

# Perceptions of Students of a Medical School on Combined Health Warnings in Plain Packs

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## Abstract

**OBJECTIVE:** Turkey has recently adopted the regulation of plain and standard packaging for tobacco products and introduced newly designed combined health warnings. In this study, we aimed to reveal how the new combined health warnings are perceived among medical students.

**MATERIAL AND METHODS:** The study was descriptive and the data were collected by a 3-part questionnaire. The first part covered demographic characteristics, the second part was designed to measure the saliency of the combined health warnings, and the third part evaluated their effect on the motivation to quit.

**RESULTS:** Out of 484 students of medicine, 287 (59%) were included in the study; 54.4% of the participants were female and 45.6% were male; and the average age was  $21.18 \pm 1.94$  years. There were 79 (27.5%) smokers and the mean duration of smoking was  $39.07 \pm 24.07$  months. The combined health warning that reads "Smoking causes laryngeal cancer" had the highest score both in terms of saliency and motivation to quit smoking. The one that reads "Protect children: don't let them inhale your smoke" had the lowest score in both categories. Non-smokers found the stimuli more effective than smokers and quitters ( $P > .05$ ).

**CONCLUSION:** The findings point out that smoking rate is unexpectedly high among participants, and medical students perceived the warnings emphasizing the physical deformities caused by tobacco products on individuals as more effective than combined health warnings aimed at protecting "others." This study suggests that the combined health warnings should be selected in a more nuanced way for different target groups.

**KEYWORDS:** Plain packaging, combined health warnings, medical students, İstanbul, Turkey

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## INTRODUCTION

The U.S. was the first country to introduce textual health warnings on cigarette packages in the 1960s,<sup>1</sup> and the policy has evolved incredibly since then. The widespread agreement on the need for tobacco control, realized by 168 signatories and 182 parties to the World Health Organization Framework Convention on Tobacco Control (WHO FCTC), exhibits the future possibility of improvement in and dedication to the policy by world countries.<sup>2</sup> It has been reported that 136 countries involving 5 billion people are implementing policies to effectively fight tobacco demand.<sup>3</sup> Plain packaging of tobacco products, which is a newer but more ambitious policy option, aims to decrease/eliminate the appeal of smoking through the removal of intriguing elements and messages that appear on the cigarette packages. The policy may have different implications, such as change of color of the packages, appearance of warning texts and pictorials, addition of warning text in the packages, change of the shape of the packages, and so forth. Specifically, the combined health warnings and their features on the plain packaging have been set forth in Article 11 of the WHO FCTC, which obliges the packaging to convey health warnings and pictures to that end occupying a 50% area or more of the package, with "clear, visible, and legible" texts and pictures.<sup>2</sup> Effective plain packaging and combined health warnings printed on the packages have been regulated by the Guidelines for Implementation of Article 11 published by the WHO FCTC, which advise members to organize the packages in a way that they hold larger, multiple, and colored pictures and texts located in the principal display areas to draw attention<sup>4</sup>

Turkey ratified the Convention on December 31, 2004.<sup>2</sup> However, the plain packaging policy was introduced 16 years later in Turkey and cigarette packages with renewed health warnings have been released; the previous packages are no longer available for purchase as of December 2019. Until this time, the main policy serving as a deterrent for tobacco products was the increased taxation introduced following the ratification of the WHO FCTC.<sup>5</sup> Acknowledging the need to do more, the Turkish Ministry of Agriculture and Forestry announced that the policy of "plain and standard packaging of tobacco products" would be implemented starting from January 5, 2020. With this policy, the presentation of the brand, distinctive wording or images and other information, and the symbol or logo of brands were removed from the packages. According to the Turkish plain packaging policy, an increased area is occupied by the combined health warnings which consist of a combination of cessation information, a warning text, and any relevant photograph, picture, or drawing.<sup>6</sup> However, unlike

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the implementation in other countries, the policy in Turkey does not involve the standardization of the packages themselves. Rather, the policy is reduced to the increase of the area allocated to combined health warnings, which rose from 65% to 85%. In this context, the main component of the plain packaging policy in Turkey seems to be the combined health warnings rather than a combination of standardized packages with strategically shaped and designed warning texts and pictorials. This difference inspired this study to reveal the impact of combined health warnings without standardized packages as a part of the plain packaging policy in Turkey.

The current study investigates the perception of 8 health warnings on cigarette packages, among the medical students of a foundation university in Istanbul, Turkey, before the implementation of the plain packaging policy in Turkey. Eight of these warnings to be used as of January 5, 2020 onwards have been chosen after consulting with an expert. The main criterion was to reflect different sub-messages with a focus on the distinction between individuality and collectivity. Specific focus has been given to the saliency of health warnings and their perceived effectiveness in generating motivation to quit smoking, through different sets of questionnaires.

## MATERIAL AND METHODS

### Study Design and Sample Size

This study was exploratory and descriptive, and was conducted among medical students attending the School of Medicine at a Foundation University located in Istanbul. A university ethics board approved the study (Decree no: 09.2019.560), and informed consent was obtained from all the participants. The data were collected by a questionnaire prepared in Turkish. The total number of medical students was 484 (excluding foreign nationals and students of the preparatory classes). Printed questionnaires were distributed and collected by hand between May and June 2019. Sample size was not calculated due to the exploratory nature of the study. Students in the pre-clinical phase were based in the

university campus; those who were in clinical and internship phases were dispersed in 3 accredited training hospitals, all of which were geographically far away from the campus location. Physical distance restrained access particularly to this group of students. Fifty-nine percent of medical students ( $N = 287$ ) filled out the questionnaire and participated in the study. Only 2 students invited to participate in the study did not agree to participate. Therefore, the response rate was 99%. No incentives were offered to the participants.

### Questionnaire

A 25-item questionnaire was piloted on 6 students. For the sake of clarity, minor changes were made based on the responses to the pilot tests. The questionnaires were distributed to the students by hand, and were collected after the students filled them in.

The questionnaire consisted of 3 parts. The first part was about sociodemographic characteristics of the participants and covered age, sex, school grade, maternal and paternal education level, and smoking status. The second part addressed questions about the appeal of standardized health warnings. This part included 8 pictorials in color and attempted to measure the impact of combined health warnings in terms of saliency. These 8 pictorials were chosen among all pictorials that appeared on the cigarette packages in Turkey at the time of the study. Figure 1 includes all pictorials and health warnings used. The third part assessed the influence of health warnings on the motivation to quit smoking. This part also included the same 8 pictorials. The answers of the second and third parts were evaluated using the 1 to 5-point Likert scale; 1 being not effective at all, 5 being very effective.

### Statistical Analysis

Data were analyzed with the Statistical Package for Social Sciences for Windows Version 18.0 (SPSS Inc.; Chicago, IL, USA), and presented via descriptive statistics such as range, mode, mean, and median. Chi-square and Fisher's exact test were used for the comparison of categorical variables. A  $P$  value below .05 was statistically significant.

## RESULTS

Out of 287 participants, 156 (54.4%) were female and the mean age was  $21.18 \pm 1.94$  (min 18-max 26). Seventy-nine of them (27.5%) were current smokers and the mean duration of smoking was  $39.07 \pm 24.07$  months (min 3-max 89). The demographical characteristics are presented in Table 1.

The combined health warning with the "Smoking Causes Laryngeal Cancer" message got the highest score in terms of both saliency and motivation to quit smoking (4.42 and 4.07, respectively). On the other hand, the one with the "Protect Children: Do Not Let Them Inhale Your Smoke" message received the lowest score in both categories (2.34 and 2.32, respectively). The "Children See, Children Do" warning followed the previous one in terms of being the second least salient and the least effective health warning. The mean scores of "Smoking Causes Fatal Lung Cancer" and "Smoking Leads to Foot Gangrene" were calculated to be higher than 4, which is a higher score in the Likert scale. However, there was no warning that scored above 4 points in terms of motivation to quit. Scores are presented in Tables 2 and 3.

### MAIN POINTS

- Smoking rate is unexpectedly high among study participants who were raised in highly educated households. This finding suggests that medical education should be re-evaluated in terms of tobacco control.
- Combined health warnings seem to be instrumental in primary prevention, to halt tobacco initiation rather than induce smoking.
- Combined health warnings which entail disturbing photos and texts on the cigarette packages are more influential and attract attention.
- The study reveals that nuanced policy options need to be considered and applied in order to influence a wider population, based mainly on the findings of qualitative studies conducted for different target groups.
- The plain packaging policy reduced to wider coverage of combined health warnings, without the standardization of cigarette packages, may not lead to expected benefits on adults—particularly on current users—in terms of tobacco control.



Figure 1. Pictorials and health warnings.

Combined health warnings were scored noticeably lower in terms of motivation to quit. From both the points of view of saliency and motivation to quit, non-smokers found warning stimuli more effective than smokers and quitters ( $P < .026$ ). On the other hand, no statistically significant difference was found with sex, school grade, or parental education level ( $P > .05$ ), which can be found as such since the participants of the study are rather homogenous in terms of their age, education, and social background.

## DISCUSSION

This study shows that combined health warnings are more effective on medical students who do not use tobacco. The findings also emphasize that combined health warnings focusing on individual severe health problems are perceived as more effective than the ones focusing on the protection of "others."

Packaging of tobacco has been interpreted to be the tobacco industry's instrument to convey messages to the users.<sup>7</sup> The influence of marketing is purposefully being removed from the package to decrease the appeal of smoking.<sup>8</sup> More specifically, Vardavas et al.<sup>8</sup> introduced 4 arguments supporting the plain package policy and combined health warnings:

- Plain packaging is found to lead individuals and specifically adolescents to consider quitting or not start smoking.
- Plain packaging is cost-effective for the public.
- Plain packaging is internationally integrated as a viable and legal policy option through WHO FCTC, by international organizations such as the World Trade

Organization, in legislations such as the European Union legislation, and in specific countries who implement the policy.

- The policy is spreading with the intentions of mitigating the health-related, economic, and social effects of smoking.

The literature on this issue pays specific attention to the youth and young adults and how they are influenced by health warnings on cigarette packages. Since it is important to prevent the habit of smoking before it starts—which is generally expected to take place early in life—this body of work aims to point out strategies that would be successful in deterring young people from smoking. Non-smoker adolescents in New Zealand argued that plain packaging may help reduce smoking uptake because the plain package is "straight-to-the-point" without any distractions, successful in conveying the health risks of smoking through combined health warnings, and it may reduce the social appeal of smoking through packages that are perceived to be inferior, unattractive, and unexceptional.<sup>9</sup> A mixed group of smoker and non-smoker adolescents in India thought that bigger and more disturbing photos and texts on packages would have more influence on smoking behavior. However, according to this group, health warnings would positively influence non-smokers, ambivalent smokers, and occasional smokers, rather than regular smokers. The participants mentioned that "they never really get to see the packet" because they buy 1 or 2 cigarettes at a time, which can be considered a problem for the communication of health messages.<sup>10</sup> A study with a similar age group of UK youth also supports the finding that the health warnings generate responses that are

**Table 1.** Demographic Characteristics of the Study Participants

	N (%)
Sex	
Female	156 (54.4)
Male	131 (45.6)
Grade	
I	71 (24.7)
II	48 (16.7)
III	41 (14.3)
IV	63 (22.0)
V	25 (8.7)
VI	39 (13.6)
Maternal education level:	
Primary school (5.9)	17
Secondary + high school 65 (22.7)	
College/university (71.4)	205
Paternal education level:	
Primary school (1.7)	5
Secondary + high school 42 (14.6)	
College/university (83.6)	240
Smoking status	
Non-smoker (61.7)	177
Current smoker (27.5)	79
Quit (10.8)	31
Smoking frequency	
Every day	49 (62.0)
Sometimes	30 (38.0)
Number of attempts to quit	
Once	15 (18.8)
More than once	27 (33.8)
None	38 (47.5)
Determination to quit	
Yes	34 (43.0)
Hesitant	24 (30.4)
None	21 (26.6)

often in the line of avoidance of tobacco products, depending on the disturbance generated by the combined health warning. The participants thought that these policies would be most influential on non-smokers or occasional smokers among the youth,<sup>11</sup> which is in line with the results of our study. Research conducted with young adults aged between 18 and 24 in Turkey reveal that plain packages may lead individuals to consider quitting smoking, especially females. The different options in policy implementation, such as the numbered packs and the in-pack messages, were found to be effective on new smokers, but not on those who regularly smoke.<sup>7</sup> Unlike the prevalent practice in other countries, Turkey has not standardized the tobacco packages, which

**Table 2.** Impact of Combined Health Warnings in Terms of Saliency

Pictorial No	Statement	Score Mean (Median)
1	"Children see, children do"	2.40 (2)
2	"Smoking causes fatal emphysema"	3.78 (4)
3	"Smoking slows down blood flow and causes sexual impotence"	2.65 (3)
4	"Smoking leads to foot gangrene"	4.26 (5)
5	"Cigarettes harm babies"	2.73 (3)
6	"Smoking causes laryngeal cancer"	4.42 (5)
7	"Protect children: do not let them inhale your smoke"	2.34 (2)
8	"Smoking causes fatal lung cancer"	4.33 (5)
Mean score: 3.36		

can negatively influence the expected benefit of the plain packaging policy.

Nazar et al.<sup>12</sup> investigated the influence of increased area occupied by graphic health warnings on cigarette packages in India. The results revealed that more area (85%) reserved for health warnings increased their perceived effectiveness by 40%, as compared to 40% of the pack being reserved for health warnings. Adults and adolescents found these packs less attractive. In a similar vein, the increased area occupied by combined health warnings on cigarette packs in Turkey might positively contribute to the perception of cigarettes and smoking as negative, however, by different

**Table 3.** Impact of Combined Health Warnings in Terms of Motivation to Quit Smoking

Pictorial No	Statement	Score Mean (Median)
1	"Children see, children do"	2.48 (2)
2	"Smoking causes fatal emphysema"	3.57 (4)
3	"Smoking slows down blood flow and causes sexual impotence"	2.52 (2)
4	"Smoking leads to foot gangrene"	3.80 (4)
5	"Cigarettes harm babies"	2.80 (3)
6	"Smoking causes laryngeal cancer"	4.07 (5)
7	"Protect children: don not let them inhale your smoke"	2.32 (2)
8	"Smoking causes fatal lung cancer"	3.98 (4)
Mean score: 3.19		

groups of smokers. Positive effects on motivation to quit and perceived health risks associated with tobacco were found.<sup>12</sup> This study involves a mixed age group and shows that both age groups in the study perceive health warnings as effective. This result may mean that further improvement on the moderation of the cigarette packages could expand the positive influence to a larger population. Adult male smokers in Pakistan reported that the influence of health warnings was not significant on their attempt to quit smoking.<sup>1</sup> Another important result of this study was that 11% of the participants did not notice the warnings, which is a higher proportion compared to other countries. The researchers connected these results with the perception of warnings as a formality, and the tendency to ignore the warnings. The researchers emphasized the importance of stronger measures to increase the impact of health warnings, that is, through increasing the area occupied by a health warning. Based on the conclusions made about the perception of the health warnings as a formality and the tendency to ignore them, different communication systems suitable to the society's different habits may be developed, so that the health messages can be better conveyed.

Systematic reviews in this research area further support the results mentioned previously. Ratih and Susanna<sup>13</sup> investigated the studies conducted on the effect of pictorial health warnings and plain packaging in Asian countries. The results show that plain packaging may lead to:

- Motivation to quit smoking among youth, depending on certain different pictorial warnings (the picture of a child using an inhaler was much more effective),
- Motivation not to take-up smoking, in young females more than young males,
- Increased confidence among adults to quit smoking in the future after being exposed to plain packages with pictorial warnings, and
- Increased perception of the effectiveness of graphic warnings rather than symbolic or testimonial warnings among adults.

In a similar vein, a study involving 30 000 participants from 31 studies, emphasizes the vital role played by pictorial health warnings on pushing young people away from tobacco use or toward motivation to quit.<sup>14</sup> A methodology- and participant-wise research very similar to the current study reported that 82% of the participants think that combined health warnings decrease the appeal of tobacco products.<sup>15</sup> While 77% of the participants believed that the plain cigarette packages leave a "cold" impression, 74% of the participants thought that graphic warnings on the packages would influence smoking cessation. These similar results emerging from different contexts further boost the validity of the plain packaging policy entailing combined health warnings, for many different countries.

The current study aimed to review the Turkish version of the plain packaging policy (with increased area allocated to combined health warnings, but without standardization) and its effectiveness on smoking cessation among a group of young adults raised in an educated environment and expected to

undergo medical education. The results of the study show that the smoking rate is unexpectedly high among this group, whose parents are highly educated. Those who do not smoke perceived health messages to be more effective, which reveal the distinctions regarding the appeal of smoking between different groups. Even though the students found warnings appealing and effective on smoking cessation, scores on saliency were higher than scores on effectiveness on the motivation to quit smoking. The participants found the combined health warnings that present health problems in a disturbing manner to be the most eye-catching and attractive, more than they perceive them as influential on inducing smoking cessation. The result underlines the fact that these warnings serve more of a preventive purpose than inducing smoking cessation. Furthermore, disturbing disease-related visuals are found to be capable of generating motivation to quit smoking. However, no warning scored higher than 4 when it comes to motivation to quit. Also, the mean overall score of motivation to quit was lower than that of saliency. While the "Smoking Causes Laryngeal Cancer" message has the highest impact in terms of both saliency and motivation to quit smoking, the least appealing message on cigarette packages is the message "Protect Children: Do Not Let Them Inhale Your Smoke," revealing the impact of differently worded health messages on the packages. A distinction can also be made between the saliency of combined health warnings emphasizing individual health problems and protection of the health of "others." The individualization of health risks and protection in the new neoliberal era might contribute to the perception that individual suffering is more important than public health.

## CONCLUSION

In conclusion, as pointed out by Elbek et al., the tobacco industry intervenes in order to delay the legalization of tobacco control measures and nullify the meaning of the measures through socio-culturally strategic movements. Intervening in the measures that are in the process of legalization is not possible, and the tobacco industry cannot prevent such legalization.<sup>16</sup> The most important interventions by the tobacco industry have been ensuring the continuation of tobacco control struggles in Turkey on the basis of demand. However, the plain packaging policy is considered to be the first step moving from a policy of demand toward the control of the supply of tobacco products. In this context, while the wider area occupied by the combined health warnings has been aimed to control the demand for tobacco products, the standardization of the packages is aimed to control the supply of tobacco products. Our research shows that the combined health warnings with the purpose of controlling the demand have not been very effective, especially for those who already consume tobacco products. For this reason, as proposed by Elbek et al. and revealed by data, the need exists for careful consideration and implementation of the FCTC as much as MPOWER strategies of the WHO for fighting the tobacco epidemic, and for the public health measures to be developed without paying attention to the commercial benefits of the tobacco industry. We have to realize that combined health warnings have very little impact on users of tobacco products, and the success of the plain packaging policy depends

on the standardization of tobacco packages rather than on the combined health warnings, in order to underline the interest they attract.

Moreover, our findings also indicate the need to discuss the plausibility of decreased smoking rate among young individuals in 2017 as emphasized by Elbek et al.<sup>17</sup> According to authors, based on 2017 data, it is significantly contradictory to conclude that tobacco consumption among young individuals was decreasing while the findings show the decline in the visibility of health warnings on tobacco products in the media and the rise in the visibility of advertisements for tobacco products after the 2008-2012 period. Our findings that 27.5% of medical school students use tobacco products and the median usage duration being  $39.07 \pm 24.07$  months stress the necessity, as emphasized by Elbek et al., to question the alleged success of tobacco control measures on young individuals based on the 2017 data.

The limitations of our study include the limited scope of study participants, as they are the students of one medical school in one university in Istanbul; thus our study findings should not be considered representative. There is a need for qualitative studies targeting different groups of young people in order to generalize the results. Furthermore, we used only 8 health warnings after consulting with an expert to reflect a balanced range of warnings emphasizing the individual health hazards of smoking and addressing broader groups/public. Therefore, it can be argued that warnings that are not included in the current study could have produced different results.

**Ethics Committee Approval:** This study was approved by Clinical Research Ethics Committee of Marmara University School of Medicine (Approval No: 09.2019.560).

**Informed Consent:** Verbal and written informed consent was obtained from the patients who agreed to take part in the study.

**Peer Review:** Externally peer-reviewed.

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