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The Awareness, Perceptions and Attitudes towards health warnings on cigarette packages in Northern Cyprus: a community-based descriptive study

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Abstract

Background: Health warnings displayed on tobacco products are important sources of health information for the community.

Aims: The aim of this study was to determine the awareness, perceptions and attitudes towards the impact of health warnings on cigarette packages of a community in Nicosia, where no previous data was available.

Methods: The descriptive cross-sectional study was conducted among 629 cafe attendants in Nicosia in October 2019, using a structured questionnaire to determine the impact of pictorial and text-only cigarette pack warnings. Since cigarette packs include only text-only warnings in Northern Cyprus, sample pictorial warnings from Turkey were presented to the participants.The data were analysed by IBM–SPSS-18.0 to compare perceptions regarding sex, age, smoking status with significance level accepted as $p<0.05$.

Results: Of all the participants, 48%were smokers and smokers among men were significantly higher (56.8%) than women (40.6%). The results demonstrated that 71.2% of the participants were aware of the health warnings on packages and 59.4% rated health warnings as effective. Stronger pictorial health warnings were deemed as more effective. However, 65.6% of the “smoker” group were not aware of the warnings.There were significant differences between smokers and non-smokers regarding perceptions of pictorial warnings. Non-smokers, including former smokers adopted positive views more; 54% of ex-smokers declared health warnings had contributed to their quitting process.

Conclusion: The perceptions of the non-smokers of this community group displayed more positive attitudes towards health warnings. This study has pointed to the urgent need for the implementation of pictorial warnings for smokers in Northern Cyprus.

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Background

Tobacco use is a major preventable cause of mortality and morbidity worldwide as it was responsible for 100 million deaths in the 20th century. Without undertaking effective tobacco control measures, tobacco is estimated to lead to a billion deaths in the 21st century [1]. The usage of health warnings on tobacco products is one of the most important and an efficient tobacco control measure that plays significant role in informing people of the hazards of smoking, preventing non-smokers from starting smoking and also encouraging smokers to quit. Studies have demonstrated that large health warnings with coloured pictures are highly effective [2][3]. Warnings on tobacco products provide an efficient way of communicating with smokers by focusing on the warnings directly related to smoking behaviours and health consequences [4][5].

Article 11 of the World Health Organization (WHO) Framework Convention on Tobacco Control requires the adoption of health warnings on tobacco product packages. All packages must carry health warnings including pictorial warnings, “Which should be 50% or more of the front and back of the package, no less than 30% of the areas” [6][7]. Currently, 118 countries have finalized requirements for pictorial warnings [6]. The implementation of cigarette pack warnings covering the world population has evolved from 5% in 2007 to 48% in 2016 and 58% in 2018 [6][8]. However, some studies have demonstrated that the minimum size of warnings recommended by the WHO is insufficient to generate a response [9][10].

In the European Union (EU), text-only warnings have been mandatory since 2001. Additionally, Tobacco Products Directive of the EU (2014/40/EU) demands cigarettes and waterpipe tobacco to have combined health warnings covering

the top 65% of both the front and back of tobacco packs and consisting of a picture from the EU picture library, a text warning in the official language (s) and information on quitting services [10]. Since May 2016, all cigarettes are required to include such pictorial warnings [7][11]. Plain packaging is another progress in the development of tobacco control by cigarette packages [12][13]. Trofor et al. conducted a study to assess the knowledge of health risks of smoking among tobacco users from six EU member states prior to the introduction of the EU Tobacco Products Directive. The results have highlighted the need for stronger educational interventions and regulations to increase the effectiveness of health warnings [14].

In the Turkish Republic of Northern Cyprus (TRNC), the law on tobacco control entitled “The Law on Protection and Control of the Hazards of Tobacco Products” has been established in 2008 [15]. According to the legislation, cigarette packages should have Turkish and English warnings either as “Smoking/tobacco use causes death” or as “Smoking/tobacco use harms you and others in your surroundings”, covering 40% of one of the larger sides of the package and also another warning stated in the list appended to the law, covering 30% of the other larger side of the package [15]. Non-cigarette tobacco products should also include one of the text-only warnings stated. Pictorial warnings are not yet mandatory in the TRNC, therefore, currently non-existent. There is no study conducted locally to evaluate the perceptions of people towards health warnings on the cigarette packages and its effects on people’s tobacco consumption. Such studies are crucial to understand the perceptions and attitudes of local people on this issue, which might provide preliminary evidence for the future changes regarding the tobacco packaging policy in the country [16]. Thus, the current study attempted to determine the awareness, perceptions and attitudes on the impact of health warnings on cigarette packages of a community living in Nicosia, Northern Cyprus, where a high prevalence of smoking has been established by previous research [17].

Materials and Methods

This descriptive study was conducted among the customers who visited the cafés during 4-14 October, 2019. Cafés were selected as study sites as the provision of comfortable environments for socializing and networking among people in all ages, of whom the majority are teenagers and young adults, who are more susceptible to the smoking habit. Two most popular locations in the center of Nicosia city were chosen, namely, Dereboyu and Surlarici districts. All cafes situated in these two locations were included and café attendants who visited at the time of the data collection were requested to participate in the study. A total of 674 individuals were approached in 20 cafés for participation by the researchers, and 629 of them answered the questionnaire with a response rate of 93.3%.

A structured questionnaire was developed through extensive literature reviews and content validation by the public health experts (please refer to the appendix) [16]. The questionnaire was administered by face-face interviews by the researchers and there were a total of 28 questions including four components. The first part consisted of six questions on socio-demographic features of the participants such as age (in years), gender (male/female), educational level (primary /junior high school/high school/university-college/postgraduate), nationality (Turkish/Northern Cyprus/both/others), income (high/medium/low), and marital status (married/single/others). The second part included six questions on the smoking

behaviours of the participants including questions on their smoking status, smoking frequency and their experience of indoor exposure of smoke. Some questions were asked only to smokers once they answered “yes” to the previous question about smoking status. These questions were regarding the age they started smoking, brands of cigarettes, and awareness of warnings on cigarette packs with the answer options of “yes” and“no”. The awareness of the “smoker” participants about the health warnings on the package of cigarettes they consumed was tested by question 14 of the questionnaire. The response of the participant to the question was compared with the surveyor’s inspection of the actual warning on the package. The result was recorded as correct if the response of the participant and the assessment of the surveyor were in compliance. If the response was partially correct, the answer was recorded as insufficient or as incorrect if there was no compliance of the two outputs.

Subsequent section with 13 questions was regarding participants’ awareness, perceptions and attitudes about health warnings on packages, mainly related to the awareness of participants about the existence of the health warnings, their perception on the effectiveness of these warnings and its impact on their attitudes towards cigarette brand selection and intention to quit smoking. Moreover, the participants who reported to be smokers were asked which health warnings are more effective with the given options of “pictorial warnings”, “text-only warnings”, “both 1&2”, and “none”. For questions 27 and 28 of the questionnaire, two sets of pictures were presented to the participants. The pictures were selected from the pictorial warnings currently implemented in Turkey. Each set consisted of three pictures representing mild, moderate and strong messages regarding health conditions due to tobacco use. The text of the warning label was the same for all the three pictures in question 27, while question 28 presented pictures of three different health conditions caused by tobacco use. The participants were inquired to choose the picture which they thought would have the highest impact on smokers in each set (See Appendix, questions 27 and 28).

The questionnaire was tested among 30 people in the Café at the Near East University Hospital in order to improve the quality and readability of the questions. As a result, minor revisions were done in terms of the structure and content of the questionnaire. The average duration of administering the questionnaire was approximately six minutes. The data collected from pre-test were excluded from the final analysis.

The data were analyzed using IBM-SPSS (Statistical Package for the Social Sciences) version 18 (SPSS Inc., Chicago, IL, USA). Descriptive statistics including frequency, percentage, mean, and standard deviation (SD) were done to describe the characteristics of the study sample. Bivariate analysis using chi-square test was done to examine the relationships between independent variables such as sex, age, nationality, educational status and smoking behaviours of the participants with their awareness, perceptions and attitudes towards health warnings, with a significance level set at $p< 0.05$.

Ethics issues

The informed consent of the participants was obtained prior to administering the questionnaire.

The approval of the Ethics Committee of the Near East University was provided with the project no: YDU/2019/72-897,

which was dated 19 September 2019.

Results

The mean age of the participants was 30.1(±11.3) years. Of the respondents, 55.2% were female and 76% were 20-39 years of age. Table 1 displays some socioeconomic and smoking features of the participants. Individuals with education level of university and above comprised 75.4% of the participants.The majority of the participants were Turkish Republic and Northern Cyprus citizens (54.8% and 39.9% respectively); 5.3% were other country citizens.

Smoking frequency of the participants was 48.0% and the proportion of smokers among men (56.8%) was significantly higher than women (40.6%) (p<0.001).The ever smoker rate was 60.4% with the inclusion of former smokers. Furthermore, 17.8% of the respondents were non-cigarette tobacco consumers, water-pipe use leading with 63.6% among non-cigarette tobacco product users. Notably, 80.3% of the participants acknowledged being exposed to passive smoking (Table 1).

Table 1. Socio-demographic features of the participants (Nicosia, October 2019) (N=629)

Socio-demographic feature	**n**	**%**
Sex		
Male	280	44.5
Female	347	55.2
LGBT-I	2	0.3
Age group(years)		
<19	39	6.2
20-29	365	58.0
30-39	113	18.0
≥40	112	17.8
Mean ± SS =30.1±11.3, Median =26, Minimum–Maximum =15-80		
Marital status		
Married	209	33.2
Single	419	66.6
Widower	1	0.2
Education		
High school and lower	155	24.6
Universityandabove	474	75.4
Nationality		
Turkish Republic of Northern Cyprus(TRNC)	251	39.9
Turkish Republic (TR)	345	54.8
Other†	33	5.3

Economicstatus		
High	203	32.3
Middle	384	61.0
Low	42	6.7
Smoking features(n=629)		
Smoker	302	48.0
Ex-smoker	78	12.4
Non-smoker	249	39.6
Non-cigarette tobacco use(n=629)		
Yes	112	17.8
No	517	82.2
Non-cigarette tobacco product used(n=110)		
Water—pipe (Narghile)	70	63.6
Smokeless tobacco	14	12.7
Cigar	13	11.8
IQOS	10	9.1
Cannabis	3	2.7
Exposure to passive smoking (n=629)		
Yes	229	36.4
No	124	19.7
Occasionally	276	43.9

†*Other countries: Iraq, Russia, Moldova, Southern Cyprus, Bulgaria, Syria, XinjianUyghur Autonomous Region*

The perceptions of the participants about health warnings on cigarette packages are illustrated in Table 2. In total, 71.2% of the participants were aware of the health warnings and 72.2% were in favour of their implementation.Of the responders,15.0% deemed warnings as effective while 44.5% perceived them as partially effective, adding up to59.4% in total. As shown in Table 2, 17.3% of the participants evaluated the warnings as effective in quitting smoking while49.2% comprehended them as ineffective in this respect. Furthermore, 86.2% of the participants responded that the impact of health warnings wear-out in time. The perceptions about the efficacy of pictorial and text-only warnings illustrated that 37.8% of the participants rated pictorial warnings while 42.3%assessed combined pictorial and text warnings as more effective.

Two sets of warning pictures consisting of mild, moderate and severe message pictures were presented to the participants and asked for their opinions about their efficacy.The analysis of the responses revealed that 59.6% of the participants regarding set 1 (question 27) and 53.3% in set 2 (question 28) evaluated the strong picture as more effective for tobacco control (Table 2).

Table 2. The perceptions and attitudes of the participants about health warnings on cigarette packages (Nicosia, October 2019) (N=629)

The awareness of the participants about health warnings on cigarette packs (n=629)	**n**	**%**
Yes	482	76.6
No	147	23.4
The opinions of the participants about the effectiveness of health warnings on smokers (n=629)		
Yes, effective	94	15.0
Partially effective	280	44.5
Not effective	255	40.5
The attitudes of the participants about the use of health warnings on cigarette packages (n=629)		
Supportive	454	72. 2
Not supportive	175	27.8
The effectiveness of warnings on smokers for starting contemplating on quitting smoking (n=629)		
Yes	109	17.3
No	309	49.2
Maybe	211	33.5
Opinions of the participants on wear-out of impact of warnings in time (n=629)		
No	87	13.8
Yes	542	86.2
The opinions of participants on efficacy of pictorial and/or text-only warnings (n=629)		
Pictorialeffective	238	37.8
Text-onlyeffective	30	4.8
Both are effective	266	42.3
None	95	15.1
Which picture is more effective in set 1 pictures (n=629)†		
Picture1 (mild)	46	7.3
Picture 2 (moderate)	94	14.9
Picture 3(strong)	375	59.6
None	114	18.1
Which picture is more effective in set 2 pictures (n=629)†		
Picture 1 (mild)	121	19.2
Picture 2 (moderate)	99	15.7
Picture 3 (strong)	335	53.3
None	74	11.8

†See questionnaire in Appendix section

The perceptions of the “smoker” group in particular about health warnings on cigarette packages are disclosed in Table 3. Of the smokers, 65.6% responded that they were unaware of the current health warnings on packages. Besides, just 50% of the smokers had correct knowledge of the warnings on the packs of cigarettes they consumed, while 34% had incomplete and 14% incorrect knowledge. Naturally, this information could only be obtained from the participants who had their cigarette packs with them. The results also demonstrate the perceptions of the former smokers about the efficacy of

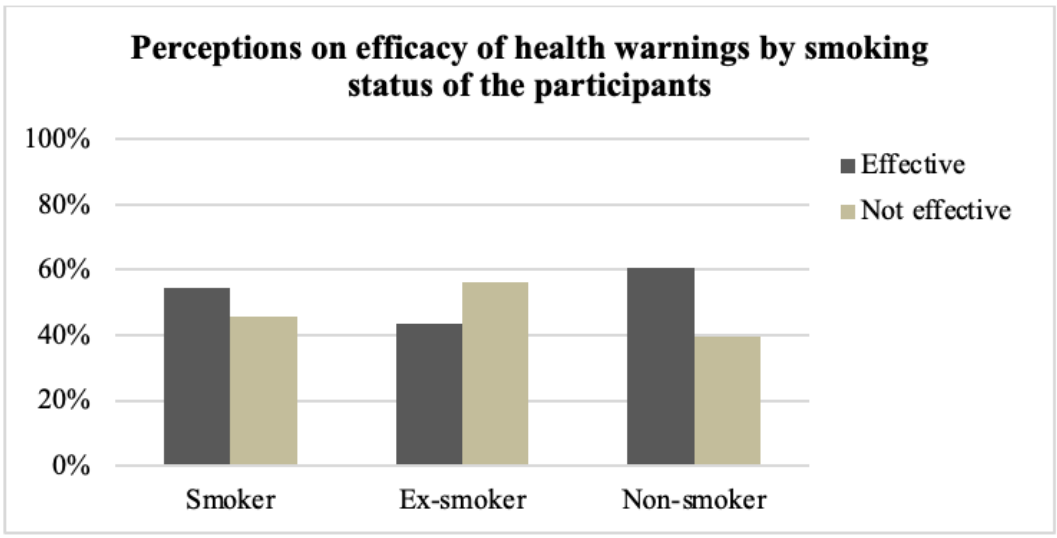
health warnings on their own cessation process, 53.9% indicating that health warnings on cigarette packages were influential on their quitting.

Table 3. The awareness and perceptions of the smokers and ex-smokers about healthwarnings on cigarette packages (Nicosia, October 2019)

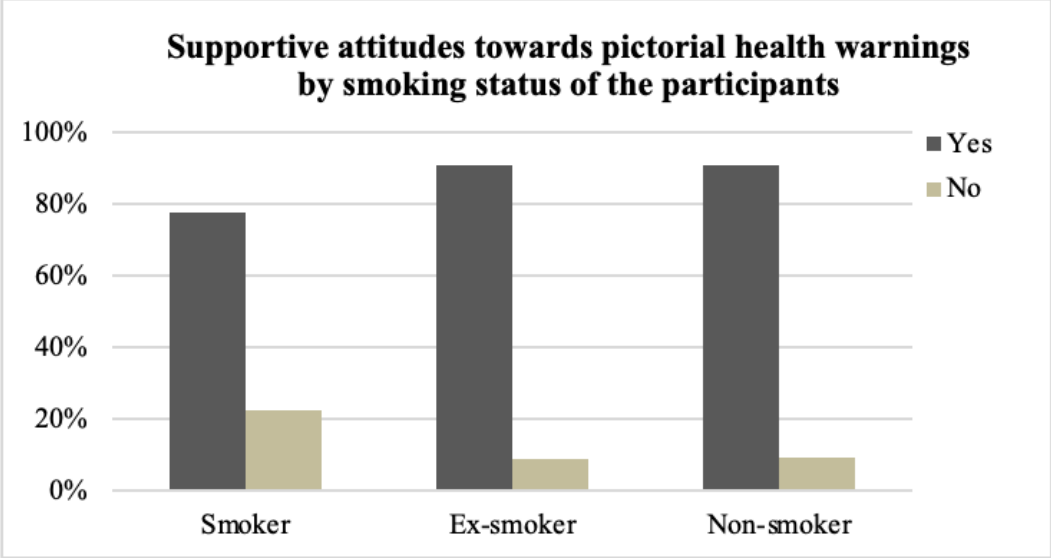
The awareness of the smoker participants about current health warnings on cigarette packages(n=302)	**n**	**%**
Not aware	198	65.6
Aware	104	34.4
The knowledge of the smokers about the health warnings on the packs of cigarettes they smoke(n=94)		
Incorrect knowledge	15	16.0
Incomplete knowledge	32	34.0
Complete and correct knowledge	47	50.0
The perceptions about the influence of health warnings on smoking cessation process of ex-smokers(n=76)		
Yes	41	53.9
No	35	46.1

The comparisons of the participants' perceptions towards health warnings by smoking status are demonstrated in Figure 1. Higher proportion of non- smokers perceived that the health warnings are effective compared to smokers and ex –smokers (60.6% vs. 54.3% & 43.6%). More than 90% of non -smokers and ex-smokers respectively showed supportive attitudes towards the implementation of pictorial health warnings compared to smokers (77.5%). A significantly higher proportion of ex-smokers stated that the health warnings are effective on quitting smoking compared to smokers (69.2% vs. 46.7%). The differences in perceptions between groups were shown to be statistically significant (p=0.026, p<0.001, p=0.002 respectively).

a.



b.



c.

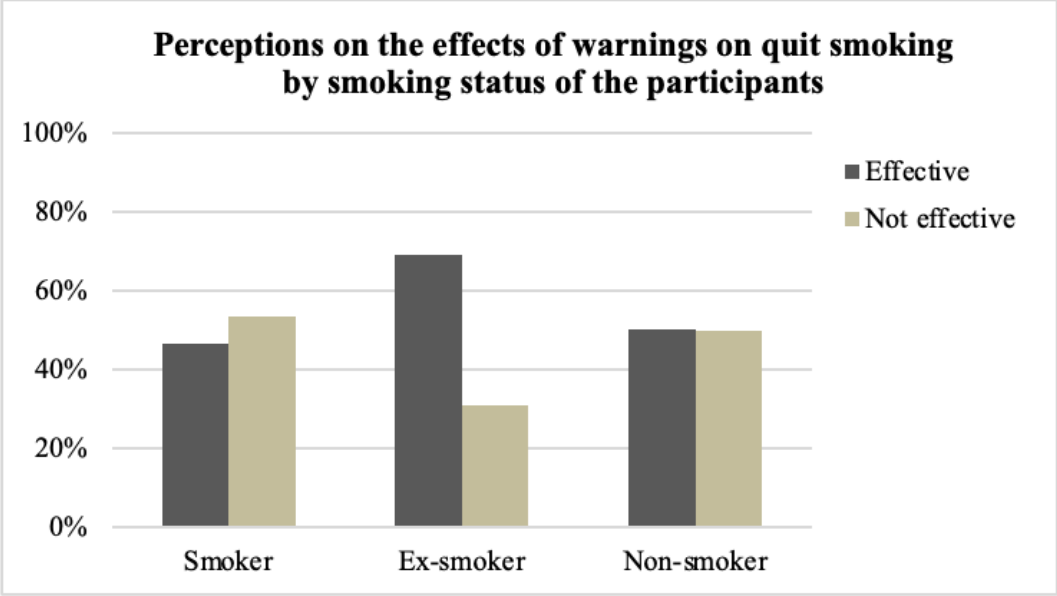


Figure 1. The comparisons of perceptions and attitudes towards health warnings on cigarette packages by smoking status of the participants (N=629)

Figure legends

a) Shows a higher proportion of non smokers perceived that the health warnings are effective compared to smokers and ex – smokers (60.6% vs. 54.3% & 43.6%).

b) Presents more than 90% of non smokers and ex-smokers repectively showed supportive attitudes towards the implementation of pictorial health warnings compared to smokers (77.5%).

c) Shows significantly higher proportion of ex-smokers stated that the health warnings are effective on quitting smoking compared to smokers (69.2% vs. 46.7%). The differences in perceptions between groups were shown to be statistically significant ($p=0.026$, $p<0.001$, $p=0.002$ respectively).

There were no significant differences between genders, age groups, and nationalities regarding their status of awareness

of the health warnings on cigarette packs. However, there was a significant difference among the participants who had university or higher education level and their counterparts as having higher education positively related to higher awareness among participants (p=0.001). Furthermore, 32.2% of males and 29.2% of females assessed pictorial warnings as more effective compared to text-only warnings. The comparison of the smokers and non-smokers on this issue demonstrated that 32.3% of the smokers and 28.9% of the non-smokers deemed pictorial warnings as having more impact, the difference of the two groups being non-significant as well.

Discussion

One of the strengths of the current study is to fill the knowledge gap on such an important public health issue by assessing the impact of the existing health warnings among the population, and particularly, the study is essential in the local context of Northern Cyprus as the prevalence of ever smoking among the general population was as high as 64% in 2008 [17].The high smoking rates in Northern Cyprus warrant serious measures for tobacco control throughout the country. In spite of the legislation of 2008, tobacco control measures have been weakly implemented due to lack of effective interventions and community action. The current study aimed to assess the impact of one of these measures for the first time in the region, namely health warnings on cigarette packages.The results of the current study could lay a preliminary foundation for the future nationwide research by the local government to amend the existing policy on health warnings on tobacco products.The present study investigated the awareness, perceptions and attitudes regarding the impact of health warnings on cigarette packages among a community in Nicosia. As a result, the frequency of smoking was established as 48.0%, higher than a previous survey conducted in Northern Cyprus in 2008 among adults, where the frequency of smokers in the last 30 days was 46.6%, with a lifetime smoker rate of 64%[17].The high smoking rate of the present study is in compliance with the current observations of the general population of Northern Cyprus, although representative smoking studies are yet not available.The rate of smoking was higher than smoking frequencies in Turkey for both genders, where recent smoking rates among adults were demonstrated as 27.5% for males and 8.4% for females[18].

Health warnings on cigarette packages have been a subject of the tobacco control community in recent decades as an effective tool for tobacco control interventions. Pictorial warnings increased quit attempts by keeping the message in smokers' minds [19][20]. Our study has manifested the perceptions of the participants regarding the efficacy of pictorial warnings. Of the respondents, 38% deemed pictorial warnings as more effective while 42% assessed a combination of the pictorial and text messages as having a greater impact.

Surveys consistently have shown that pictorial health warnings are “more likely to be noticed and read by smokers, remind of the health risks of smoking and increase motivation and intentions to quit”[11][19][21][22]. A study among Italian smokers found that 29% of quitters declared pictorial health warnings as one of the reasons to quit [23]. In the current study as well, 53.9% of the former smokers indicated that health warnings on cigarette packages were effective on their quitting process.

Our study disclosed the awareness of the efficacy of pictorial warnings and the significance of the strength of the pictures

exhibited on packages, similar to the data from two surveys carried out in 10 European countries covering 12600 participants, where responses were stronger to combined text and pictorial warnings than to text-only warnings. Combined warnings with an unknown pictorial content were more effective than pictorial warnings already in use, suggesting wear-out effects. The findings show that periodically introducing new pictures helps maintain warning effectiveness [24]. Further, rotation of pictorial warnings may prevent wear-out [25]. In the current study, 86% of the respondents pointed to the wear-out of impact of health warnings.

In spite of the data on the efficacy of pictorial health warnings, there are yet no pictorial warnings on cigarette packs in Northern Cyprus. Our study has indicated that 66% of the smoker participants were not aware of the text-only health warnings on cigarette packs, while the respondents of a study in Turkey, where rotational pictorials warnings exist, were aware of the warnings by 94% [26]. Although the text warnings have been implemented since 2008, only 34% of the smokers in our study were aware of the warnings in general. Besides, half of the smokers were not fully aware of the text warnings on their own cigarette packages. These findings may be reflective of the inefficacy of text-only warnings as well as of the stationary -instead of rotational- use of the warnings on packs.

There is evidence that the severity of the pictorial messages increases the impact of the warnings. The strongest pictorial health warnings received the highest believability and effectiveness ratings and the text-only warnings received the lowest in a study covering both smokers and non-smokers [27]. Our study as well has indicated this issue by sample pictorial warnings presented to the participants. The results demonstrated that more than half of the respondents evaluated the pictures exhibiting the most conspicuous and severe health conditions as most effective for tobacco control aims.

There are several limitations of the study to be noted. Firstly, as the cigarette packages have text-only warning labels in Northern Cyprus, the perceptions of the participants regarding pictorial warnings were evaluated by pictures on cigarette packages from Turkey as two countries have close cultural and language similarities. However, the perceptions might be relatively subjective as the participants had not been exposed to the cigarette packages with these pictures. Secondly, the descriptive study design with convenient sampling method might limit the reliability and generalizability of the study results to the entire Northern Cyprus population.

Conclusions

This study about the impact of health warning labels on cigarette packages among a special community in a city of Northern Cyprus has indicated that the participants are in a supportive attitude toward the warnings on packages. Non-smokers manifested more awareness and positive opinions about the warnings. Furthermore, pictures illustrating the most agressive health conditions were defined as the most effective of the warnings.The findings are in support of the role of pictorial warnings as a method of tobacco control and quitting smoking.

In spite of the data on the impact of pictorial health warnings on tobacco control, there are yet no pictorial warnings on cigarette packages in Northern Cyprus and text-only warnings are not rotational. The results of the study highlight the significance of using rotational pictorial health warning labels on cigarette packages in Northern Cyprus urgently.

What this paper adds

- What is already known on this subject

Northern Cyprus has established its policy on text-only health warnings on cigarette packages and the pictorial warnings are not mandatory yet. The smoking prevalence was reported to be as high as 66% among the general population.

- What important gaps in knowledge exist on this topic

Unlike most of the countries worldwide, there are no pictorial health warnings mandated by law in TRNC. There is no study conducted locally to evaluate the effectiveness of the existing health warnings on the cigarette packages and its effects on people's tobacco consumption.

- What this paper adds

As this is the first of its kind in studying people's perceptions towards health warnings and effects on tobacco consumptions, the majority of the smokers in the study have shown negative perceptions and attitude towards text-only warnings. The preliminary findings of the study highlighted the importance of inclusion of pictorial warnings tobacco packaging. Moreover, the study is expected to be the kick-start of more comprehensive, nationwide studies by the government and to provide strong evidence to change the tobacco packaging policy in the country.

Appendix

*This material is available from the Supplementary data section and can be downloaded*here*.*

Declaration of Interest

The authors declare that there are no conflicts of interest.

Author Contributions

Both author shave contributed to the conception and design, data collection, analysis, and interpretation of the data. OA drafted the work and GA read and revised it. Both authors have approved the submitted final version and agree to be personally accountable for all parts of the work presented.

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