

## COVID-19 Salgını Sırasında Öğrencilerin Sigarayı Bırakmaya Hazır Olma ve Sağlık İnanç Düzeylerine Göre Üniversite Kampüslerinde Tütünsüz Kampüs Politikasına Destek

Mehmet Ali KURÇER<sup>1</sup>, Gülşen KARACA<sup>2</sup>, Merve BEKTAŞ<sup>3</sup>

<sup>1</sup>Prof. Dr., Zonguldak Bülent Ecevit Üniversitesi, Tıp Fakültesi, kurcer@gmail.com,

ORCID : 0000-0003-2672-1079

<sup>2</sup>Arş. Gör. Dr., Zonguldak Bülent Ecevit Üniversitesi, Tıp Fakültesi, glsnkrc@gmail.com,

ORCID : 0000-0003-1209-9039

<sup>3</sup>Arş.Gör.Dr., Zonguldak Bülent Ecevit Üniversitesi, Tıp Fakültesi, mervebkt@gmail.com,

ORCID: 0000-0002-6300-547X

Geliş Tarihi/Received

18.08.2023

Kabul Tarihi/Accepted

27.11.2023

e-Yayın/e-Printed

08.02.2023

### ÖZET

Gençlerin %91,1'i kamuya açık kapalı alanlarda sigara yasağını desteklerken, %74,5'i açık alanlarda sigara içilmesinin yasaklanmasını istemektedir. Dumansız üniversite/kampüs için farklı ülkelerde örnekler mevcuttur. Konuyla ilgili uluslararası kuruluşların önerileri de mevcuttur. (Örneğin: Tüberküloz ve Akciğer Kanserine Karşı Uluslararası Örgüt tarafından hazırlanan kılavuz). Bu kılavuz dumansız üniversite/kampüs ile ilgili temel adımları içermektedir. Dumansız ve tütünsüz politikalar, Hastalık Kontrol ve Önleme Merkezleri (CDC) tarafından kapsamlı tütün kontrolü için en iyi uygulama olarak tavsiye edilmektedir. Bu çalışmada öğrencilerinde sağlık inanç modeline göre sigarayı bırakmaya hazır olma durumunun ve tütünsüz kampüs politikasına yönelik yaklaşımların tespit edilmesi amaçlanmıştır.

Öğrencilerin tütünsüz kampüs projelerine katılımını etkileyen faktörleri inceleyen bu kesitsel araştırmanın evrenini Zonguldak Bülent Ecevit Üniversitesi İbni Sina Kampüsü'nde tıp, diş hekimliği, hemşirelik, eczacılık fakülteleri ve sağlık hizmetleri meslek yüksekokullarından birinde öğrenim gören 1426 öğrenci oluşturmuştur. HBM-SCS (HBM-Sigara Bırakma Ölçeği) ve RSCS (Sigara Bırakmaya Hazır Olma Ölçeği) sigarayı bırakmaya hazır olma durumunu ve tütünsüz kampüs politikasına yönelik tutumları belirlemek için kullanılmıştır.

Öğrencilerin %47,8'i pandemide sigara içme davranışını değiştirmezken, %13,9'unun sigarayı artırdığını, %32,5'inin sigarayı azalttığını ve %5,7'sinin sigarayı bıraktığı tespit edilmiştir. 72,5'i tütünsüz kampüs politikasını desteklemeye isteklidir. 36,6'sı 6 ay içinde, %20'si ise 1 ay içinde sigarayı bırakmayı düşünmektedir. Tütünsüz kampüs politikasını desteklemeye istekli olan öğrencilerin HBM-SCS toplam puan ortalamaları ( $p=0.002$ ) ve RSCS toplam puan ortalamaları ( $p<0.001$ ) desteklemeyen öğrencilere göre anlamlı derecede yüksektir.

Tütünsüz kampüs politikaları gençler için kabul edilebilir ve sigara kullanımını önleyici olabilir.

**Anahtar kelimeler:** Tütünsüz kampüs politikası, Sigara bırakmaya hazır olma ölçeği, Sağlık inanç modeli sigara bırakma ölçeği, Sağlık inanç düzeyleri, Sigara içmek, Covid-19'da sigara

# Support for Tobacco-Free Campus Policy (Tfcp) in University Campus According to Readiness to Quit Smoking and Health Belief Levels of Students During the COVID-19 Pandemic

## ABSTRACT

%91,1 of young people support smoking bans in public indoor areas and %74,5 want smoking to be banned in open places. Examples are available in different countries for smokeless university/campus. Suggestions on the subject by international organisations also exist. (For example: The guideline prepared by International Organisation Against Tuberculosis and Lung Cancer.) This Guideline includes basic steps relating to smokeless university/campus. Smoke and tobacco-free policies are recommended by the Centers for Disease Control and Prevention (CDC) as a best practice for comprehensive tobacco control. It was aimed to detect readiness to quit smoking and approaches towards Tobacco free campus policy (TFCP) according to health belief model in university students during Covid-19 pandemic.

Population of this cross sectional research examining factors affecting students' participation in tobacco free campus projects consisted of 1426 students studying in one of the faculties of medicine, dentistry, nursing, pharmacy and vocational school of health services in İbni Sina Campus of Zonguldak Bülent Ecevit University. HBM-SCS (HBM-Smoking Cessation Scale) and RSCS (Readiness to Smoking Cessation Scale) were used to detect readiness to quit smoking and attitudes towards TFCP.

We detected that while %47,8 of the students didn't change smoking behavior in pandemic,%13,9 increased smoking,%32,5 reduced smoking and %5,7 quitted smoking. %72,5 had willingness to support TFCP. %36,6 thought of quitting smoking within 6 months and %20 thought of quitting smoking within 1 month. Means of HBM-SCS total scores ( $p=0.002$ ) and RSCS total scores ( $p<0.001$ ) in students who had willingness to support TFCP were significantly higher than students who didn't.

Tobacco free campus policies can be acceptable and preventive steps for young people.

**Key Words:** Tobacco free campus policy, Readiness to smoking cessation scale, Health belief model-smoking cessation scale, Health belief levels , Smoking , Smoking in covid-19

## INTRODUCTION

In our country %17,9 of 13-15 years old youngs use any tobacco product. This rate is about two times higher in boys (%23,2) than in girls (%12,1) . %53,2 of youngs who smoke currently want to quit smoking . In addition %91,1 of young people fortunately support smoking bans in public indoor areas and %74,5 of them also want smoking to be banned in open areas (GYTR,2017).

Examples are available in different countries for smokeless university/campus. Suggestions on the subject by international organisations also exist. (For example: A guideline prepared by International Organisation Against Tuberculosis and Lung Cancer.) The Guideline of International Organisation against Tuberculosis and Lung Cancer includes basic steps relating to smokeless university/campus such as smokeless indoors and outdoors, banning to sell any tobacco product inside the borders of campus/university, banning advertisement , promotion of any tobacco product and any sponsorship of tobacco industry , obstructing the contribution of tobacco industry to research facilities of universities and the youngs' career development , providing services that are easily accessible to those who want to quit smoking (Quan, 2021), (Ünüvar&Dişçigil, 2017)

It is also found that if youngs dont smoke till their 26s , they don't start smoking later. From this point of view it is seen that the most important approach against tobacco is preventing youngs from beginning smoking.

On the other hand the main reasons for youngs to begin smoking are emotional changes, difficulties in adaptation to individuals and environment , an effort to show that they are growing, rebellion againts adult authority and an effort to socialize with peers (Karalezli 2016).

In addition, banning smoking in public areas and indoors can be preventive steps for young people (Bilir, 2008). The current studies find that the policies for smokless university/campus decrease the prevalance of smoking, prevent from being passsive smoker , change desirably perceptions of youngs under peer pressure and increase social norms supporting smokless area (Lechner, 2012) , (Lee, 2013) , (Seo, 2011). Smoke and tobacco-free policies are recommended by the Centers for Disease Control and Prevention (CDC) as a best practice for comprehensive tobacco control, as they protect nonsmokers from environmental tobacco smoke, reduce social acceptability of tobacco use, help to prevent youngs from initiation, and increase users' efforts to quit (Ünüvar & Dişçigil ,2017) , (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014).

Variety of behavioral theories to explain the way of smoking cessation are enlightened at present. The mostly used model is health belief model on the subject. HBM-SCS (Health belief model-Smoking Cessation Scale) which was evolved from health belief model can be utilized to understand view of youngs in smoking cessation so that HBM-SCS (HBM-Smoking Cessation Scale) developed by Kurcer et al was used in this study (Kurcer & Erdogan, 2020). RSCS (Readiness to Smoking Cessation Scale) was also developed by Kurçer et al to detect how ready the students are to quit smoking (Kurcer & Erdogan, 2020).

In this study it is aimed to detect readiness to quit smoking and approaches towards tobacco free university/campus according to health belief system in university students.

## METHOD

The research was done in faculties in İbni Sina campus of Zonguldak Bülent Ecevit University between november and december in 2020 .

Population of this cross sectional research examining factors affecting students' participation in tobacco free campus projects consisted of 1426 students who studied in one of the faculties of medicine, dentistry, nursing, pharmacy and vocational school of health services in İbni Sina Campus of Zonguldak Bülent Ecevit University .

Sample size was calculated as  $n = Z_{0.975} * p(1-p) / MOE^2 = 1.9599642 * 0.5(1-0.5) / 0.032^2 = 1068$  with %95 power and %95 confidence interval. It was aimed to reach 1175 students with %10 spare students. 1126 (%95.8) students participating composed the sample of this research.

First of all , students were informed about the research to provide voluntary participation . The Questionnaire consisting of questions relating to sociodemographic features, smoking and smoking cessation behaviors during Covid-19 pandemic, the scales named as "Readiness to smoking cessation scale" (RSCS) and "Health Behavior Model Smoking Cessation Scale" (HBM-SCS) developed by Kurcer et al were administered (Kurcer & Erdogan, 2020). The first 12 questions were about age, gender , faculty , grade, financial status , state of Covid-19 vaccination , smoking habit presence , duration of smoking habit and amount of smoking , effect of Covid-19 pandemic on smoking behavior. The behaviors of the smokers towards smoking cessation were determined by HBM-SCS and RSCS.

19 items were present in HBM-SCS . Each item had 5 likert answer options. These answers were scored in order from I strongly disagree:0 to I strongly agree:5. Cronbach alpha coefficient of HBM-SCS was found as 0.820. HBM-SCS had 6 subscales consisting of perceived susceptibility (7 items), perceived benefits (5 items), perceived severity (1 item), perceived barriers (2 items), cue to action (3 items), self-efficacy (1 item). 76 was the maximum obtainable score in this scale.

18 items were present in RSCS. Each item had 5 likert answer options. These answers were scored in order from I strongly disagree:0 to I strongly agree:5. RSCS had 4 subscales named Intention stability (10 items), Self-Control(4 items), Compliance (2 items) , Awareness(2 items) . 90 was the maximum obtainable score in this scale. The Cronbach Alpha coefficient of RSCS was calculated to be 0.874. The number of rotations was determined.

Statistical analysis of data obtained in the research were evaluated by IBM SPSS for Windows version 22.0. The variables were shown to fit normal distribution by Kolmogrov Smirnov test. Student t test was used in analysis of binary continuous variables and ANOVA in analysis of multiple variables . While Arithmetic mean  $\pm$  standart deviation was presented as  $X \pm SD$ , categorical variables were presented as number (n) and percent (%). Chi-square analysis was used to compare percentages of categorical variables.  $P < 0.05$  was accepted as statistical significance in all tests used.

## RESULTS

This study included 1126 students in Zonguldak Bülent Ecevit University Health Campus.

Data of Sociodemographic features and opinions of students about effect of smoking on healing process from Covid-19 were given in table 1.

**Table 1:** Sociodemographic features and opinions of students about effect of smoking on healing process from Covid-19

(n =1126)

Sociodemographic features			
		(n)	(%)
Age (mean $\pm$ Std) : (20,66 $\pm$ 2,15)			
Gender	Female	838	(74.4)
	Male	288	(%25,6)
Faculty	Medicine	424	(%37,8)
	Nursing	308	(%29,3)
	Dentistry	85	(%7,5)
	Pharmacy	69	(%6,1)
	Vocational school of health services	240	(%21,3)
	1st	338	(%30,0)

<b>Grade</b>	<b>2 nd</b>	345	(%30,7)
	<b>3 rd</b>	216	(%19,2)
	<b>4 th</b>	85	(%7,5)
	<b>5 th</b>	106	(%9,4)
	<b>6 th</b>	36	(%3,2)
<b>Smoking status</b>	<b>Smoker</b>	183	(%16,3)
	<b>Not smoker</b>	877	(%77,9)
	<b>Quitted</b>	65	(%5,8)
<b>Effect of smoking on healing process from Covid-19</b>	<b>Heavy</b>	1052	(%93,4)
	<b>Mild</b>	11	(%1)
	<b>No effect</b>	63	(%5,6)
<b>Table:1</b>			

The mean age of students was found as  $20,66 \pm 2,15$ . The females' was ( $20,51 \pm 1,93$ ), the males' was ( $21,10 \pm 2,67$ ). 838 (%74.4) of students were female and 288 (%25,6) were male . 424 (%37,8) of 1126 students surveyed were in faculty of medicine, 85 (%7.5) in faculty of dentistry , 69 (%6.1) in faculty of pharmacy, 308 (%29,3) in faculty of nursing, 240 (%21,3) in vocational school of health services. 338 studens (%30,0) were in 1 st, 345 (%30,7) in 2 nd, 216 (%19,2) in 3 rd, 85 (%7,5) in 4 th, 106 (%9,4) in 5 th and 36 (%3.2) in grade 6 th. 183 (%16,3) students were smoker , 877 (%77,9) were not smoker, 65 (%5,8) were the ones who had quitted smoking. 1052 (%93,4) students stated that smoking caused heavy healing process from Covid-19 infection , 11 (%1) stated that smoking caused mild healing process from Covid-19 infection , 63 (%5,6) stated that smoking didn't effect on healing process from Covid-19 infection.

Age, gender, faculty and willingness to support TFCP of the students were given in table 2.

**Table 2:** Age, gender, faculty and willingness to support TFCP of the students were given in table 2

( n=1091)

<b>Willingness to support actively a TFCP</b>						
		<b>Supporting</b>		<b>Not supporting</b>		<b>p</b>
		<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	
<b>Age</b>	<b>19 and under</b>	254	70,0	109	30	0,226
	<b>20 and over</b>	534	73.5	193	26.5	
<b>Gender</b>	<b>Female</b>	637	79.6	183	60.4	<0,0001
	<b>Male</b>	163	20.4	120	39.6	
<b>Faculty</b>	<b>Medicine</b>	305	73.1	112	26.9	0,006
	<b>Dentistry</b>	54	64.3	30	35.7	
	<b>Pharmacy</b>	42	64.6	23	35.4	
	<b>Nursing</b>	256	78.8	69	21.2	
	<b>Vocational school of health services</b>	134	67,0	66	33	
	<b>Smoker</b>	58	31,9	124	40,8	

Smoking Status	Not smoker	693	80,7	166	19,3	<0,0001
	Quitted	50	78,1	14	21,9	
	Total	791	72,5	300	27,5	

Table:2

In this study, 72.5% of the students had willingness to support TFCP. There was not statistical difference between the students who were 19 years and under and the ones who were 20 and over in terms of willingness to support actively TFCP ( $p=0,226$ ). Female students (%79,6) had significantly more willingness to support actively TFCP comparing the male students (%20,4) ( $<0,0001$ ). Students in faculty of medicine (%73,1) and in faculty of nursing (%78,8) had significantly more willingness to support actively TFCP comparing the students in faculty of dentistry (%64,3), faculty of pharmacy (%64,6) and vocational school of health services (%67). ( $p=0,006$ ). The students who were not smoker (%80,7) and had quitted smoking (%78,1) had significantly more willingness to support actively TFCP comparing to the students who were smoker (%31,9) ( $<0,0001$ ) (Table 2).

Information about attitudes and behaviors of students who were smoker in Covid-19 pandemic were given in table 3.

Table:3 Attitudes and behaviors of students who were smoker about TFCP in Covid-19 pandemic

How was your smoking behavior in pandemic?	No change	100	(47,8)
	Increased	29	(13,9)
	Reduced	68	(%32,5)
	Quitted	12	(5,7)
Do you think of quitting smoking within 6 months ?	Yes	68	(%36,6)
	No	118	(%63,4)
Do you think of quitting smoking within 1 month ?	Yes	37	(%20,0)
	No	148	(%80)

Table 3

While %47,8 of the students didn't change smoking behavior in pandemic, %13,9 increased smoking, %32,5 reduced smoking and %5,7 quitted smoking. %36,6 of those participating in the research thought of quitting smoking within 6 months and %20 thought of quitting smoking within 1 month.

Comparison of means in HBM-SCS and means in RSCS in the students according to their gender were given in table 4.

Table 4: Comparison of means in HBM-SCS and means in RSCS in the students according to their gender.

HBM-SCS	Female Mean±Std	Male Mean±Std	p
Perceived susceptibility	21,82± 7,76	21,87 ± 7,90	0,962
Perceived severity	3,02 ± 1,29	3,52 ± 1,43	<b>0,015</b>
Perceived benefits	17,00 ± 5,96	18,52 ± 6,20	0,092
Perceived barriers	6,33 ± 1,78	6,65 ± 1,30	0,093
Cue to action	8,01 ± 2,77	7,84± 2,52	0,165
Self efficacy	3,86± 1,41	4,05 ± 1,28	0,679
HBM-SCS Total	60,10± 15,26	63,07± 15,01	0.202
RSCS			

Self control	13,91 ± 5,35	13,69 ± 4,70	0,444
Compliance	6,54 ± 2,74	6,84 ± 2,46	0,648
Awareness	7,57 ± 2,52	7,40 ± 2,60	0,649
Stable to quit	30,50 ± 11,10	34,60 ± 10,90	<b>0,017</b>
<b>RSCS Total</b>	<b>58,65 ± 17,68</b>	<b>62,35 ± 16,44</b>	<b>0,167</b>
<b>Table:4</b>			

As it is seen in table 4, there was not significant difference in means of total scores obtained from HBM-SCS ( $p=0,002$ ) and RSCS ( $p=0,167$ ) in terms of gender but perceived severity in HBM-SCS ( $p=0.015$ ) and means of scores in subscales of RSCS ( $p=0,017$ ) were significantly higher in males. There were not significant difference between the scores obtained from the other subscales of both HBM-SCS and RSCS ( $p>0.05$ )

Means of scores in HBM-SCS and RSCS according to sociodemographic features and individual characteristics were given in table 5.

**Table 5:** Means of scores in HBM-SCS and RSCS according to sociodemographic features and individual characteristics

Sociodemographic features and individual characteristics	Mean of total score in HBM-SCS ±Std	P	Mean of total score in RSCS ±Std	p
<b>Age</b>				
19 and under	62,32 ± 0.51	0,889	62,91 ± 14,79	0,127
20 and Above	62,23 ± 0.12		59,7 ± 17,74	
<b>Faculty</b>				
Medicine	63,42 ± 13.42*	<b>0.041</b>	63.14 ± 14,42*	<b>0.026</b>
Dentistry	63,22 ± 15.52*		65,87 ± 17,36*	
Pharmacy	56,00 ± 12.12		52.66 ± 14,45	
Nursing	62,26 ± 16.28*		61.27 ± 14,23*	
Vocational school of health services	57,32 ± 14.43		56,20 ± 16.13	
<b>Grade</b>				
1st	60,81 ± 17.32	<b>0.016</b>	61.45 ± 18,95	<b>0.012</b>
2nd	61,03 ± 17.12		57,48 ± 18,58	
3 rd	61,62 ± 16.51		58,33 ± 17,74	
4 th	63,02 ± 17.12*		64.27 ± 14,79*	
5 th	65,53 ± 17.51*		69,53 ± 19.24*	
6 th	63,57 ± 17,94*		65,85 ± 18,57*	

<b>Financial status</b>				
Low	62,53 ± 18.24*		64.57±14,79*	
Middle	62,33 ± 15.12*	<b>0,033</b>	62,18±17,74*	<b>0,014</b>
High	58,42±17.24		59.57±14,79	
<b>Attempting to quit smoking</b>				
Attempted	63,58 ± 14.93*	<b>0.019</b>	59.26±17,56	0,729
Not attempted	58,54 ± 15.15		61,27±16,26	
<b>Do you think of quitting smoking within 6 months?</b>				
Yes	65,47 ± 15.74*	<b>0,002</b>	62.90±15,64*	<b>0,002</b>
No	59,05 ± 13.91		58,8±17,21	
<b>Do you think of quitting smoking within 1 month ?</b>				
Yes	67,67 ± 13.31*	<b>0,001</b>	64.31±16,42*	<b>0,031</b>
No	59,80 ± 14.39		59,28±17,23	
<b>Attitude towards quitting smoking during remote education period</b>				
Yes		0,568	55,70 ± 14.89	0,119
No	59,68 ± 14.89		56,85 ± 16,89	
	59,41 ± 16,89			
<b>Supporting TFCP</b>				
Yes	67,44 ± 14.89*	<b>0,002</b>	65,70 ± 13.62*	<b>&lt;0,0001</b>
No	58,37 ± 16,89		56,85 ± 16,89	
<b>Table:5</b>				

There was not significant difference in means of HBM-SCS and RSCS total scores in terms of age groups and attitude towards quitting smoking during remote education period ( $p>0.05$ ). Means of HBM-SCS total scores ( $P=0.041$ ) and RSCS total scores ( $p=0.026$ ) in medicine, dentistry and nursing students were significantly higher than students in pharmacy and vocational school of health services. Means of HBM-SCS total scores ( $p=0.016$ ) and RSCS total scores ( $p=0.012$ ) in grade 4-5-6th students were significantly higher than grade 1-2-3th students. Means of HBM-SCS total scores ( $p=0.033$ ) and RSCS total scores ( $p=0.014$ ) in students who perceived their financial status as low and middle were significantly higher than students who perceived their financial status as high. Means of HBM-SCS and RSCS total scores in students who thought of quitting smoking within both 1 and 6 months were significantly higher than the students who didn't think of quitting smoking. (respectively  $p=0,002$ ,  $p=0.002$ ,  $p=0.001$ ,  $p=0.031$ ).

There was not significant difference between HBM-SCS and RSCS total scores in terms of attitudes towards quitting smoking during Covid-19 pandemic. ( $p=0,568$  and  $p=0,119$ )

Means of HBM-SCS total scores ( $p=0.002$ ) and RSCS total scores ( $p<0.001$ ) in students who had willingness to support TFCP were significantly higher than students who didn't.

## DISCUSSION AND CONCLUSION

74.4% of the students who participated in this study were female and 25.6% were male. Mean age of the students was  $20,66 \pm 2,15$ . Smoking prevalence of the students in medical faculty was %16,3. This rate was lower than the one in students of Düzce medical faculty found by Mayda et al. in 2009 (%31.3) and by Yengil et al in 2014 (%25,7). Despite the fact that these researches were done in nearby regions, the reason for lower prevalence in this research might be said to be due to tendency to decrease in prevalence over years (Yengil, 2014), (Mayda, 2009).

Ratios of the students who desired to quit smoking within 6 months and 1 month were found as %36.6 and %20,0.

%62.2 of the 712 students thought of quitting smoking in the research done by Yengil E. et al (Yengil, 2014). %51.9 of the students studying in medical faculty thought of quitting smoking and %32,1 experienced to quit smoking in the research in Zonguldak done by Er et al (Er & Kurçer, 2020). In this study ratios of desire to quit smoking were much lower regardless of short and long term than other studies.

It is known that approximately fifteen percent of people who relapse regress to the pre-contemplation stage and often try to suppress the memory of the unsuccessful attempt and thoughts of the negative behavior. People who relapse regress to the pre-contemplation stage might increase due to lack of tobacco cessation support during Covid-19 pandemic so that probable too many attempts on reducing and quitting smoking during Covid-19 pandemic might explain the low ratios of desire to quit smoking in this research (Er & Kurçer, 2020), (Prochaska 1992).

%13.9 of the students increased smoking, %32,5 reduced smoking and %5.7 quitted smoking during Covid-19 pandemic. As it is seen that nearly half of the students in this research reduced or quitted smoking and most of the students showed tendency to change smoking habit in Covid-19 pandemic.

This could indicate that there has been no actual increase in smoking cessation during the pandemic; however, even if there are some changes in the coming months, the Covid-19 pandemic is probably far from over and will continue as a public health issue. We hope that public health messages will focus on smoking cessation to improve lung health during this continued pandemic. Smoking cessation campaigns are important as smokers are more vulnerable to viral infections and lung diseases, as well as appear to have worse outcomes when hospitalised with Covid-19 than non-smokers (Park, 2018), (Arcavi & Benowitz, 2004), (Vardavas C & Nikitara 2020).

In this study female students (%79,6) had significantly more willingness to support actively TFCP comparing the male students (%20.4) ( $<0.0001$ ). Similarly to this study Kecojevic et.al. found that female participants were more supportive of a tobacco-free policy so that it may be said that we can benefit more from females in our TFCP campaigns.

Kecojevic also found that tobacco users were less likely to support tobacco free policies and among students, sophomores were significantly less likely than graduate students to support tobacco-free policy.. All these findings were consistent with the findings of our study (Kecojevic, 2020).

The students who were not smoker (%80,7) and had quitted smoking (%78,1) had significantly more willingness to support actively TFCP comparing to the students who were smoker (%31,9) ( $<0,0001$ ).

In this study the ratio of the students supporting TFCP was very high (%71,1). %49,9 of the medical students in Trabzon supported tobacco free policies in the research done by Özcan et al. The surveys demonstrated strong support for the tobacco free policies among students, staff and faculty with over 70% support in each category in both years (Ricardo, 2020).

Tobacco-users were significantly less likely to support TFCP. In the study of Kecojevic et al. the bivariate analyses indicated that all four of the tobacco use variables (cigarettes, smokeless tobacco, e-cigarettes, and non-cigarette combustibles) were strongly associated with tobacco-free policy opposition. These findings suggest that there is need to develop policies that will break the opposition of smoking students to TFCP (Kecojevic, 2020).

In this study, 72.5% of the students want to support TFCP. According to the research of Çalışkan et al. 28.4% of the students and 48.8% of the employees stated that they would voluntarily participate in the smoking cessation campaigns to be organized within the scope of the faculty. According to the students in the study, it is quite pleasing that they stated that they would support DFCP at a fairly high rate. These differences may be related to the years when the studies done and the cities where the Universities are located (Çalışkan 2005).

In this research the findings showed very high rates of having willingness to take place in TFCP in addition to low rates of smoking. The students of medicine, dentistry and nursing supported TFCP significantly more than the students in pharmacy and Vocational school of health services. Similarly to this study, Mamudu et al. showed that the study participants significantly associated with increased likelihood of support for the tobacco-free campus policy were females, being a faculty or an administrator/professional and affiliated with the College of Medicine (Mamudu, 2012).

In this study students stated smoking greatly aggravated the course of Covid-19 disease (93.4%). Patanavanich et. al. showed that smoking was a risk factor for progression of Covid-19, with smokers having 1.91 times the odds of progression in Covid-19 severity than never smokers (Roengrudee, 2020).

This finding showed that the vast majority of university students had the right knowledge about the relation between smoking and Covid-19 progress. This situation was reflected to some extent on the smoking status of the students who smoked during the pandemic which %6 of the students who were smoker quitted smoking and one third reduced. Jackson et. al. found that following the Covid-19 lockdown, smokers and high-risk drinkers in England were more likely to report trying to quit smoking or reduce alcohol consumption than before and rates of smoking cessation and use of remote cessation support were higher.

Despite this positivities %14 of the students increased smoking. The smoking state of nearly half of the students didn't change during the pandemic. All this data may indicate the difficulty of providing smoking cessation support and applying TFCP during the pandemic period (Jackson, 2021).



This findings might also show that Covid-19 lockdown increased to smoking cessation potential . However, the ratio of the students thinking of quitting smoking within 1 month was low (%20.0). Although they were aware of bad consequences of addiction, factors affecting behavioral change in the students were examined in scales called HBM-SCS and RSCS developed by Kurçer et al (Kurcer & Erdogan, 2020). but still less is known about determinants of readiness to quit smoking (Zhou, 2009).

The evaluation of one's readiness for smoking cessation is the first provider activity that actually can be viewed as an intervention. If a patient is not ready for change , provider attempts at intervention will fail (Prochaska, 1983).

For this reasons It was important to determine how ready the ones who wanted to quit smoking . RSCS is the first scale in the field developed by Kurcer et al to determine readiness of patients to smoking cessation (Kurcer & Erdogan , 2020).

When RSCS points were evaluated in the students participating the research there was not significant difference in aspect of age, state of trying to quit smoking and state of trying to quit smoking during pandemic.

This findings showed that readiness of the students to quit smoking and HBM-SCS score were similar, no matter what the attitude of the students towards quitting smoking during pandemic so that it could be conceivable that similar interventions could be applied without discrimination among groups. However, while HBM-SCS scores of the students who tried to quit smoking were higher than the ones who didn't try , RSCS mean scores didn't have significant difference so that it might show necessity of HBM oriented behavioral interventions for the students especially who didn't try to quit smoking, RSCS mean scores of the students studying in faculty of medicine, nursing and dentistry were significantly higher than the ones studying in faculty of pharmacy and vocational school of health services ( $p=0.026$ ). RSCS mean scores of the students who were grade 4th, 5th and 6th were significantly higher than the ones who were grade 1st, 2nd and 3th ( $p=0.012$ ). RSCS mean scores of the students whose financial status were low and middle were higher than the ones whose financial status was high ( $p=0.014$ ).

While TFCP intervention policies are prepared it is better to pay attention to that the departments directly relating to diagnosis and treatment of patients in the health campus were more prone to smoking struggle and smoking cessation. RSCS mean scores of the students who thought of quitting smoking within 6 months or 1 month and the ones who developed attitude towards quitting smoking during pandemic were significantly higher than others.

There was not significant difference between HBM-SCS and RSCS total scores in aspect of attitudes towards smoking cessation during the remote education period in Covid-19 pandemic.

Means of HBM-SCS total score ( $p=0.002$ ) and RSCS total score ( $p<0.001$ ) in students who desired to support TFCP were significantly higher than students who didn't desire to support

## LIMITATIONS

Face to face application method was not available due to Covid-19 pandemic , which reduced participation rates in the research

## REFERENCES

- Akvardar, Y. , Demiral, Y. & Ergor, G. (2004). Substance use among medical students and physicians in a medical school in Turkey. *Soc Psychiatry Psychiatr Epidemiol*; 39:502-6.
- Arcavi, L. , & Benowitz, N.L. (2004). Cigarette smoking and infection. *Arch Intern Med*, Nov 8;164(20):2206. doi: 10.1001/archinte.164.20.2206
- Asut, Ö. (1993). Hekim ve Sigara [Physician and Cigaret.] Turkish medical association publications, First edition
- Bilir, N. (2008). Sigarayı Bırakma Yolları ( Sigaranın Zararlı Etkilerinden Korunma) [The ways to cessate smoking (Protection From Harmful Effect of smoking)]. Ministry Of Health, publication no:731, s. 7
- Çalışkan, D. , Çulha, G. , Sarışen, Ö. , Karpuzoğlu, S. ,Tunçbilek, A. (2005). Ankara Üniversitesi Tıp Fakültesi öğrenci ve çalışanlarının sigara içme durumu ve etkili faktörler. [Smoking status and affecting factors in the students and workers in Ankara University Faculty of Medicine] *Ankara Üniversitesi Tıp Fakültesi Mecmuası*, 58.3: 124-131.
- Er, T. , Kurçer, M. A. (2020) . Tıp Fakültesi 1. ve 6. Sınıf Öğrencilerinin Sigara İçme Davranışları ve Anksiyete Düzeyleri [Smoking behaviors and anxiety levels of 1 st and 6 th grade medical students.] *Publication of Addiction*, 21.3: 201-209
- Erbaycu, A. E. , Aksel, N. ,& Çakan, A. (2004). İzmir ilinde sağlık çalışanlarının sigara içme alışkanlıkları [ Smoking Habit of Health Professionals in İzmir City.]. *Turkish Thoracic society*, 5:6-12.
- Gunes, G. , Karaoglu, L. , & Genc, M. F. (2005). University hospital physicians' attitude and practices for smoking cessation counseling in Malatya, Turkey. *Patient Educ Couns*, 56:147-53.
- Güleç, M. , Bakır, B. , & Ozer, M. (2005) . Association between cigarette smoking and depressive symptoms among military medical students in Turkey. *Psychiatry Res*, 134:281-6
- Heatherton, T. F. , Kowlofski, L. T. , Frecker, R. C. ,& Fagerström, K. O. (1991). The Fagerström Test for Nicotine Dependence: a revision of the Fagerström Tolerance Questionnaire. *Br J Addict*, Sep, 86(9):1119-27. doi: 10.1111/j.1360-0443.1991.tb01879.x

- Inandi, T. , Caman, O. K. , & Aydın, N. (2013). Global Health Professions Student Survey--Turkey: second-hand smoke exposure and opinions of medical students on anti-tobacco law. *Cent Eur J Public Health*, 21(3):134-39
- Jackson, S. E. (2021). Association of the COVID-19 lockdown with smoking, drinking and attempts to quit in England: an analysis of 2019–20 data. *Addiction*, 116.5: 1233-1244.
- Karalezli, A. (2016). Gençlik ve Sigara Bırakma Tedavileri [Youth and Smoking Cessation Treatments.]. *Current Chest Diseases series*, 4(1): 128-135
- Kecojević, A. (2020). Support for 100% Tobacco-Free Policy on a College Campus in New Jersey: Differences between students and faculty/staff. *Journal of Public Health*, 1-10
- Kocabas, A. , Burgut, R. & Bozdemir, N. (1994). Smoking patterns at different medical schools in Turkey. *Tob Control*, 3(3):228-35
- Kurcer, M.A. , & Erdogan, Z. (2020). A scale development study: The readiness to smoking cessation scale. *Ann Med Res*, 27(9):2391-5 2391
- Kurcer, M.A. , & Erdogan, Z. (2020). Development Of The Smoking Cessation Scale According To Health Belief Model. *Health sciences journal of Acibadem University*, 11(3):464-470.
- Lechner, W.V. , Meier, E. , Miller, M.B. , Wiener, J.W. , & Fils-Aime, Y. (2012). Changes in smoking prevalence, attitudes, and beliefs over 4 years following a campus-wide anti-tobacco intervention. *J. Am. Coll. Health*, 60, pp. 505-511
- Lee, J.G.L , Ranney, L. M. ,& Goldstein, A.O. (2013). Cigarette butts near building entrances: what is the impact of smoke-free college campus policies?. *Tob. Control* , 22, pp. 107-112
- Mamudu, H. M. (2012). University personnel's attitudes and behaviors toward the first tobacco-free campus policy in Tennessee. *Journal of Community Health*, 37.4: 855-864.
- Mayda, S. A. (2009). The relationship between the prevalence of depressive symptoms in the students of medical faculty with demographic characteristics, cigarette, alcohol and substance use, dominant hand and exposed violence *tıbbi bilimler dergisi*, 2.4: 476-483
- Park, J. - E. , Jung, S. , & Kim, A. (2018). MERS transmission and risk factors: a systematic review. *BMC Pub Health*, Dec 2;18(1):574. doi: 10.1186/s12889-018-5484-8.
- Quan, G.(2021) Reflections On The 'Other Cop' – Progress On Tobacco Control Despite Covid And Industry Attacks. [https://www.theunion.org/what-we-do/publications/english/pubtc\\_campus-factsheet-en.pdf](https://www.theunion.org/what-we-do/publications/english/pubtc_campus-factsheet-en.pdf).
- Prochaska, D. O. , Diclemente, C. C., & Norcross, D. C. (1983). Stage and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51, 390–395.
- Prochaska, J. O. , DiClemente, C. C. , & Norcross, J. C. (1992). In search of how people change. Applications to addictive behaviors. *Am Psychol*, Sep;47(9):1102-14.
- Ricardo, J. (2020). Effects of a campus-wide tobacco-free policy on tobacco attitudes, norms and behaviors among students, staff and faculty. *Journal of American College Health*, 1-12.
- Roengrudee, P. (2020). Smoking Is Associated With COVID-19 Progression: A Meta-analysis. *Nicotine & Tobacco Research*, Volume 22, Issue 9, September, Pages 1653–1656, <https://doi.org/10.1093/ntr/ntaa082>
- Sahin, E. M. , Ozer, & C. Dağdeviren, N. (2005). Physicians Smoke as much as their Patients in Turkey. *Middle East Journal of Family Medicine*, 3(2):1-7.
- Schwartz, J. L. (1992). Methods of smoking cessation. *Med Clin North Am*, 76:451-76.
- Schwartz, J. L. (1987). Review and Evaluation of Smoking Cessation Methods: The United States and Canada, 1978-1985. NIH publications; 87- 2940, 1987; pp:125- 156
- Seo, D.-C. , Macy, J.T. , Torabi, M.R. ,& Middlestadt, S.E. (2011). The effect of a smoke-free campus policy on college students' smoking behaviors and attitudes. *Prev. Med.* , 53 , pp. 347-354
- Şenol, Y. , Dönmez, L. , & Turkey, M. (2006). The incidence of smoking and risk factors for smoking initiation in medical faculty students: cohort study. *BMC Public Health*, 6:128.
- T. C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü. (2017). Küresel Gençlik Tütün Araştırması,(KGTA-2017) [Global Youth tobacco research (GYTR-2017)]
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. ( 2014). The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta, GA.
- US Department of Health and Human Services-Public Health Service (June,2020). Clinical Practice Guideline Treating Tobacco Use and Dependence

Ünivar, E. M. , & Dişçigil, G. (2017) . Sigarayı bırakma girişimlerinde başarıyı etkileyen faktörler - Hekim adayları örneği [Smoking cessation attempts and associated factors with success – Medical students sample.] Jour Turk Fam Phy, 08 (3): 57-65. Doi: 10.15511/tjtfp.17.00357

Vardavas C., Nikitara K. (2020). COVID-19 and smoking: a systematic review of the evidence. <http://www.journalssystem.com/tid/COVID-19-and-smoking-A-systematic-review-of-the-evidence>

Yengil, E. (2014). Smoking Among Medical School Students and Attitudes against Smoking. *Konuralp Medical Journal*, 6.3: 1-7.

World Health Organization. Implementing tobacco control. Available from <http://www.who.int/tobacco/control/en/>.

World Health Organization Tobacco Free Initiative. (2004). Building blocks for tobacco control. A handbook ( p. 4-13.)

World Health Organization. Why tobacco is a public health priority. Available from [http://www.who.int/tobacco/health\\_priority/en/](http://www.who.int/tobacco/health_priority/en/)

Zhou, X. (2009). Attempts to quit smoking and relapse: factors associated with success or failure from the ATTEMPT cohort study. *Addictive behaviors*, 34.4: 365-373

