Arrival Date: 11.05.2021 | Published Date: 25.07.2021 | 2021, Vol: 6, Issue: 13 | pp: 24-30 | Doi Number: http://dx.doi.org/10.46648/gnj.221

Investigation of Surgical Nurses' Cigarette Use, Nicotine Dependence Levels, and the Affecting Factors

Gürkan KAPIKIRAN[1], Semra BÜLBÜLOĞLU[2], Serdar SARITAŞ[3]

ABSTRACT

Aim: This study aims to investigate surgical nurses' cigarette use, their nicotine dependence levels, and the affecting factors.

Material and Methods: This descriptive and correlational research was carried out in a university hospital with the participation of nurses (n = 108) who work in surgical units and smoke. The data were collected with a Personal Information Form, Smoking Information Form, and the Fagerström Test for Nicotine Dependence. SPSS for IBM 25 was used for statistical analysis. Descriptive statistics, independent t-test, one-way variance and regression analysis, and the Bonferroni test were used in the analysis of the data.

Results: The results were evaluated at a 95% confidence interval and $p < 0.05$ significance level. 34% of surgical nurses were between 21-29 years old, 65% were women, 58% were single, and 86% had bachelor degrees. 65% of the nurses were smoking due to stress, 53% due to enjoyment, and 80% were smoking more than 10 cigarettes per day. It was found that the nurses working in the intensive care unit smoked more cigarettes than the operating room and service nurses.

Conclusion: As a result of this research, it was found that surgical nurses had a high level of nicotine dependence. Strategies for surgical nurses to quit smoking should be developed and training should be provided.

Keywords: Nicotine dependence, surgical nurses, smoking

Introduction

Worldwide, it is estimated that around 7 million people die every year due to cigarette-related diseases, and by 2030 this number will exceed 8 million per year, and half of the deaths will be in productive-age individuals.[1] Cigarette is a highly-addictive substance such as heroin and cocaine, as it contains high levels of nicotine.[2]

According to the 2017 Global Adult Tobacco Survey (GATS) results, the rate of smoking cessation decreased from 27.2% to 13.6% in Turkey.3 In the same report, it was found that the health workers' advice to quit decreased from 42.9% to 40.1%, and thinking about quitting decreased from 55.2% to 32.8%.[3]

Smoking is considered as one of the most important public health problems in the world.[4,5] Smokers are exposed to more than 7,000 toxic substances and also face many fatal risks such as cancer, diabetes, and cardiovascular and pulmonary diseases.[5] Although smoking is a preventable health problem, it is one of the leading causes of death in the world.[5,6] The number of smokers in Turkey is reported to be 14.8 million and approximately 100,000 people are thought to lose their lives due to smoking-related reasons each year.[2]

In the literature reviews, it was found that the frequency of smoking of nurses ranged from 6.5% to 25%.[4,7-10] The roles and responsibilities of nurses are to improve, maintain and protect the health of individuals, families and community members.[11,12] In this context, they are responsible for reducing and managing potential problems and risks.[11,12] However, while putting their own health at risk, it does not seem very possible to give consultation, advise or training to patients to avoid smoking. In addition, nurses who smoke may have to struggle with many diseases that have cigarettes in their etiology.

Surgical nurses undoubtedly experience stress in the face of the negative effects of intense work tempo and resort to smoking, which is an ineffective method, to cope with this situation. In order to prevent smoking of the nurses working in the surgical units, the levels and causes of smoking must first be well-known. In this study, it was aimed to investigate and descriptive the surgical nurses' cigarette use, their nicotine dependence levels, and the affecting factors.

[1] Bingöl University, Health Sciences Faculty, Nursing Department, Bingöl, Turkey, https://orcid.org/0000-0002-3242-1059
[2] Gaziosmanpaşa University, Erbaa Health Sciences Faculty, Nursing Department, Tokat, Turkey, https://orcid.org/0000-0002-7252-9478
[3] İnönü University, Nursing Faculty, Malatya, Turkey, https://orcid.org/0000-0003-4076-9001

Material and Method

Research Design and Participants

This research was conducted as descriptive and correlational to examine the nicotine dependence levels and affecting factors of surgical nurses working in a university hospital. The research was carried out in surgical units between December 2019 and March 2020.

As the criterion for inclusion in the research the following were determined; to be a nurse in the study hospital, to be smoking, not to be on leave for reasons such as annual leave, sick leave, maternity leave, etc., and to be working.

Written permissions were obtained from the administrative department of the hospital where the study was conducted and the Malatya Clinical Research Ethics Committee. It was determined that 400 surgical nurses worked in the hospital where the study was conducted. Purposeful sampling method was used in the study. A total of 108 smoker surgical nurses (27% of the total number of surgical nurses) who met the inclusion criteria were interviewed and by this means, only smokers were reached. All surgical nurses who smoke and work actively participated in our study. Surgical nurses work in the general surgery clinic, operating room, cardiovascular surgery and neurosurgery intensive care unit, orthopedic clinic and other (plastic surgery, ear-nose-throat surgery, gynecology) departments of the hospital where the study was conducted. Nurses working in internal clinics and emergency services were not included in our study. All of the nurses interviewed volunteered to participate in the study. After the permission of the institution, the approval of the ethics committee and the verbal consent received from the participants, data collection was carried out using the questionnaire method.

Data Collection Tools

In the research, a Personal Information Form with 9 questions -created by the researcher by scanning the literature,[9,11] a 5-Question Smoking Information Form, and the 6-question Fagerström Test for Nicotine Dependence was used as data collection tools. Information on the Fagerström Test for Nicotine Dependence is provided below.

Fagerström Test for Nicotine Dependence- FTND

The Fagerström Test for Nicotine Dependence (FTND) is a screening test used to determine the physical level of nicotine dependence, it provides measurements between 0-1 and 0-3 with 2-point and 4-point Likert type questions, and consists of 6 questions. Validity and factor analyses for the Turkish version were performed by Uysal et al.,[13] and Cronbach's alpha coefficient was found to be 0.56. In this study, the Fagerström Test for Nicotine Dependence's Cronbach's Alpha Reliability Coefficient was found to be 0.84.

Data Analysis

The findings obtained in the study were transferred to the computer environment and Statistical Package for Social Sciences (SPSS) for IBM 25 was used for statistical analysis. Descriptive statistical methods (Frequency, Average, Standard Deviation) were used while evaluating the study data. For validity and reliability analysis of the scale used for FTND, Cronbach's alpha coefficient was examined. The results were evaluated at a 95% confidence interval and at the level of significance ($p<0.05$). Mann Whitney U, Kruskal-Wallis were carried out to examine the relationship between variables, and the Bonferroni test was performed to examine the difference between variables.

Findings

It was determined that the number of nurses working in the surgical units at the hospital where this study was conducted was 400 and 27% (N=108) were smoking, and smokers were included in the research. The introductory information of the sample group are presented in Table 1.

When the introductory information of the surgical nurses participating in the study was examined, it was determined that 34% were between 21-29 years old, 65% were women, 58% were single, and 86% had bachelor's degrees. 45% of the nurses participating in the study worked in Surgical Clinics. 49% of the surgical nurses had between 6-11 years of work experience, 86% of them work both day and night shifts, and 41% of them worked between 161-191 hours a week (Table 1).

Table 1. Introductory Information of Surgical Nurses

Introductory Information	Number of Surgical Nurses (N=108)	Percentage of Surgery Nurses (%)
Age		
21-29	37	34.26
30-34	33	30.55
35 and over	38	35.19
Gender		
Female	71	65.7
Male	37	34.3
Marital Status		
Single	63	58
Married	45	42
Education Level		
Associate Degree	6	5.6
Bachelor's Degree	93	86.1
Master's Degree	9	8.3
Unit		
Surgical Clinics	49	45.4
Surgical Intensive Care Units	36	33.3
Operating Room	23	21.3
Professional Experience		
0-5 years	30	27.8
6-11 years	53	49.1
12 years and over	25	23.1
Shift Type		
Continuous daytime shift	15	13.9
Day and night shift	93	86.1
Weekly working hours		
160 hours	43	39.8
161-191 hours	45	41.7
192 hours and over	20	18.5
Smoking History		
0-3 years	13	12.1
4-7 years	26	24.1
8 years and over	69	63.8
Attempt to quit smoking		
Yes	27	25
No	81	75

Table 2 shows the reasons for the smoking and the occasions they smoke the most. Accordingly, 65% stated that they smoke because of stress, 30% emotional problems, 57% social problems, and 30% family problems. In addition, it was determined that 53% of them were smoking due to pleasure and enjoyment, 35% of them were financial problems, 60% of them due to work intensity and long working hours. It was determined that up to 39% of the surgical nurses were smoking while outdoors, 64% while chatting with their friends, and 48% were smoking while working in the workplace (Table 2).

Table 2. Reasons to Smoke According to Surgical Nurses and the Occasions They Smoke the Most

Reasons to smoke*	**N=108**	**Yüzde (%)**
Stress	71	65.7
Emotional problems	33	30.5
Social issues	62	57.4
Family problems	33	30.5
Pleasure and enjoyment	58	53.7
Work intensity, long working hours	65	60.18
Financial difficulties	38	35.2
The effect of friends	29	26.8
Occasions They Smoke the Most*		
Outdoors	43	39.8
While chatting with friends	70	64.8
While working	52	48.1
At home	11	10.2

* More than one answer (N=108)

When Table 3 was examined, it was found that more than 80% of the surgical nurses smoked their first cigarette within one hour after waking up, 62% had difficulty following the rules in places where smoking was prohibited, and 80% smoked more than 10 cigarettes per day (Table 3).

Table 3. Surgical Nurses' Answers to FTND Questions

FTND Questions	**Options**	**N=108**	**%**
Time to smoke the first cigarette	Within 5 minutes	27	25
	31 to 60 minutes	42	38.9
	6 to 30 minutes	24	22.2
	After 60 minutes	15	13.9
Difficulty avoiding smoking in places where it is prohibited (e.g. in the bus, hospital, movie theater)	Yes	67	62
	No	41	38
Which cigarette would you hate most to give up?	The first one in the morning	39	36.1
	Any other	69	63.9
The cigarette preference you don't want to give up	10 or less	21	19.4
	21 to 30	43	39.8
	11 to 20	25	23.2
	31 or more	19	17.6
More frequent smoking in the first hours after waking up than during the rest of the day	Yes	74	68.5
	No	34	31.5
Smoking when you are so ill that you are in bed most of the day	Yes	61	56.5
	No	47	43.5
Total Score	7.32±2.61		

Cigarette Dependence Levels of Surgical Nurses are presented in Table 4. According to this, it was determined that 51% had high and 34% had very high levels of dependence. In this study, Cronbach's Alpha Reliability Coefficient of the Fagerström Test for Nicotine Dependence was found to be 0.84 and the average age of the participants was 32.23.

Table 4. Cigarette Dependence Levels of Surgical Nurses		
Low	11	10.2
Average	4	3.7
High	56	51.8
Very High	37	34.3

When Table 5 was examined, it was determined that there was no statistical difference between surgical nurses' nicotine dependence and their gender, age, education level, income level or stress level (p> 0.05).

Table 5. Investigation of Participants' Nicotine Dependence Levels According to Variables

Variables		N	FTND-Median	U/KW Value	P,	Bonferroni
Gender	Female	71	7	U=1188.500	0.402	-
	Male	37	7			
Marital Status	Married (1)	59	10	U=1019.000	**0.006****	1>2
	Single (2)	49	7			
Age	21-29	37	7	KW=5.318	0.070	-
	30-34	33	7			
	35 and Over	38	7			
Education Level	Associate Degree	6	8	KW=0.855	0.313	-
	Bachelor's Degree	93	7			
	Master's Degree	9	7			
Professional Experience	0-5 years	30	7	KW=3.292	0.193	-
	6-11 years	53	7			
	12 years and over	25	7			
Shift Type	Continuous daytime shift	15	7	U=1188.500	0.402	-
	Day and night shift	93	7			
Unit	Surgical Service (1)	49	7	KW=6.228	**0.044***	2>3,1
	Intensive Care Unit (2)	36	9			
	Operating-room (3)	23	8			

*p<0.05, **P<0.01, U;Mann Whitney U, KW;Kruskal-Wallis

There was a statistically significant difference between surgical nurses' nicotine dependence and their marital status and unit of work (p<0.05). According to the Bonferroni test, it was found that those working in intensive care units had more nicotine dependence than the clinical nurses.

Discussion

This study was conducted to investigate surgical nurses' cigarette use, their nicotine dependence levels, and the affecting factors in a university hospital.

Previous studies indicate that less-educated individuals use more cigarettes than those who had higher education.[10,14] Education provides more information about personal health and therefore allows one to recognize the risks of smoking. However, in this study, no statistical difference was found between educational level and nicotine dependence (p> 0.05).

It is reported in the literature that low-income individuals smoke at a higher prevalence level than the highest income group.[14,15] In this study, no statistical difference was found between income status and nicotine dependence (p> 0.05). However, the rate of smokers who smoke due to financial

problems was 35%. The financial problems experienced by individuals are generally related to their expenses rather than their income level. In other words, even if individuals have a high income, they are likely to experience financial difficulties when they spend more than what they earn. From this point of view, it prepares the ground for an increase in nicotine dependence related to financial difficulties.

Smoking behavior is defined as a relaxing habit by individuals experiencing stress and is not considered an important risk factor.[16,17] Work-related stress is a condition that can produce health, physical and mental problems, and can lead to excessive nicotine dependence.[18,19]

A previous study found that nurses and other healthcare professionals experienced higher levels of stress than other professionals in the region.[18] In this study, it was concluded that nicotine dependence of the nurses who work in intensive care units (in which there are the most stressful and difficult health care practices compared to other surgical units) are higher than the nurses working in the operating rooms and clinics ($p<0.05$). In addition, when nurses' causes of smoking were examined, it was found that 65% smoked due to stress, and 35% experienced high and 65% moderate levels of stress.

Continuous exposure to stress increases the risk of anxiety and depression in individuals and decreases the quality of life.[20] Individuals take refuge in smoking in the face of psychological breakdowns they experience, and when physical dependence develops, they cannot quit smoking. In this study, it was found that 51% of nurses had a high level of nicotine dependence while 34% had a very high level. It was also found that 63% had been smoking for 8 years or more. It is known that as nicotine dependence increases, withdrawal symptoms increase in direct proportion and smoking cessation becomes more difficult.

Another study found that most of the cigarette-addicted nurses smoked twenty cigarettes a day and were highly dependent.[4] Another study found that most of them smoked their first cigarette of the day in an hour after waking up and smoked 1 to 10 cigarettes.[21] In this study, it was found that 86% of the nurses smoked their first cigarette within one hour after waking up and 80% consumed more than 10 cigarettes per day.

In a previous study, it was found that some participants did not attempt to quit smoking while 9.4% were unsuccessful to quit.[21] In this study, it was found that 25% of the nurses attempted to quit smoking before but were not successful, and the remaining 75% did not attempt to quit smoking at all. Although the desire to quit smoking is in many smokers, the success of smoking cessation is related to the level of motivation, desire, and readiness.

Conclusion

In this study, the nicotine dependence level of surgical nurses was found to be high. The data obtained in this study are of great importance in identifying and eliminating the factors that cause smoking among nurses in order to reduce the prevalence of smoking among them. In addition, since nurses are role models in the society, it is necessary to periodically provide training on the individual and social harms of smoking and motivate them to quit.

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