

Determination of sunscreen and cosmetic product use awareness in adolescents

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Abstract

Aim: Using an appropriate sunscreen is very important because the role of sun rays in development of skin cancer is well known. Besides, the recent increase in the use of cosmetics among adolescents is noteworthy. In this study, we aimed to determine the frequency of using cosmetics and the level of awareness of harmful effects of the sun, in adolescents.

Material and Methods: In this cross-sectional descriptive study, a questionnaire consisted of 25 questions was applied, on voluntary basis, in middle schools.

Results: A total of 607 students participated in the study; 434 participants were female students (71.5%), 173 were male students (28.5%) and the average age was 17 years. The question "Do you think it is necessary to protect from the sun?" is answered as "yes" by 361 of the female students (81.1%) and 109 of the male students (62.3%). The question "Do you use sunscreen?" is answered as "Yes" by 33.3% of all participants.

Conclusion: In our study, we found that adolescents had a good understanding of the harmful effects of sun, but in contrast to this, we found that the use of sunscreen products was at very low levels. We think that education and methods for building awareness in this regard will be effective.

Keywords: Adolescents; Cosmetic Product; Sunscreen; Skin Care.

INTRODUCTION

Protection from the sun has become a very important issue, with the clear understanding of the role of sun rays in development skin cancer and skin aging. The sun causes many undesirable effects including mainly skin cancer and erythema, sunburn, solar lentigo, solar elastosis, cataracts and aging (1,2). It is important to use an appropriate sunscreen in order to reduce the harmful effects of sunlight on the skin.

In the past, cosmetic products had been preferred mainly by women and adults, currently, these products have been preferred by both sexes and younger individuals. The studies in the literature have shown that the physical appearance has an enhancing effect on achievement in life, as well as bringing in self-confidence. A good physical appearance causes individuals feeling happier by making them feeling better (3). In the present times, there has been a remarkable increase in the use of cosmetics

by adolescents. In this study, we aimed to determine the frequency of the using cosmetics and the level of awareness of the harmful effects of sun, in adolescents.

MATERIAL and METHODS

This study is planned to be a cross-sectional descriptive study. The study was approved by the ethical scientific research and publishing board of Inonu university. The decision number is 2017 / 13-2. According to the power analysis the study was planned to include at least 528 students for 0.03 deviation, 0.05 type 1 error, and 0.10 type 2 error. In order to carry out the study in secondary schools, written permission was obtained from the Provincial Directorate of National Education of Malatya governorship with the number 6234655-44-E.4006094.

The research universe consisted of three state schools and one private school which were selected by random sampling method, among the middle schools in each

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Battalgazi and Yesilyurt districts of Malatya between May and June 2017. The questionnaire used was modified according to the socio-cultural level of the society by examining the studies in the literature. The first part of the questionnaire included 15 questions concerning awareness of the harmful effects of sun, protection from the sun, and demographic data of the participants; the second part consisted of 10 questions concerning awareness and usage of general skin health products (i.e. skin cleaning, moisturizing, hair cleaning). A total of 607 students (434 girls, 173 boys) fully completed the study, after excluding the questionnaires of those students who did not want to participate in the questionnaire voluntarily and who did not want to answer some of the questions.

Statistical analysis

Statistical evaluation of the data was performed by using IBM SPSS for Windows version 22.0 software. Arithmetic average (\bar{X}) \pm Standard Deviation (SD) or median (min-max) values are used to define quantitative variables. Mann Whitney U test is used in comparison of two independent groups, Kruskal-Wallis test is used for more than two groups, and Conover binary comparison method is used for numerical variables. Qualitative variables are defined by number (n) and percentage (%) and Pearson Chi-square test is used in the comparisons. A value of $p < 0.05$ is considered statistically significant ($p < 0.001$ for $p = 0.000$).

RESULTS

A total of 607 students participated in the study, 434 of the participants were female students (71.5%) and 173 were male students (28.5%). The age of the students ranged from 13 to 20 years (mean age: 17 years). Regarding eye colors, 22 (3.6%) students had blue eyes, 41 (6.8%) green eyes, 388 (64.1%) brown eyes, 87 (14.4%) hazel eyes, and 67 (11.01%) black eyes. There was no statistically significant difference regarding the duration of exposure to the sun and eye colors ($p = 0.971$). Regarding hair colors, 81 (13.4%) students had yellow hair, 276 (45.5%) brown hair, 234 (38.6%) black hair and 15 (2.5%) red hair. There was no statistically significant difference regarding the duration of exposure to the sun and hair colors ($p = 0.77$). In the comparison of educational status of the parents and exposure to the sun, we found that the duration of exposure to the sunlight gets shorter as the educational level of the mother increases ($p = 0.001$); there were no statistically significant difference in terms of educational level of the fathers and duration of exposure to the sun. Female students were less likely to stay in the sun than male students ($p < 0.001$) (Table 1).

Table 1. Duration of exposure to sun for both sexes

Gender	Duration of sunshine				
	Less than 1 hour n/%	1-3 hours n/%	4-6 hours n/%	4-6 hours n/%	More than 8 hours n/%
Female	111/25.6	187/43.1	85/19.6	24/5.5	27/6.2
Male	32/18.5	55/31.8	38/22.0	21/12.1	27/15.6

194 (43.7%) of the female students and 101 (57.1%) of the male students had a history of sunburn; there was no statistically significant difference between the two sexes in terms of sunburn ($p = 0.003$).

When we asked what they were doing to protect from the sun lights, in summer, 79% of both the boys and girls stated that they stayed in the shadows and 52% stated that they preferred light-colored clothes.

The question "Do you think it is necessary to protect from the sun?" is answered as "yes" by 361 (81.1%) of the female students and 109 (62.3%) of the male students. The question "Do you use sunscreen?" is answered as "yes" by 36.7% of the female students and 24.9% of the male students, and 33.3 of all participants. Only 38.4% of the students who said it was necessary to protect from the sun were using sunscreen. The rate of sunscreen use by female students was statistically significantly higher than that of males ($p = 0.003$). Both sexes stated that they especially take the protection factor into consideration when they buy sunscreen (59.5% of the female students and 48.6% of the male students). The second important property sought by the female students was brand (41.2%), whereas the second most frequently sought property by the male students was being odorless (31.6%). Female students used sunscreen mostly in the facial area; male students used it mostly in the trunk and back. The question "Should children use sunscreen?" is answered as "Yes" by 94.6% of the female students and 86.2% of the male students.

The question "Does the sun has harmful effects?" is answered as "Yes" by the female students statistically significantly more than the male students ($p = 0.002$). Regarding awareness, 289 (67.4%) of the female students and 103 (60.6%) of the male students were aware of the relationship between skin cancers and sunlight.

The data regarding skin health and use of cosmetic products: When we question the daily face washing frequency of both male and female students stated that they prefer to wash up to 3 or more, at most. The frequency of facial washing according to genders is summarized in table 2.

Table 2. Frequency of face washing for both sexes

Gender	Frequency of face washing				Total
	Once n/%	Twice n/%	3 Times or more n/%	Never n/%	
Female	52/11.7	189/42.4	196/43.9	9/2.0	446/100
Male	18/10.2	59/33.3	93/52.5	7/4.0	177/100
Total	70/11.2	248/39.8	289/46.4	16/2.6	623/100

There was no difference between the groups in terms of frequency of facial washing ($p = 0.81$). In facial cleaning, 177 (39.7%) of the female students stated that they

generally use soap, and 102 (58%) of the male students stated that they cleaned their face only with water. Regarding selection of cleaning products, both sexes stated that they mainly prefer herbal products and those

cleaning better. When we questioned whether they receive advice regarding skincare products, both female students and male students stated that they get help from a dermatologist (Table 3).

Table 3. Individuals that participants received help in choosing skincare products

	Dermatologist	Advertisements	Pharmacist	Internet	Friends	Receive no help
Female	184/41.6	9/2.0	67/15.2	44/10.0	56/12.7	82/18.6
Male	65/39.6	2/1.2	34/20.7	12/7.3	21/12.8	30/18.6

DISCUSSION

Skin cancer is one of the most common type of cancer and it is preventable. Eighty percent of the sun we are exposed to during our lives are exposed in childhood and adolescence (4). Ultraviolet radiation and environmental factors are thought to be effective by 86%, in the formation of skin cancers (5). Sunburns and exposure to sun rays, especially during childhood and adolescence have an important place in the formation of skin cancer. In many studies, it has been reported that the awareness of sun protection developed before the age of 20 has contributed positively to the reduction of skin cancers (2). For this reason, in many countries, development awareness of sun protection during early childhood and adolescence has been regarded as an important step in prevention of skin cancer.

In our country, studies regarding sun protection and awareness of the harmful effects of the sun have been carried out in different age groups and different occupational groups (6-8). In our study, we aimed to reproduce the parameters in order to define the frequency of the use of cosmetics and awareness of the harmful effects of the sun, in adolescents. It has been known that individuals with light hair and eye color are more affected by UVR. However, in our study, there was no statistically significant difference between the duration of exposure to sunlight and the use of sunscreen between the students with light hair and eye color and dark hair and eye color. This finding has not met our expectation of more protection from sun of light colored individuals. Kaptanoglu et al. (9) found that there is a strong association between the increase in parents' educational status and the use of sunscreen in Cypriot children. Interestingly, unlike the mother's educational status, there was no relationship between the father's education status and the frequency of use of sunscreen.

Studies have shown that awareness of sun protection is higher in women than in men (10). Similarly, in our study, we found that female students exposed to the sunlight less longer and used sunscreen products more frequently than male students. Due to the female student's awareness of protection from the sun, the history of sunburn is significantly lower in female students than that of male students. The question regarding the harmful effects of the sun lights in skin cancer is answered as "yes" by

female students at a significantly higher rate than male students. In a different study conducted on adolescents, it was found that both men and women used sunscreen in close rates (11).

In our study, the most common behavior for protection from the sun is to stay in the shadows and not to go out in the middle of the day. Similar to our results, Terzi et al. (12), in their study, found that not to go out in the middle of the day is preferred to other physical preventive methods. They suggested that this could be explained by the fact that physical protection methods are more difficult in practice. The World Health Organization (WHO) has stated that it is necessary to reduce exposure to sunlight in the middle of the day (between 10:00 and 16:00), wearing highly sun protective clothes and sunglasses, and using sunscreen in order to prevent skin cancer.

The question "Do you think it is necessary to protect from the sun?" is answered as "Yes" by 361 (81.1%) of the female students and 109 (62.3%) of the male students. However, interestingly, only 38.4% of the students who thought it necessary to protect from the sun, were using sunscreen. This low ratio can be explained by high cost of sunscreen products and the physical difficulties in practice. Everett et al. (13) have shown that school practices that can change the norms of protection from the sun in children and adolescents are not widespread, and they suggested that interventions and practices aimed at increasing awareness of the sun are needed.

In addition, our study also included questions about use of sunscreen, cosmetics, and general skin cleaning and health. In the literature the number of studies in this regard is limited. As far as we know, our study is single on this subject, in our country. In our study we observed that, adolescents often preferred 3 or more washings per week for hair cleaning. Regarding, facial cleaning, the most frequent answer was 3 or more washing in a day. In a study on family care products, participants stated that they used shampoo 3 or 4 times a week and they used cleaning products such as shower gel 1 or 2 times a day (14). Whereas, most of the female students used soap for facial hygiene, male students generally preferred to clean their skin with only water. In a French study, it was found that the most of the adolescents used soaps for facial cleaning (15). In another study it was found that consumption of soap in childhood and adolescence was higher than in

populations over 18 years (10). It has been reported that the adolescents pay attention to well cleaning property of the product, and ensure that the products are herbal, when they are choosing a cleaning product.

CONCLUSION

In our study, the students who stated that they received help from a doctor when choosing a skincare product were the most crowded group; the second most crowded group stated that they did not receive help from anyone. Consequently, we can suggest that adolescents can frequently use inappropriate products.

Another interesting point of our study was frequency of wearing makeup among adolescents; we found that 70.4% of the girls and 4.6% of the boys were using makeup products. The most frequently used makeup products were concealers. We think it may be due to feelings of discomfort caused by skin problems such as scars in adolescence and the need to hide it.

As a method of epilation, female students most frequently used epilating wax, whereas the male students used razor blades. Another interesting finding was the rate of female students who applied laser epilation.

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