Dermatologic Foot Complaints of the Young Adults: A Prospective Study from a Dermatology Outpatient Clinic in Turkey

Genç Erişkinlerde Ayağın Dermatolojik Problemleri: Türkiye'de Bir Dermatoloji Polikliğinde Yapılan Prospektif Çalışma

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ABSTRACT

Objective: Young adulthood can be considered the healthiest time of life and young adults are generally in good health. However many adult patients presented to hospitals for various problems including dermatologic complaints. Almost 70 % of adults have various foot problems. Although there are more detailed population based surveys where participitants self-reported problems of foot and toenail pathology, there is sparse data about the dermatological foot problems of the young adults. The aim of this study is to determine the dermatologic foot complaints of the young adults attending a dermatology outpatient clinic.

Type of the study: Prospective study

Methods: Patients aged between 18 and 35 years, who were admitted to the dermatology outpatient clinic with a complaint of dermatologic foot disorders over a 6-months period were included. Demographic features of the patients were recorded. The patients were asked for the dermatologic complaints of the feet.

Results: A total of 107 young adult patients attended the dermatology outpatient clinic with a complaint of dermatologic foot problems over a 6-months-period. Overall, the five most frequent dermatologic foot complaints were tinea pedis (20.5 %), verruca (16.8 %), callosities (15.8 %), unguium incarnatus (13.1 %), and onychomycosis (9.3 %). In males; the most frequent complaint was tinea pedis (27.2 %), followed by verruca (18.1 %) and onychomycosis (12.7 %) whereas in females; the most frequent complaint was callosities (23.1 %), followed by unguium incarnatus (17.3 %), and verruca (15.3 %).

Conclusions: Most of the dermatologic complaints of the foot in young adults are preventable and treatable. Medical education programs for health care personnal and young adult population would have a great contribution in informing the people about the preventive measures and the proper treatments of dermatologic foot problems.

Key Words: Foot, dermatologic, complaints, young adults

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ÖZET

Amaç: Genç erişkinlik dönemi hayatın en sağlıklı dönemi olarak bilinir ve genç erişkinler genellikle sağlıklıdır. Ancak birçok erişkin hasta dermatolojik şikayetleri de içeren değişik şikayetlerle hastanelere başvurmaktadır. Erişkinlerin yaklaşık % 70'i değişik ayak problemlerine sahiptir. Hernekadar ayak ve ayak tırnaklarına ait katılımcıların kendilerinin belirttiği problemleri kapsayan toplum temelli detaylı araştırmalar olsa da, genç erişkinlerin dermatolojik ayak problemlerini ilgilendiren az sayıda bilgi mevcuttur. Bu çalışmanın amacı dermatoloji polikliğine başvuran genç erişkin hastaların dermatolojik ayak problemlerini belirlemekti.

Çalışma türü: Prospektif çalışma

Yöntemler: Yaşları 18 ve 35 arasında olan ve 6 ay süresince dermatoloji polikliniğine dermatolojik ayak şikayetleri ile başvuran hastalar çalışmaya alındı. Hastaların demografik özellikleri belirlendi. Hastalara ayaklarındaki dermatolojik şikayetler sorgulandı.

Bulgular: Altı ay süresince toplam 107 hasta dermatoloji polikliğine dermatolojik ayak şikayetleri ile başvurdu. Genel olarak en sık beş dermatolojik şikayet tinea pedis (% 20.5), verrü (% 16.8), kallozite (% 15.8), tırnak batması (% 13.1), ve onikomikozdu (% 9.3). Erkeklerde en sık şikayetler tinea pedis (% 27.2), verrü (% 18.1) ve onikomikoz iken (% 12.7) kadınlarda en sık şikayetler sırasıyla kalloziteler (% 23.1), tırnak batması (%17.3), ve verrüydü (% 15.3).

Sonuçlar: Genç erişkinlerdeki ayakla ilgili dermatolojik şikayetlerin birçoğu önlenebilir ve tedavi edilebilir. Sağlıkla ilgilenen personel ve genç erişkin popülasyon için düzenlenecek medikal eğitim programları, insanları koruyucu önlemler ve dermatolojik ayak problemlerinin uygun tedavisi hakkında bilgilendirmede çok büyük katkı sağlayacaktır.

Anahtar Sözcükler: Ayak, dermatolojik, şikayetler, genç erişkin

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INTRODUCTION

There are published studies about the epidemiology of onychomycosis and tinea pedis in specific population groups of individuals(1-3), as well as with specific occupations(4-5), or subjects with underlying diseases(6), or type of foot problems seen by pediatrists(7). However, there is not much information about the frequencies and patterns of dermatologic foot problems in young adults. There are studies from different countries and reviews identifying most common presenting foot complaints and pathologies, the most prevalent conditions affecting feet and superficial problems of the skin and pathological nail findings. Many of these studies include a wide range of age(8-11). Although there are more detailed population-based surveys where participants self-reported problems of foot and toenail pathology(12-13), there is sparse data about the dermatological foot problems of the young adults. The aim of this study was to determine the dermatologic foot complaints of the young adults attending a dermatology outpatient clinic.

METHODS

Patients aged between 18 years and 35 years who were admitted to the dermatology outpatient clinic with the complaint of dermatologic foot disease over a 6-months period between November 2011 and April 2012 were included in this study. All the patients signed an informed consent form before participating in the study. Baseline information on sociodemographic variables, occupations, duration of the complaints, previous treatments and past medical history were noted. Dermatologic complaints were assessed by the same dermatologist throughout the study period. Wood's lamp examination, skin scrapings and mycologic examination were performed when necessary. Mycologic samples were examined by direct microscopy after preparing a15 % potassium hydroxide solution in cases of possible dermatophyte infections. The diseases were cathegorized into tinea pedis, onychomycosis, callosities, verruca, pitted keratolysis, unguium incarnatus, eczematous dermatitis, discoloration of foot nails, erythrasma, and bullous disorders.

RESULTS

A total of 107 young adult patients attended a dermatology outpatient clinic with a complaint of dermatologic foot diseases over a 6-months-period. Of these, 55 (51.4 %) were male and 52 (48.6 %) were female. The 27.1 % of the patients were students (males: 18.6 %, females: 8.4 %). The 45.7 % of the patients were occupied (males: 24.2 %, females: 21.4 %). The 27.1 % of the patients had no occupation (males: 8.4 %, females: 18.6 %). The median age of the patients was 27.0 (males: 26.0, females: 28.1) (min:18, max: 35). Overall, the five most frequent dermatologic foot complaints were tinea pedis (20.5 %), verruca (16.8 %), callosities (15.8 %), unguium incarnatus (13.1 %), and onychomycosis (9.3 %). In male; the most frequent complaint was tinea pedis (27.2 %), followed by verruca (18.1 %) and onychomycosis (12.7 %). The other dermatologic foot problems of the male patients were erythrasma and discoloration of the toenails. In female; the most frequent complaint was callosities (23.1 %), followed by unguium incarnatus (17.3 %), verruca (15.3 %), and tinea pedis (13.4 %). The percentages of male patients with the complaint of callosities, pitted keratolysis, eczematous dermatitis and unguium incarnatus were 9.1 %. Female patients presented with the complaints of onychomycosis, pitted keratolysis, discoloration of toenails, and bullous lesions, each havinga 5.7 % prevalence rate. Eczematous dermatitis and erythrasma were the other dermatologic foot complaints of the female patients (Table 1).

Table1. The distribution of dermatologic foot complaints according to gender in the young adult patients

	Male		**Female**		**Total**	
Disease	No	%	No	%	No	%
Tinea pedis	15	27.2	7	13.41	22	20.51
Verruca	10	18.1	8	15.31	18	16.81
Callosities	5	9.1	12	23.1	17	15.81
Unguium incarnatus	5	9.1	9	17.31	14	13.1
Onychomycosis	7	12.7	3	5.71	10	9.31
Pitted keratolysis	5	9.1	3	5.71	8	7.41
Eczematous dermatitis	5	9.1	2	3.81	7	6.51
Discoloration of the nails	1	1.81	3	5.71	4	3.71
Erythrasma	2	3.61	2	3.81	4	3.71
Bullous lesions	0	0	3	5.71	3	2.81
Total	**55**		**52**		**107**	**100,0**

DISCUSSION

A young adult, according to Erik Erikson's stages of human development, is generally a person in the age range of 20 to 40, whereas an adolescent is a person aging from 13 to 19, although definitions and opinions vary. The young adult stage in human development precedes middle adulthood. For a variety of reasons, timeliness on young adulthood cannot be exactly defined, producing different results according to the different mix of overlapping indices (legal, maturational, occupational, sexual, emotional) employed, or whether a developmental perspective or the socialization perspective is taken. Arguably indeed, with people living longer, and also reaching puberty earlier, age norms for major life events have become highly elastic by the twenty-first century(14). Concerning this elasticity in age range of young adult definition, we include the patients between 18 years and 35 years old in our study.

There are studies about the foot disorders of spesific populations, such as young athletes(15), diabetic patients(6), or elderly patients(16), however there is not much data reported about the foot skin disorders of the young adults. Young/prime adulthood can be considered the healthiest time of life and young adults are generally in good health, subject neither to disease nor the problems of senescence. This fact may be the reason of not seeking medical help and not presenting to hospitals in general(14). However our study indicated that young adults ignore the dermatologic foot complaints and seek medical help for their complaints. The number of male and female patients is nearly the same, indicating that both men and female young adults give importance to foot dermatologic disorders.

Feet are organs carrying the weight of the body and are subject to various environmental factors. Foot health is affected by factors such as mechanical effects originating from the shoes, personal hygiene, the environmental, seasonal characteristics, education, and economic status as well as traumas and effects related to weight of the body. Skin diseases seen on the feet, according to the order of their frequency, are fungus infections, bacterial infections, toenail pathologies, hyperkeratotic lesions, and eczematous lesions(17).

In our study, overall the most common dermatologic complaint of the feet for patient admittance to hospital was tinea pedis. Nearly one of five patients among 107 young adults presented with this complaint. It was the first, and fourth most common complaints presented by male and female patients respectively. The 22 of 107 patients presented with tinea pedis. Of these, 15 patients were male. It seems that female young adults do not suffer from tinea pedis as much as male young adults. By the way it is a fact that tinea pedis more commonly affects male as compared with females(15). In a previous study from Turkey, the most frequent disease was tinea pedis (32.5 %) among male adolescent and post-adolescent boarding school students(18). Tinea pedis has been found to be very frequent in young adults of special groups such as young athletes(15). The high percentage of tinea pedis, especially in males is probably due to wearing occlusive rubber shoes for a long time, and failing to dry the feet properly and adequetely after washing as mentioned by these patients(15). In our study, most of the patients with a complaint of tinea pedis were students and mentioned that they do not dry their feet properly.

Verruca vulgaris was the overall second most frequent complaint in our study. In males verruca vulgaris was the second, and in females it was the third most frequent dermatologic foot complaint. It affected 16.8 % of 107 young adults, and the percentages of affected males and females were similar. A lower proportion of verruca vulgaris was found in a study from Thailand including a wide range of age(19), and from Turkey(18) including adolescant and post-adolescant male students, as 0.6, and 1.8 % respectively. In our study, most of the patients presented with verruca were as verruca plantaris, and mentioned that they repored to the hospital because of the pain due to verruca.

Callosities were the third overall dermatologic foot complaint of the patients in our study affecting 15.8 % of 107 patients. It was the first common dermatologic foot complaint among females. Nearly one of four females was suffering from callosities on their feet. The percentage of callosities in previous studies including a wide range of age groups is lower (3.2 %) than the percentage of complaint of callosities in our study. In our study as well as the previous studies, callosities are more frequent in female than in male. This is most probably due to the ill-fitting shoes worn by female young adults. Foot callosities are generally formed as a result of the thickening in the normal skin due to excessive pressure and friction formed because of wearing tight shoes(20). In our study, most of the female patients with this complaint were office workers and mentioned that they were wearing tight shoes for long hours. Unguium incarnatus was another common foot problem presented by the young adult patients. In females, it was the second most frequent complaint. The 17.3 % of the female patients presented with unguium incarnatus, whereas it was not a common complaint of the male patients. Unguium incarnatus is often observed in the big toe, as seen in our study, and generally develops as a result of cutting the toenails improperly and choosing tight shoes which are not suitable for the foot(15). It may be the reason of occurrence of unguium incarnatus especially in females. The percentage of this complaint in our study was higher than the previous studies. In Tuncel et al's study the percentage of unguium incarnatus was reported as 4.1 %.

Onychomycosis was the fifth most frequent dermatologic foot complaint overall. However in male patients it was the third most frequent complaint. The 12.7 % of the male patients presented with onychomycosis, and in most of the patients only the toenails were affected. A lower proportion of onychomycosis was found in the studies from Thailand(19), and Turkey(18) and the percentages are 1.7 and 8.0 % respectively.

Pitted keratolysis, eczematous dermatitis, discoloration of the nails, bullous lesions and erythrasma were the other dematologic foot complaints of the young adults in our study. Of these complaints, eczematous dermatitis and pitted keratolysis were more common in males whereas discoloration of the nails and bullous lesions were more common in females. Number of patients with erythrasma was same both in males and females.

Our study indicated that dermatologic foot problems are common in adults, and both male and female young adults need to seek medical help for their complaints. Educational activities regarding the protection of foot health and using healthy shoes should therefore be carried out in this age group. Considering that almost 70 % of the individuals in the society experience health problems related to their feet at least once in their lives, and foot pathologies start to increase beginning from the adolescence, it can be suggested that foot health screening should be performed more frequently(21-22).

CONCLUSION

Most of the dermatologic foot problems in the young adults are preventable or treatable, so the proper foot skin care and the treatment of foot skin diseases should be emphasized in the general health care for the young adults. Medical education programs for health care personal and young adult population would make a great contribution to informing people about the preventive measures and proper treatments of dermatological foot problems.

Conflict of Interest

No conflict of interest was declared by the authors.

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