

The Relationship Between Smoking Behavior and Health Perception of Healthcare Employees Suffering From Covid-19

Covid-19 Geçiren Sağlık Çalışanlarının Sigara İçme Davranışı İle Sağlık Algısı Arasındaki İlişki

Gülşah Ethemoğlu¹, Dursun Çadircı², Hamdiye Turan³.

¹ Mehmet Akif İnan Training and Research Hospital, Department of Chest Diseases, Şanlıurfa, Türkiye

² Harran University Faculty of Medicine, Department of Family Medicine, Şanlıurfa, Türkiye

³ Harran University Faculty of Medicine, Department of Chest Diseases, Şanlıurfa, Türkiye

Summary

Objective: Smoking is one of the first causes of preventable death worldwide. In this study, it was aimed to scrutinize the change in smoking habits among healthcare professionals following Covid-19 infection and the factors associated with health perception.

Material and Method: The universe of the study, which was planned as a descriptive cross-sectional survey, constituted by health professionals at Şanlıurfa Harran University Medical Faculty Hospital. A survey form, which was created by scanning the literature, was used as data collection tools. The surveys were collected electronically between 10 and 25 January 2022. Data were evaluated with appropriate statistics using SPSS 20.

Results: 56.2% (n=114) of the participants were male, 43.8% (n=89) were female, and age average was 34.45±7.381 (19-66). It was observed that 33.7% (n=66) of people had been vaccinated before they had Covid-19. The most common symptom found was fatigue by 85.4% (n=164). 30.8% (n=61) of the people stated that they smoked before being diagnosed with Covid-19. During the illness, 63.6% (n=28) of the respondents stated that the number of cigarettes they smoked decreased. The health perception scale total score was found as 50.05±6.66 (29-69).

Conclusion: When the smoking behaviors of health professionals who had Covid-19 were scrutinized, it was seen that there were smokers even during the illness but some of the smokers were willing to quit smoking. Although the perception of health is not very low, it would be suitable to evaluate it through more comprehensive studies.

Key words: Cigarette, Covid-19, health professionals, health perception

Özet

Amaç: Sigara kullanımı, dünya genelinde önlenebilir ölüm sebepleri arasında ilk sıralarda yer almaktadır. Bu çalışmada Covid-19 enfeksiyonu sonrasında sağlık çalışanlarının sigara kullanımındaki değişimi ve sağlık algısı ile ilişkili faktörlerin araştırılması amaçlanmıştır.

Gereç ve Yöntem: Tanımlayıcı nitelikte kesitsel bir anket çalışması olarak planlanan çalışmanın evrenini; Şanlıurfa Harran Üniversitesi Tıp Fakültesi Hastanesi'ndeki sağlık çalışanları oluşturmaktaydı. Literatür taranarak oluşturulan anket veri toplama aracı olarak kullanıldı. Anketler, 10-25 Ocak 2022 tarihleri arasında elektronik ortamda toplandı. Veriler SPSS 20 kullanılarak uygun istatistiklerle değerlendirildi.

Bulgular: Katılımcıların %56,2 (n=114) erkek, %43,8 (n=89) kadın ve yaş ortalaması 34,45±7,381 (19-66) idi. %33,7 (n=66) kişinin Covid-19 geçirmeden önce aşı yaptırdığı gözlemlendi. Halsizlik %85,4 (n=164) ile en sık görülen semptom idi. Covid-19 tanısı almadan önce %30,8 (n=61) kişi sigara kullandığını belirtmişti. Sigara kullananların %36(n=32) hastalık sırasında sigara içmeye devam ettiğini bildirmişti. Sağlık algısı ölçeği toplam puanı 50,05±6,66 (29-69) olarak değerlendirildi.

Sonuç: Covid 19 geçiren sağlık çalışanlarının sigara içme davranışları incelendiğinde hastalık esnasında dahi içenler olduğu, ancak sigara içicilerin bir bölümünün sigarayı bırakma isteklerinin olduğu görülmüştür. Sağlık algısı çok düşük olmamakla birlikte daha geniş kapsamlı çalışmalarla değerlendirilmesinin uygun olacaktır.

Anahtar kelimeler: Sigara, Covid-19, sağlık çalışanları, sağlık algısı.

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Introduction

Smoking is one of the most important causes of mortality and morbidity and one of the causes of preventable death throughout the world. According to the World Health Organization (WHO) report published in 2018, the number of people who smoke is 1.1 billion and 7 million people die annually due to smoking-related causes (1).

In December 2019, cases of pneumonia started to be encountered in the city of Wuhan in China. This disease, caused by Sars-CoV-2 virus, was later named Covid-19 disease and WHO declared it a global pandemic on March 11, 2020 (2). SARS-CoV-2 is communicated by the contact or inhalation of infected droplets scattered from ill people with the mucous membranes of healthy people (3). Studies demonstrate parallelism between the severity of the course of Covid-19 infection and smoking (4).

The spectrum of Covid-19 infection may range from asymptomatic carrier to severe pneumonia, cardiac injury, ARDS, septic shock, and death. Within this wide spectrum, while many healthcare professionals' infections showed mild symptoms, some may have severe clinical pictures up to death (5). In previous studies, it was demonstrated that addictive substance use increased after large-scale epidemics and disasters (6). Nevertheless, studies on smoking following the Covid-19 pandemic, particularly among healthcare professionals, are relatively few.

There are many objective benchmarks for assessing health. In cases where these benchmarks are insufficient or cannot be reached, the easiest and most holistic way to measure health is health perception (7). In this study, an attempt was made to investigate the change in smoking behavior in healthcare professionals who had Covid-19 disease and the relationship of that change, if any, with the perception of health.

Material and Methods

Consent was obtained from the Harran University Faculty of Medicine Clinical Research Ethics Committee (Date:10,01.2022, session no:01,

decision no:18) and the Scientific Research Studies Commission of the TR Ministry of Health, General Directorate of Health Services in order to conduct this study.

Study was planned as a cross-sectional survey study of a descriptive nature. The universe of the study consisted of health professionals (physician, nurse, data processing personnel, health technician, cleaning personnel, and other health professionals) working in Şanlıurfa Harran University Medical Faculty Hospital. The healthcare professionals were informed and those who agreed to participate in the research were included. In the study, a sample selection was not conducted and an attempt was made to reach all health professionals. An electronic survey form drawn up with "Google Surveys" was used as a data collection tool. The data were collected by means of filling in a data form consisting of 29 questions and an online survey consisting of a health perception scale, which was compiled from various studies examining the sociodemographic characteristics, smoking, and Covid-19 status of the participants. The data were collected between the dates of 10 and 25 January 2022. The forms filled in by 204 participants who gave consent to participate in the study out of 210 people were evaluated. Alongside the purpose of the study, it was explained to the participants that the answers they would give would only be used for scientific purposes and confidentiality principle would be adhered to.

Sociodemographic Data Form

The questionnaire form, which was created by the researchers by scanning the literature, included questions about sociodemographic data like the gender, age, occupation, marital status, educational status, etc. of the participants. In addition, questions about whether they were diagnosed with Covid-19, about the disease period and after the disease for those who were diagnosed, and about smoking were included.

Health Perception Scale (HPC)

It was developed by Diamond et al. in 2007, Turkish validity study was conducted by Kadioğlu in 2012. The health perception scale is a five-point Likert-type scale consisting of fifteen articles and

four sub-factors. Articles 1, 5, 9, 10, 11, and 14 are positive statements, while articles 2, 3, 4, 6, 7, 8, 12, 13, and 15 are negative ones. Negative statements are scored as “Strongly Disagree=1”, “Disagree=2”, “Undecided=3”, “Agree=4”, “Very Agree=5,” while positive statements are scored reversely. A score between 15 and 75 points can be obtained from the scale. Respondents were asked to define the questions used in the Health Perception Scale as Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree (8,9).

Statistical Analysis

Statistical analysis was performed using the SPSS version 20.0 package program. The level of significance was taken as p=0.05 in all results. The normality assumption of the data was evaluated with normality tests (Kolmogorov Smirnov) and it was seen that it showed normal distribution with 95% confidence. The socio-demographic characteristics of the participants were determined using descriptive statistics (the number, mean, percentage, and standard deviation). The t-test was applied in groups of 2 and the One-Way analysis of variance (ANOVA) test was applied in groups of more than 2 in order to determine whether there is a significant difference between the variables on health perception in the questions about smoking. Post-Hoc Tukey test was applied to pore over the groups showing statistically significant difference.

Results

A total of 210 people participated in the study. While 97.14% (n=204) of the participants agreed to participate in the survey, 2.85% (n=6) refused it. Sociodemographic features of the participants were summarised in table.1 (Table 1).

When the PCR results of the study participants were asked at the time of diagnosis, 83.94% (n=162) stated that they were positive. To the question of “What was the form of treatment?”, 90.57% (n=173) stated that they received outpatient treatment. When the participants' symptoms during Covid-19 disease were inquired about, fatigue was the most common symptom with 85.41% (n=164). It was followed by headache with 63.54% (n=122), cough with 54.16% (n=104), loss of smell with 53.64% (Table 2).

Table 1. Sociodemographic characteristics of the participants

	Mean±SD	Min-Max
Age	34,45±7,381	19-66
	N	%
Gender		
Male	114	56.15
Female	89	43.84
Marital status		
Married	142	69.95
Single	61	30.04
Educational status		
University	178	88.55
High School	21	10.44
Secondary School	2	0.99
Occupation		
Physician	110	54.45
Nurse	44	21.78
Health technician	7	3.46
Cleaning staff	8	3.96
IT staff	14	6.93
Other	16	7.92

30.80% (n=61) of the participants stated that they smoked prior to being diagnosed with Covid-19. The number of cigarettes consumed daily was 14.92±8.99(1-40). Years of smoking were 12.53±6.922(1-30). 35.95% (n=32) of the smokers stated that they continued to smoke during the illness. Of those who continued to smoke during the illness, 63.63% (n=28) expressed that the number of cigarettes smoked decreased, 31.81% (n=14) said that the amount did not change, and 4.54% (n=2) stated that the amount they smoked increased. Of those who quit smoking during the illness, 64.91% (n=37) stated that they started smoking again after recovery. Of those who started smoking again after recovery, 76.60% (n=36) stated that there was no change in the amount they smoked compared to before, 12.77% (n=6) stated that the amount they smoked increased, and 10.64% (n=5) stated that the amount they smoked decreased. When the current smoking status of the participants was questioned, 32.59% (n=59) stated that they currently smoke. Of the smokers, 57.81% (n=37) stated that they were considering stopping and 42.18% (n=27) stated that they were not considering stopping (Table 3).

Table 2. Findings from healthcare professionals concerning the Covid-19 disease they had

	N	%
Result of PCR Test at the time of diagnosis		
Positive	162	83.94
Negative	31	16.06
Type of treatment		
Hospitalized treatment	18	9.42
Outpatient treatment	173	90.57
Availability of intensive care hospitalization for inpatients		
Yes	1	0.78
No	126	99.21
Symptoms emerging during the period of Covid-19 disease*		
Cough	104	54.16
Chest pain	36	18.75
Shortness of breath	63	32.81
Fatigue	164	85.41
Decrease in smelling	103	53.64
Headache	122	63.54
Diarrhea	3	1.56
Fever	2	1.04
Other	31	16.14

*Multiple answers were given

When the health perception scale is evaluated; The total score of the respondents was 50.05±6.66 (29-69). When the mean scores of the sub-dimensions of the health perception scale were evaluated, the highest mean score belonged to the control center sub-dimension with 17.48±4.45, which was followed by the precision with 13.76±3.73, the importance of health with 9.63±3.60, and the self-awareness sub-dimension with 9.19±3.33, respectively (Table 4).

When the Health Perception Scale was compared according to the occupations of the participants, a significant difference was found between the importance of health subgroup physician and cleaning personnel (p=0.05), between cleaning personnel and nurse (p=0.013), and between cleaning personnel and the other group (p=0.042). When the health perception scale and all subscale dimensions were evaluated together, no statistically significant relation was found between age, gender, and marital status (p>0.05).

When the health perception scale and educational status were evaluated together, a significant difference was found between being a university graduate and being a secondary school graduate (p=0.04). When PCR positivity was evaluated together with the health perception scale and subscale scores, no statistically significant relation was found between them (p>0.05). When the vaccination status prior to Covid-19 was evaluated together with the health perception scale and subscale scores, no statistically significant relation was found between them. When the pre-disease smoking status was evaluated together with the health perception scale and subscale scores, no statistically significant relationship was found between them (p>0.05). When post-disease smoking status and health perception scale were evaluated together, a significant relationship between them was found (p=0.034). When the idea of quitting smoking was evaluated together with the health perception scale and subscale scores, no statistically significant relationship was found between them.

Considering all these, our opinion is that although the perception of health is not very low in this study, it would be appropriate to evaluate it with more comprehensive studies.

Discussion

In the study, the change in smoking habits of healthcare professionals who had Covid-19 disease and the relation between that change and people's perception of health were scrutinized. The number of people participating was 204, and the average age was 34.45±7.38. When the sociodemographic data of the participants were pored over, the ratio of those who were married as male gender and marital status was high and although the majority of them were university graduates, the number of people in the physician group was the majority. In a study conducted by Guan et al. in China, it was expressed that 58.1% of the patients were male and the average age was 47 (10). While the ratio of males to females was higher in this study, it was lower than that of the study by Guan et al. Likewise, the average age was lower than in the study in question.

Table 3. Responses of healthcare professionals to questions about smoking behavior

	Mean±SD	Min-Max
Number of the years of smoking before the diagnosis of Covid-19	12.53±6.92	1-30
Number of the daily smoked cigarettes before the diagnosis of Covid-19	14.92±8.99	1-40
	N	%
Status of smoking before the diagnosis of Covid-19	61	30.80
Yes	137	69.19
No		
Status of continuing to smoke during illness		
Yes	32	35.95
No	57	64.04
Status of change in the amount of cigarette smoked during illness	2	4.54
Yes, the amount smoked increased	28	63.63
Yes, the amount smoked decreased	14	31.81
No, the amount smoked did not change		
Restarting smoking after recovery following quitting during illness		
Yes	37	64.91
No	20	35.08
Change in the amount smoked in those who started smoking again after recovery, compared to pre-disease	6	12.76
Yes, the amount smoked increased	5	10.63
Yes, the amount smoked decreased	36	76.59
No, the amount smoked did not change		
Current smoking status		
Yes	59	32.59
No	122	67.40
Thinking of quitting for smokers		
Yes	37	57.81
No	27	42.18
Smoking of tobacco and tobacco products other than cigarettes	13	8.49
Yes	140	91.50
No		
Tobacco product smoked		
Hookah	7	25.92
Rolled tobacco	18	66.66
Electronic cigarette	2	7.40

Table 4. Health perception subscale scores

Mean scores of the sub-dimensions of the scale	Mean±SD	Min-Max
Control center	17.48±4.45	5-25
Self-Awareness	9.19±3.33	3-15
Precision	13.76±3.73	4-20
Importance of Health	9.63±3.60	3-15
Health Perception Scale Total Score	50.05±6.66	29-69

In the study of Guan et al., the ratio of intensive care hospitalization was specified as 5% (10). In this study, it was concluded that the majority of the participants were treated as outpatients, very few of them required inpatient treatment, and almost all of the inpatients were service inpatients. The number of inpatients treated in intensive care was quite low.

Liu et al. stated that Covid-19 disease is 14.28 times more common in smokers compared to non-smokers (11). In a study conducted in Turkey, the ratio of smoking in Covid-19 patients was found to be 32.6% (12). 30.80% of the healthcare professionals who participated in the study said that they used to smoke before they were diagnosed with Covid-19.

Huang et al. found in their study that fever (98%) was the most common symptom during active disease, followed by cough (76%), and muscle pain or fatigue (44%), respectively (13). In this study, fatigue was the most common symptom in the participants during the active disease period and it was followed by headache and cough.

In the study of Shigemura et al., the fact that there may be an increase in tobacco and alcohol use in addition to psychiatric disorders like anger, insomnia, intense fear and anxiety about getting sick, adjustment disorder, somatization, depression, and posttraumatic stress disorder in people affected by Covid-19 was highlighted (6). In a study conducted in 2003 following the SARS epidemic, which was caused by another virus from

the coronavirus family, it was found that 12.9% of smokers had an increase in cigarette consumption subsequently, compared to the pre-epidemic period (14). In this study, one-third of the pre-disease smokers stated that they continued to smoke during the illness. The majority of those who continued to smoke during the illness expressed that the number of cigarettes they smoked decreased, a small portion of them stated that the amount did not change, and a very small portion of them said that the amount they smoked increased. It was also stated that the majority of those who stopped smoking during the illness started smoking again after they recovered. The majority of those who started smoking again after recovery expressed that they started smoking immediately after they felt better.

It was stated in a study conducted in Italy that the restrictions yielded positive results in terms of the spread of Covid-19 but they caused an increase in the number of cigarettes smoked due to economic reasons, stress, boredom, and anxiety (15). This study's result shows that in the majority of those who started smoking again following recovery, the amount they smoked compared to beforehand did not change and that it was followed by the groups that stated that the amount they smoked increased and the amount they smoked decreased, respectively.

Studies have shown that the anxiety levels of the public and health professionals increased during the epidemics in the past years worldwide (16). In the study conducted by Jones and Salathé in 2009 on H1N1, it was shown that the anxiety levels of the participants increased at the beginning of the epidemic and decreased over the course of time as expected (17). A large majority of the participants in our study quit smoking during the illness but most of them started smoking again after recovery. The fact that the level of anxiety in individuals is effective on the precautionary behaviors they will take is one of the important findings mentioned in various studies (18). When we inquired about the desire to quit smoking, which is one of such measures, it was concluded that some of the participants are currently smoking and a significant portion of the smokers are considering stopping smoking.

It was found in a national study conducted in Pakistan that men have a more positive perception of health than women (19). Also in the same study, an important finding that smoking was significantly associated with low/medium health perception was obtained (19). In this study, no statistically significant relationship between gender and health perception and gender and health perception subscale scores was found. Nevertheless, when the health perception scale was evaluated together with educational status, a significant difference between being a university graduate and being a secondary school graduate was found ($p=0.04$).

In a study conducted by Yen and Kaplan, they reached a conclusion that ethnic origin, income, and education level are among the factors that affect health perception, while smoking is not effective (20). The conclusion found in this study is that there was no statistically significant relationship between age, marital status, and pre-disease smoking status with health perception scale and subscale scores. A significant relationship between the health perception scale and post-disease smoking status was determined ($p=0.034$). When the opinion of quitting smoking was evaluated together with the health perception scale and subscale scores, a statistically significant relationship was not found between them.

Vissandjee et al. pointed out in a study they conducted in 2004 that health perception is an important criterion in terms of social, cultural, physical, and emotional status. Also in the same study, they concluded that smoking, age, low education level, and being in a low socioeconomic group affect health perception negatively (21). In this study, when the importance of the health subgroup was evaluated together with the occupation, a significant difference between the cleaning personnel and the physician, nurse and the other group was found ($p=0.05$, $p=0.013$, $p=0.042$). When it comes to results, studies conducted in Turkey in the field of health perception are also similar to the studies of other countries.

In their study, Soysal and Yiğit determined the total health perception scale score as 53.1 ± 6.3 and

their conclusion found was that the health perception level of the participants was moderate (22). In a similar fashion to the study of Soysal and Yiğit, according to the data we obtained from this study, the total score of health care workers on the health perception scale was identified as 50.05 ± 6.66 . Considering the fact that the scale score can be at least 29 and at most 69, it can be concluded that the health perception score average of the participants is moderate.

In the same study, Soysal and Yiğit concluded that the score of the control center sub-dimension (17.5 ± 3.1) was higher than in prior studies (22). In this study, the control center sub-dimension score was determined as 17.48 ± 4.45 . The fact that the control center subscale scores are higher than in previous studies may be construed as the fact that the participants want to control their health-related processes more during the pandemic period.

Studies have been conducted around the world poring over the impacts of such traumas and stress on smoking after disasters and epidemics that took place at different times. In those studies, it was shown that smoking increases after disasters and epidemics but after the Covid-19 pandemic, evidence-based assessments, particularly in the field of smoking in healthcare professionals and its impact on health perception are relatively few. Our opinion is that when all the foregoing are evaluated, the health perception of health professionals in our study was not very low, but it would be appropriate to evaluate it with more comprehensive studies.

Conclusion

The problems that the Covid-19 disease, which is an important public health problem, will inflict on us in the future are not fully known yet. Nevertheless, the fact that smokers did not give up smoking even in the disease, in question appears to us as an issue that must be taken into account. It is seen that serious endeavors are still needed to increase social awareness campaigns in the fight against smoking addiction during and after the pandemic, plan trainings for healthcare staff, and direct smokers to pharmacological and behavioral smoking cessation programs.

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Correspondance:

Uzm.Dr. Gülşah Ethemoglu
Mehmet Akif İnan Training and Research
Hospital, Department of Chest Diseases,
Şanlıurfa, Türkiye
Tel: +90.505.3148480
E-mail: gulsahethemoglu@gmail.com