

TEPAV Tobacco Control Policy Research Team ¹**How effective are plain packaging and health warnings in reducing smoking intentions of Turkish university students?²**

POLICY NOTE

The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) became a legally binding international instrument in 2005. WHO declared six main policy areas, labelled by its abbreviation MPOWER, as key summary indicators for tobacco control policies³. In line with FCTC and all other MPOWER measures, the requirement of health warnings displayed on cigarette packages, and plain packaging (PP)^{4,5}, two of the prominent regulatory measures, were also mandated in Turkey.

Pack warnings provide information about the tobacco-attributable risk and health consequences, and intend to persuade tobacco users to reduce or end their consumption⁶. PP is expected to alter smoking behavior by

¹ This note was prepared by the TEPAV Tobacco Control Policy Research Team.

² This policy note reiterates findings and updates figures and statistics, when possible, from the report titled, "The Economics of Curbing Smoking in Turkey: A Scoping Review Supply, Demand, Health, and Public Policy Aspects." The report and note were funded with a grant from the Foundation for a Smoke-Free World, a U.S.-based nonprofit 501(c)(3) private foundation with a mission to end smoking during this generation. The Foundation accepts charitable gifts from PMI Global Services Inc. (PMI); under the Foundation's Bylaws and Pledge Agreement with PMI, the Foundation is independent from PMI and the tobacco industry. The contents, selection, and presentation of facts, as well as any opinions expressed are the sole responsibility of the authors and under no circumstance.

³ MPOWER's individual sections are (M) Monitoring tobacco use and prevention policies, (P) Protecting d from tobacco smoke, (O) Offering help to quit tobacco use, (W) Warning about the dangers of tobacco, (E) Enforcing bans on tobacco advertising, promotion and sponsorship, and (R) Raising taxes on tobacco.

⁴ WHO FCTC. "WHO Framework Convention on Tobacco Control." World Health Organization, updated reprint 2004, 2005 2003.

⁵ WHO FCTC. "2018 Global Progress Report on Implementation of the WHO Framework Convention on Tobacco Control." Geneva: World Health Organization, 2018.

⁶ World Health Organization, "World Health Organization Report on the Global Tobacco Epidemic 2019, Offer Help to Quit Tobacco Use", World Health Organization. 2019

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reducing the appeal of packages, drawing more attention to graphic and text health warnings, and removing misleading labels, such as “light”, “mild”, or “low tar”^{7,8}. Thus PP has only informative and necessary details with a uniform color, shape, style, and material⁹.

Turkey is one of the countries that enacted the most comprehensive policies to curb smoking¹⁰. Also, it is one of the countries where awareness of harmful health risks of smoking is high. However, it is observed that smoking prevalence has not been declining. In this note we investigate how plain packaging and health warnings on cigarette packs have changed negative affect, avoidant responses, and quit intentions among ever-smoker university students in Turkey.

An online survey was used to collect data. Results from regression analyses revealed that:

- plain packaging and new, harsher graphic health warnings are effective in generating negative affect and avoidant responses,
- the impact is higher on female students and late initiators of smoking, whereas it is lower on nicotine-dependent smokers.
- neither plain packaging nor harsher graphic health warnings are effective in increasing intentions to quit within six months or sooner,
- when either the new and stronger health warnings or PP is in place, the introduction of the missing element does not generate any added impact.

Health Warning and Plain Packaging Regulations in Turkey

In line with FCTC Article 11, initial policy actions with regard to pack warnings were taken in 1996, and these actions have accelerated over the years in Turkey. In 2008, the regulations on health warnings became stricter by mandating that warnings should be on the two sides of the packages¹¹. Between 2012 and 2019, at least 65 percent of the area of tobacco product packages and waterpipe bottles were required to be covered with a warning¹². The law in 2019 required health messages to cover at least 85 percent of the front and back of the packaging of all smoked tobacco products¹³, and in this respect Turkey is one of the best practice countries in the world^{14,15,16}. Additionally, plain packaging was mandated at the retailer level¹⁷ by 2020.

⁷ Janne Scheffels and Gunnar Sæbø. “Perceptions of Plain and Branded Cigarette Packaging among Norwegian Youth and Adults: A Focus Group Study.” *Nicotine & Tobacco Research* 15, no. 2 (September 2012): 450–56. <https://doi.org/10.1093/ntr/nts153>.

⁸ Richard Pollay and Timothy Dewhirst. “The Dark Side of Marketing Seemingly ‘Light’ Cigarettes: Successful Images and Failed Fact.” *Tobacco Control* 11, no. Suppl 1 (March 2002): 18–31. https://doi.org/10.1136/tc.11.suppl_1.i18

⁹ World Health Organization Framework Convention on Tobacco Control, *Guidelines for Implementation*, 2013 ed.

¹⁰TEPAV, Why Study Turkey’s Tobacco Control Policies?, 2021, <https://www.tepav-he.org/en/publications/policy-notes/why-study-turkey-s-tobacco-control-policies/>,

¹¹ Official Gazette of the Republic of Turkey. January 19, 2008.

¹² Official Gazette of the Republic of Turkey. November 22, 2012.

¹³ Official Gazette of the Republic of Turkey. March 1, 2019.

¹⁴ World Health Organization Framework Convention on Tobacco Control, *Guidelines for Implementation*, 2013 ed. page 108

¹⁵ “Tobacco: Health Warnings” European Commission. Accessed August 1, 2020.

¹⁶ Canadian Cancer Society, *Cigarette Package Health Warnings*, 6th ed. September, 2018.

¹⁷ Official Gazette of the Republic of Turkey. December 5, 2018.

Further actions were taken between 2014 and 2019 to regulate the information content of cigarette packages to reduce the appeal of smoking. Using phrases such as low tar, light, ultra-light, mild, extra, and ultra may be misleading or deceptive about the characteristics and health effects of tobacco products. The use of such phrases on cigarette packs were prohibited in 2014 in Turkey¹⁸. According to WHO FCTC Health Warnings Database, Turkey currently has pictorial warnings on cigarette packages regarding addictive nature of tobacco products, the aesthetic consequences of tobacco consumption such as wrinkles/premature aging of the skin, mortality threat, adverse direct health consequences (heart disease, lung disease, mouth disease/oral cancer, stroke, impotence, and sexual dysfunction), impacts of exposure to second-hand smoking on babies/fetuses and children, toxins and constituents of the products, and advice on cessation.

Plain (standard) packaging was introduced in Turkey in 2019 as the most current legislation, in tandem with global trends. Packaging is an element of advertising and promotion, where logos, colors, fonts, pictures, shapes, and materials on, or in packs, or on individual cigarettes, can attract consumers¹⁹. Plain package has only informative and necessary details such as contact details, brand, manufacturer name, quantity of sticks, health warnings, tax stamp, and other government-mandated information in uniform color, shape, style, and material²⁰. Australia was the first WHO member implementing plain packaging in 2012, followed by countries like France and Ireland. Turkey switched to standard packaging effective from 2020^{21,22}.

In Turkey, pack warnings have captured the attention of people as intended, but the effect may have waned over time. According to GATS 2016 data, 76.4 percent of adults in Turkey declared that they noticed health warnings on cigarette packages. The high rate is compatible with the high prevalence of cigarette smoking in Turkey, and thus higher exposure to cigarette packs. Only 2.6 percent of adults stated that they did not see any warnings on cigarette packages. Furthermore, 2016 GATS data suggested that pack warnings triggered intentions to quit, as 37.3 percent of smokers stated that warnings on cigarette packs made them think about quitting. Yet, the effectiveness of these warnings seems to have eroded over the years since the same percentage was 56.2 in 2012.

Survey-Based Experimental Analysis of PP and GHW in Inducing Negative Affect, Avoidance Response, and Quit Intentions of Ever-Smoking Students

The prevalence rate of smoking among university graduates in Turkey was estimated to be 27.3 percent, 23.6 percent, and 38.2 percent in 2008, 2012, and 2016, respectively, indicating that prevalence rate for university graduates has been increasing²³. We investigated the effect of PP and health warnings on cigarette packs among ever smoking university students in Ankara, Turkey using an experimental approach. Only a few studies on graphic health warnings (GHW) or PP exist in Turkey. These studies are on the thoughts and perceptions of high school or university students about the effectiveness of GHWs in deterring consumers or

¹⁸ Directive 2014/40/EU of the European Parliament and of the Council, April 3, 2014.

¹⁹ World Health Organization, Plain Packaging of Tobacco Products, 2016.

²⁰ World Health Organization Framework Convention on Tobacco Control, Guidelines for Implementation, 2013 ed.

²¹ World Health Organization, *Plain Packaging of Tobacco Products*, 2016.

²² Official Gazette of the Republic of Turkey. June 27, 2019. page 109

²³ CDC(GATS Turkey Micro Data 2008, 2012, 2016), TEPAV calculations

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encouraging them to quit smoking^{24,25}, but the effectiveness of PP has not been investigated using an experimental approach.

The survey collected data on demographics and consumption patterns, as well as harm perceptions on cigarettes and self-stated responses to PP regulation. Descriptive statistics from 602 ever smoker university students (55% male, 45% female), are summarized in Table 1. One of the most disturbing findings is that the average age for initiation to smoking is 16, and that 70% of the initiation takes place during high school and first years of university. However, it is interesting to note that the respondents are almost in full agreement with the statements that smoking is addictive (with an average score of 4.22 out of 5) and that smoking is harmful for health (an average of 3.83 out of 4). In fact, 56.6% have stated that they have attempted to quit previously, but only 25% stated that they had not consumed any cigarettes in the past 30 days. The average weekly leisurely spending budget for the respondents was estimated to be 484.45 TL, which corresponds to 30-35 packs in 2021 prices. However, only 10% reported to have smoked more than a pack a day for the last month.

Table 1: Descriptive statistics (Mean and standard deviation, or the number of observations (n) and percentages (%))

	Mean	Standard deviation	Min	Max
Age	22.01	2.42	18	31
Gender (n, %) Male	n= 332	55.15		
Female	n= 270	44.85		
Income (TL)	484.75	454.75	0	1500
Age at initiation	16.18	2.63	7	26
Tried to quit in the past (n, %)	n= 341	56.64		
Nicotine dependence	0.79	1.04	0	3
Past 30-day consumption (n, %)				
None	n= 153	25.42		
Fewer than 1/day	n= 45	7.48		
1/day	n= 17	2.82		
2-5/day	n= 90	14.95		
6-10/day	n= 91	15.12		
11-20/day	n= 146	24.25		
21-30/day	n= 43	7.14		
More than 30/day	n= 17	2.82		
Cigarette harm perception	3.83	0.45	1	4
Smoking is addictive	4.22	1.05	1	5

A clear majority of self-reported responses to the effects of PP regulation reported no changes after the regulation. Most commonly observed effect was a decline in pleasurable feeling of smoking, followed by more interest in rolling own cigarettes. There appeared to be no visible effect of PP on cigarette consumption or on the interest in alternative products such as e-cigarettes (Table 2).

²⁴ Funda Özpulat and Nazmi Bilir. "Opinions of University Students Regarding Pictorial Warnings on Cigarettes Packs." *Journal of Human Sciences* 14, no. 1 (2017): 987–99.

²⁵ Erdal Ceylan, Neşe Uysal, and Ayşegül Koç. "Nursing Students' Views about Graphic Warnings and Texts on Cigarettes and Their Nicotine Dependence." *Bağımlılık Dergisi* 21, no. 4 (n.d.).

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Table 2: Frequency distribution of responses to plain pack regulation (%)

	Decreased	Stayed the same	Increased
Quantity of cigarettes consumed	3.99	92.03	3.99
Interest in using cheaper cigarettes	1.99	91.36	6.64
Interest in using roll-your-own cigarettes	2.66	86.88	10.47
Interest in using alternative products (such as e-cigarettes, heated tobacco products)	2.82	93.85	3.32
Knowledge of harmful effects of smoking cigarettes	3.32	88.54	8.14
Willingness to quit	3.65	87.54	8.80
Pleasurable feeling of smoking	19.77	77.91	2.33

Participants were randomly assigned to one of the five conditions and were shown the images of 14 cigarette packs (designed by the research team). The conditions included images described as follows:

- Condition 1: Brand logos + Old text warnings (no pictorial warnings)
- Condition 2: Brand logos + Old text warnings with pictorial warnings
- Condition 3: Brand logos + New text and pictorial warnings
- Condition 4: No Brand logos (PP) + Old text and pictorial warnings
- Condition 5: No Brand logos (PP) + New text and pictorial warnings

After examining the images, the participants were asked to answer three questions on negative affect, avoidant responses, and intentions to quit. The first question aimed to determine the negative affect of the images as a consumer of one of the packs, where they were asked whether they felt afraid, angry, annoyed, sad, disturbed, grossed-out, scared, and guilty. The second question intended to assess avoidant responses of the participants, where they were asked how they would react if they purchased a pack with those features, whether they would stop smoking, cover the pack, hide it, prefer to buy a pack with another look. The third question aimed to measure the intention to quit by asking the respondents if they were consumer of cigarettes in one of these packs, would they quit, would they have an intention of quitting in a week, a month, six months, or in a year.

The mean values of negative affect, avoidant responses, and intentions to quit within 6 months or sooner were compared across conditions. Figure 1 shows the mean values and 90% confidence intervals for *Negative affect*, *Avoidant responses to health warnings*, and *Intentions to quit*, by condition. Evidently, in the first and second graphs, conditions 1 and 2 are separated from conditions 3, 4, and 5, meaning that in the latter three conditions on average more negative affect and stronger avoidant responses are generated among the participating students. By contrast, *Intentions to quit* reported in the five conditions cannot be ranked, as the 90% confidence intervals overlap and there is no statistically significant difference across conditions. Those reporting an intention to quit within 6 months or sooner constituted a relatively small fraction (less than 13%) of the participant pool across all conditions. Conditions 4 and 5 seemed to be the most successful intervention to induce an intention to quit.

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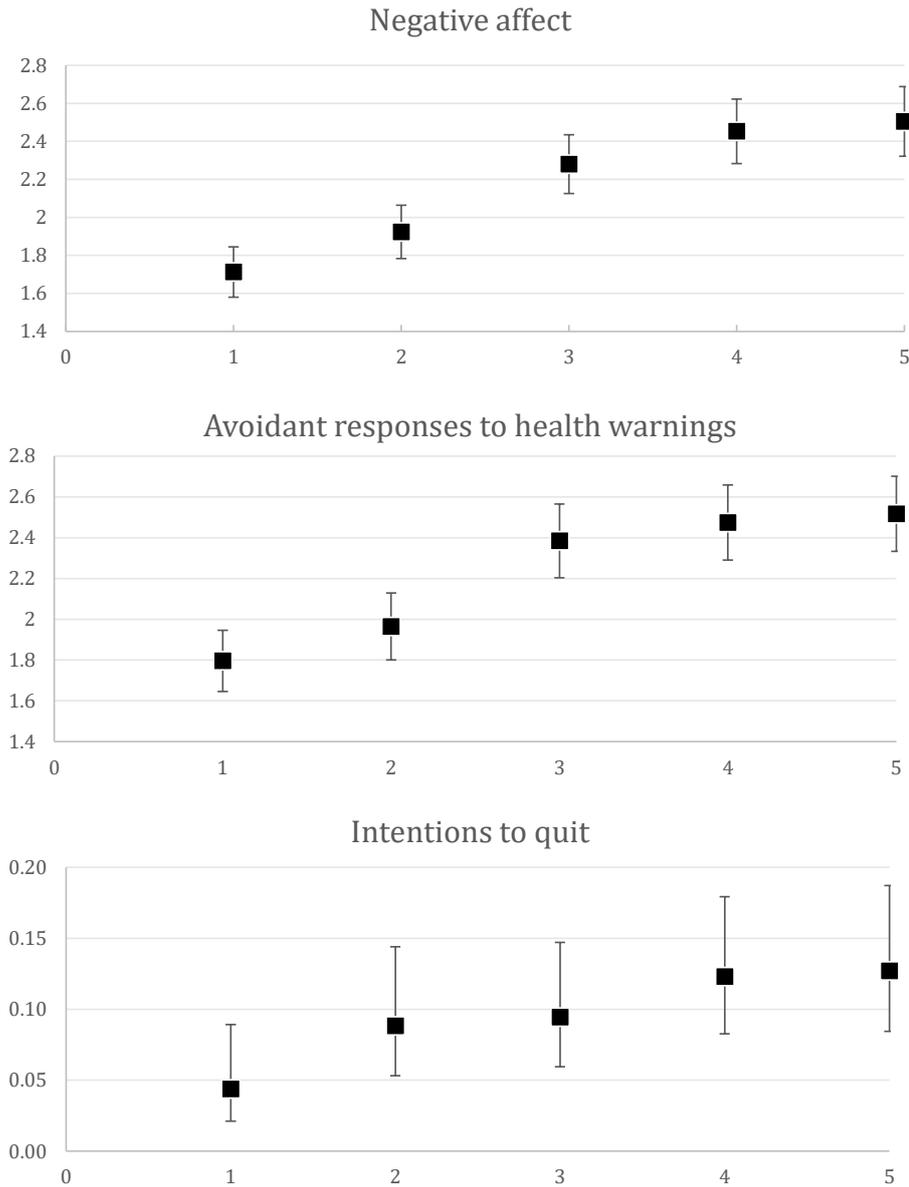


Figure 1: Mean and 90% confidence interval values for *Negative affect*, *Avoidant responses to health warnings*, and *Intentions to quit in 6 months or sooner*, by condition.

Comparison across conditions revealed that some package design elements were associated with negative affect and avoidant responses, but not with intentions to quit. A comparison of the scores of negative affect, avoidant responses, and intentions to quit using regression analyses allowed us to evaluate the effects of package design elements. The results are summarized in Table 3.

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Table 3: Comparison across conditions

Condition 1 versus Condition 2	Adding pictorial warnings to packages with brand logos had no effect on negative affect, avoidant responses, or intentions to quit.
Condition 2 versus Condition 3	Replacing old text and pictorial warnings with new and stronger ones (when brand logos were visible) generated more negative affect and avoidant responses.
Condition 2 versus Condition 4	Removing brand logos from the packs that had old text and pictorial warnings generated more negative affect and avoidant responses.
Condition 3 versus Condition 5	Removing brand logos from the packs that had new text and pictorial warnings had no effect on negative affect, avoidant responses, or intentions to quit.
Condition 4 versus Condition 5	Replacing old text and pictorial warnings with new and stronger ones (on plain packs) had no effect on negative affect, avoidant responses, or intentions to quit.

Conclusion

In conformity with GATS 2016 findings, a majority of our sample of university students in our study agreed that smoking is harmful to health. However, awareness of harm did not generate a reduction in smoking or an increase in cessation. In our experimental study of ever smoking university students in Turkey, we were interested in the effects of PP and health warnings in generating negative affect, avoidant responses, and intentions to quit. Findings revealed that a black background without brand logos as well as harsher and stronger GHW are more effective in generating negative affect and avoidance response. Furthermore, female students are influenced by PP and health warnings more than male students, as are late initiators of smoking, and less intense and less nicotine dependent smokers. Our findings also showed that when either the new and stronger health warnings or PP is in place, the introduction of the missing element does not generate any added impact. Our results also indicated that negative affect, and avoidant responses do not translate into intentions to quit within 6 months or sooner. Based on these results, it is imperative for policy makers to find innovative and compelling ways of reaching educated youth to encourage them in reducing their smoking and inducing them to cessation.

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