively affects treatment outcomes, prolongs treatment duration, and increases costs. Several studies conducted in various centers in Türkiye have reported malnutrition rates ranging from 11% to 63% among hospitalized patients.⁷ Other studies in Türkiye have shown malnutrition prevalence or risk among outpatient elderly individuals to be between 13% and 28%, among hospitalized patients to be between 25% and 45%, among hospitalized elderly patients to be between 20% and 60%, and among institutionalized elderly individuals to be between 30% and 70%.⁸ In a study performed worldwide in 2010, malnutrition rates were found to be 5.8% in community-dwelling elderly individuals, 50.5% in rehabilitation centers, 13.8% in nursing homes, and 38.7% in hospitalized patients.^{4,9} Prevalence studies conducted worldwide have shown that approximately one-fourth of the geriatric population (20-30%), 5-15% of elderly individuals in outpatient settings, 15-45% of elderly patients presenting to hospitals, 20-65% of hospitalized elderly patients, and

25-85% of institutionalized elderly individuals suffer from malnutrition.⁸ These studies reveal that malnutrition is common in the general population and even more so in individuals with comorbidities.

Malnutrition in elderly patients can also be associated with alcohol consumption. Alcohol remains the most commonly used substance among the elderly population.¹⁰ According to the Royal College of Psychiatrists' 2018 report, the highest increase in alcohol-related deaths since 2001 has been observed among elderly individuals, particularly in the 80-84 age group.¹¹ For this reason, alcohol consumption in the elderly has been classified as an increasing public health problem. Alcohol-related problems can manifest as malnutrition, cognitive deterioration, and worsening of existing medical conditions.¹⁰ Hence, our study also investigated alcohol consumption as one of the potential factors contributing to malnutrition.

Although there have been numerous studies on the comorbidities of psoriasis, there is a lack of detailed research in the literature regarding malnutrition, an important geriatric syndrome that can significantly affect the lives, treatment processes, and prognosis of patients at this age group. The aim of this study is to determine the frequency of malnutrition in geriatric psoriasis patients and identify its relationship with disease severity and sociodemographic characteristics.

MATERIAL AND METHODS

The study population was comprised of psoriasis patients aged sixty and above who applied to the Psoriasis Follow-up Clinic of the Department of Dermatology and Venereal Diseases at Ege University Faculty of Medicine between July 2019 and May 2021 and agreed to participate. Individuals who could provide written consent and had a definite diagnosis of psoriasis confirmed by biopsy were included in the study. Patients with conditions that prevent them from giving written consent, those who were unable to communicate, those with clinical mental retardation, individuals who were not willing to participate, patients with conditions that could lead to malnutrition to a significant extent (such as cancer, neurolog-

ical diseases causing swallowing problems like Alzheimer's or multiple sclerosis), those with pathologies or oral lesions at a level that would hinder written consent (severe scleroderma, oral blisters), individuals with diseases causing malabsorption (such as celiac disease), complicated diabetes mellitus patients, individuals with advanced kidney failure, and patients with severe depression were excluded from the study. Psoriasis patients who met the study criteria were informed about the study and signed informed consent forms. This study was performed in accordance with the ethical principles of the Declaration of Helsinki. The necessary ethical approval for the research was received from the Ege University Faculty of Medicine Medical Research Ethics Committee with the number and date August 21, 2019-E.252487, respectively.

The sample size was planned to be determined in proportion to the number of patients under follow-up and treatment in the psoriasis clinic who applied within the specified age and time frame. The goal was to reach the required number of patients, which was determined to be 28 patients based on a power analysis using correlation analysis between two parameters (malnutrition and disease severity) with G power statistics 3.1.9.2 (Heinrich-Heine-Universität, Düsseldorf, Germany) analysis.

In this cross-sectional study, the data collection tools included a patient questionnaire form and the mini nutritional assessment (MNA) scale. The dependent variable of the research is the malnutrition status. The MNA scale was applied to determine the malnutrition status. MNA is a scale recommended to be used in the geriatric age group by the European Society of Parenteral and Enteral Nutrition, and it is a preferred scale in many studies for screening and evaluating the presence of malnutrition. All scoring is done on a scale of 30 points, and when 12 or more points are obtained out of 14 questions in the screening section consisting of 6 questions, the person's nutrition is considered normal, and the test is terminated. If 11 points or less are obtained, the remaining 12 questions of the test are continued. If the MNA total score is 24 or higher, there is no risk of malnutrition. A score of 17-23.5 indicates a risk of malnutrition, while a score below 17 indicates

protein-energy malnutrition. In the 17-23.5 score range, malnutrition risk can be detected without significant changes in serum albumin and body weight levels. Patients with test results in this score range must be monitored, and factors causing the risk should be corrected. MNA should be repeated after 3-6 months to control the risk status.¹²

The independent variables of the study were age, gender, educational status, marital status, economic status, place of residence, number of people living together, employment status, occupation, social security status, and disease severity [Psoriasis Area Severity Index (PASI) value]. PASI is currently the most valid scoring system that evaluates the prevalence and severity of psoriasis together. The PASI value is obtained by summing the severity values of each body area, with a maximum value of 72. A PASI score of 10 or higher defines the disease as moderate to severe and a candidate for systemic treatment.¹³

In the statistical analysis of the study, the SPSS 21.0 program was used. Descriptive analyses were performed to calculate descriptive values such as frequency distributions, mean, standard deviation, median, minimum, maximum, and percentages. To determine the factors associated with malnutrition risk, univariate binary and then multivariate logistic regression analysis were used. In this analysis, explanatory variables with p-values of <0.20-0.25 were included in the multivariate logistic regression analysis. The results were expressed as odds ratios with a 95% confidence interval. In the data analysis, patients were divided into 2 groups according to their age: early elderly (60-74) and advanced elderly (75 and above).

RESULTS

The qualifications of the participants according to sociodemographic and clinical characteristics are listed in [Table 1](#).

Among the study participants, 84.4% were male (n=27). Age distribution was concentrated in early old age with 84.4%. The majority were primary school graduates (37.5%); however, 31.3% had university education or higher. Those who were married constitute the majority (87.5%). The rate of those living alone is 9.4%. 68.8% were retired and 12.5%

TABLE 1: Distribution of participants according to sociodemographic and clinical characteristics.

	n (%)
Age distribution	
60-74 years (early elderly)	27 (84.4)
75 years and older (elderly and late elderly)	5 (15.6)
Gender	
Female	5 (15.6)
Male	27 (84.4)
Marital status	
Single	1 (3.1)
Married	28 (87.5)
Divorced	1 (3.1)
Widowed	2 (6.3)
Educational background	
Illiterate	1 (3.1)
Literate	2 (6.3)
Primary school	12 (37.5)
Middle school	3 (9.4)
High school	4 (12.5)
University and above	10 (31.3)
PASI value	
10 and above	5 (15.6)
Below 10	27 (84.4)
Smoking status	
Yes	18 (56.3)
No	14 (43.8)
Alcohol consumption	
Yes	4 (12.5)
No	28 (87.5)
Chronic diseases	
Yes	23 (71.9)
No	9 (28.1)
Presence of nausea	
Yes	3 (9.4)
No	29 (90.6)
Presence of constipation	
Yes	4 (12.5)
No	28 (87.5)
Use of biological agents	
Yes	12 (37.5)
No	20 (67.5)

PASI: Psoriasis Area Severity Index.

were housewives. Only 15.6% of the patients had moderate to severe psoriasis according to the PASI. Since all patients were under treatment, moderate to severe psoriasis was rare. 43.8% of the patients had never smoked and 87.5% had never consumed alcohol. In the last 3 weeks, 91.0% of the patients had no

nausea and 88% had no constipation. 37.5% of the patients were using biologic agents at the time of inclusion (Table 1).

The malnutrition status of the participants by gender is shown in Figure 1.

Among the patients included in the study, 16% were at risk for malnutrition (n=5). 4 of the 5 patients at risk for malnutrition were male and one was female. Similarly, 23 of the patients in the normal group according to MNA were male and 4 were female (Figure 1).

The variables affecting the MNA score in geriatric psoriasis patients are shown in Table 2 and Table 3.

According to the results of the univariate binary logistic regression analysis, when assessing the key factors that could affect the malnutrition status in geriatric psoriasis patients, variables with a p-value <0.25, including age, marital status, and alcohol use, were considered for inclusion in the multivariate logistic regression model (Table 2).

Consequently, the results of the multivariate logistic regression model incorporating these variables are provided in Table 3.

According to the results of the multivariate logistic regression analysis, the effect of the age variable on malnutrition status in geriatric psoriasis patients was found to be insignificant. However, the contribution of alcohol use was deemed significant. The risk of malnutrition was found to be 52.5 times higher in alcohol users compared to non-users (Table 3).

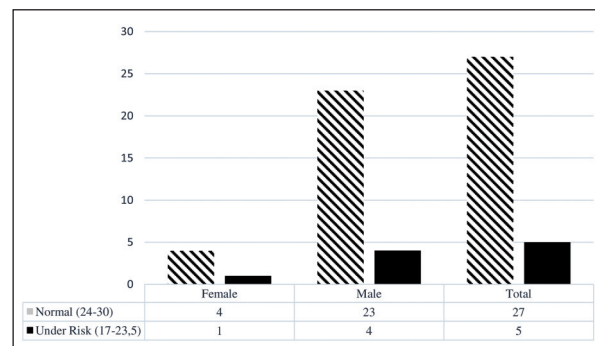


FIGURE 1: Malnutrition status of participants by gender.

TABLE 2: Variables affecting MNA score in geriatric psoriasis patients.

Variables	OR	95% CI	p value
Age	0.19	0.02-1.62	0.128
Gender	1.44	0.13-16.41	0.770
Income level	0.53	0.07-3.82	0.525
Educational background	1.88	0.27-13.09	0.526
Marital status	8.33	0.84-82.86	0.070
PASI value	1.44	0.13-16.41	0.770
Smoking status	0.27	0.03-2.73	0.267
Alcohol consumption	39.00	2.67-569.67	0.007
Chronic diseases	0.00	0.00-0.00	0.999
Presence of nausea	3.13	0.23-43.02	0.394
Presence of constipation	2.00	0.16-24.33	0.587
Use of biological agents	0.88	0.13-6.22	0.900

MNA: Mini nutritional assessment; OR: Odds ratio; CI: Confidence interval; PASI: Psoriasis Area Severity Index.

TABLE 3: Potential risk factors affecting MNA score in the multivariable logistic regression model.

Variables	Exp (B)	For 95% CI Exp (B)	p value
Step 1 (Initial model)			
Age (75 years and older)	2.339	0.07-82.38	0.640
Marital status (married)	0.069	0.00-1.58	0.094
Alcohol consumption (yes)	45.059	1.99-1019.13	0.017
Step 2 (Final model)			
Marital status (married)	0.08	0.04-1.55	0.094
Alcohol consumption (yes)	52.51	2.514-1096.76	0.011

MNA: Mini nutritional assessment; CI: Confidence interval.

DISCUSSION

In our study, we investigated the impact of psoriasis on malnutrition frequency in patients aged sixty and over who were treated at the Psoriasis Follow-up Clinic at Ege University Faculty of Medicine between July 2019 and May 2021, as well as whether the severity of the disease in the geriatric age group increases the frequency or severity of malnutrition.

When the 32 psoriasis patients included in the study were classified according to their sociodemographic characteristics, 84.4% were male, and the average age was 67.4 ± 6.6 years. According to the PASI value, 15.6% of the patients had a value of 10 and above, while 84.4% had a value below 10. Four out of the 5 patients at risk for malnutrition had PASI values below 10. Similarly, 23 of the patients in the nor-

mal group according to MNA had PASI values below 10. Alcohol users were found to have a much higher risk of malnutrition compared to non-users.

INTERPRETATION OF RESULTS WITH LITERATURE

In this study, the average age of the patients was determined to be 67.37 ± 6.6 years. In a study conducted in Türkiye, the average age was 72.17 ± 7.18 years, while in the international studies, the average age of geriatric psoriasis patients was found to be 61.1 ± 13.7 in the Netherlands, 67 ± 7 in the Ivory Coast, and 68.6 ± 7.8 in Taiwan.¹⁴⁻¹⁷ The average age identified in our study is consistent with the international studies.

Psoriasis is equally prevalent in both sexes. In our study, the male patient ratio in the geriatric age group was 84.4%. This difference may be due to a higher number of male patients treated at the psoriasis clinic during the period when the study was con-

ducted or limited access to all eligible patients due to the coronavirus disease-2019 (COVID-19) pandemic. Consistent with our study, various psoriasis patient studies have found that male patients are more common, while in some studies, the disease is more prevalent in women.¹⁷⁻²¹

Among the geriatric psoriasis patients included in the study, vulgar type psoriasis was observed in 81.5% of men and all women, while the frequency of guttate and palmoplantar psoriasis was higher in men compared to women. In the current literature, no publications have been found that evaluate clinical types separately in men and women with psoriasis. However, in a study conducted on psoriasis patients, vulgar psoriasis was reported to be the most common type in both genders, and unlike our study it reported that guttate and pustular psoriasis were more common in women than in men.¹⁹

The coexistence of psoriasis with other diseases is often investigated. In our study, 71.9% of the participants had chronic diseases in addition to psoriasis. The most common comorbidities in these patients were diabetes, followed by hypertension. Coronary artery disease was also frequently observed. Our findings regarding the most common comorbidities in psoriasis patients are in line with other studies in the literature. In recent years, many studies have discussed the association between psoriasis and metabolic syndrome.^{19,22} Psoriasis patients are more likely to have hypertension, heart failure, myocardial infarction, pulmonary embolism, obesity, diabetes mellitus, and cerebrovascular events.^{15,16}

In our study group, 84.4% of patients had low PASI scores (below 10). This situation may be related to patients being followed up in the outpatient clinic for a long time and receiving intensive treatment. Because more than half of the patients undergoing treatment receive systemic treatment, and a significant portion of them use biological agents. Therefore, it is natural for the severity of the disease in geriatric psoriasis patients to be milder compared to the normal population. In a similar study conducted in 2020, PASI scores were higher because patients received less aggressive treatment.¹⁴

Malnutrition is one of the most common geriatric syndromes and can significantly affect the quality of life of elderly patients. If not addressed in a timely manner, it can lead to serious consequences. When studies conducted in different countries are examined, malnutrition rates vary between 1.0% and 16%.²³⁻²⁵ Malnutrition rates were found to be quite high in Japan, Germany, and Spain compared to other countries because the average age of patients participating in the studies in these countries was higher. Our average age group (67.37) is lower than in all these studies. Studies on malnutrition in the elderly in the cities Ankara, İstanbul, and Konya in Türkiye have found malnutrition rates between 1.1% and 28.8%, with the average age of elderly patients ranging from 72 to 81 years.²⁶⁻²⁹ In other words, as the age increases, similar to studies worldwide, the malnutrition rate also increases in Türkiye.

It is known that the risk of malnutrition increases with age, and in Europe, 5-20% of the elderly are at risk of malnutrition.^{23,24} However, contrary to expectations, the MNA values in our study, just like a study performed on 22,007 elderly individuals in Europe, were 25 or higher.²⁵ In studies conducted on the elderly with MNA, the risk of malnutrition has been found to vary between 11.8% and 57.5%. In our study, 16.0% of the patients were found to be at risk of malnutrition. Observations in our study indicated that the patients included in the study had a healthy and regular diet in terms of protein and fruit/vegetable consumption. Therefore, their malnutrition risk is expected to be low. In Sweden, a similar study conducted in 2009 reported 16.0%, while in Finland, the risk was at 15.2%.^{30,31} The numerical differences seen in malnutrition risk may be related to different lifestyles, such as more physical activity, better nutrition, or higher living standards, among elderly individuals living in Scandinavian countries. Similarly, in studies held in Türkiye, different results have been obtained. Ülger et al. determined the rate of patients at risk of malnutrition as 28% in a study conducted in a tertiary healthcare facility in Ankara.²⁶ According to the results of a study conducted by a home care unit affiliated with a secondary healthcare facility, 36.3% of patients receiving home care were at risk of malnutrition.²⁷ In a single-center study with 238 elderly

patients at the primary healthcare level, the malnutrition risk rate was found to be 5.0%, while in a study conducted at 5 different centers at the primary healthcare level with 276 patients, this was determined as 38.4%.^{28,29} This difference may be due to patients' living conditions (financial resources, social support, etc.), lifestyles, the presence of different chronic diseases, or limited access to medical care.

Alcohol consumption is believed to have an impact on the prevalence of malnutrition. In our study, malnutrition risk was found to be significantly higher in alcohol users compared to non-users. Excessive alcohol consumption can lead to vitamin and mineral deficiencies that can affect the nutritional status of elderly individuals.³²

However, there are conflicting findings regarding the relationship between alcohol consumption and inadequate nutrition in other studies.³³ Tian et al. reported that moderate alcohol consumption had beneficial effects on inadequate nutrition, while Mathew et al. and Ijaz et al. found no relationship between alcohol consumption and inadequate nutrition among elderly individuals.^{32,34,35} Therefore, a more detailed examination of alcohol consumption patterns is needed to reach a final conclusion.

STRENGTHS AND LIMITATIONS

This study conducted at the Ege University Faculty of Medicine Dermatology Department's Psoriasis Follow-up Clinic, which serves as a tertiary care center, primarily for patients with severe or treatment-resistant psoriasis, provides valuable insights into this specific patient population. The controlled environment of this specialized clinic ensures well-established treatment protocols and better management of psoriasis severity, enhancing the quality of the data collected. Moreover, the study collected comprehensive data, including sociodemographic information, disease severity, comorbidities, and nutritional status, further enriching its findings.

However, the study's limitations must be considered. The findings may not be fully generalizable to the broader elderly psoriasis patient population due to the specialized clinic's focus on more controlled disease severity. The study's cross-sectional design

allows for the assessment of associations but does not establish causality. Moreover, the study faced challenges related to the COVID-19 pandemic, potentially impacting patient recruitment and participation. Lastly, the age range was limited to individuals aged 60 to 65, which may affect the applicability of the findings to older age groups.

CONCLUSION

According to our study, the key factor affecting malnutrition in geriatric psoriasis patients is alcohol consumption. The high malnutrition risk in alcohol users in our study may serve as motivation for more extensive studies involving a broader and older patient group in the future. By closely examining patterns of alcohol consumption and establishing its impact on malnutrition prevalence, we can take steps to raise awareness among elderly patients about alcohol consumption and prevent malnutrition. Additionally, using different malnutrition assessment scales in studies can provide comparative results, aiding in the development of solutions to health issues during aging and contributing to the formulation of future health policies for the elderly.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

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Ertam Sağduyu; Control/Supervision: Didem Aytimur, Selahattin Fehmi Akçiçek, Zeliha Fulden Saraç; **Data Collection and/or Processing:** Didem Aytimur; **Analysis and/or Interpretation:**

Didem Aytimur, Selahattin Fehmi Akçiçek; **Literature Review:** Didem Aytimur; **Writing the Article:** Didem Aytimur; **Critical Review:** Didem Aytimur, Selahattin Fehmi Akçiçek.

REFERENCES

- Koç E. Türkiye Psoriasis Tedavi Kılavuzu-2016. İstanbul: Galenos Yayınevi; 2016. [Link]
- Alper S, Atakan N, Gurer MA, Onsun N, Ozarmagan G. Güncellenmiş Türkiye psoriasis biyolojik ajan kullanım kılavuzu [Updated Turkish guidelines for the management of psoriasis with biologic agents]. *Turkderm*. 2010;44:105-12. [Crossref]
- Pathirana D, Nast A, Ormerod AD, Reytan N, Saiag P, Smith CH, et al. On the development of the European S3 guidelines on the systemic treatment of psoriasis vulgaris: structure and challenges. *J Eur Acad Dermatol Venereol*. 2010;24(12):1458-67. [Crossref] [PubMed]
- Parisi R, Symmons DP, Griffiths CE, Ashcroft DM; Identification and Management of Psoriasis and Associated Comorbidity (IMPACT) project team. Global epidemiology of psoriasis: a systematic review of incidence and prevalence. *J Invest Dermatol*. 2013;133(2):377-85. [Crossref] [PubMed]
- Barker JN. Genetic aspects of psoriasis. *Clin Exp Dermatol*. 2001;26(4):321-5. [Crossref] [PubMed]
- Çelik Tıgılı R. Psoriasisli Hastalarda Metabolik Sendrom Sıklığı [Uzmanlık tezi]. İstanbul: T.C. Sağlık Bakanlığı Haseki Eğitim ve Araştırma Hastanesi; 2009. Erişim tarihi: 04.10.2023 [Link]
- Gündoğdu H. Malnütrisyon [Malnutrition]. *İç Hastalıkları Dergisi*. 2010;17:189-202. [Link]
- Bozoğlu E, Öztürk A. Malnütrisyonun tanımı, sıklığı ve etiyolojik faktörler [Definition, prevalence and etiological factors of malnutrition]. *Türkiye Klinikleri Journal of Geriatrics-Special Topics*. 2016;2(1):7-15. [Link]
- Kaiser MJ, Bauer JM, Rämisch C, Uter W, Guigoz Y, Cederholm T, et al; Mini Nutritional Assessment International Group. Frequency of malnutrition in older adults: a multinational perspective using the mini nutritional assessment. *J Am Geriatr Soc*. 2010;58(9):1734-8. [Crossref] [PubMed]
- Çavuşoğlu Ç, Demirkol ME. Yaşlılarda bağımlılık [Dependence in the elderly]. *Journal of Dependence*. 2018;19(3):59-69. [Link]
- Royal College of Psychiatrists. *Our Invisible Addicts*. 2nd ed. London: The Royal College of Psychiatrists; 2018. [Link]
- Sarıkaya D. Geriatrik hastalarda mini nütrisyonel değerlendirme (MNA) testinin uzun ve kısa (MNA-SF) formunun geçerlilik çalışması [Uzmanlık tezi]. Ankara: Hacettepe Üniversitesi; 2013. Erişim tarihi: 04.10.2023 Erişim linki: [Link]
- Bilaç C, Şahin MT, Öztürkcan S. Dermatolojide hastalık şiddeti skorlama sistemleri [Disease severity scoring systems in dermatology]. *Turkderm-Arch Turk Dermatol Venerology*. 2016;50:42-53 [Crossref]
- Yıldızhan IK, Sürgün E. Epidemiological and clinical characteristics, treatments, and comorbidities in elderly patients with psoriasis and the evaluation of patients according to the age of onset. *Turkish Journal of Geriatrics*. 2020;23(2):216-23. [Crossref]
- van Winden MEC, ter Haar ELM, Groenewoud HMM, van de Kerkhof PCM, de Jong EMGJ, Lubek SFK. Disease and treatment characteristics in geriatric psoriasis: a patient survey comparing age groups. *Acta Derm Venereol*. 2020;100(14):adv00215. [Crossref] [PubMed] [PMC]
- Tseng IL, Yang CC, Lai EC, Lee CN. Psoriasis in the geriatric population: A retrospective study in Asians. *J Dermatol*. 2021;48(6):818-24. [Crossref] [PubMed]
- Chen K, Wang G, Jin H, Xu J, Zhu X, Zheng M, et al. Clinic characteristics of psoriasis in China: a nationwide survey in over 12000 patients. *Oncotarget*. 2017;8(28):46381-9. [Crossref] [PubMed] [PMC]
- Gottlieb AB, Langley RG, Strober BE, Papp KA, Klekotka P, Creamer K, et al. A randomized, double-blind, placebo-controlled study to evaluate the addition of methotrexate to etanercept in patients with moderate to severe plaque psoriasis. *Br J Dermatol*. 2012;167(3):649-57. [Crossref] [PubMed] [PMC]
- Alakbarov H. Psoriasis hastalarında yaşa bağlı klinik ve epidemiyolojik özelliklerin karşılaştırmalı değerlendirilmesi [Uzmanlık tezi]. İzmir: Ege Üniversitesi; 2017. Erişim tarihi: 04.10.2023 [Link]
- Aykol C, Mevlitoğlu I, Özdemir M, Ünal M. Konya yöresindeki psoriasis hastalarının klinik ve sosyodemografik özelliklerinin değerlendirilmesi [Evaluation of clinical and sociodemographic features of patients with psoriasis in the Konya region]. *Turk Dermatoloji Dergisi*. 2011;5(3):71-4. [Crossref]
- Kundakci N, Türsen U, Babiker MO, Gürgey E. The evaluation of the sociodemographic and clinical features of Turkish psoriasis patients. *Int J Dermatol*. 2002;41(4):220-4. [Crossref] [PubMed]
- Polo TCF, Corrente JE, Miot LDB, Papini SJ, Miot HA. Dietary patterns of patients with psoriasis at a public healthcare institution in Brazil. *An Bras Dermatol*. 2020;95(4):452-8. [Crossref] [PubMed] [PMC]
- De La Montana J, Miguez M. Suitability of the short-form Mini Nutritional Assessment in free-living elderly people in the northwest of Spain. *J Nutr Health Aging*. 2011;15(3):187-91. [Crossref] [PubMed]
- Krzywińska-Siemaszkó R, Mossakowska M, Skalska A, Klich-Rączka A, Tobis S, Szybalska A, et al. Social and economic correlates of malnutrition in Polish elderly population: the results of PolSenior study. *J Nutr Health Aging*. 2015;19(4):397-402. [Crossref] [PubMed]
- Cuervo M, García A, Ansorena D, Sánchez-Villegas A, Martínez-González M, Astiasarán I, et al. Nutritional assessment interpretation on 22,007 Spanish community-dwelling elders through the Mini Nutritional Assessment test. *Public Health Nutr*. 2009;12(1):82-90. Erratum in: *Public Health Nutr*. 2009;12(1):136. [Crossref] [PubMed]
- Ülger Z, Halil M, Kalan I, Yavuz BB, Cankurtaran M, Güngör E, et al. Comprehensive assessment of malnutrition risk and related factors in a large group of community-dwelling older adults. *Clin Nutr*. 2010;29(4):507-11. [Crossref] [PubMed]
- Tüzün S, Hacıağaoğlu N, Dabak MR. Malnutrition in home care patients. *TJFMPC*. 2019;13(2):159-66. [Crossref]
- Bayrak F, Ersoy S, Pala E. Ümraniye Durmuş Tanış Aile Sağlığı Merkezine başvuran 65 yaş üzeri hastalarda malnütrisyon sıklığı ve ilişkili durumlar [Prevalence of malnutrition and related conditions in patients over 65 years of age admitted to Ümraniye Durmuş Tanış Family Health Center]. *Abant Tıp Dergisi*. 2021;10(1):93-103. [Crossref]
- Eken K, Uyar M. Yaşlı bireylerde malnütrisyon/malnütrisyon riski sıklığı ve etkileyen faktörler [Prevalence of malnutrition/malnütrisyon risk and relevant factors among older adults]. *ESTÜDAM Halk Sağlığı Dergisi*. 2021;6(3):200-8. [Crossref]
- Johansson L, Sidenvall B, Malmberg B, Christensson L. Who will become malnourished? A prospective study of factors associated with malnutrition in older persons living at home. *J Nutr Health Aging*. 2009;13(10):855-61. [Crossref] [PubMed]
- Nykänen I, Lönnroos E, Kautiainen H, Sulkava R, Hartikainen S. Nutritional screening in a population-based cohort of community-dwelling older people. *Eur J Public Health*. 2013;23(3):405-9. [Crossref] [PubMed]
- Ijaz S, Jackson J, Thorley H, Porter K, Fleming C, Richards A, et al. Nutritional deficiencies in homeless persons with problematic drinking: a systematic review. *Int J Equity Health*. 2017;16(1):71. [Crossref] [PubMed] [PMC]
- Fares D, Barbosa AR, Borgatto AF, Coqueiro Rda S, Fernandes MH. Factors associated with nutritional status of the elderly in two regions of Brazil. *Rev Assoc Med Bras* (1992). 2012;58(4):434-41. English, Portuguese. [Crossref] [PubMed]
- Tian HY, Qiu R, Jing LP, Chen ZY, Chen GD, Chen YM. Alternate Mediterranean diet score is positively associated with skeletal muscle mass index in middle-aged adults. *Br J Nutr*. 2017;117(8):1181-8. [Crossref] [PubMed]
- Mathew AC, Das D, Sampath S, Vijayakumar M, Ramakrishnan N, Ravishanker SL. Prevalence and correlates of malnutrition among elderly in an urban area in Coimbatore. *Indian J Public Health*. 2016;60(2):112-7. [Crossref] [PubMed]