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RESEARCH

EVALUATION OF SUNBATHING AND PROTECTION AWARENESS ACCORDING TO THE SOCIODEMOGRAPHIC CHARACTERISTICS OF INDIVIDUALS AGED ABOVE 65 YEARS

Abstract

Introduction: Because excessive exposure to solar radiation contributes to the aging of skin and the risk of skin cancer, protection from sunlight has become an important public health problem. This study aims to assess the knowledge level of individuals aged >65 years regarding sun exposure and their current use of sunscreen products.

Materials and Method: A questionnaire consisting of 22 questions was prepared to measure sun protection awareness and use of sunscreen products by individuals aged >65 years. Between July and August 2017, the questionnaire was administered to 603 patients who presented to outpatient clinics. The data were analyzed using SPSS 22 software; a p-value of <0.05 was considered significant.

Results: The average age of the 603 participants was 67.8 years; 202 (33.5%) of them stated that they generally remained in the sun for 4–6 h, and 518 (86.3%) indicated that they had not received any information about sun protection.

Conclusion: We found that individuals aged ≥65 years had insufficient knowledge of the dangers of excessive sun exposure and were not protected from it. In order to reduce the risk of skin cancer in Turkey, education regarding lifestyle modification, sun protection, and use of sunscreen should be provided and relevant health policies should be formulated for these trainings to become a part of lifestyle there.

Keywords: Aged; Sun; Awareness

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ARAŞTIRMA

65 YAŞ ÜZERİ BİREYLERDE GÜNEŞLENME VE KORUNMA BİLİNCİNİN SOSYODEMOGRAFİK ÖZELLİKLERE GÖRE DEĞERLENDİRİLMESİ

Öz

Giriş: Deri kanseri ve deri yaşlanmasında güneş ışınlarının rolünün net olarak anlaşılmasıyla birlikte güneşten korunmak önemli bir toplum sağlığı sorunu haline gelmiştir. Çalışamayla 65 yaş üstü bireylerin güneşin zararlı etkileri konusundaki bilgi düzeylerini ve güneş koruyucu ürün kullanım durumları değerlendirilmeye çalışılmıştır.

Gereç ve Yöntem: Çalışmaya 65 yaş üstü bireylerin güneşlenme bilincini ve güneş koruyucu ürün kullanım durumlarını ölçen 22 sorudan oluşan bir anket hazırlandı. TemmuzAğustos 2017 tarihi arasında ayaktan hasta polikliniklerine müracaat eden hastalar uygulandı. Veriler SPSS 22 prog ile değerlendirildi ve anlamlılık değeri p<0.05 olarak alındı.

Bulgular: Çalışmamıza katılan 603 kişinin yaş ortalaması 67.8 yıl olarak hesaplandı. Katılımcılardan 202'si (%33.5) 4-6 saat güneşte kaldığı ve 518'i (%86.3) güneşten korunma konusunda hiç bilgi almadığını belirtti.

Sonuç: Altmış beş yaş üstü bireylerin güneşten korunma konusunda yeterli bilgilerinin olmadığı ve güneşten korunmadıkları bulunmuştur. Yılın dört mevsimi güneş gören ülkemizde yaşla birlikte arttığı bilinen cilt kanserleri sıklığını azaltmak için; yaşam tarzı değişikliği, güneşten korunma ve güneş koruyucu kullanımı hakkında eğitimler düzenlenmeli ve bu eğitimlerin yaşam stili olarak kabul edilmesi için sağlık politikaları oluşturulması gerekmektedir.

Anahtar sözcükler: Yaşlı; Güneş; Farkındalık

INTRODUCTION

In the 20th century, it was reported that the world population included more than 500,000 people aged >65 years; it was estimated that this number would reach 2 billion by 2050 (1). According to 2016 data from the Turkey Statistical Institute, 6.6 million people are now aged >65 years (2). This increase in life expectancy has raised the question of how to improve people's quality of life as their lives become longer.

In literature it has been noted that even short durations of exposure to sunlight, although necessary for vitamin D synthesis, may still cause DNA damage. With our current clear understanding of the role of UV light in promoting skin cancer and the premature aging of the skin, protection from sunlight has become an important public health issue. It is known that the prevalence of sun exposure ?and incidence of skin cancer increase with age; however, awareness of the importance of protection against sun exposure is barely spread among older people (3). According to the WHO, 132,000 people were diagnosed with melanoma, the deadliest form of skin cancer, and 2–3 million were diagnosed with non-melanoma skin cancer. In addition, the incidence of skin cancer increases by 3% annually (4). Despite variety of treatment options, it is known that, annually, Approximately 55,000 people die due to melanoma (5). The most common etiological cause of skin cancer is exposure to sunlight. For this reason, nations have been organizing various campaigns to raise awareness of people about sun protection and being out in the sunlight at proper times (6, 7).

Despite all awareness-raising efforts and improvements in health care, exposure to sunlight is still high and increased incidence of skin cancer suggests that behavioral changes could not be produced in individuals in this regard. The aim of our study is to increase the awareness of individuals aged >65 years by determining their level of knowledge regarding the harmful effects of UV light and the use of both sunscreen and sun protection products.

MATERIALS AND METHOD

Two dermatologists prepared a questionnaire consisting of 22 questions designed to measure the respondents' awareness of the risks of sun exposure and the use of sunscreen products; all respondents were aged >65 years. The survey questions were created on the basis of literature review. The initial questionnaire was tested with 45 individuals. Then the unclear questions were revised, and a Turkish language expert checked them for clarity. The final questionnaire included 21 questions: 7 questions were designed to obtain demographic information, 10 tested for attitudes, and 4 questioned knowledge level. After a power analysis, when the questionnaire reached an accuracy of 96%, at least 528 individuals were included in the study, with n = 0.96, a deviation of 0.03, type 1 error of 0.05, and type 2 error of 0.10.

From July to August 2017, the questionnaire was administered on a voluntary basis via faceto-face interviews with patients aged ≥65 years who were illiterate, had no neurologic or psychiatric problems, and who had applied to the outpatient clinics of the Inonu University Scientific Research and Publication Committee.

For data analysis, the SPSS 22 software program was utilized. When descriptive statistics were reported, frequency distributions of qualitative data were presented; for quantitative data, arithmetic mean and standard deviation values were presented. Nonparametric tests and chi-square tests were used in the analysis of qualitative data; parametric tests were used in the analysis of quantitative data, and nonparametric tests were used in the analysis of quantitative data that did not have a normal distribution. The Mann–Whitney U test, Kruskal–Wallis test and Binary Logistic Regression test were used in analyzing the data. A p-value of <0.05 was considered significant.

RESULTS

The study included 603 participants and average age was 70.73±5.42. The majority of participants are males. Details of the sociodemographic characteristics are given in Table 1.

Participants' daily duration of exposure to sun and status of sunburn and sun protection are given in Table 2.

We found that 33% of participants have been sunburn once in their previous life. Regarding the awareness of sun protection, we found that 86.3% of patients had no information from healthcare personnel. Regarding sun protection, 82.7% of the participants stated that they stay in the shade to protect from the sun, 46.5% used hats, and 17.4% used sun cream. Only 15.6% of the participants using sun-cream stated that they had received help from a dermatologist. The first factor considered in choosing sunscreen (21.3%) was found to be the price of the product, while 16.5% considered height the sun protective factor. The factors affecting the participants' behavior of using the sunscreen are given in Table 3.

When sociodemographic factors affecting the use of sunscreen were taken into consideration, income and occupation were found to be most effective factors ($p<0.001$). It was found that people with high income and qualified professions use sunscreens more often. We found that gender, age and social security did not affect the use of sunscreen creams.

The analysis of the answers to the questions asked to evaluate the potential benefits and harms of the sun rays is given in Table 4.

We found that the number of the correct answers given the participants who worked for higher salaries, who occupied in qualified professions, and those between the ages of 71-80 were statistically significantly higher

According to the results of the logistic regression analysis, which we included questions regarding the time spent outside (divided for three hours or more), use of sunscreen, hair color (light and dark colors), eye color (blue, green and other dark colors), being received information about necessity of sun protection, and whether any of these has an effect on sunburn, we observed that model fit of was good (omnibus test $p<0.001$). The overall correct estimate of the model is 67.8%. The results of the regression analysis for development of sunburn are given in Table 5.

We found that staying out more than 3 hours increased the risk of sunburn 1.6 times, while not using sunscreen cream increased this risk by about 3 times. while the out-of-worker his of developing sunburn by a factor of 1.6 over 3 hours. It has been found that hair color, eye color, and being received information in this regard are not important for the risk of developing sunburn.

Table 1. Sociodemographic characteristics of the participants.

Variable	n	%
Gender		
Male	327	54.2
Female	276	45.8
Age group (in years)		
65–70	372	61.7
71–80	179	29.7
≥81	52	8.6
Monthly income (in TL)		
<1000	207	34.7
1001–2000	263	44.1
2001–3000	96	16.1
≥3001	31	5.2
Occupation		
Retired Civil Servant	132	21.9
Retired worker	91	15.1
Self-Employed	149	24.7
Housewife	231	38.3
Social security		
Yes	513	85.2
No	90	14.8
Total	603	100.0

Table 2. Participants' daily duration of exposure to sun, sunburn and, sun protection.

Variable	n	%
Daily duration of exposure to sun		
Less than 1 hour	188	31.2
1-3 hours	108	17.9
4-6 hours	202	33.5
6-8 hours	66	10.9
More than 8 hours	39	6.5
Sunburn		
Yes	199	33.0
No	404	67.0

Table 3. Participants' behaviors of using sunscreen.

Variable	n	%
Do you use sunscreen?		
Yes	104	17.4
No	493	82.6
Whom do you get help while you buy sunscreen?		
Dermatologist	94	15.6
Advertisements	19	3.2
Pharmacist	83	13.8
Internet	7	1.2
Friends	23	3.8
No help	86	14.3
How do you choose the sunscreen?		
According to the brand	98	16.3
By price	128	21.3
According to the protective factor height	99	16.5
According to the perfume it contains	15	2.5
According to being free of perfume	20	3.3
When do you use sun protector?		
1 hour before sunbath	125	20.8
15 minutes before sunbath	46	7.6
While sunbathing	22	3.7
After sunbathe	5	0.8
It does not matter	16	2.7
Where do you apply sunscreen?		
Face	218	36.2
Back of the hands	117	19.4
Back	46	7.6
Arms and legs	114	18.9
Body	41	6.8

Table 4. Answers to questions according to sociodemographic factors.

	Number of correct answers	
Variable	**A.O.±sd**	**p**
Gender		
Male	2.73±1.17	0.241
Female	2.85±1.13	
Age		
60-70	2.82±1.11	
71-80	2.93±1.15	**≤0.001**
>80	2.00±1.13	
Income (TL)		
<1000	2.60±1.13	
1001-200	2.69±1.14	**≤0.001**
2001-3000	3.22±1.09	
>3000	3.40±1.06	
Occupation		
Retired officer	3.33±0.95	
Retired worker	2.70±1.20	**≤0.001**
Self employment	2.37±1.15	
Housewife	2.76±1.12	

Table 5. Results of logistic regression analysis.

	Development of sunburn				
Variable				**CI %95**	
	B	**p**	**Exp (B)**	**Lower limit**	**Upper limit**
Time spent out	0.474	**0.009**	**1.606**	1.127	2.289
Not to use sunscreen	1.114	**<0.001**	**3.046**	1.861	4.985
Hair color	0.187	0.324	1.196	0.831	1.750
Eye color	0.087	0.669	0.462	0.731	1.629
Being informed before	0.172	0.549	1.185	0.677	2.083

DISCUSSION

It is known that the number of melanocytes gradually decreases as people age and that the incidence of skin damage and skin cancer increases (8). A significant increase in the incidence of melanoma has been identified in the United States and Europe because of an increase in the proportion of people aged >65 years, and this is considered a public health problem (9). It has recently been reported that this is also a serious problem in Turkey (10). Therefore, it will be appropriate to perform skin cancer screening within the scope of cancer screenings, within the basic principles of geriatric preventive medicine.

The mean age of the patients in epidemiological studies investigating skin cancers and etiological factors in older groups was reported to be 64–69 years (10,11). The average age of those in the present study was 67.8 years, which is consistent with the findings of other studies in the literature.

The ideal way to protect oneself from the sun is to wear long, less open clothing as well as hats and wide-framed sunglasses that protect the face; one should also remain in the shade as much as possible, especially when the sun is directly overhead (12). When the literature is examined in this regard, in studies conducted in Canada, about half of the participants stated that they stay in the shadow to protect from the sun (13,14). Seit et al. in their multicenter study including 23 countries found that most of the participants used sunscreen and sunglasses to protect against sunlight (15). In our study, 85% of the participants stated that they stay in the shadow to protect from the sun. It is known that resistant sun exposure is generally associated with basal cell carcinoma and melanoma, and chronic sun exposure is associated with squamous cell carcinoma (16). In the light of this information, just sitting in the shadow without taking sun protection precautions is not considered to be adequate protection method, in areas such as our city which is sunny for most of the year.

Hall et al. found that those who stayed in the sun for more than 4 h a day were more likely to be young males with higher incomes (17). Although the participants in the present study were aged >65 years, they mostly (33.5%) stayed under the sun for 4–6 h a day. This result may be explained by the fact that our city is located in the eastern part of Turkey, where many people are farmers and are therefore obliged to work in the sunlight.

It is known that UV light plays an important role in all skin cancers and that UV light is an accepted part of the environment. To prevent excessive exposure to UV, sun protectors, products that increase the production of collagen, and antioxidants can be used (18). A study in Australia found that the use of sunscreens reduced the frequency of squamous cell carcinoma by 9.3% and melanoma by 14% (19). Only 17.3% of the participants in our study indicated that they used sunscreens, which suggests that they are vulnerable to skin damage or cancer in the future. This indicates that community awareness needs to be created. In the study of Pinault and Fioletov, ithas been reported that 45% of those who said they used sunscreen, applied it on the face, while in the study of Seit et al. the participants said that they applied sunscreen mostly on their legs and arms. (13,15). In our study, 36.2% of those who used sunscreen stated that they most frequently applied it on their faces. It is known that sunscreen protectors should be applied 15–20 min before sun exposure and repeated every 2 h if the individuals remain in the sun (20). In our study, we found that the participants over the age of 65 applied sunscreen 1 hour before going out and not repeated and using it in this way was not enough to protect the skin of people over 65 years from sunlight. We suggest that giving information about skin cancer and prevention methods is necessary, when advising elderly people in our country, and campaigns should be organized and even media should be employed. In this context, Haluza et al. found that participants had deficiencies in knowledge about sun protection and the rate of sun protection increased, after the

media, TV, and even doctors informed individuals about sun protection (21).

The studies in which sun protection techniques were examined on the basis of gender indicate that females mostly prefer to stay in the shade and use sunscreen products, whereas males prefer to wear hats and long pants (13,17,22). In our study, we found that both females and males preferred to sit in the shade but females used sun protection more than males.

Purdue et al. reported that the use of sunscreen and wearing thick clothes reduced the frequency of sunburn and that the use or inadequate application of sunscreen increased sun exposure (14). In the study by Pinault and Fioletov, 33% of participants were found to have experienced sunburn during the previous year and most of these were males, unemployed, and with low levels of income (13,15). There are also studies indicating that sunburn is more common among males and in high-income groups (14,23), which helps explain why malignant melanoma is seen more often in those with higher incomes (24). Our study included male participants who stayed under the sun for 4–6 h daily and did not use sunscreen; among them, the rate of sunburn during the preceding year was reported as 33%. It has been reported that male skin is thicker, colloidally richer, and with less subcutaneous fat; thus, it is able to repair UV damage more readily; this accounts for the fact that males are less likely to experience erythema and sunburn (25,26). We found that as people's monthly income increases, their use of sunscreen also increases. In addition, we found that retired civil servants and workers, who had higher level of education, used more sunscreen products. In addition, the participants' response of "according to price" for the question "How do you select your sunscreen?" led us to conclude that the frequency of sunscreen use is directly related to the level of income.

When our participants were asked, "Is sun protection necessary?", 63.2% replied that it was not. As to the question of how long one should expose oneself to the sun daily, the response was generally "more than an hour." In response to the question "Have you ever received information on how to protect yourself from the sun?", 86.3% of the participants answered that they had not received such information. Liu-Smith et al. emphasized that informative training should be organized to reduce the risk of skin cancer in people as they age (22). Seit et al also found a positive association between level of knowledge of sun protection, age and socioeconomic status and sun exposure. The primary prevention methods for skin cancer and self-skin examination should be taught and an awareness should be raised (15). It is stated in the literature that among all cancers, skin cancer is the most costly type (27,28). Although there is no official skin cancer screening program in Australia, skin cancer screening programs are being implemented by family physicians (29). Economic analyses show that the early diagnosis of skin cancer reduces the cost of treating it (12). Early diagnosis is especially important for malignant melanoma; overall, education and awareness are the primary and most cost-effective preventive measures (30). Based on the results of our study, we believe that it would be appropriate to screen for skin cancer in individuals aged >65 years, with a nocost physical examination as the first step.

In their study, Pinault and Fioletov found the rate of awareness regarding sun protection to be only 35%. When the answers to the questions that measure sun protection awareness in our study were examined, it was found that those who had a higher monthly income and higher level of education (such as retired civil servants) and those in the age range of 65–80 years had a greater level of awareness (13,15).

A limitation of our study was that it did not include questions about winter sun exposure or chronic exposure, and the physical examinations did not include a search for precancerous skin lesions. However, our study remains significant because to

the best of our knowledge, no other similar study has been conducted in Turkey, and this is the first study conducted for the present purpose.

In conclusion; we investigated the socio-demographic characteristics of 65-year-olds and the level of knowledge about sun protection in this study. Our results showed that the participants did not have adequate information on sun protection and were not protected from the sun effectively. It is very important for individuals living in our region to be informed about the harmful effects of the sun because our region is mostly sunny and the farming is the main occupation group. In particular, healthcare professionals should conduct training on self skin examination and primary prevention methods and health policies should be established to ensure that these trainings are considered as a lifestyle. In this regard even public spots should be created to ensure media support.

Ethical considerations

Ethical issues (ıncluding plagiarism, ınformed consent, misconduct, data fabrication, double publication and/or submission, redundancy, etc.) have been completely checked by the authors.

Conflict of interest

The authors declare that they have no conflicts of interest.

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