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The effects of health warning labels on cigarette packages on patients who apply to cardiology clinic

Sigara kutusu üzerindeki sağlık uyarı etiketlerinin kardiyoloji polikliniğine başvuran hastalar üzerindeki etkisi

Ercan Akşit¹, Coşkun Bakar², Özgür Özerdoğan², Özge Turgay Yıldırım³, Fatih Aydın³, Ayşe Hüseyinoğlu Aydın³, Bahadır Kırılmaz¹, Emine Gazi¹, Ali Duygu¹

¹ Department of Cardiology, Faculty of Medicine, Çanakkale Onsekiz Mart University, Çanakkale, Turkey

² Department of Public Health, Faculty of Medicine, Çanakkale Onsekiz Mart University, Çanakkale, Turkey

³ Department of Cardiology, Eskisehir State Hospital, Eskisehir, Turkey

ORCID ID of the authors
EA: 0000-0002-4478-4324
CB: 0000-0002-5497-2759
ÖÖ: 0000-0003-2176-9073
ÖTY: 0000-0002-6731-4958
FA: 0000-0002-1017-1917
AHA: 0000-0002-3056-9981
BK: 0000-0002-5929-1426
EG: 0000-0002-0513-0870
AD: 0000-0001-6849-8894

Corresponding author / Sorumlu yazar:
Ercan Akşit

Address / Adres: Çanakkale Onsekiz Mart Üniversitesi, Kardiyoloji Departmanı, Kepez, Çanakkale, Türkiye
E-mail: ercanaksit@hotmail.com

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Introduction

Cigarettes and tobacco products are the major preventable cause of death and diseases worldwide [1]. According to the World Health Organization Report, about six million people die due to smoking and cigarette-related illnesses, and it is estimated that this number will be 8 billion by 2030 [2]. In Turkey, approximately 16 million people are smokers, and cigarette use frequency of those over the age of 15 is 31.2% [3]. The National Burden of Disease and Cost-effectiveness Study, Burden of Disease Report published in 2004 in Turkey shows that 54,699 of the 430,459 deaths that took place in the year 2000 could have been prevented by the cessation of smoking [4].

In order to prevent smoking, various health policies are implemented in many countries. In 2003, the World Health Organization adopted the Framework Convention on Tobacco Control, which aims to fight against tobacco use and control the tobacco market. Turkey signed the convention in 2004 and this agreement has been valid in our country since then. With this agreement, implementations such as the increase of cigarette taxes, smoke free airspace, and support for the provision of smoking cessation have initiated. HWLs have started to be used on cigarette packages with the same agreement [5]. Making attractive cigarette packages is one of the methods used to increase tobacco sales [6]. This method can also be used to make cigarette smoking unattractive and teach every part of the society about its harms [7]. A pack-a-day smoker sees a cigarette package 7300 times a day so; the HWLs put on the packages are more effective and cheaper than the news, ads and anti-smoking campaigns [8]. In Turkey, 'Procedures and Principles Regarding Protection from Harms of Tobacco Products by Production Methods, Labeling and Evaluation' has been valid since 2005 [9]. According to this regulation, 14 different written health warnings were printed on cigarette packages. In 2010, both pictorial and written health warnings have started to be printed on the cover of cigarette packages [10].

Health warnings on cigarette packages can be classified as gain-framed and loss-framed warning labels. Gain-framed messages emphasize the positive consequences of quitting smoking, while loss-framed messages emphasize the negative consequences of smoking. Studies indicate that health messages with loss-framed warnings increase the effectiveness of the messages [11-13].

Observations we made in smoking patients suggest that the effects of the HWLs used in our country are less effective when compared to images and texts used in foreign countries. The short-term objective of this study is to compare the efficacy of pictorial and written warnings on cigarette packages currently used in Turkey to the warnings used in foreign countries. The long-term objective is to ensure the use of the most effective cigarette package warning styles which can help us in the active struggle against smoking in our country by triggering our people to quit smoking.

Materials and methods

Study population

This descriptive study was performed in the the Çanakkale Onsekiz Mart University cardiology outpatient clinic

from October to November 2017. The target population was defined as patients aged between 18-80 years who applied to the cardiology outpatient clinic. Determination of the sample size had not been done and volunteers who applied to the cardiology clinic on the specified dates and agreed to participate in the study were included in the study. Even smoking one cigarette a day is known to increase cardiovascular risk [14]. For this reason a person who smokes one or more cigarettes per day evaluated as a smoker. Noncooperable patients, patients with speech impairment or unwilling to participate were excluded from study. During the study period, 656 people between 18-80 years of age were admitted to the cardiology outpatient clinic and 239 (36%) of them participated in the study.

Research approach and sources of data

This research was carried out in the cardiology clinic of Çanakkale Onsekiz Mart University Application and Research Hospital. The questionnaire was applied to those who agreed to participate in the survey using face-to-face interview techniques. The data collection phase was carried out by cardiology, public health doctors and intern doctors who were studying at the public health department at that time. Prior to the study, cardiology and public health doctors provided 4 hours of training to intern doctors. The purpose of the education was to teach how to carry out a questionnaire.

The data collection phase was carried out between 26.10.2017 and 11.11.2017 under the supervision of cardiology and public health doctors in a room prepared for interviews in the cardiology clinic. The purpose and method of the study were explained to the volunteer participants by intern doctors. Verbal and written consent was obtained from each participant. Participants in the study were questioned about the efficacy of HWLs used on cigarette packages. The visual expressions related to the cigarette were questioned by showing the participants the pictorial warnings. For this purpose, the images were printed on 70x100 cm colored posters.

A questionnaire form was used for data collection of the study. The questionnaire consists of three parts containing 45 questions, in which socio-demographic characteristics, cigarette use habits and perceptions on HWLs were questioned.

Table 1 presented the meanings of the HWLs used in Turkey and foreign countries. For HWLs in Turkey, 14 HWLs implemented by the Tobacco Labelling Resource Center in 2010 were used. Examples of graphic warning labels from foreign countries were taken from the Tobacco Labelling Resource Center in Hong Kong, Brazil, Venezuela, Uruguay, England, Singapore, Iran, Thailand and New Zealand [15].

Statistical analysis

The data of the study was analyzed with the statistical package program SPSS 20.0. Number, percentage, mean, standard deviation, median, minimum, maximum values were used in the presentation of the data. Analyzes are based on the number of answers given for each question. The chi-square test was used in the analysis of categorical data. The statistical significance level was taken as $p < 0.05$.

Ethical approval

Ethical approval was obtained from the Çanakkale Onsekiz Mart University Ethics Committee of Clinical

Investigations on 27/09/2017 with the decision number of 2011-KAEK-27 / 2017-97682.

Table 1: Health warning labels in Turkey and foreign countries and their meanings

Health warning labels in Turkey	
Figure 1	Smokers die at a young age
Figure 2	Smoking clogs the arteries and causes heart attacks and strokes
Figure 3	Smoking causes fatal lung cancer
Figure 4	Smoking is harmful to the baby while pregnancy
Figure 5	Protect children: Don't let them breathe your smoke
Figure 6	Health care facilities can help you quit smoking
Figure 7	Smoking is highly addictive, do not start
Figure 8	Quitting smoking reduces the risk of fatal heart and lung diseases
Figure 9	Smoking can cause a slow and painful death
Figure 10	Ask for help from your doctor and your nearest health center to quit smoking
Figure 11	Cigarette smoking slows blood flow and causes sexual impotence
Figure 12	Smoking causes premature aging of the skin
Figure 13	Smoking reduces fertility by damaging sperm
Figure 14	Cigarette smoke contains cancer-causing substances such as benzene, nitrosamine, formaldehyde and hydrogen cyanide
Health warning labels in foreign countries	
Figure 15	Smoking kills
Figure 16	Smoking leads to gangrene and limb amputation
Figure 17	Smoking causes mouth and throat cancer
Figure 18	Smoking causes bad oral hygiene and decrease in taste perception
Figure 19	Smoking can cause a slow and painful death
Figure 20	Smoking causes neck cancer
Figure 21	Smoking causes painful skin cancer
Figure 22	Smoking causes head and neck cancer
Figure 23	Smoking causes mouth cancer

Results

The explanations of HWLs in Turkey and foreign countries used in the study were summarized in table 1 and shown in image1 and 2. 60.3% of the participants were male and the mean age was 47.9 ± 17.1 (median: 51, min-max: 18-80 years). 54.4% of the respondents were high school graduates and above. 72.7% of the participants were married and 76% had children. While 28.9% of the participants have never smoked, 36.0% of them still smoked and 35.1% of them were ex-smokers. The mean age at initiation of cigarette smoking for those who were still smokers or ex-smokers was 17.8 ± 4.8 (median: 17, min-max: 5-35 years), and the mean of active smoking period was 23.6 ± 16.1 (median: 20, max: 5-62) years (Table 2).

Table 2: The sociodemographic characteristics of the study group and distribution of smoking status, Çanakkale 2017

Sociodemographic Feature	n	%
Gender		
Male	144	60.3
Female	95	39.7
Total	239	100.0
Education Status		
Primary education and lower	109	45.6
High school and over	130	54.4
Total	239	100.0
Marital Status		
Married	173	72.7
Single / Widowed / Divorced	65	27.3
Total	238	100.0
Income Status		
Low	23	9.7
Average	160	66.9
High	56	23.4
Total	239	100.0
Cigarette or any of tobacco product use		
Still smoking	86	36.0
Ex-smoker	84	35.1
Never smoked	69	28.9
Total	239	100.0

n=Number, %=Percentage

Among the smoking prevention measures, the restriction of smoking in enclosed public spaces, increased cigarette prices, and HWLs were found most important by the study participants. 57.7% of the survey participants stated that the pictorial warnings on cigarette packages were effective and 50.2% stated that written warnings on cigarette packages were effective in the prevention of smoking. 83.4% of the participants indicated that pictorial warnings should be on both sides of the

packages and 75.7% of them wanted written warnings to be on both sides of the cigarette packages. 51.2% of the participants stated that pictorial warnings were more important than written warnings. When warnings in other countries were compared to the warnings in Turkey, 90.8% of the participants indicated that warnings in foreign countries were more effective (Table 3).

Table 3: Considerations about graphic warning labels, Çanakkale 2017

Variables	n	%
Do you think pictorial warnings on cigarette packs are effective to prevent people from smoking? (n=239)		
Yes	138	57.7
No	101	42.3
How do you think pictorial warnings should be? (n=157)		
On one side of the pack	26	16.6
On both sides of the pack	131	83.4
Do you think written warnings on cigarette packs are effective to prevent people from smoking? (n=237)		
Yes	119	50.2
No	118	49.8
How do you think written warnings should be? (n=148)		
On one side of the pack	36	24.3
On both sides of the pack	112	75.7
Which kind of warning is more important to prevent people from smoking: Pictorial or written warnings? (n=203)		
Pictorial warnings are more important	104	51.2
Written warnings are more important	17	8.4
Both are equally important	82	40.4
Evaluate the pictures used in foreign countries. According to those in Turkey, assess how they affect you. (n=239)		
They did not affect	21	8.8
Indifferent	1	0.4
They affected more	217	90.8

n=number, %=Percent

20.9% of the participants in the survey decided not to buy cigarettes when they first noticed the images on the cigarette box, 20% had a memory of deciding not to smoke at that moment due to the visual on the cigarette box, and 14.3% requested a package change due to the visual on the cigarette package. 28.2% of the participants said they pay attention to the visuals and written warnings each time they buy cigarettes, 9.6% said that they had written and visuals on the packages when they started smoking cigarettes, 33.9% of the participants considered quitting smoking, 40.8% reduced or thought about reducing smoking, and 14.0% put the cigarettes in a box without warnings on it since the start of the usage of pictorial warnings. 23.8% declared that there were images they were not familiar with among the warnings used in Turkey. 4.1% stated that visual warnings had affected them to come to the cardiology clinic. 82.3% of the participants thought that the presence of these warnings in cardiology clinics would be effective, and 92.4% thought that the use of multiple pictures with all the images of warnings in cardiology clinics would be more effective (Table 4).

According to the cigarette or any other tobacco product use status, the response of the participants to the warnings on packages in foreign countries was examined. Current smokers were most affected by Figure 20, Figure 22, Figure 19 and Figure 23; ex-smokers were most affected by Figure 19, Figure 22, Figure 20; and non-smokers were most affected by Figure 16, Figure 19, Figure 20, Figure 21 and Figure 22. Results of the other figures are shown in Table 5. When examining the graphics of this data, the efficacy of the HWLs on current smokers is seen in graphic 1 and on ex-smokers is seen in graphic 2. Graphic 3 show that non-smokers were affected by the HWLs more than the other two groups.

Table 4: Effect of the graphic warning labels on cigarette packages on participants, Çanakkale 2017

Variables	n	%
When you first noticed the visuals on the cigarette bow, did you decide not to buy at that moment? (n=129)		
Yes	27	20.9
No	102	79.1
Did you ever decide not to smoke when you see the visual on the cigarette pack at that moment? (n=125)		
Yes	25	20.0
No	100	80.0
Did you ever request a package change due to the visual on the cigarette pack when you bought it? (n=126)		
Yes	18	14.3
No	108	85.7
Do you pay attention to the visuals and written warning each time you buy cigarette? (n=124)		
Yes	35	28.2
No	89	71.8
When you started smoking were there any texts and pictures on the packages? (n=146)		
Yes	14	9.6
No	132	90.4
Since pictorial warnings have been started to be used, did you ever think about quitting smoking? (n=121)		
Yes	41	33.9
No	80	66.1
Since pictorial warnings have been started to be used, did you ever reduce smoking or think about reducing smoking? (n=120)		
Yes	49	40.8
No	71	59.2
Since pictorial warnings have been started to be used, did you ever put the cigarettes in a box without pictures? (n=121)		
Yes	17	14.0
No	104	86.0
Are there any pictorial warnings you don't know about among these pictures we show? (n=172)		
Yes	41	23.8
No	131	76.2
Do the pictorial warnings have effect on you about coming to the cardiology clinic? (n=219)		
Yes	9	4.1
No	210	95.9
Would these warnings be effective in the cardiology clinic (n=237)		
Yes	195	82.3
No	42	17.7
In the cardiology outpatient clinic, which one would influence you more: one table with only one of these warnings, or a multi-picture table with all the images? (n=211)		
One picture	16	7.6
Multiple pictures	195	92.4

n=Number, %=Percentage

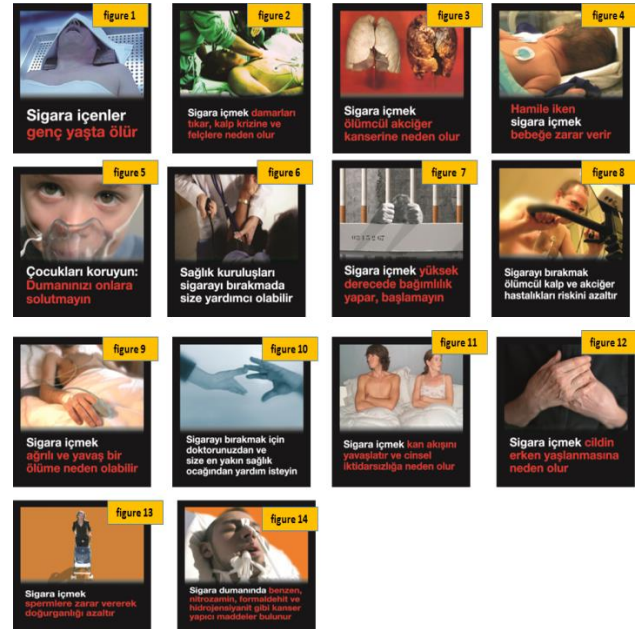


Image 1: Health warning labels in Turkey

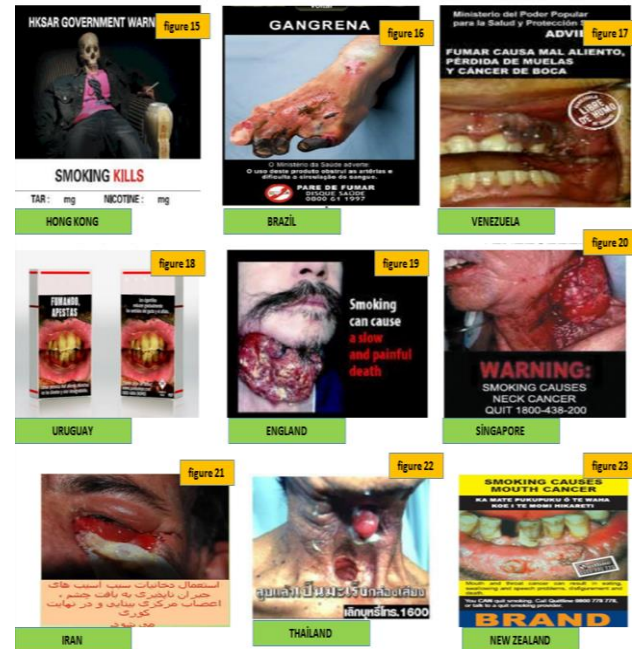
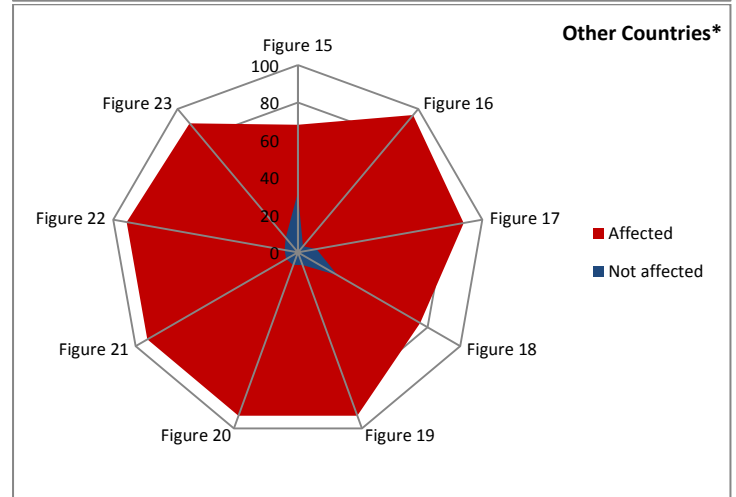
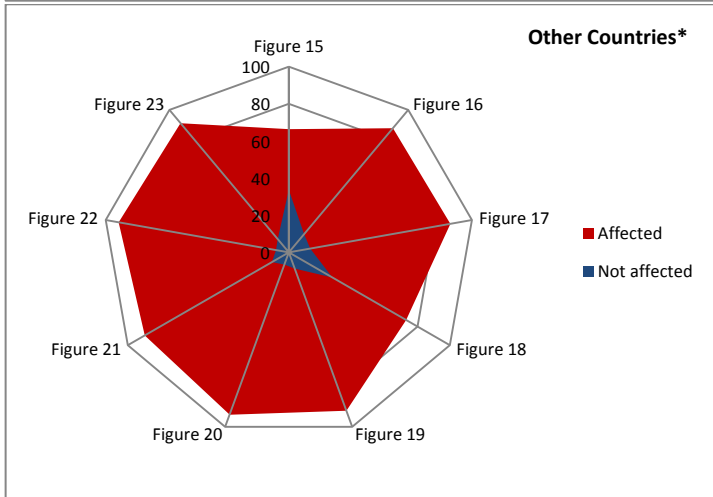
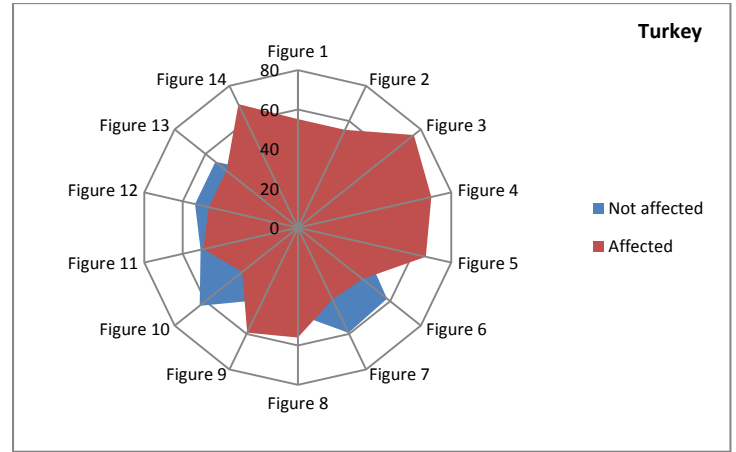
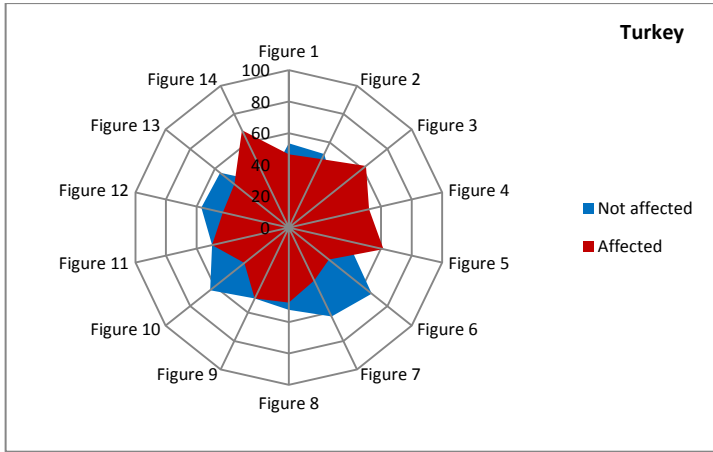


Image 2: Health warning labels in foreign countries

Table 5: According to the cigarette or any tobacco product use status, effects of pictorial warnings in cigarette packs on participants in Turkey and other countries, Çanakkale 2017

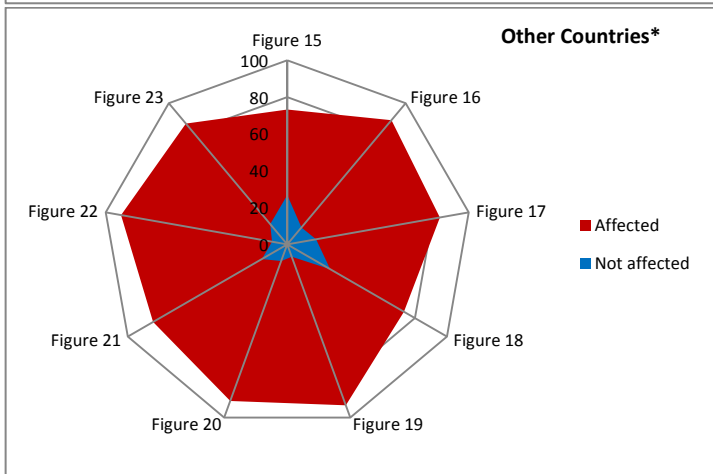
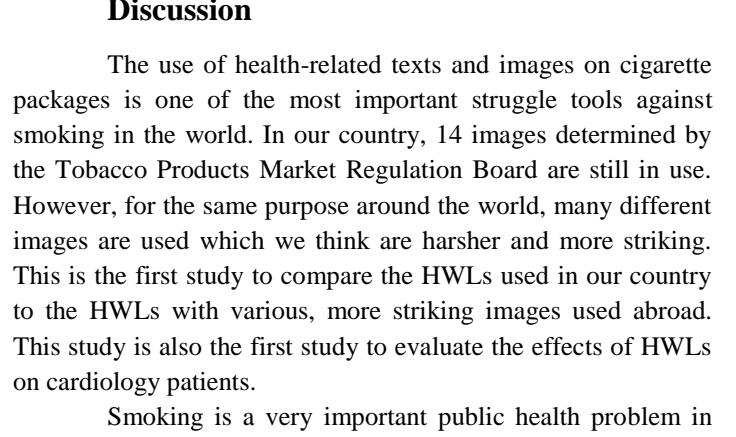
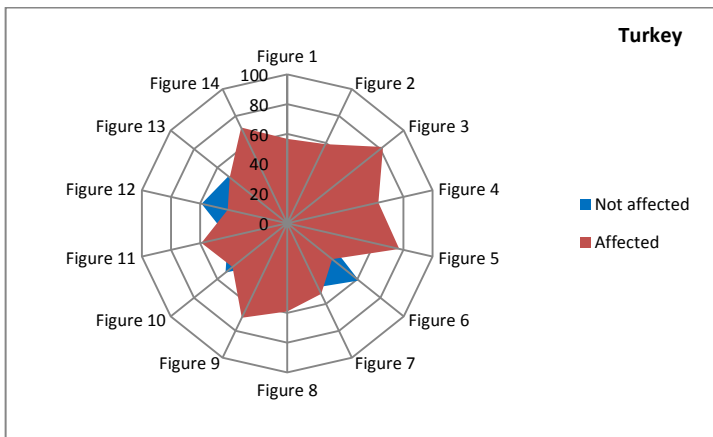
Turkey	Current smoker			Ex-smoker			Non-smoker			p
	Not affected n (%)	Indifferent n (%)	Affected n (%)	Not affected n (%)	Indifferent n (%)	Affected n (%)	Not affected n (%)	Indifferent n (%)	Affected n (%)	
Figure 1	37 (43.0)	9 (10.5)	40 (46.5)	29 (34.9)	7 (8.4)	47 (56.7)	19 (27.5)	12 (17.4)	38 (55.1)	0.178
Figure 2	35 (41.2)	9 (10.6)	41 (48.2)	18 (21.7)	16 (19.3)	49 (59.0)	21 (30.4)	10 (14.5)	38 (55.1)	0.084
Figure 3	20 (23.3)	12 (14.0)	54 (62.7)	6 (7.1)	9 (10.7)	69 (82.2)	6 (8.7)	11 (15.9)	52 (75.4)	0.012
Figure 4	24 (27.9)	17 (19.8)	45 (52.3)	21 (25.3)	10 (12.0)	52 (62.7)	12 (17.4)	9 (13.0)	48 (69.6)	0.220
Figure 5	18 (20.9)	15 (17.4)	53 (61.7)	16 (19.3)	3 (3.6)	64 (77.1)	9 (13.0)	14 (20.3)	46 (66.7)	0.015
Figure 6	43 (50.0)	15 (17.4)	28 (32.6)	36 (43.4)	15 (18.1)	32 (38.5)	28 (40.6)	12 (17.4)	29 (42.0)	0.772
Figure 7	39 (45.3)	15 (17.4)	32 (37.3)	32 (39.0)	7 (8.5)	43 (52.5)	30 (43.5)	11 (15.9)	28 (40.6)	0.239
Figure 8	37 (43.0)	8 (9.3)	41 (47.7)	24 (28.9)	10 (12.0)	49 (59.1)	18 (26.5)	12 (17.6)	38 (55.9)	0.132
Figure 9	34 (39.5)	9 (10.5)	43 (50.0)	17 (20.2)	8 (9.5)	59 (70.3)	25 (36.2)	10 (14.5)	34 (49.3)	0.032
Figure 10	48 (55.8)	7 (8.1)	31 (36.1)	35 (42.2)	9 (10.8)	39 (47.0)	36 (52.2)	8 (11.6)	25 (36.2)	0.435
Figure 11	33 (38.4)	10 (11.6)	43 (50.0)	27 (32.5)	7 (8.4)	49 (59.1)	24 (34.8)	11 (15.9)	34 (49.3)	0.538
Figure 12	38 (44.2)	11 (12.8)	37 (43.0)	36 (43.3)	13 (15.7)	34 (41.0)	28 (40.6)	9 (13.0)	32 (46.4)	0.954
Figure 13	38 (44.2)	10 (11.6)	38 (44.2)	30 (36.1)	12 (14.5)	41 (49.4)	26 (37.7)	11 (15.9)	32 (46.4)	0.815
Figure 14	19 (22.1)	8 (9.3)	59 (68.6)	13 (15.5)	11 (13.1)	60 (71.4)	9 (13.0)	12 (17.4)	48 (69.6)	0.403
Other Countries										
Figure 15	22 (25.6)	7 (8.1)	57 (66.3)	15 (18.3)	7 (8.5)	60 (73.2)	18 (26.1)	4 (5.8)	47 (68.1)	0.729
Figure 16	7 (8.1)	4 (4.7)	75 (87.2)	5 (6.0)	5 (6.0)	73 (88.0)	3 (4.3)	0 (0.0)	66 (95.7)	0.109
Figure 17	9 (10.5)	1 (1.2)	76 (88.3)	7 (8.5)	6 (7.4)	69 (84.1)	3 (4.3)	4 (5.8)	62 (89.9)	0.156
Figure 18	17 (20.0)	6 (7.1)	62 (72.9)	13 (15.9)	9 (11.0)	60 (73.1)	9 (13.0)	8 (11.6)	52 (75.4)	0.702
Figure 19	5 (5.8)	3 (3.5)	78 (90.7)	5 (6.0)	1 (1.1)	78 (92.9)	3 (4.3)	2 (2.9)	64 (92.8)	0.860
Figure 20	6 (7.0)	0 (0.0)	80 (93.0)	8 (9.6)	0 (0.0)	75 (90.4)	3 (4.3)	2 (2.9)	64 (92.8)	0.163
Figure 21	8 (9.3)	1 (1.2)	77 (89.5)	10 (12.2)	3 (3.7)	69 (84.1)	4 (5.8)	1 (1.4)	64 (92.8)	0.491
Figure 22	6 (7.0)	0 (0.0)	80 (93.0)	5 (6.0)	2 (2.4)	77 (91.6)	2 (2.9)	3 (4.3)	64 (92.8)	0.179
Figure 23	6 (7.0)	2 (2.3)	78 (90.7)	7 (8.4)	5 (6.0)	71 (85.6)	3 (4.3)	4 (5.8)	62 (89.9)	0.581

n=Number, %=Percentage, p: Chi-square test, *: Other Countries: Hong Kong, Brazil, Venezuela, Uruguay, United Kingdom, Singapore, Iran, Thailand and New Zealand



Graphic 1: Status of affection to the health warning labels of current smokers, Çanakkale 2017
 *Other Countries: Hong Kong, Brazil, Venezuela, Uruguay, United Kingdom, Singapore, Iran, Thailand and New Zealand

Graphic 3: Status of affection to the health warning labels of non-smokers, Çanakkale 2017
 *Other Countries: Hong Kong, Brazil, Venezuela, Uruguay, United Kingdom, Singapore, Iran, Thailand and New Zealand



Graphic 2: Status of affection to the health warning labels of ex-smokers, Çanakkale 2017
 *Other Countries: Hong Kong, Brazil, Venezuela, Uruguay, United Kingdom, Singapore, Iran, Thailand and New Zealand

Discussion

The use of health-related texts and images on cigarette packages is one of the most important struggle tools against smoking in the world. In our country, 14 images determined by the Tobacco Products Market Regulation Board are still in use. However, for the same purpose around the world, many different images are used which we think are harsher and more striking. This is the first study to compare the HWLs used in our country to the HWLs with various, more striking images used abroad. This study is also the first study to evaluate the effects of HWLs on cardiology patients.

Smoking is a very important public health problem in all countries. In 2012, 56 million deaths occurred. Of these deaths, 38 million were caused by cardiovascular diseases, cancer, and chronic airway diseases. Smoking is considered to be one of the major and the most important preventable risk factor causing these diseases [16]. Considering that cardiovascular diseases are the most common cause of death in the world, struggle against smoking is an important area to be emphasized in preventive cardiology practice.

There is a downward trend in tobacco use in Turkey similar to that of the developed countries according to data presented by the Turkish Statistical Institute. However, 30% of the population over the age of 15 continue to use tobacco and tobacco products [2,3]. In our study, the smoking rate of patients who applied to the cardiology outpatient clinic was 36%. The patients continue to smoke even if they have suffered from cardiovascular events and survived. This is a relative indicator of

how strong the addiction is to the cigarettes. That is why HWLs seems to be a good tool for those who have never used cigarettes. In our study, we found that those who did not smoke cigarettes were more affected by the HWLs than those who were ex-smokers and those who continue to smoke.

At first glance, HWLs on cigarette packages seem to be insignificant; however, a study conducted in Korea in 2017 showed the situation is quite the opposite. This study showed that HWLs reduce smoking in men by 4.79% and women by 0.66%. As a result of this effect, it is estimated that within ten years a reduction in the incidence of 85238 diabetes mellitus, 67948 chronic obstructive pulmonary diseases, 31526 ischemic heart diseases, 21036 lung cancers, and 3972 oral cancer cases is expected [17]. In our study, 33.9% of the participants stated that they considered quitting smoking, and 40.8% of them reduced or considered reducing smoking since the start of the usage of HWLs.

It has been shown in previous studies that after a certain period of time, the HWLs on cigarette packages are ignored or not noticed by smokers [18,19]. In a study conducted by Ratneswaran et al. [20] in 2014 on smoking and non-smoking groups with chronic obstructive pulmonary disease, HWLs were found to be very effective on non-smokers, while smokers showed negligence and insensitivity to HWLs. Ratneswaran et al. [21] carried out a study in which they compared the effects of HWLs in London and Singapore and this study showed that HWLs were perceived differently among different cultures, and in both cities after a period of time, HWLs lost their influence on people. It is known that HWLs lose their initial effect on people after a while, however the duration is unclear. White et al. [22] found that this effect decreases after 5 years for adolescents. Similar studies have shown that this period changes in different cultures; however it is about 3 years [23,24]. It is known that exposure to new messages is more effective than previous known messages [25,26]. Strahan et al. [27] emphasized the importance of alternating the use of stimuli and changing the stimuli to avoid them from getting accustomed to. There are 14 HWLs on cigarette packages in our country since 2010 and they have never been updated to this date [10]. As a matter of fact, according to our study, 42.3% of participants did not find HWLs in our country effective in the prevention of smoking. This may be the result of the fact that the HWLs have not been changed in our country for seven years and the participants may have gotten used to the stimuli and become indifferent to them. In fact, the health effects of smoking are known by many segments of society; however this does not have much effect on smoking status. It is the development of the positive attitude that needs to be improved here. However, the development of attitude is the most difficult process. For this purpose, it is necessary to tackle every area. HWLs are one of these areas. However, it is evident that there is a need to constantly keep an eye on them. Otherwise, the HWLs are gotten used to and ignored by smokers, especially after a while.

Many diseases which are caused by smoking and which negatively affect many systems and organs are not known by smokers. A study involving 21 European countries showed a significant difference in the awareness of cardiac disease due to cigarette smoking [28]. Ratneswaran et al. [20] showed that

Singaporeans have less awareness of oral laryngeal cancer, heart disease, and lung cancer than Londoners do. The 'Smoking causes lung cancer' warning was removed from the warnings used in Singapore in 2005; however it started to be used again in 2013. Also, one of the lesser known facts about smoking is that it causes blindness [29]. In 2012, the European Commission issued a new warning: 'Smoking causes blindness'. In our study, 23.8% of the participants stated that there were HWLs they were not familiar with among the warnings used in Turkey.

4.1% of participants stated that HWLs had influenced them to come to the cardiology clinic. 82.3% of the participants thought that the presence of these warnings in the cardiology clinics would be effective and 92.4% thought that the use of multiple pictures with all the images of warnings in cardiology clinics would be more effective.

This is the first study that compares HWLs in our country and foreign countries, and the result of this study is that 90.8% of participants found the HWLs in other countries more effective. We can say this result may have emerged due to the fact that the HWLs we have shown as examples of those used in foreign countries are more striking and shocking, and that the HWLs used in our country are less harsh than those used abroad, and people have gotten used to the HWLs in our country because the same images have been being used for seven years. The study was conducted on a limited number of patients who applied only to the cardiology clinic without spreading to the community base. It is very important to reach young people for struggle against smoking. We performed this study on patients who applied to our cardiology clinic. Thus, the number of young patients in our study population was low. The number of patients who came to the cardiology clinic was low and the average age was too high. For this reason determination of the sample size could not be done.

For the struggle against smoking, the base of the society should be reached and the views of people from all ages and all walks of life should be examined regarding the harsher and more striking HWLs used in foreign countries. Given that cardiovascular diseases are the major cause of mortality in the world and smoking is one of the major risk factor for cardiovascular diseases, struggle against smoking is an important field for preventive cardiology. In the light of our study and other studies, it seems that replacing the HWLs used on cigarette packages in our country with the harsher visuals applied in other countries and renewing them periodically may be an effective method in the struggle against smoking.

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