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Research Article

The Evaluation of Tobacco use and Respiratory Symptoms and Findings of Senior Year Students in our Hospital during the COVID-19 Pandemic Period

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Abstract

Objective

In this study, we aimed to evaluate the tobacco addiction of senior medical school students and senior vocational health academy students in our hospital. Another purpose was to observe the changes in the tobacco addiction attitudes and behaviors of these students during the COVID-19 pandemic period. We evaluated the respiratory system examinations of these students in detail. By detecting their respiratory system pathologies, we postponed active work in the hospital during the COVID-19 pandemic period. The students in the risk group returned to their education after their vaccinations were completed.

Methods

Three hundred and twenty-seven consecutive students were enrolled in the study. Of these students, 127 were senior-year vocational health academy students. Of the students, 165 (69%) were women and 72 (30%) were men. Fifty-four of the students (16%) were using tobacco products, 258 (78%) were not. Cigarette was the most commonly used tobacco product, being smoked by 59 participants (80%). In respiratory system examinations, rales and rhonci were heard in 3

and 18 students, respectively. Bronchiectasis was detected in 3 students.

Results

The tobacco addiction rate in potential healthcare professionals is almost the same as in society. During the pandemic period, this rate was high and seem like it was not affected by the pandemic. COVID disease is more severe when there is an underlying pulmonary disease. For this reason, students with respiratory system pathology were not actively employed in the hospital until their vaccinations were completed.

Keywords: Tobacco addiction; COVID-19; Health Sciences Students

1. Introduction

COVID-19 is a respiratory disease caused by the SARS-CoV-2 virus [1]. Tobacco smoking has been recognized as a bad risk factor for SARS-CoV-2 infection. During the pandemic period; stress, unknown aspects about the disease, anxiety, depression, confusion, and state of quarantine have affected all societies of the world. The pandemic has firstly adversely affected healthcare professionals who healed COVID-19 patients [2]. We investigated the effects of this situation on the tobacco addiction behaviors of our university senior students. Students were evaluated by performing respiratory system examinations and tests. During the pandemic period, the education of university students could not be done face-to-face for a long time in our country. From the beginning of the pandemic period, distance education was not possible. After the vaccines came out and the vaccinations were completed, with the healthcare professionals being prioritized, universities were opened to education completely. The final-year medical school students and vocational health academy students received active training in hospitals. It would be correct to evaluate these two student groups as healthcare professional candidates. Healthcare professional candidates also isolated themselves from their families and worked in the hospital for educational purposes. There are many studies showing that the rate of depression and anxiety increases among healthcare professionals as in the general population [3-7]. It is obvious that in this extraordinary period, anxiety, stress, and depression increase in healthcare professional candidates. Stress and anxiety increase tobacco addiction. In this case, tobacco addiction could increase among the healthcare professional candidates due to stress [8]. On the contrary, knowing that tobacco addiction causes a more severe course of COVID-19 disease can reduce tobacco addiction [9]. We evaluated the tobacco addiction status and characteristics of healthcare professional candidates at our university. By performing respiratory system examinations, we identified risky persons to be present in the hospital.

2. Materials and Methods

2.1 Study design

The study is a prospective, cross-sectional, and descriptive study. It was carried out in our hospital in April-May 2021.

2.2 Sample population

Sixth-grade medical school students and vocational health academy students who will spend their senior year between 2021-2022 and who will study actively at our university hospital were included in the study.

Exclusion criteria were as follows: those who do not want to participate in the study, those who are not eligible for the senior year.

2.3 Ethical approval

This study was approved by the University local ethics committee (2021/100), and informed written consent was obtained from the students.

2.4 Measurement method

In the two-stage study, firstly, a questionnaire about tobacco addiction, which was previously included in the literature and was created with theoretical knowledge, was applied face-to-face. In this questionnaire, the first part included sociodemographic findings such as age, gender, and the department the students study. The second part included tobacco addiction, its severity, characteristics, cause, affecting conditions, cessation wishes and experiences, the effect of the COVID-19 pandemic on these addictions, and their desire to reduce or increase tobacco use. The third section questioned the respiratory system symptoms (cough, sputum, hemoptysis, chest pain, shortness of breath) in detail. This survey was not validated prior to this research. Afterward, anamnesis of the students in terms of the respiratory system was taken, examinations were made, and chest radiographs of all of the students were examined. Thorax computed tomography and pulmonary function tests were performed when deemed necessary. Among the students, those who are at risk in terms of work were determined.

2.5 Statistical analysis

The obtained data were collected in the Statistical Package for Social Sciences (SPSS) 20.0 program. Results were evaluated with chi-square test and correlation analysis. The normality of the distribution of the observed numerical variables was tested using the Kolmogorov Smirnov test. $p<0.05$ values were considered statistically significant.

3. Results

3.1 Descriptives

The demographic findings and descriptive characteristics of the participants are given in Table 1. The population in this study represents the universe. There were 165 (69.6%) female and 72 (30.4%) male students. The mean age of the students was 22.6 ± 0.07. Two hundred of the students were medical faculty and 127 were vocational health academy students. The number of tobacco users among all students was 68 (20.7%). Twelve of the students had asthma, 6 had thyroid dysfunction, 1 had malignancy, 1 had diabetes, 2 had migraine.

Gender	**n**	**%**
Female	165	69.6
Male	72	30.4
Age	327	100
22.6±0.71		
Tobacco Addiction		
Yes	68 (44 Male)	20.7
No	259	79.3
Type of Tobacco		
Shisha	7	10.1
Roll-up Cigarette	2	2.9
Cigarette	59	87
Rate of Addiction		
Low	31	49
Medium	20	31
High	12	20

Tobacco Addiction in Your Family		
Yes	140	45.5
No	184	55.5
Chronic Disease		
Yes	36	10.9
No	288	88.1

Table 1: Participitants characteristics and medical history

3.2 Characteristics of tobacco addiction

Forty-seven of the participants (14.4%) stated that they smoke due to the effect of the social environment. Three students (0.9%) stated that they quit smoking with pharmacological support, 2 students stated they quit (0.6%) with nicotine patches, and 18 students (5.5%) stated they quit tobacco products without any supplement. Nineteen users of tobacco products (5.8%) stated that they inhaled the product with a deep breath and 25 (7.6) with a light breath. Forty-seven (14.4%) of the tobacco users stated that they tried to stop using the product. Twelve students (3.7%) stated that they were satisfied with using tobacco products, and 18 students (5.5%) were not satisfied.

3.3 Factors affecting tobacco addiction

We asked about the factors affecting this addiction to students with tobacco addiction (Table 2). Of the students, 116 (35.5%) stated that they found the bans on tobacco products sufficient. Of the students, 113 (34.6%) stated that they see the photos on tobacco products as a deterrent. Ten of those who quit tobacco products (3%) stated that they quit because they are healthcare professionals.

	Yes n (%)	No n (%)	p
Did hospital conditions increase tobacco addiction?	29 (38.2)	39 (61.8)	0.124
Did witnessing tobacco addiction in healthcare professionals increase tobacco addiction?	33 (48.5)	35 (51.5)	0.379
Is there anyone in your social circle who experienced health problems (COVID-19)? Has this situation decreased your tobacco addiction?	29 (42.6)	39 (57.4)	0.579
Has the COVID-19 pandemic period increased your tobacco addiction?	40 (58.8)	28 (41.2)	**0.003**
Did television, magazine, newspaper advertisements increase your tobacco addiction?	15 (22)	53 (78)	**0.001**

Table 2: Factors affecting addiction in tobacco product users

3.4 Respiratory system examination and examination results in participants

Cough was present in 31 of the students (9.5%). Seven students (2.1%) stated that their cough continued throughout the day, including the night. Eight students (2.4%) stated that they coughed throughout the year. Twenty-eight students (8.6%) stated that they produce sputum in the morning. Twenty-one students (6.4%) stated that the frequency of sputum was more than 2. Eleven students (3.4%) stated that they had uninterrupted sputum complaints for at least 3 months. Eleven students (3.4%) stated that they had uninterrupted sputum complaints for at least 3 months. Eighteen students (5.5%) stated that they had shortness of breath after an upper respiratory tract infection. Twenty-four students (7.3%) stated that they

experienced shortness of breath at least once and had respiratory distress in the form of shortness of breath. Sixteen students (4.9%) had shortness of breath that required inhaler treatment. Fifteen students (4.6%) stated that they did their work more slowly than other people due to shortness of breath. Eight students (2.4%) stated that they could not walk even 100 meters due to shortness of breath. Forty-eight students (14.7%) stated that they had chest pain after upper respiratory tract infection (URTI). Thirty-seven students (11.3%) stated that they had pneumonia so severe that they could not stand up. Ninety students (27.5%) stated that they were diagnosed with hay fever and allergic rhinitis. Hundred and fifty-eight students (48.3%) stated that they had sinusitis. Eighteen students (5.5%) stated that they had tuberculosis before. Ten students (3.1%) stated that they were diagnosed with asthma. One student (0.3%) stated that he/she had lung surgery. Ten students (3.1%) stated that they have heart disease.

4. Discussion

According to our results, tobacco addiction was found to be close to the general population (20.7%) in health sciences university senior students [10]. In many studies, while it is expected that medical school students would have less tobacco addiction due to the education they received and the environment they are in, their tobacco addiction levels are close to the overall level in society. In their study, Livaditis et al. stated that the education of medical school students about tobacco addiction did not affect their tobacco addiction status [11]. Richmond, on the other hand, stated in his study that although medical school students knew about the effects of smoking, their tobacco addiction status did not decrease [12]. In a systematic review by Nilan et al. in 2019, tobacco addiction rates among healthcare professionals were approximately 20-25%. In this review, in which studies of the pre-pandemic period are examined, the results are close to our study. According to these rates, in our study, we see that students' tobacco addiction did not increase during the pandemic period. However, when we looked at the survey questions, the response of the COVID-19 pandemic situation increased my tobacco addiction was significantly higher (p= 0.003) [9]. In their study conducted in 2021, Yıldırım et al. investigated the tobacco addiction status of healthcare professionals and observed a significant increase in tobacco addiction due to stress caused by COVID-19 in women (34%) (p=0.004) [10]. During the pandemic period, healthcare professionals had more depression and anxiety than the rest of society. This may increase the rate of tobacco use [13-15]. When we compared the tobacco addiction of the students according to their genders, male students were in the lead with a rate of 64.7%. In many studies, tobacco addiction is high in male students due to their roles in society [16,17]. Cigarette (97%) ranked first among tobacco addiction, while shisha (10.1%) ranked second. In the study of Özden et al. the rate of shisha use was almost the same (50%) as smoking in vocational health academy students [18]. Of the participants, 14.4% stated that they had tobacco addiction due to their friends and social environment, and this reason was the leading cause of tobacco addiction. In the study conducted by Sönmez et al. in 2017, medical school students stated that social factors were the cause of tobacco addiction at a rate of 43.5% [19]. The reason for tobacco addiction was specified as "social settings" in the study by Kara et al. as "to cope with problems" in the study by Boyacı et al., and as "stress" in the study by Baykan et al. [20,21]. Of the tobacco users, 5.5% stated that they were not satisfied with this situation. Others were

satisfied with or undecided about their smoking habit. This rate was very low. Witnessing tobacco use among healthcare professionals did not encourage students according to our study (p=0.379). In patients, witnessing the use of tobacco by physicians is an encouraging factor. Sönmez et al. stated that the rate of tobacco addiction in medical school students increased as the grade increased, and they stated that this situation might be caused by stress and anxiety. In our study, only 3% of the students stated that they stopped using tobacco products because they are healthcare professionals. This rate is very low. The reason for this low rate may be the insufficient training on tobacco products. When we looked at the respiratory system examinations of the students, 31 students (9.5%) had a cough. Eighteen students (5.5%) stated that they had shortness of breath after an upper respiratory tract infection. None of the students with these complaints had tobacco addiction. Fifteen students (4.6%) stated that they did their work more slowly than other people due to shortness of breath. Eight students (2.4%) stated that they could not walk even 100 meters due to shortness of breath. Although 5 of these 23 students had such respiratory problems, they had tobacco addictions. Two of them smoked cigarettes, 3 were using tobacco. Ninety students (27.5%) stated that they had hay fever and 4 of these students were tobacco addicts. Tobacco addiction was not present in 10 students (3.1%) who stated that they had heart disease. Tobacco addiction of students with respiratory system problems was significantly lower (p<0.001). The common finding in our study and other studies is that there is a certain percentage of medical school students who smoke. The prominent aspect in our study is the effect of the COVID-19 pandemic on the pre-existing smoking rates on this phenomenon. It is necessary to increase the education of students about smoking and its harms in medical education. Physicians have a major role in reducing the smoking habit of society. In order to reduce the smoking habits of medical school students, medical school curricula should be arranged accordingly. Students should be provided with internships in smoking cessation polyclinics, and medical students, who are future physicians, should be taught to be role models to society and to stay away from smoking.

Declaration of patient consent

Sule Cilekar contributed to the main text

Aydin Balci contributed to the main text

References

1. LQ. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. New England Journal of Medicine 382 (2020): 1199-1207.
2. Hawryluck L, Gold WL, Robinson S, et al. SARS control and psychological effects of quarantine, Toronto, Canada. Emerg. Infect. Dis 10 (2004): 1206-1212.
3. Wu P. Alcohol abuse/dependence symptoms among hospital employees exposed to a SARS outbreak. Alcohol Alcohol 43 (2008): 706-712.
4. Lima CKT. The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease). Psychiatry Res. 287 (2020): 12-15.
5. Wang C. Immediate Psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int. J. Environ. Res. Public Health 17 (2020) 19-25.
6. García-Álvarez L. Early psychological

impact of the 2019 coronavirus disease (COVID-19) pandemic and lockdown in a large Spanish sample. J. Glob. Health 10 (2020) 56-65.

7. Rossinot H, Fantin R, Venne J. Behavioral changes during COVID-19 confinement in France: A Web-Based Study. Int. J. Environ. Res. Public Health 17 (2020): 1-14.
8. Stanton R. Depression, anxiety and stress during COVID-19: Associations with changes in physical activity, sleep, tobacco and alcohol use in Australian adults. Int. J. Environ. Res. Public Health 17 (2020): 1-13.
9. Nilan K, McKeever TM, McNeill A, et al. Prevalence of tobacco use in healthcare workers: A systematic review and meta-analysis. Plos One 14 (2019): 12-15.
10. Cilekar S and Günay E. Use of tobacco products by healthcare professionals in our hospital. Kocatepe Tıp Derg 21 (2020): 295-300.
11. Richmond R. Occasional reviews Teaching medical students about tobacco (2018).
12. Livaditis M, Samakouri M, Kafalis G, et al. Sociodemographic and psychological characteristics associated with smoking among Greek medical students. Eur. Addict. Res 7 (2001): 24-31.
13. Rolland B, Haesebaert F, Zante E, et al. Global changes and factors of increase in caloric/salty food intake, screen use, and substance use during the early COVID-19 Containment Phase in the general population in France: Survey Study. JMIR public Heal Surveill 6 (2020): 32-45.
14. Meyer J. Erratum: Meyer J. Changes in physical activity and sedentary behavior in response to COVID-19 and their associations with mental health in 3052 US adults. Int. J. Environ. Res. Public Health 17 (2020): 1-2.
15. Schuch FB. Physical activity protects from incident anxiety: A meta-analysis of prospective cohort studies. Depress. Anxiety 36 (2019): 846-858.
16. Türkiye İstatistik Kurumu (2021).
17. Cifci S, Deger VB, Saka G, et al. Frequency of and factors affecting smoking among nursing students at school of health (2021).
18. Ertürk N. Universite öğrencilerinde tütün kullanim alişkanliklarinin belirleyicileri ve algilar: istanbul ilinde sağlik hizmetleri yüksekokulu öğrencileri örneği. Anadolu Hemşirelik ve Sağlık Bilim Derg 24 (2021): 264-273.
19. Işık Sönmez C. Düzce Üniversitesi Tıp Fakültesi Öğrencilerinin Sigara İçme Sıklığı Ve Sigara İle İlgili Bilgi Tutum Ve Davranışları. Konuralp Tıp Derg 9 (2017): 160-166.
20. Yildiz F. Kocaeli Üniversitesi Öğrencilerinin Sigara İçme Alişkanliklarinin Değerlendirilmesi (2003).
21. Adresi Y. Tıp fakültesi öğrencilerinin sigara kullanımı ve tütün kanununa ilişkin görüşleri. Dicle Tıp Derg 41 (2014): 483-490.