

Evaluation of Elderly Patients That Presented to Dermatology Outpatient Clinics During the COVID-19 Pandemic: A Retrospective Study

COVID-19 Pandemisi Sürecinde Dermatoloji Polikliniklerine Başvuran Yaşlı Hastaların Değerlendirilmesi: Retrospektif Çalışma

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ABSTRACT Objective: During the ongoing coronavirus disease-2019 (COVID-19) pandemic, the overall number of patients presented to dermatology outpatient clinics has decreased. This study aims to examine the number of elderly patients presented to dermatology outpatient clinics during the ongoing COVID-19 pandemic, the periodic variation in the number of patients, and the most common reasons for their presentation. **Material and Methods:** This study retrospectively analyzed 448 presentations of 381 patients aged ≥ 60 years between March 11 and May 31, 2020. These cases were evaluated considering the age, gender, presentation diagnoses, presence of chronic diseases, the urgency of complaints, duration of symptoms, and whether they had contracted COVID-19. **Results:** Overall, 15% of the patients were diagnosed with eczematous dermatitis, followed by psoriasis and senile pruritus. Chronic diseases were present in 319 (83.7%) patients. Most patients applied between March 11 and March 31, in the first period of the pandemic. It was determined that seven of the patients had contracted COVID-19 infection. **Conclusion:** This study suggests that the curfew policy in Turkey has greatly affected the decision of elderly people in visiting dermatology outpatient clinics. However, the number of elderly patients presented to the outpatient clinic remains substantial. The spectrum of the presentation diagnoses of the patients was similar to the pre-pandemic period. Determining the reasons for the elderly population to visit these clinics during the pandemic can provide a guide in taking the necessary precautions to meet the health needs of this population in similar situations in the future.

ÖZET Amaç: Koronavirüs hastalığı-2019 [coronavirus disease-2019 (COVID-19)] pandemi sürecinde, dermatoloji polikliniklerine başvuran hasta sayısı azalmıştır. Bu çalışmada, pandemi sırasında dermatoloji polikliniklerine başvuran yaşlı hastaların sayısı, başvuran hasta sayısındaki periyodik değişimler ve en sık başvuru sebeplerinin incelenmesi planlanmıştır. **Gereç ve Yöntemler:** Bu çalışmada, 11 Mart 2020'den 31 Mayıs 2020 tarihine kadar olan süreçte 60 yaş ve üzeri 381 hastanın 448 poliklinik başvurusu retrospektif olarak incelendi. Hastaların yaşı, cinsiyeti, başvuru tanısı, kronik hastalık varlığı, şikâyetlerinin aciliyeti, semptom süresi ve COVID-19 geçirip geçirmediikleri belirlendi. **Bulgular:** Hastaların %15'i egzamatöz dermatit tanısı aldı, bu tanıyı psöriyazis ve senil pruritus takip etti. Hastaların 319'unda (%83,7) kronik hastalık mevcuttu. En çok hasta, pandeminin ilk dönemi olan 11 Mart ve 31 Mart tarihleri arasında başvurdu. Yedi hastanın, COVID-19 enfeksiyonu geçirdiği belirlendi. **Sonuç:** Türkiye'de sokağa çıkma yasağı politikası, yaşlı hastaların dermatoloji polikliniğine başvurma kararını büyük oranda etkilemiştir. Buna rağmen polikliniğe başvuran yaşlı hastaların sayısı yüksektir. Hastaların başvuru tanıları, pandemi öncesi dönemle benzerdir. Yaşlı hastaların pandemi sürecinde dermatoloji polikliniklerine başvuru sebeplerinin incelenmesi, gelecekte benzer durumlarda bu hastaların sağlık ihtiyaçlarını karşılamak için gerekli önlemlerin alınmasına rehberlik edebilir.

Keywords: COVID-19; dermatology; aged; outpatient clinics, hospital; pandemics

Anahtar Kelimeler: COVID-19; dermatoloji; yaşlı; poliklinikler, hastane; pandemi

Coronavirus disease-2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome-CoV-2, which started in Wuhan, China in

December 2019 and has rapidly spread across the world.^{1,2} In Turkey, the first case was confirmed on March 11, 2020, and on the same day, the World

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Health Organization declared the rapidly spreading new coronavirus epidemic a pandemic. Since then, measures have been taken to control the rapidly spreading virus in Turkey, such as the implementation of a curfew on March 21, 2020, for at-risk individuals >65 years old and those with chronic diseases; cancellation of elective surgeries in hospitals where the risk of disease spread is high; and implementation of flexible working hours by reducing the number of operating outpatient clinics during the pandemic. Despite the measures, it was not possible to completely halt all outpatient services for patients in need of urgent medical attention and for those who needed a follow up for various reasons. Nevertheless, as in all clinics, the number of presentations to the dermatology outpatient clinic also decreased.

Several studies have examined the number of patients presented to dermatology outpatient clinics, reasons for presentation, and the most common dermatological diagnoses during the pandemic.³⁻⁹ It has been shown that COVID-19 has a more severe course among the elderly and people with underlying comorbidities, and these groups have a higher risk of associated mortality.¹⁰ However, to the best of our knowledge, the literature contains no study investigating the reasons for presentation to the hospital during this period among elderly individuals with a higher risk of COVID-19. Therefore, the current study was planned to determine the number of patients aged ≥ 60 years presented to dermatology outpatient clinics in a tertiary hospital during the COVID-19 pandemic, evaluate the periodic variation in these numbers under implemented restrictions, and identify the most common reasons for presentation in this age group.

MATERIAL AND METHODS

This research was planned as a retrospective, cross-sectional, and single-center study. Prior to the study, approval was obtained from the University of Health Sciences Hamidiye Scientific Researches Ethics Committee (approval number: 10/20, date: 3.7.2020) and the Scientific Research Platform of the Turkish Ministry of Health. The study was actualized according to the rules expressed in the Declaration of Helsinki. In this study, we examined 448 presentations among patients aged ≥ 60 years that visited the

dermatology outpatient clinics of Sultan 2. Abdulhamid Han Training and Research Hospital between March 11 and May 31, 2020, during the ongoing COVID-19 pandemic. After excluding recurrent presentations of the same patients for control purposes or as part of a regular follow-up due to chronic diseases, a total of 381 patients aged ≥ 60 years presented to any of the dermatology outpatient clinics of the hospital were included in the study. These patients were retrospectively evaluated in terms of age, gender, presentation diagnosis, presence of chronic diseases, use of regular prescriptions, urgency of their complaints, acute or chronic development of their complaints, duration of symptoms, whether they received outpatient or inpatient treatment, and whether they had contracted COVID-19. In addition, it was determined whether the patients were being followed up at our dermatology clinics for any chronic diseases.

The diagnoses of the patients were grouped as eczematous dermatitis, senile pruritus, bacterial, parasitic, viral and fungal infections, xerosis cutis, drug reactions, hair disorders, nail disorders, oral mucosal diseases, psoriasis and other erythematous squamous dermatoses, benign and malignant skin neoplasms and precancerous diseases, urticaria, bullous diseases, acneiform dermatoses, vascular diseases, dermatoses due to physical agents, connective tissue diseases, skin lymphoma, granulomatous diseases, pigmentation disorders, and Behçet's disease. For patients who presented with more than one complaint, the primary diagnosis of the main complaint was considered. Accompanying comorbid conditions were determined with International Statistical Classification of Diseases and Related Health Problems codes registered in the system and notes recorded in the patient files. The comorbidities of the patients were grouped as hypertension, diabetes mellitus, congestive heart failure, ischemic heart diseases, chronic obstructive pulmonary disease, cancer diseases, and other chronic diseases.

The patients were divided into 5 groups according to the time of presentation (March 11-31, April 1-15, April 16-30, May 1-15, and May 16-31). It was examined whether there was a difference between these periods in terms of the number of dermatology outpatient clinic presentations among patients aged

≥60 years. In addition, whether the three most frequent diagnoses significantly differed based on the presentation period was investigated.

For analyzing the research data, descriptive statistics (frequency and percentages), the chi-square test, and Fisher's exact test were used as statistical methods. The results were evaluated at a 95% confidence interval and $p < 0.05$ significance level. SPSS version 20 and Microsoft Excel were used to analyze the data.

RESULTS

During the study period, the total number of presentations to the dermatology outpatient clinics of Sultan 2. Abdulhamid Han Training and Research Hospital was 3,400. The total number of patients aged ≥60 years was 381, and the total number of presentations was 448. Overall, 13.17% were individuals aged ≥60 years. Over the same time during the pre-pandemic period, a total of 8,975 patients had presented to the dermatology outpatient clinics, and 1,295 of these patients (14.42%) were ≥60 years. Although the number of patients presenting to these clinics during the pandemic decreased considerably compared to the pre-pandemic period, no significant proportional variation was observed among patients aged ≥60 years ($p = 0.074$).

Recurrent presentations were either for a control examination related to the first presentation or for a follow-up examination for chronic diseases. Of the

381 patients evaluated, 219 (57.5%) were male and 162 (42.5%) were female, with the mean age calculated as 68.99 ± 7.16 years. Table 1 shows the diagnoses of the patients with the number and percentage data. During the pandemic period, 15% of the diagnoses of patients aged ≥60 years were eczematous dermatitis, followed by psoriasis and senile pruritus.

Chronic diseases were present in 319 (83.7%) patients, while the remaining 62 patients (16.3%) have no chronic diseases. The percentage 66.7 of patients had hypertension, 37% has diabetes mellitus, 24.9% had ischemic heart disease, 10.5% had chronic obstructive pulmonary disease, 3.9% had congestive heart failure, 3.9% had cancer. Of all patients, 313 (82.2%) regularly used at least 1 drug for chronic diseases, while 68 patients (17.8%) were not on any regular medications.

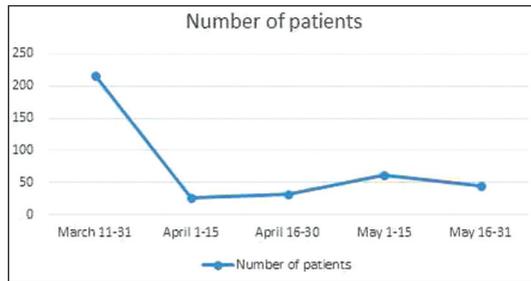
When the patients were grouped according to the time of presentation, it was observed that most of them visited the hospital between March 11 and March 31, 2020, followed by May 1 to May 15. There was a statistically significant difference in the number of patient presentations between these two date ranges and the remaining periods ($p < 0.0001$). No significant difference was detected in the number of patients presented during the other 3 periods ($p = 0.06$) (Table 2). According to the data shown in Figure 1, the number of patients rapidly decreased after the March 11-31 period and slightly increased during May 1-15.

TABLE 1: Diagnosis of patients aged ≥60 years presenting to dermatology outpatient clinics during the COVID-19 pandemic.

Presentation diagnosis	n	%	Presentation diagnosis	n	%
Eczematous dermatitis	57	15.00	Drug reactions	9	2.40
Psoriasis	37	9.70	Bullous diseases	9	2.40
Senile pruritus	27	7.10	Acneiform dermatoses	9	2.40
Xerosis cutis	26	6.80	Other erythematous squamous dermatoses	9	2.40
Fungal infections	25	6.60	Vascular diseases	7	1.80
Nail disorders	25	6.60	Dermatoses due to physical agents	5	1.30
Urticaria	24	6.30	Hair disorders	3	0.80
Viral infections	21	5.50	Oral mucosal diseases	2	0.50
Benign skin neoplasms	21	5.50	Connective tissue diseases	2	0.50
Parasitic diseases	20	5.20	Skin lymphoma	1	0.30
Bacterial infections	16	4.20	Granulomatous diseases	1	0.30
Precancerous diseases	13	3.40	Pigmentation disorders	1	0.30
Malign skin neoplasms	10	2.60	Behçet's disease	1	0.30

TABLE 2: Grouping of patients aged ≥ 60 years presented to dermatology outpatient clinics during the COVID-19 pandemic according to the presentation time.

	n	%	
Presentation period	March 11-31	217	57.0
	April 1-15	26	6.8
	April 16-30	32	8.4
	May 1-15	61	16.0
	May 16-31	45	11.8

**FIGURE 1:** Variations in the number of patients aged ≥ 60 years presented to dermatology outpatient clinics based on the presentation period.

The most common groups of diagnoses during the pandemic period, such as eczematous dermatitis, psoriasis, and senile pruritus, were also evaluated based on the presentation period. No significant difference was found between these diagnosis groups according to the time of presentation ($p=0.71$) (Table 3).

Of the patients included in the sample, 157 (41.2%) had also visited the dermatology outpatient clinics of the hospital before the pandemic, whereas for 224 cases (58.8%), it was their first presentation. Of all cases examined, 54 (14.2%) were urgent and 327 (85.8%) were non-urgent. The mean symptom duration of the patients was 30.35 ± 62.59 months. There were 66 patients with a symptom duration of <1 month. The complaints of 71 (18.6%) patients were acute, whereas 310 (81.4%) cases had chronic complaints. Sixty-two (16.3%) patients were being followed up at the dermatology clinics of the same hospital and taking regular medications with the diagnoses of chronic urticaria, psoriasis, hidradenitis suppurativa, connective tissue diseases, and malignant skin tumors. When the medical records of the patients were examined, it was determined that seven had previously undergone COVID-19 infection. The characteristics of these patients are shown in Table 4.

Lastly, only two of the patients presented to the hospital during the evaluation period received inpatient treatment. One of the patients was diagnosed with a bacterial infection (cellulitis) and the other with a bullous disease (pemphigus foliaceus).

DISCUSSION

The COVID-19 pandemic has become a major global threat, and as in most countries, Turkey has implemented various measures to prevent the spread of the disease. The number of inpatients, consultations, elective surgical procedures, and staff working at each shift was limited. In some hospitals around the world, dermatology departments were found to be relatively risky in terms of the spread of the pandemic, and some have halted their outpatient clinics and inpatient services completely while others continue to accept patients by reducing the number of outpatient clinics.¹¹

Our tertiary hospital has 4 dermatology outpatient clinics (approximately 200 patients are examined daily) and an inpatient unit. Minor surgical and cosmetic procedures are performed and chronic dermatological diseases are followed up and treated. Although strict measures were implemented in Turkey to prevent the spread of COVID-19, our dermatology department did not completely halt; however, the number of services and working staff were limited to patients that required urgent care or were being followed up due to chronic diseases. The number of operating outpatient clinics was reduced to two, bed capacities were limited, and elective surgical and cosmetic procedures were canceled. The patients' body temperatures were measured at the entrance of the outpatient clinic, where it was then determined if they should use protective equipment or not. Except for the disabled and those who could not clearly explain their health problems, only the patient was allowed into the clinic without an attendant/family member. Health personnel also worked with full protective equipment and paid attention to hand hygiene. Furthermore, the intervals between each patient examination were extended, the rooms were ventilated after each examination, the outpatient clinic environment was frequently cleaned, and hygiene measures were maximized. Except for facial lesions, patients were

TABLE 3: Evaluation of the three most common diagnoses of patients aged ≥ 60 years during the COVID-19 pandemic based on the presentation period.

p=0.71	Diagnosis	Presentation period									
		March 11-31		April 1-15		April 16-30		May 1-15		May 16-31	
		n	%	n	%	n	%	n	%	n	%
	Ecze-matous dermatitis	25	42.40	4	44.40	9	64.30	13	56.50	6	37.50
	Senile pruritus	13	22.00	2	22.20	2	14.30	4	17.40	6	37.50
	Psoriasis	21	35.60	3	33.30	3	21.40	6	26.10	4	25.00

TABLE 4: Characteristics of patients with COVID-19 aged ≥ 60 years presented to dermatology outpatient clinics during the COVID-19 pandemic.

Patient	Age	Gender	Comorbidity	Regular medicine use	Dermatologic diagnosis
1	63	Female	Breast cancer	Present	Bacterial infection
2	70	Male	DM	Present	Parasitic infection
3	71	Female	HT, IHD	Present	Ecze-matous dermatitis
4	72	Male	HT, DM	Present	Nail disorders
5	72	Female	None	Absent	Fungal infection
6	75	Male	HT	Present	Psoriasis
7	76	Male	HT, IHD	Present	Pruritus

DM: Diabetes mellitus; HT: Hypertension; IHD: Ischemic heart disease.

not allowed to remove their masks during the examination and the use of dermoscopy was also reduced.

Despite the intensive global measures taken to prevent the spread of COVID-19, as of July 25, 2020, 16 million people have been infected and 650 thousand people have died from the disease. In Turkey, 224 thousand people have been infected and 5,580 people have died from the disease.¹² There is a growing elderly population in Turkey, as well as in other parts of the world and these population are at a higher risk for COVID-19.¹³ Studies conducted to date have shown that in patients with comorbidities, such as diabetes mellitus, cardiovascular disease, lung diseases, and immunosuppression, COVID-19 infection presents more severely and progresses faster, leading to death in a shorter time.¹⁴⁻¹⁶ It has been reported that 42.2% of the patients who died aged 80-89 years, 32.4% were 70-79 years, and 8.4% were 60-69 years.¹⁰

The COVID-19 outbreak affected Turkey at a later date, with the first case being reported on March 11, 2020. As a result, this enabled Turkish authorities to better identify sensitive populations and take rapid

action. On March 21, a curfew was imposed on people aged ≥ 65 years and those with chronic diseases. Social support groups were established to help elderly patients with their daily needs; as much as possible, their healthcare needs were met at their homes and they were able to reach family physicians easily and visit the hospital in case of emergencies. However, during this period, some elderly patients continued to present to outpatient clinics for various reasons. In this study, we evaluated the reasons for patients aged ≥ 60 years, considered as a high-risk group for COVID-19, to present to dermatology clinics, and based on similar previous studies, we compared our data to the pre-pandemic period.¹⁷⁻¹⁹

According to the results of our study, most of the patients aged ≥ 60 years presented to the outpatient clinics between March 11 and March 31, 2020, while the lowest number of presentations was seen during the first 2 weeks of April. This suggests that the curfew implemented on March 21 for people ≥ 65 years and those with chronic diseases led to a decrease in the number of elderly patients visiting dermatology outpatient clinics. As of May 10, 2020, this popula-

tion was allowed to go out at certain times and on certain days. With the relaxation of strict measures, the number of patients presenting to these clinics slightly increased. It was observed that the curfew policy greatly affected the decisions of this age group to visit dermatology outpatient clinics. However, there was no significant variation in the proportion of elderly patients presenting to dermatology outpatient clinics during the pandemic period compared to the pre-pandemic period.

According to epidemiological studies, eczematous dermatitis is the most common reason for visiting dermatology outpatient clinics among geriatric patients (32.9%), followed by senile pruritus (14.6%) and superficial fungal diseases (14.5%).¹⁷⁻¹⁹ In another study, the most common causes of outpatient presentation of geriatric patients were eczematous dermatitis (20.4%), fungal infections (15.8%), and pruritus (11.5%).¹⁷

In the current study, eczematous dermatitis was identified as the most common reason (15%) for elderly patients to present to our dermatology outpatient clinics during the pandemic period. Considering the increase in the frequency of hand washing and the use of soap, disinfectant, and cologne during this period, the incidence of eczema was expected to increase with an increase in the frequency of irritant contact dermatitis. However, a proportional increase was not observed in patients with eczema. The rate of presentation due to fungal infections was found to be lower than reported in other studies conducted in the pre-pandemic period.¹⁷⁻¹⁹ In our study, senile pruritus was the third most common diagnosis, similar to previous studies.¹⁷⁻¹⁹ We confirmed the diagnosis of senile pruritus after excluding xerosis cutis and all other diseases that could cause itching; thus, we evaluated xerosis cutis as a separate diagnostic group and it constituted the fourth most common diagnosis.

The remarkable detail in our study is the relatively higher rates of parasitic diseases and psoriasis compared to other studies. According to previous studies, psoriasis constitutes 2.4%-3.9% of all geriatric dermatological presentations.^{18,19} In our study, 9.7% of the patients presented to our clinics due to psoriasis, determined as the second most common reason for presentation. This may be because patients

with psoriasis are regularly followed up in our clinics, and because they use regular immunosuppressive and biological agents, they continued to visit our clinics to receive information about their diseases, working conditions, and drug use during the pandemic period. In addition, the proportion of these patients may have increased relatively due to the decrease in the total number of patients. All the patients presented with parasitic diseases were determined to have scabies, and this proportional increase was due to the increase in existing scabies cases and treatment-resistant cases during the pre-pandemic period.²⁰ As a result, these patients may have visited the hospital because they could not tolerate the severe itching.

In our study, comorbidities were present in the majority of the patients aged ≥ 60 years presented to our dermatology clinics during the pandemic period, and the rate of regular medicines used among these patients was also high. This population, who are already at a greater risk due to their advanced age, carries higher risk caused by their comorbidities. Although the number of patients decreased with the implementation of curfews, a considerable number of elderly patients visited our outpatient clinics despite the risk. Furthermore, most of these patients did not require urgent care, except for those who were being followed up due to chronic dermatological diseases and those with emergencies. Nevertheless, only seven of the patients presented to the dermatology outpatient clinics contracted COVID-19 and none of them died.

The limitation of the study is its retrospective design. In addition, some patients who visited the dermatology outpatient clinics had more than one dermatological problem, but only the primary diagnosis of each patient was evaluated in this study, which may have slightly affected the spectrum of disease diagnosis distribution.

CONCLUSION

In this study, the reasons for patients aged ≥ 60 years to present to dermatology outpatient clinics during a risky period, COVID-19 pandemic, were investigated. Determining the reasons for the elderly population to visit these clinics during the pandemic will enable dermatologists to develop a perspective on the

measures needed to be taken in similar future situations. This study can serve as a guide in taking the necessary precautions to meet the health needs of elderly people who struggle with health problems and have difficulty accessing medical assistance in sudden emerging situations, such as the COVID-19 pandemic.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

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

Idea/Concept: Tuğba Falay Gür; **Design:** Tuğba Falay Gür, Sevil Savaş Erdoğan; **Control/Supervision:** Tuğba Falay Gür, Bilal Doğan; **Data Collection and/or Processing:** Tuğba Falay Gür, Sevil Savaş Erdoğan; **Analysis and/or Interpretation:** Tuğba Falay Gür; **Literature Review:** Tuğba Falay Gür, Sevil Savaş Erdoğan; **Writing the Article:** Tuğba Falay Gür; **Critical Review:** Bilal Doğan; **References and Fundings:** Bilal Doğan.

REFERENCES

- Lu R, Zhao X, Li J, Niu P, Yang B, Wu H, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. *Lancet*. 2020;395(10224):565-74. [Crossref] [PubMed] [PMC]
- Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ, et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. *Mil Med Res*. 2020;7(1):11. [Crossref] [PubMed] [PMC]
- Cengiz FP, Emiroglu N, Bahali AG, Dizman D, Taslidere N, Akarslan TC, et al. Which dermatology patients attend to Dermatology Outpatient Clinics during the SARS-CoV-2 outbreak in Turkey and what happened to them? *Dermatol Ther*. 2020;33(4):e13470. [Crossref] [PubMed]
- Kutlu Ö, Güneş R, Coerd K, Metin A, Khachemoune A. The effect of the "stay-at-home" policy on requests for dermatology outpatient clinic visits after the COVID-19 outbreak. *Dermatol Ther*. 2020;33(4):e13581. [Crossref] [PubMed] [PMC]
- Turan Ç, Metin N, Utlu Z, Öner Ü, Kotan ÖS. Change of the diagnostic distribution in applicants to dermatology after COVID-19 pandemic: What it whispers to us? *Dermatol Ther*. 2020;33(4):e13804. [Crossref] [PubMed] [PMC]
- Türkmen D, Altunışık N, Mantar I, Durmaz I, Sener S, Colak C. Comparison of patients' diagnoses in a dermatology outpatient clinic during the COVID-19 pandemic period and pre-pandemic period. *Int J Clin Pract*. 2021;75(4):e13948. [Crossref] [PubMed] [PMC]
- Kutlu Ö, Metin A. Relative changes in the pattern of diseases presenting in dermatology outpatient clinic in the era of the COVID-19 pandemic. *Dermatol Ther*. 2020;33(6):e14096. [Crossref] [PubMed]
- Kartal SP, Çelik G, Sendur N, Aytekin S, Serdaroglu S, Doğan B, et al. Multicenter study evaluating the impact of COVID-19 outbreak on dermatology outpatients in Turkey. *Dermatol Ther*. 2020;33(6):e14485. [Crossref] [PubMed]
- Çaytemel C, Erdem O, Ağırğöl Ş, Türkoğlu Z. Dermatology outpatient clinic outcomes after COVID-19 outbreak: What is new normal? *Dermatol Ther*. 2021:e14950. [Crossref] [PubMed]
- Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? *Lancet*. 2020;395(10231):1225-8. [Crossref] [PubMed] [PMC]
- Tao J, Song Z, Yang L, Huang C, Feng A, Man X. Emergency management for preventing and controlling nosocomial infection of the 2019 novel coronavirus: implications for the dermatology department. *Br J Dermatol*. 2020;182(6):1477-8. [Crossref] [PubMed]
- Worldometer [Internet]. © Copyright Worldometers.info [Cited 25.7.2020]. COVID-19 coronavirus pandemic. Available from: [Link]
- Altın Z. Covid-19 pandemisinde yaşlılar [Elderly people in Covid-19 outbreak]. *The Journal of Tepecik Education and Research Hospital*. 2020;30 (Suppl 2):49-57. [Link]
- Wang W, Tang J, Wei F. Updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China. *J Med Virol*. 2020;92(4):441-7. [Crossref] [PubMed] [PMC]
- Qin C, Zhou L, Hu Z, Zhang S, Yang S, Tao Y, et al. Dysregulation of immune response in patients with coronavirus 2019 (COVID-19) in Wuhan, China. *Clin Infect Dis*. 2020;71(15): 762-8. [Crossref] [PubMed] [PMC]
- Fang L, Karakiulakis G, Roth M. Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection? *Lancet Respir Med*. 2020;8(4):e21. Erratum in: *Lancet Respir Med*. 2020;8(6):e54. [Crossref] [PubMed] [PMC]
- Yalçın B, Tamer E, Toy GG, Oztas P, Hayran M, Alli N. The prevalence of skin diseases in the elderly: analysis of 4099 geriatric patients. *Int J Dermatol*. 2006;45(6):672-6. [Crossref] [PubMed]
- Özyurt K, Avcı A, Çınar SL, Silay E. Geriatrik hastalarda dermatolojik sorunlar [Dermatological disorders in geriatric patients]. *Turk J Dermatol*. 2014;4:206-9. [Crossref]
- Liao YH, Chen KH, Tseng MP, Sun CC. Pattern of skin diseases in a geriatric patient group in Taiwan: a 7-year survey from the outpatient clinic of a university medical center. *Dermatology*. 2001;203(4):308-13. [Crossref] [PubMed]
- Sunderkötter C, Aebischer A, Neufeld M, Löser C, Kreuter A, Bialek R, et al. Increase of scabies in Germany and development of resistant mites? Evidence and consequences. *J Dtsch Dermatol Ges*. 2019;17(1):15-23. [Crossref] [PubMed]