

# Evaluation of Geriatric Patients Admitted to the Dermatology Outpatient Clinic for Treatment of Facial Dermatoses: A Retrospective Study

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## ABSTRACT

**Purpose:** Skin is the human body's largest organ, and it has essential social, sexual, and psychological roles. Especially the effect of this fact on visible body parts such as face is more prominent. The elderly population is increasing all over the world, and medical treatment for these senior citizens' dermatological complaints is more frequent in Turkey as elsewhere. The aim of this study is to report the age group, gender distribution and dermatological diseases of the geriatric population admitted to our dermatology outpatient clinic, which is a tertiary referral center for any facial skin complaint.

**Methods:** This retrospective study included 302 patients aged 65 and over with facial skin complaints. The age, disease frequency, gender and localization distribution of the patients were examined. SPSS package program was used for data analysis.

**Results:** There was a significant difference between the diagnoses groups of the participants in terms of gender and age groups. The most common facial dermatoses in this population examined were basal cell carcinoma (BCC), actinic keratosis (AK), seborrheic keratosis (SK), rosacea, urticaria, and benign skin and skin appendage tumors.

**Conclusion:** As the geriatric population is increasing all over the world, recognition of skin diseases is becoming increasingly important. Facial dermatoses are especially a concern because of how they affect the appearance and expression of persons in this age group.

**Keywords:** Basal cell carcinoma, facial dermatosis, geriatrics, rosacea

## Yüz Dermatozu Nedeniyle Dermatoloji Polikliniğine Başvurulan Geriatrik Hastaların Retrospektif Olarak Değerlendirilmesi

### ÖZET

**Amaç:** Deri, insan vücudunun en büyük organıdır ve sosyal, cinsel ve psikolojik rollere sahiptir. Bu durumun özellikle yüz gibi vücudun görünen kısımları üzerindeki etkisi daha aşikardır. Tüm dünyada yaşlı nüfus artmakta ve bu bireylerin dermatolojik şikayetleri tüm dünyada olduğu gibi Türkiye'de de artık daha sık görülmektedir. Bu çalışmanın amacı yüz derisinde herhangi bir şikayet ile üçüncü basamak dermatoloji polikliniğimize başvuran geriatrik popülasyonun yaş grubu, cinsiyet dağılımı ve yüz dermatoz tanılarının değerlendirilmesidir.

**Yöntem:** Retrospektif çalışmaya yüz bölgesinde dermatolojik şikayetleri olan 65 yaş ve üzeri 302 hasta dahil edildi. Hastaların yaş, hastalık sıklığı, cinsiyet ve lokalizasyon dağılımı incelendi. Verilerin analizi için SPSS paket programı kullanıldı.

**Bulgular:** Cinsiyet ve yaş grupları açısından katılımcıların dermatolojik tanısal alt grupları arasında anlamlı farklılık saptandı. Çalışmada incelenmiş olan geriatrik popülasyonda en sık görülen yüz dermatozları bazal hücreli karsinom (BCC), aktinik keratoz (AK), seboreik keratoz (SK), rozasea, ürtiker ve benign deri ve deri eki tümörleriydi.

**Sonuç:** Tüm dünyada geriatrik popülasyonun artmasıyla birlikte deri hastalıklarının tanınması giderek önem kazanmaktadır. Yüz dermatozları, bu yaş grubundaki kişilerin görünüşü ve ifadesini etkilediğinden dolayı endişe verici olabilir ve hastaların tedavi arayışı ile sonuçlanabilir.

**Anahtar kelimeler:** Bazal hücreli karsinom, yüz dermatozları, geriatrik, rozasea

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**W**ith the development of health care and technologies, the management strategies of chronic diseases have also increased. The resulting extension of average human life expectancy has thus caused an increase in the elderly population (1). The number of elderly people is increasing day by day all over the world, and it is estimated that one fifth of the entire population will consist of individuals aged 65 and over by 2050 (2). Thus, hospital admissions of elderly people will increase, and it is important to know the diseases specific to this population including the dermatological diseases.

Skin is the human body's largest organ, and it has essential social, sexual and psychological roles in self-expression, the perception of beauty and esthetics. Aging is a physiological process that starts from the mother's womb and is related to many factors. This process affects changes in the skin as it does throughout all organ systems. Wrinkles, coarsening and changes in elasticity occur in the skin, while the frequency of some dermatological diseases increases and/or their presentations change (1). Skin lesions in visible areas such as the face and hands undeniably have considerable negative effects on people (3). It is known that skin diseases of the face, which is the most striking body part at first glance, and other visible areas, lead to increased emotional stress and psychosocial effects (4). Although there are many studies that examine skin diseases and skin changes in the geriatric age group, so far we find no study focusing specifically on facial skin diseases. The aim of this study is to report the age group, gender distribution and dermatological diseases of the geriatric population admitted to our dermatology outpatient clinic, which is a tertiary referral center for any facial skin complaint. We also aimed to evaluate the age, gender, disease frequency and localization of these dermatological diagnoses by grouping the diseases.

## MATERIALS AND METHOD

The study was designed retrospectively as a cross-sectional evaluation of a study group consisting of patients admitted to Başakşehir Çam and Sakura City Hospital (education and research hospital) Dermatology Outpatient Clinic between August 31, 2020, and August 31, 2021. Ethics committee approval was obtained from Istanbul Kent University Ethics Committee. Patients aged 65 and over were filtered through the hospital data processing system and their examination notes and diagnoses were reviewed. Accordingly, patients who applied to the Dermatology Outpatient Clinic with facial lesions were included in the study. Thus, disease diagnoses were

based on clinical notes and existing pathology reports for malignant, pre-malignant lesions. Age, gender, location of the lesions and diagnosis were recorded. Inclusion criteria for the study were: being  $\geq 65$  years of age, applying to dermatology outpatient clinic with complaints in the facial area, and presence of complete data. Patients with missing data and who were consulted from other departments due to facial skin complaints were excluded from the study. After making general diagnoses, these were divided into 10 diagnostic subgroups according to main dermatologic diseases: Allergic / inflammatory dermatoses (rosacea, folliculitis, alopecia areata, angioedema, urticaria and polymorphous light eruption); dermatitis group of diseases (perioral dermatitis, seborrheic dermatitis, atopic dermatitis, irritant contact dermatitis, allergic contact dermatitis, nummular dermatitis, and angular cheilitis); erythematous-squamous diseases (psoriasis and lichen group diseases); cutaneous infections (verruca vulgaris, herpes zoster, herpes simplex infection, tinea faciei, and lupus vulgaris); rheumatological diseases (dermatomyositis, and discoid lupus erythematosus); autoimmune blistering diseases (pemphigus and bullous pemphigoid); benign neoplasia (seborrheic keratosis, pyogenic granuloma, xanthelasma, skin tag, lentigo simplex, other benign skin and skin appendage tumors); premalignant changes (keratoacanthoma, cutaneous horn, actinic keratosis, actinic cheilitis); cutaneous malignancy (Kaposi sarcoma, squamous cell carcinoma, basal cell carcinoma); melanocytic lesions and miscellaneous (melanocytic nevus, hyperpigmentation, lupus pernio, cuperosity, scarring, xerosis, venous lake).

SPSS 22.0 package program was used for data analysis. Frequency values, and mean values of the patients' demographic characteristics were calculated. The frequencies of the facial dermatoses of the patients included in the study were calculated by determining the localization. Pearson Chi-Square test was performed to determine whether the disease diagnoses of the patients included in the study differed statistically by gender and age.

## RESULTS

A total 302 patients were enrolled in the study. Their age range was 65-101 with the mean of 73,  $8 \pm 8$ , 1 year (mean age  $\pm$  standard deviation (SD)). Of the patients included in the study, 54% were women and 46% were men. Patients in the 65-74 age range constituted 59% of participants (Table 1).

**Table 1. Demographic Frequency Table**

	Frequency	Percentage (%)
<b>Gender</b>		
Female	162	53.6
Male	140	46.4
Total	302	100.0
<b>Age (years)</b>		
65-74	178	58.9
75-84	87	28.8
≥85	37	12.3
Total	302	100.0

When the diagnoses of 302 patients included in the study were examined, the diseases most frequently occurring were basal cell carcinoma (BCC) (17%), actinic keratosis (AK) (9%), seborrheic keratosis (SK) (8%), rosacea (6%), urticaria (4%), benign neoplasia (4%) (Table 2).

**Table 2. Diagnoses**

Diagnosis	Frequency	Percentage (%)
Hyperpigmentation	4	1.3
Folliculitis	4	1.3
Rosacea	17	5.6
Perioral dermatitis	1	0.3
Cuperosity	3	1.0
Seborrheic dermatitis	12	4.0
Atopic dermatitis	1	0.3
Irritant contact dermatitis	11	3.6
Allergic contact dermatitis	7	2.3
Nummular dermatitis	4	1.3
Psoriasis	3	1.0
Lichen	4	1.3
Alopecia areata	1	0.3
Angioedema	1	0.3
Polymorphous light eruption	2	0.7
Lupus pernio	1	0.3
Tinea faciei	3	1.0
Herpes simplex	1	0.3
Herpes zoster	9	3.0
Verruca vulgaris	6	2.0
Lupus vulgaris	1	0.3
Discoïd lupus erythematosus	3	1.0
Dermatomyositis	1	0.3
Lentigo simplex	7	2.3

Skin tag	3	1.0
Xanthelasma	3	1.0
Benign skin & appendages tumors	13	4.3
Melanocytic nevus	4	1.3
BCC	52	17.2
AK	27	8.9
Actinic cheilitis	5	1.7
Cutaneous horn	4	1.3
Keratoacanthoma	5	1.7
Venous lake	2	0.7
Pyogenic granuloma	1	0.3
Cicatrice	1	0.3
SK	26	8.6
Urticaria	13	4.3
Xerosis cutis	4	1.3
Squamous cell carcinoma	9	3.0
Angular cheilitis	1	0.3
Pemphigus vulgaris	10	3.3
Bullous pemphigoid	10	3.3
Kaposi sarcoma	2	0.7
Total	302	100.0

AK=Actinic keratosis, BCC=Basal cell carcinoma, SK=Seborrheic keratosis

Considering the lesion localizations of the patients, 35% of the lesions were in the malar region, 30% in the nose region, 26% in the forehead region, 12% in the neck region, 11% in the auricular region, 7% in the perioral region, 6% in the periorbital region, 5% in the mentum, 5% were on the lips, and 3% were on the eyebrows (Table 3).

Fifty-two patients were diagnosed with BCC. The age range of these patients was between 65-97, and the mean age was 76.1±7 years (mean ± SD). Forty-six per cent of patients were in the age range of 65-74 year; 33% were female and 67% male (Table 4,5). The affected sites were nose (56%), malar region (15%), auricular region (8%), perioral region (6%), forehead (6%), periorbital region (4%), eyebrows (4%), and mentum (2%) (Table 6).

Actinic keratosis was diagnosed in 27 patients. It was observed that the age range of these patients was between 65 and 96, and the mean age was 76.6±8.8 years (mean ± SD). Eighty-two per cent of patients were in the age range of 65-84 years; 52% were female while 48% were male (table 4,5). When the lesion localization of the patients was examined, it was observed that 59% had forehead, 26% had malar, 22% had nose and 4% had auricular area localization (Table 6).

Localization		
Nose	Frequency	89
	Perc. (%)	29.5
Malar Region	Frequency	106
	Perc. (%)	35.1
Forehead	Frequency	78
	Perc. (%)	25.8
Mentum	Frequency	14
	Perc. (%)	4.6
Lips	Frequency	16
	Perc. (%)	5.3
Perioral Region	Frequency	20
	Perc. (%)	6.6
Periorbital Region	Frequency	19
	Perc. (%)	6.3
Eyebrows	Frequency	10
	Perc. (%)	3.3
Neck	Frequency	35
	Perc. (%)	11.6
Auricular and periauricular region	Frequency	32
	Perc. (%)	10.6

Perc.=Percentage

There were 26 patients with SK in this study. When the demographic characteristics were examined, it was found that the age range was between 65 and 93, and the mean age is 73.5±8.1 years (mean ± SD). Sixty-nine per cent of the patients were in the age range of 65-74; 65% were female and 35% male (table 4,5). Fifty per cent of the lesions were located in the malar region, 35% on the forehead, 19% on the nose, 11% on and around the auricle, and 4% on the eyebrows (Table 6).

Seventeen patients were diagnosed with rosacea. Their age range is between 65-74, with a mean age of 68.3±3.12 years (mean ± SD). All patients were between 65-74 years of age; 53% of patients were female and 47% male (table 4,5). It was determined that 88% of the lesions were located in the malar region, 59% in the nasal region, 12% on the forehead and 12% in the mentum (Table 6).

Diagnoses	Number of patients	Age			
		Mean	SD	Min.	Max.
BCC	52	76.08	7.87	65	97
AK	27	76.56	8.81	65	96
SK	26	73.5	8.15	65	93
Rosacea	17	68.3	3.12	65	74

AK=Actinic keratosis; BCC=Basal cell carcinoma; SK=Seborrheic keratosis; SD=Standard deviation; Min.=Minimum; Max=Maximum

Diagnoses	Gender	female	male	TOTAL	Age	65-74	75-84	≥85	TOTAL
						%	%	%	%
BCC		32.7%	67.3	100%		46.2%	40.4%	13.5%	100%
AK		51.9%	48.1%	100%		40.7%	40.7%	18.5%	100%
SK		65.4%	34.6%	100%		69.2%	11.5%	19.2%	100%
Rosacea		52.9%	47.1%	100%		1000%	0%	0%	100%

AK=Actinic keratosis; BCC=Basal cell carcinoma; SK=Seborrheic keratosis

LOCATIONS	BCC	AK	SK	ROSACEA
Nose	55.8%	22.2%	19.2%	58.8%
Malar area	15.4%	25.9%	50.0%	88.2%
Forehead	5.8%	59.3%	34.6%	11.8%
Chin	1.9%	0%	0%	11.8%
Lips	0%	0%	0%	0%
Perioral area	5.8%	0%	0%	0%
Periorbital area	3.8%	0%	0%	0%
Eyebrows	3.8%	0%	3.8%	0%
Neck	0%	0%	0%	0%
Auricular and periauricular region	7.7%	3.7%	11.5%	0%

AK=Actinic keratosis; BCC=Basal cell carcinoma; SK=Seborrheic keratosis

When the diagnoses of 302 patients included in the study were group concerning main dermatologic disease subgroups, it was observed that 22% were afflicted by erythematous-scaly diseases, 21% had cutaneous malignancy, 17.5% has benign neoplasms,

**Table 7. Grouping of diagnoses**

	Freq.	Perc. (%)
<b>Diagnoses</b>		
Allergic/ Inflammatory Dermatoses	38	12.6
Dermatitis Group Diseases	37	12.3
Erythematous-Squamous Diseases	7	2.3
Infectious Diseases	20	6.6
Rheumatological Diseases	4	1.3
Bullous Diseases	20	6.6
Benign Neoplasms	53	17.5
Premalignant Changes	41	13.6
Malignancy	63	20.9
Melanocytic Lesions and Others	19	6.3
<b>Total</b>	<b>302</b>	<b>100.0</b>

Freq.= Frequency; Perc.=Percentage

14% had premalignant changes, 13% had allergic/inflammatory dermatoses, 12% had dermatitis group diseases, 7% had cutaneous infections, 7% had autoimmune blistering disease, 6% had melanocytic lesions and miscellaneous, 1% had rheumatologic diseases (Table 7).

Disease diagnoses of the patients included in the study exhibited significant statistical differences according to gender ( $\chi^2 = 31.531$ ;  $p < 0.05$ ). Accordingly, 22% of 162 female patients were diagnosed with benign neoplasia, 17% with allergic/inflammatory dermatoses, 13% with cutaneous malignancy, and 12% with premalignant changes. When 140 male patients were examined, it was detected that 30% of them were diagnosed with cutaneous malignancy, 15% with premalignant changes, 14% with dermatitis group of diseases, and 12% with benign neoplasia (Table 8).

**Table 8. The Relationship Between Disease Diagnoses and Gender**

Diagose groups		Gender		TOTAL	$\chi^2$	P
		Female	Male			
Allergic/ Inflammatory Dermatoses	Frequency	27	11	38	5,299	,021*
	Percentage(%)	16,7	7,9	12,6		
Dermatitis Group Diseases	Frequency	17	20	37	1,004	,316
	Percentage(%)	10,5	14,3	12,3		
Erythematous-Squamous Diseases	Frequency	6	1	7	2,964	,085
	Percentage(%)	3,7	0,7	2,3		
Infectious Diseases	Frequency	6	14	20	4,814	,028*
	Percentage(%)	3,7	10,0	6,6		
Rheumatological Diseases	Frequency	3	1	4	0,744	,389
	Percentage(%)	1,9	0,7	1,3		
Bullous Diseases	Frequency	13	7	20	1,111	,292
	Percentage(%)	8,0	5,0	6,6		
Benign Neoplasms	Frequency	36	17	53	5,273	,022*
	Percentage(%)	22,2	12,1	17,5		
Premalignant Changes	Frequency	20	21	41	0,451	,502
	Percentage(%)	12,3	15,0	13,6		
Malignancy	Frequency	21	42	63	13,204	,000*
	Percentage(%)	13,0	30,0	20,9		
Melanocytic Lesions and Others	Frequency	13	6	19	1,781	,182
	Percentage(%)	8,0	4,3	6,3		
<b>TOTAL</b>		<b>162</b>	<b>140</b>	<b>302</b>	<b>31,531</b>	<b>,000*</b>

\*p<0,005

Pearson Chi-Square test was performed to determine whether the patients included in the study differed statistically according to gender in the disease groups. The most common diagnoses are malignancy, benign neoplasms, allergic/inflammatory dermatoses, and dermatitis group diseases. When the distribution of men and women in these disease groups was examined; It was observed that the diagnosis of malignancy and dermatitis group diseases was more common in men, while the diagnosis of benign neoplasms and allergic / inflammatory dermatoses were more common in women. Dermatitis group ( $\chi^2 = 1.004$ ;  $p > 0.05$ ), erythematous-scaly ( $\chi^2 = 2.964$ ;  $p > 0.05$ ), rheumatological ( $\chi^2 = 0.744$ ;  $p > 0.05$ ), bullous ( $\chi^2 = 1.111$ ;  $p > 0.05$ ) diseases and premalignant changes ( $\chi^2 = 0.451$ ;  $p > 0.05$ ), melanocytic lesions and other ( $\chi^2 = 1.781$ ;  $p > 0.05$ ) diagnoses were not statistically different in terms of gender. Infectious skin diseases differed statistically significantly by gender and were more common in males ( $\chi^2 = 4.814$ ;  $p < 0.05$ ). Benign neoplasms were significantly by different concerning gender ( $\chi^2 = 5.273$ ;  $p < 0.05$ ) and were more common in women.

The diagnosis of malignancy was statistically different according to gender and was more common in males ( $\chi^2 = 13,204$ ;  $p < 0.05$ ). The diagnosis of allergic/inflammatory dermatoses was statistically significant according to gender ( $\chi^2 = 5.299$ ;  $p < 0.05$ ) and was more common in females.

Considering the mean age of patients according to the disease group, the years were as follows: allergic/inflammatory dermatoses:  $70.1 \pm 6.14$  (mean  $\pm$  SD), dermatitis group of diseases:  $74 \pm 7.5$  (mean  $\pm$  SD), erythematous-squamous diseases:  $69.6 \pm 5.22$  (mean  $\pm$  SD), cutaneous infections:  $73.1 \pm 9.1$  (mean  $\pm$  SD), rheumatological diseases:  $68 \pm 4.7$  (mean  $\pm$  SD), autoimmune bullous diseases:  $72.8 \pm 8.2$  (mean  $\pm$  SD), benign neoplasms:  $73.4 \pm 8.7$  (mean  $\pm$  SD), premalignant changes:  $76.4 \pm 8.6$  (mean  $\pm$  SD), cutaneous malignancy:  $76.5 \pm 7.6$  (mean  $\pm$  SD), melanocytic lesions and miscellaneous:  $72 \pm 8.1$  (mean  $\pm$  SD). The highest mean age was found in patients with cutaneous malignancy, and those with the lowest mean age were the patients in the rheumatological diseases group (Table 9).

Table 9. The Relationship Between Disease Diagnoses and Age Groups

Diagnose groups		Age (Years)			TOTAL	$\chi^2$	p
		65-74	75-84	$\geq 85$			
Allergic/ Inflammatory Dermatoses	Frequency	32	4	2	38	11,486	,003*
	Percentage(%)	18,0	4,6	5,4	12,6		
Dermatitis Group Diseases	Frequency	19	16	2	37	5,075	,079
	Percentage(%)	10,7	18,4	5,4	12,3		
Erythematous-Squamous Diseases	Frequency	5	2	0	7	1,068	,586
	Percentage(%)	2,8	2,3	0,0	2,3		
Infectious Diseases	Frequency	14	2	4	20	4,124	,127
	Percentage(%)	7,9	2,3	10,8	6,6		
Rheumatological Diseases	Frequency	3	1	0	4	0,694	,707
	Percentage(%)	1,7	1,1	0,0	1,3		
Bullous Diseases	Frequency	14	3	3	20	1,994	,369
	Percentage(%)	7,9	3,4	8,1	6,6		
Benign Neoplasms	Frequency	34	11	8	53	2,167	,338
	Percentage(%)	19,1	12,6	21,6	17,5		
Premalignant Changes	Frequency	18	15	8	41	4,858	,088
	Percentage(%)	10,1	17,2	21,6	13,6		
Malignancy	Frequency	26	29	8	63	12,428	,002*
	Percentage(%)	14,6	33,3	21,6	20,9		
Melanocytic Lesions and Others	Frequency	13	4	2	19	0,782	,676
	Percentage(%)	7,3	4,6	5,4	6,3		
TOTAL		178	87	37	302	38,488	,003*

\* $p < 0,005$



Pearson Chi-Square test was performed to determine whether the disease diagnoses of the patients included in the study differed statistically according to categorized age groups. Dermatitis group diseases ( $\chi^2 = 5.075$ ;  $p > 0.05$ ), erythematous-squamous diseases ( $\chi^2 = 1.068$ ;  $p > 0.05$ ), infectious diseases ( $\chi^2 = 4.124$ ;  $p > 0.05$ ), rheumatological diseases ( $\chi^2 = 0.694$ ;  $p > 0.05$ ), bullous diseases ( $\chi^2 = 1.994$ ;  $p > 0.05$ ), benign neoplasms ( $\chi^2 = 2.167$ ;  $p > 0.05$ ), premalignant changes ( $\chi^2 = 2.167$ ;  $p > 0.05$ ), melanocytic lesions and other ( $\chi^2 = 0.782$ ;  $p > 0.05$ ) diagnoses did not differ statistically significantly according to age groups. The status of having a diagnosis of malignancy was found to be statistically significant according to age groups ( $\chi^2 = 12,428$ ;  $p < 0.05$ ). It was observed that 41% of those diagnosed with malignancy were in the 65-74 age range, 46% were in the 75-84 age range, and 13% were 85 and over. The diagnosis of allergic/inflammatory dermatoses was statistically significant according to age groups ( $\chi^2 = 11,486$ ;  $p < 0.05$ ). It was determined that 84% of those diagnosed with allergic/inflammatory dermatoses were between the ages of 65-74, 10% were between the ages of 75-84, and 5% were 85 and over.

Disease diagnoses of patients included in the study had a significant statistical difference according to age ( $\chi^2 = 38.488$ ;  $p < 0.05$ ). When 178 patients between the ages of 65-74 were examined, 19% had benign neoplasia, 18% had allergic / inflammatory dermatoses, 15% had cutaneous malignancy. When 87 patients between the ages of 75-84 were examined, cutaneous malignancy was found in 33%, dermatitis group of diseases in 18%, premalignant changes in 17%, and benign neoplasia in 13%. When 37 patients aged 85 and over were assessed, it was detected that 22% had cutaneous malignancy, 22% had premalignant changes, and 11% had cutaneous infections (Table 9).

## DISCUSSION

The increase in the geriatric population all over the world also increases the hospital admissions of these people. The skin of this population, like other systems, has its own characteristics such as fragility. Besides, polypharmacy can be a significant problem in these patients. For this reason, health assessments of these people require special knowledge and skills for the diseases (5). It is more urgent than ever to increase recognition of these diseases, determine their rates, and recognize the gender distributions. Furthermore, elderly individuals are more frequently involved in social and business environments today, can use social media actively, and therefore give more importance

to their appearance (2). The face is one of the most remarkable factors in external appearance; therefore, attention to facial dermatoses and removal of disorders has increased. This situation may be related not only to aesthetic concerns, but also to health awareness. However, in this awareness, parameters such as education level, socioeconomic status, social support, and cognitive condition are also important (5).

Our study was based on the face and aging of the face. Earlier studies of this age group evaluated the whole body rather than focus regionally. In addition, there are studies in the literature that assess periorbital, malar, and periorificial dermatoses, but do not holistically consider the face (6). However, the face is the most important point especially in the person's appearance and is the striking region that reflects their expressions, and its lesions can be affected in a spectrum up to depression (7). We conducted this study because we think that this region, which is the most striking site of a person, should therefore be examined separately.

The geriatric population ages by two mechanisms: intrinsic (true) aging and photo aging. The increase in benign lesions such as SK and angiomas in the body, characteristic of intrinsic aging, has been mentioned in the literature. It has been stated that the facial localization of these SK lesions is also quite common (8,9). Our research similarly revealed an increase in the frequency of benign dermatoses of the facial region. It is noteworthy that after the age of 74, their frequency decreased with age. Increase in epidermal cellular heterogeneity and a decrease in the keratinocyte DNA repair mechanism, together with an age relative decrease in Langerhans cells and melanocytes, are the physiopathological reasons for this true aging picture (10). Specifically, it is necessary to demonstrate with further studies whether the reason for the decrease in SC after the age of 74, which was determined in our study, is due to the decrease in hospital admissions, or whether they get used to that appearance after these ages and accept it as normal, or whether it is due to more serious health problems that the lesions are not prioritized. Besra et al. evaluated diseases located in the periorbital region and found that 25% of benign and malignant skin tumors detected in 250 patients increased to a high rate of 38.5% in our geriatric patients, and with whole facial location. Studies with a large series and evaluating these lesions on the whole face are required. The frequency of melanocytic lesions (6%) was compatible with nevus events in our study (6).

However, Besra et al. examined not only the geriatric group, but all age groups. In addition, we understand a second reason for this increase is because the whole face was evaluated rather than periorbital localization. These findings were also compatible with photoaging, which is a second type of aging in the elderly. Increased sun exposure causes elastosis of the skin, irregular hyperpigmentation, hypopigmentation, and telangiectasias in addition to a series of benign and malignant neoplasms. Atrophy of the stratum corneum and a severe decrease in Langerhans cells are physiopathologically responsible for this (11).

In this study, it was observed that the distribution(s) between the disease diagnosis groups, genders, and age groups were different. While skin malignancies were at the forefront in older age groups, rheumatological diagnoses were found to be more common at younger ages. While the most common disease group in female patients is benign neoplasia (22%), malignancies take first place among males (30%). The rarest diseases in men are erythematous-squamous and rheumatological diseases with a rate of 0.7%. Rheumatological diseases are also the rarest for women (1.9%), followed by infectious and erythematous-squamous diseases (both 3.7%). To verify these data, multicenter epidemiological studies should be planned on a country-by-country basis around the world.

The most frequent facial skin diseases affecting patients over 65 years who visited our dermatology outpatient clinic were BCC (17%), AK (9%), SK (8%), rosacea (6%) and urticaria (4%) respectively. However, when the diseases were categorized, the most common disease groups were malignancies (21%), benign neoplasms (17.5%), premalignant changes (14%) and allergic/inflammatory dermatoses (13%). Malignancy, having the highest rate in this study, should be a warning for this group's healthcare providers, family physicians and, of course, dermatologists. Even if these lesions may not be the primary complaint of the patient in examinations, it is vital to screen these lesions on the face and make an early diagnosis. In other words, in elderly patients who present with dermatological complaints on the face or anywhere else, it is necessary to be more careful in terms of malignancies and dermoscopy should be used. It is also important that these lesions may need to be addressed more carefully in male patients because the frequency is higher in this gender. Thus, both mortality and morbidity will be reduced. In fact, we advise trainings to primary care family physicians, establishing patient schools for the geriatric population with good cognition, and educating caregivers.

Garcovich et al. emphasized that BCC occupies 80% of all skin cancers in the Caucasian population, and the frequency is increasing, especially in the population over 65 years old (12). It has been stated in the literature that BCC is most commonly located on the face (13). In our study, BCC was the facial dermatosis with the highest prevalence compared to other facial lesions (17.2%). Oda et al. screened geriatric BCC and determined that the most common localization in the face was the cheeks, followed by the nasal, periorbital, frontal and labial areas(13). In our study, the most common localization was the nose, followed by the malar region and the ear, respectively. There are different data on localizations all over the world. In addition, another importance of lesion localization for BCC is that it can change the treatment approach and prognosis (14). It is known that lesion localization in BCC may be related to the angle of UV lights (15). This therefore makes it likely to find variations between countries (16). In this context, the determination of BCC localizations according to latitude and longitudinal location characteristics may be important for BCC, which may require more aggressive treatment strategies in some localizations.

One of the most important contributions of this study is to obtain data on facial dermatoses in the geriatric age group in Turkey, also to the world literature epidemiologically. Thus, the formation of multi-center working groups can be encouraged. It is known that professions and hobbies have a significant effect on skin lesions, especially on visible body areas (17,18). Furthermore, when we review reports from around the world, it has been determined that dermatoses in this population are a frequent research topic, but diseases of the facial skin are neglected. Considering the increasing elderly population all over the world, we consider it important to disclose epidemiological data on all other organ diseases and, indeed, dermatological diseases of geriatric patients. With data gathered from more precisely focused medical studies, diagnostic and therapeutic approaches to more frequent and life-threatening diseases can continue accelerated development.

It is known that professions and hobbies have also an essential effect on skin lesions, especially on visible body areas. One of the limitations of this study is that the occupations or hobbies of these patients throughout their lives were not known or evaluated. In addition, the height and weight of patients could not be obtained due to retrospective data, and facial dermatoses that may be associated with weight could not be evaluated. In addition, skin type, genetic background and ethnic origin of



the patients could not be evaluated in this study. There is a need for large series studies evaluating these data together. Besides, although we do not have any data comparing the time period before COVID-19 pandemics, the patient numbers may be decreased due to the fear of hospital admissions. This hypothesis should be verified with further studies.

## CONCLUSION

In older ages, which is a special and fragile period such as the newborn period, the patient's contact with environmental stimuli is minimized, and are more standardized. By including this group in our study, we compared the cross-sectional results of this feature that we will obtain from our country and the literature data, which we consider as a similar group. Our results were consistent with the literature. We think that it will make a great contribution to the literature by observing a large patient group in the elderly, a group with high doctor dependence, in which all dermatoses in the face are questioned. We think that new studies comparing age groups statistically will contribute to the identification of unmet needs in this regard.

## DISCLOSURES

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**AUTHORSHIP:** The authors of this study contributed equally to collecting data, reviewing the literature, interpreting statistics, drafting the article, and writing the final version.

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