

The knowledge and practices of cleaning workers concerning sun protection

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Abstract

This study aims to evaluate the knowledge and practices of cleaning workers concerning sun protection.

This descriptive study was conducted in Izmir in April, 2010. The population of the study consisted of the 200 cleaning workers at the municipality of Bornova, 132 of whom were included in the sample. The data were collected using a questionnaire form developed by the researchers (23 closed-ended questions). The questionnaire included questions concerning the socio-demographic characteristics of workers (8), their knowledge about sun protection (8), and their sun protection practices (7).

The workers were all males with a mean age of 40.20 ± 2.05 . Of the participants, 91.7% stated that protection from sun was necessary, and 79.5% said they knew about the dangerous effects of sun exposure. The number of workers who knew about the reflectors that augment the impact of sun exposure was 25 (18.9%). Only 12 workers (9.1%) knew about all the factors increasing the risk of skin cancer, namely pale skin, moles, a lifelong history of working in the sun for extended periods, a history of sunburn, and a history of skin cancer in the family. The most preferred way of protecting oneself from sun was using sunscreen (33.4%), while the least preferred way was wearing thin clothing covering the whole body (0.8%). It was found that sunscreen was applied most to the face (51.8%).

It was determined that the practices of cleaning workers concerning sun protection were not sufficient.

Keywords: Cleaning workers-sun protection- skin cancer- nursing

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1 Introduction

The sun regulates our planet by ensuring the sustenance of life for all living beings; however, it is also a source of energy that can have dangerous effects due to the ultraviolet light (UV) it emits [1]. The dangerous effects of UV depend on various factors such as duration and frequency of exposure, distance from the equator, intensity, genetically determined skin color and photo type, clothing, lifestyle, and occupation. Institutions such as the World Health Organization, the World Meteorological Organization, the United Nations Environment Program (1995) have adopted decisions concerning the necessity of warning and educating the public about the dangerous effects of UV light [2]. Occupational ultraviolet exposure was first addressed at the American Conference of Industrial Hygienists at the end of the 60s [3]. Farmers and fishermen, whose occupations require working in the sun, are at higher risk for skin cancer since they are exposed to sunlight for extended periods of time [4].

In a study conducted in Trabzon (2007), of a total of 1150 cancer cases, 47.8% were seen in agricultural areas, 33.8% in forests, and 18.3% in residential areas. When the types of cancer were examined, skin cancer (12.3%) was found to be the second most common cancer [5]. The incidence of skin cancer is 0.8% among the general population in Turkey. The incidence and mortality of skin cancer are 0.6% and 0.4% respectively among men, and 1.0% and 0.7% respectively among women [6].

Many studies have been conducted in various countries with the aim of determining the effects of sunlight on the skin, the level of awareness among the general public about skin cancers and common practices of sun protection. Educational campaigns have been held for the prevention of skin cancers [7,8,9]. Nurses play a key role in these campaigns since the responsibility for public education and counseling falls on them. Nurses are also charged with screening for the prevention and early diagnosis of skin cancer [10].

Studies conducted in Turkey report that the sun protective behaviors are generally insufficient [11,12,13,14,15,16]. Some small scale studies conducted with limited participation suggest that protection programs can help to increase the public knowledge of the effects of sunlight on health. However, the same studies found that education, albeit an important factor, could only be partially effective in developing protective behaviors [11,12,13,14,15].

Education, the implementation of the acquired knowledge, and the modification of behavioral patterns are all doubtless very important for protecting people from the dangerous effects of sun. It is possible to protect oneself from or at least minimize the early and late effects of ultraviolet light exposure [17,18]. Protection from dangerous effects of sun requires taking various measures, the most important of which is proper clothing. Wearing hats with a wide brim, tightly woven and lightly colored garments, and sunglasses are needed for protection from sun. The most fundamental rule of protection is to avoid sunlight from 10:00 a.m. to 4:00 p.m. when it is most intense. Everybody needs protection during summer. However, people with higher risk occupations such as farmers, fishermen, construction workers as well as people with high risk skin types should be especially careful to use protection products that reduce the dangerous effects of sunlight [17, 18].

The city of Izmir, with its total of 157 sunny days yearly as well as a daily average sunshine duration of 7 hours, is considered to be a high risk area for skin cancer [19]. An evaluation of the sun protection knowledge and practices of cleaning workers in Izmir, who spend an average of 3.5 hours in the sun daily, is therefore especially important. This

study was conducted with the aim of evaluating the sun protection knowledge and practices of cleaning workers.

2 Materials and Methods

Descriptive study was conducted at a municipality in Bornova, Izmir, in April 2010. The population of this study consists of the 200 cleaning workers employed by the municipality. The sample size was calculated with the sample size formula with a known population and consisted of 132 workers with a confidence interval of 95% and a standard error of 5%. The data were collected using a questionnaire form (consisting of 23 closed-ended questions) developed by the researchers in light of the existing literature on the subject [14,15]. The questions covered the sociodemographic characteristics of workers (8 questions), their knowledge about sun protection (8 questions), and their sun protection practices (7 questions). The responses to the questionnaire forms were collected during face-to-face interviews that took around 15-20 minutes each. The SPSS 16.0 software package was used to analyze the data and to calculate numbers (n) and percentage values (%). Written permission was obtained from the Ethics Committee of Ege University Faculty of Nursing. Oral consent was received from the participating workers prior to the study. The primary limitations of this study are the fact that it was conducted with the participation of cleaning workers at a single municipality and that it involved self-reported data collection.

3 Results

There were a total of 132 participants, all of whom were male. The socio-demographic characteristics of the workers are presented in Table 1. The workers had a mean age of 40.20 ± 2.05 . More than half of them (75.8%) were secondary school graduates and had lived in a city longer than anywhere else (83.3%). Of these workers, 79.5% stated that their income was lower than their expenses, 70.5% were living in a nuclear family, 67.4% were married, and 66.7% had children.

When the workers' knowledge concerning the dangerous effects of sunlight was examined, a majority of them stated that protection from sunlight exposure was necessary, and 79.5% indicated that they knew about the dangerous effects of sunlight. The rate of workers who indicated that sunlight caused skin cancer and that sunlight adversely affects vision were 68.2% and 79.5%, respectively (Figure 1).

Knowledge of workers concerning the characteristics of sunlight are presented in Table 2. Three out of four workers stated that the use of medication increased sunlight sensitivity. A large fraction of workers (70.5%) stated that some foods such as lemon, carrot, ginger, and dill increased sunlight sensitivity. Only 12 workers (9.1%) knew all the factors increasing the risk for skin cancer (Table 2).

The sun protection practices of workers and the duration of their sunlight exposure are presented in Table 3. Only 58 workers (43.9%) knew about all the sun protection practices. The most preferred protection method was found to be using sunscreen (33.4%), while the least preferred method was to wear thin clothing that covers the entire body (0.8%). 49.2% of the workers stated that they spent 1-3 hours in the sun every day. It

was found that the workers spend most of their time in the sun before 12:00 p.m. (47.8%). The use of sunscreen by the workers is shown in Table 4. Protection from the dangerous effects of sunlight was a reason for using sunscreen of 53.0% workers. High protection factor is a criterion for preferring sunscreen of 47.0% workers. One-fifth of the workers did not use any sunscreen at all. Those who were using a sunscreen indicated that they were using it mostly on their face (56.8%). Of the workers, 71.2% stated that they were using a sunscreen only in the morning, while 18.2% were found to apply sunscreen regularly once every two hours. Finally, 10.6% of the workers were found to use sunscreen only after being sunburn.

The number of those who stated that education programs concerning sun protection were needed was 112 (84.8%).

4 Discussion

The majority of the participating workers stated that they knew that the sunlight had dangerous effects and that it was necessary to protect oneself from sunlight exposure. In a study conducted by Tuna Malak et al [16], it was found that very few of the farmers in Turkey (1.9%) knew about the dangerous effects of sunlight, while Marlena [20], in a study conducted in Michigan-America; found that 43% of the farmers knew that sunlight exposure caused skin cancer. Compared to existing literature on the topic, it is good news that a relatively higher percentage of the workers in the present study knew about the dangers of sunlight exposure and its adverse effects on health.

Unfortunately, the percentage of workers who knew about all the factors increasing the risk for skin cancer was low. In a study conducted by McCool et al [21], with the participation of people who had various outdoor jobs, it was found that personal risk factors were an important factor in having accurate knowledge of dangerous effects of sun, protecting oneself at work, and using sunscreen. In order for workers to adopt sun protective behaviors, it is necessary to raise their awareness concerning the risk factors for skin cancer and the dangerous effects of sunlight exposure. Knowledge of one's own risk of getting skin cancer will certainly be a motivation for taking the necessary protective measures.

Considering the workers' sun protective behaviors and sunlight exposure, it is worrying that only half of the workers knew about all the sun protection practices and that very few of the other half knew about sun protective practices other than sunscreen. The most preferred sun protective practice was sunscreen, while the least preferred was wearing thin clothing that covers the entire body. In their study, Shoveller et al [22], found that more than half of the workers working outdoors were wearing protective garments (60%) and hat (58%). Lewis et al [23], found that one quarter of post carriers were using sunscreen and wearing hats with a wide brim. Salas et al [24], reported that Hispanic farmers did not wear hats, but that they were wearing long-sleeved garments. The present study found that most of the workers believed that it was necessary to protect oneself from sunlight exposure, but did not know enough about how they can protect themselves. When the duration of work and high-risk hours (10:00 a.m.-4:00 p.m.) were examined, it was found that mean duration of sunlight exposure and the time frame of exposure varied from country to country. In the present study, almost half of the workers reported that they worked in the sun before 12:00 p.m. for 1-3 hours every day. In a study conducted by Scerri et al [25], in Malta it was found that outdoor workers were working in the sun for

more than 3 hours every day. In a study conducted by Stepanski and Mayer [26], found that construction workers, transport workers, and post carriers spent 5-7 hours outdoors every day in America.

Half of the workers were found to use sunscreen to protect themselves from the dangerous effects of sun, and the criterion that they paid most attention to when purchasing a sunscreen was found to be the SPF. In a study conducted by Kaymak et al [14], it was found that university students were careful to purchase non-allergenic sunscreen (73.7%) and products whose effects would last longer (70.4%). In the present study, only 25 workers (18.9%) knew that sunscreen should be applied 15 minutes prior to going outdoors. The percentage of those who used sunscreen was 77.3%, and only 43 workers were found using sunscreen with SPF less than 20 (32.6%). In their study of construction workers, transport workers, and postal carriers, Stepanski and Mayer [26], found that 30% of the participants used sunscreen with SPF above 15. Conversely, Buller et al [27], found that among the workers in the field of water skiing, 63% were using sunscreen and 65% were using lip protection products. The present study found that sunscreen was mostly applied to the face. In their study, Shoveller et al [22], similarly found that three quarters of the workers applied sunscreen to their face. The present study suggests that workers generally applied sunscreen in the morning, and that very few of them applied once every two hours on a regular basis. In their study, Kaymak et al [14], found that 25.1% of the university students surveyed were applying a sunscreen once a day. These results suggest that the workers are not sufficiently aware of the importance of protecting oneself from sunlight.

A large portion of the workers stated that public education concerning protection from sunlight exposure is needed. It is good news that most of the workers are sensitive about the importance of education and believe that public education about sun protection is necessary. In a study conducted by Özkan et al [15], it was found that almost all the students surveyed stated that education on the dangerous effects of sunlight exposure and protection methods is necessary. The literature suggests that education programs on the dangerous effects of sunlight exposure and skin cancer significantly increases the level of knowledge of workers working outdoors on the topic and leads them to adopt protective behaviors [16,17,28,29].

5 Conclusion

This study found that; the majority of the workers (91.7%) were aware of the importance of protecting oneself from sunlight exposure, 79.5% of the workers knew about the dangerous effects of sunlight exposure. Very few of the workers knew about the reflectors such as sand, water, snow, grass, and sidewalks that augment the effects of sunlight (18.9%). Only a small fraction of workers (9.1%) were aware of the factors increasing the risk for skin cancer such as pale skin, moles, a lifelong history of working in the sun for extended periods, a history of sunburn, and a history of skin cancer in the family. Almost half the workers (49.2%) spent 1-3 hours in the sun everyday, 53.0% of the workers used sunscreen to protect themselves from sunlight exposure. The most preferred method of sun protection was sunscreen (33.4%) and the least preferred method was wearing thin clothing covering the entire body (0.8%). Sunscreen was mostly applied to the face (56.8%).

In light of these results, one can say that it is extremely important that regulations for the

protection of outdoor workers from sunlight exposure should be introduced. Institutions should also assume responsibility for enacting these changes. Education programs on sun protection can be organized for occupations that involve high ultraviolet exposure, especially before seasons with the most sunshine. It is important to raise workers' awareness of the topic and to encourage them to take responsibility for protecting their own health; however, employers should also improve workplace conditions. Such improvements might include creating shady areas at the workplace, planting trees, especially in downtown areas, regularly giving away hats, sun protection garments, and sunscreen to workers for free. Including children and young adults along with adults in the target audience of education programs that aim to raise awareness about the importance of protection from sunlight exposure will contribute to ensuring that individuals make sun protective behaviors a lifelong habit.

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Table 1: Sociodemographic Characteristics of Workers

Descriptive Characteristics	<i>n</i>	%
Age groups		
18-25	8	6,1
26-32	22	16,6
33-39	38	28,8
40 and above	64	48,5
Gender		
Male	132	100,0
Level of Education		
Illiterate	12	9,0
Secondary School	100	75,8
High School	20	15,2
Longest Inhabitation		
City	110	83,3
Town	13	9,8
Village	9	6,9

Table 2: Knowledge of Workers Concerning the Characteristics of Sunlight

Knowledge	<i>n</i>	%
Knowing what the amount of sunlight depends on		
It depends on clouds	8	6,1
It depends on the time of the day	17	12,9
It depends on the altitude	18	13,6
It depends on the latitude	20	15,2
It depends on the season	39	39,5
It is not affected by any factor	14	10,6
All	16	12,1
Knowing the reflectors augmenting the effects of sunlight		
Sand	61	46,3
Water	21	15,9
Snow	9	6,8
Grass	9	6,8
Sidewalks	7	5,3
All	25	18,9
Use of medication increases sunlight sensitivity.		
Yes	99	75,0
No	33	25,0
Some foods increases sunlight sensitivity		
Yes	93	70,5
No	39	29,5

Knowing how sunlight increases the risk for skin cancer

Light-colored skin	72	54,5
Moles	27	20,5
Sunburn	7	5,3
Lifelong history of working out in the sun	10	7,6
History of skin cancer in the family	2	1,5
None	2	1,5
All	12	9,1
Total	132	100

Table 3: Sun Protective Behaviors and Duration of Sunlight Exposure among Workers

<i>Sun protection and sun exposure</i>	<i>n</i>	<i>%</i>
Sun protective practices		
Using a sunscreen	44	33,4
Staying indoors between 10am-4pm	7	5,3
Staying in the shade	7	5,3
Wearing light-colored clothing	2	1,5
Wearing thin clothing that covers the entire body	1	0,8
Wearing sunglasses	6	4,5
Wearing a hat	4	3,0
Using an umbrella	3	2,3
All	58	43,9
Duration of sunlight exposure per day		
Less than an hour	7	5,3
1-3 hours	65	49,2
4-6 hours	27	20,5
7-9 hours	24	18,2
More than 10 hours	9	6,8
Time of the day for longest sunlight exposure		
Before 12pm	63	47,8
12-1pm	58	43,9
2-3pm	6	4,5
After 4pm	5	3,8
Total	132	100

Table 4: Usage of Sunscreen among Workers

<i>Practices</i>	<i>n</i>	<i>%</i>
Using sunscreen		
Yes	102	77,3
No	30	22,7
Reasons for using sunscreen		
To be able to protect oneself from the dangerous effects of sunlight	70	53,0
To be able to work in the sun for longer	41	31,0
To soften the skin	11	8,5
All	10	7,5
Criterion for preferring sunscreen		
High protection factor	62	47,0
Price	29	22,0
Brand	16	12,1
Odorless	13	9,8
Particular smell	12	9,1
Knowing when to apply Sunscreen		
An hour prior to sunlight exposure	51	38,6
15 minutes before sunlight exposure	25	18,9
When working in the sun	48	36,5

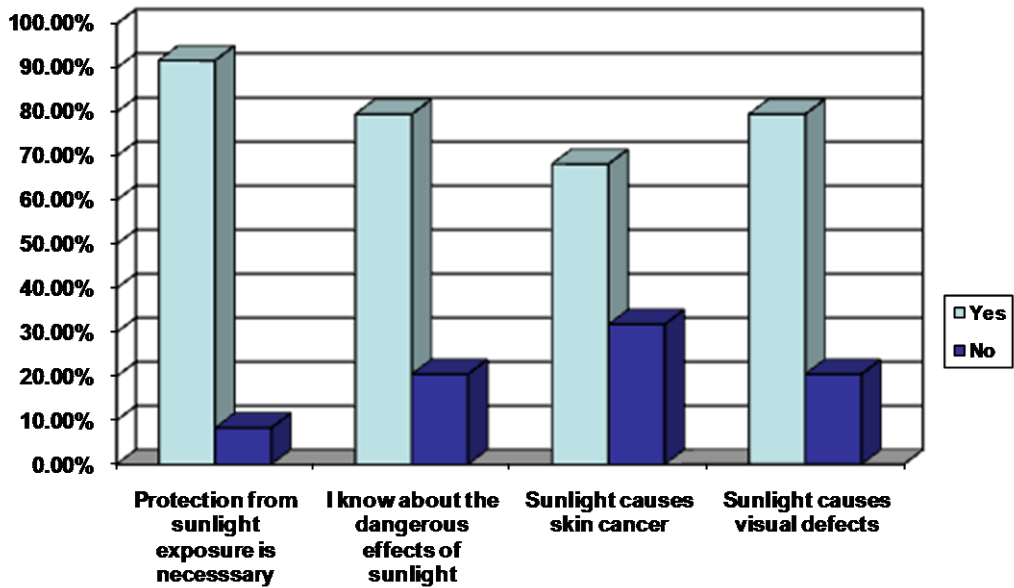


Figure 1. Knowledge concerning the dangerous effects of sunlight

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