TURJOEM
The Turkish Journal of Occupational / Environmental Medicine and Safety

The Turkish Journal of Occupational / Environmental Medicine and Safety

Vol:1, No:4, 2016 Web: http://www.turjoem.com ISSN : 2149-4711

Smoking Prevalence, Behavior, and Associated Factors in Vocational School of Health Services Students

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Vol:1, No:4, 2016 Web: http://www.turjoem.com ISSN : 2149-4711

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ABSTRACT

Objective: We aimed to investigate the smoking prevalence and dependence levels as well as the associated factors in students at the Cukurova University Vocational School of Health Services (VSHS).

Material and Method: We conducted a descriptive and cross-sectional study. Our study included 412 of the 507 students attending a 2-year program at the Cukurova University VSHS during the 2012-2013 academic year. The study data were collected by Fagerström nicotine dependence test including a questionnaire of 30 questions about sociodemographic characteristics and nicotine dependence, between September 2012 and November 2012. The statistical analyses were carried out with SPSS 19.0 package program. Each p value <0.05 was recognized as statistically significant.

Results: Among the participants, 27.4% were current smokers. Male students exhibited higher smoking rates than males (χ^2=33.755 sd=1 p<0.001). The smoking rate was observed to rise with increasing age (χ^2=13.891, sd=2, p=0.001). Close friends of smoker students were also smokers (X^2=69.754, p<0.001). According to the Fagerström test, 86 (76.1%) students showed mild level of nicotine dependence, whereas 27 (23.9%) exhibited moderate or severe level of nicotine dependence. Male participants demonstrated higher levels of nicotine dependence as compared to the females (χ^2=4.586, sd=1, p=0.032). The level of dependence was lower in students acknowledging the harmful effects of smoking to health as compared to those regarding smoking as not harmful (χ^2=7.865, sd=1, p=0.005).

Conclusion: Although young people are aware of the harmful effects of smoking, they continue to start and use smoking. The most influential factors associated with smoking are male gender and peer influence.

Keywords: Smoking, Students, Fagerström nicotine dependence test, Vocational School of Health Services, Turkey.

INTRODUCTION

Currently, smoking habit is one of the greatest threats for public health particularly in developing countries. All tobacco products and particularly cigarette smoking lead to serious diseases and death worldwide. The World Health Organization (WHO) has declared smoking

as a risk factor for the first eight leading causes of death and has reported cigarette smoking as the underlying cause of one in ten deaths[1].

Easily available nature and legal distribution appear to be responsible for the increased use of tobacco products. Recently, tobacco consumption has soared in developing countries, particularly among young adults [2,3].

The WHO defines smoking as the fastest spreading and longest standing epidemic. A total of 1.3 billion people smoke cigarette or consume a tobacco product worldwide, while this number is expected to reach 1.7 billion. Half of the people starting to smoke and becoming regular smokers are expected to lose their lives because of smoking [4]. According to the data of WHO, if proper precautions are not taken, 10 million people will be lost (70% in developing countries) due to a smoking-related disease in 2020. In addition, one person is lost every one second because of a tobacco-related health problem [1,4]. Studies report increased cigarette consumption in women, adolescents, and young adults [5,6].

According to the Global Adult Tobacco Survey of the *Turkish Statistical Institute* (TUIK) in 2008, tobacco consumption rate was 47.9% in men, 15.2% in women, and 31.2% in total [7]. The 2009 Global Youth Tobacco Survey revealed that 8.4% of the students (10.2 in males and 5.3% in females) were smokers [8].There was an increase, as compared to the same survey in 2003 (6.9% in total, 9.4% in men, and 3.5% in women) [9].

The sociologic and psychological risk factors of smoking among the youth are smoking parents, pretention, defiance of authority, peer influence, smoking role models, failure at school, low socioeconomic status, intrafamily conflict, lovelessness, loneliness, alcohol or drug use, and stress. The family, school, friends, and education can prevent a child from starting smoking [10-14]. In developing countries, the age of starting to smoke is 12-16 years. Each day, a total of 80.000-100.000 young people become tobacco addicts [15]. In a study conducted in 1999, the rate of cigarette smoking among young people aged 13-15 years was observed to vary between 10-33% [16].

In Turkey, the mean age of starting to smoke has been shown to vary between 11-18 years [17-20]. In 2002, the study of Emri et al. found the prevalence of cigarette smoking among people above 15 years of age as 35.8% (50.9% in males and 25.5% in females) [21]. The studies on prevalence of smoking among the youth in our country reveal thatit is 10-43% in junior high school/high school students, and 21.2-48.2% in university students [22]. Currently, more than 80% of adult smokers start smoking before 18 years of age [23].

In this study, which was conducted in our country having one of the highest smoking prevalence in the world, we aimed to investigate the smoking prevalence and dependence

levels as well as the associated factors in students at the Cukurova University Vocational School of Health Services (VSHS).

MATERIAL AND METHOD

We conducted a descriptive and cross-sectional study. Our study consisted of students attending one of the six 2-year programs (anesthesia, medical documentation, medical imaging, medical laboratory, oral and dental health, and physiology) at the Cukurova University VSHS during the 2012-2013 academic year.

The study data were collected between September 2012 and November 2012. No specific sample was targeted and all the students were invited. However, we were able to reach only 412 (81.2%) of the 507 students studying in VSHS.

The study data were collected with a questionnaire including 30 items. The first 24 questions were concerning the sociodemographic characteristics and smoking status of the participants. The last 6 items included Fagerström nicotine dependence test.

In 1978, Fagerström proposed the first measurement tool for nicotine dependence: Fagerström tolerance test. This test was revised by Fagerström, Heatherton, and Kozlowski under the name of “Fagerström nicotine dependence test” in 1992 [24]. In our country, Gunes et al. used the Fagerström nicotine dependence test in 2001 [25]. The test is comprised of 6 questions, with each question assigned to different points. The level of nicotine dependence is categorized in 5 groups based on the total scores: (0-2 points) very low dependence, (3-4 points) low dependence, (5) medium dependence, (6-7) high dependence, (8-10) very high dependence [24].In the present study, the statistical analyses were based on the following categorization: (0-4) low dependence and (5-10) medium-high dependence.

The questionnaires were applied within a single class period under the supervision of a research physician in each class. Prior to the application of the questionnaire, the aim of the study was explained and the students were informed on how to fill out the form. The approval of the VSHS administration was obtained before starting the study. The statistical analyses were carried out with SPSS 19.0 package program. A p value <0.05 was recognized as statistically significant.

RESULTS

Among our study sample, 257 (62.4%) of the 412 participants were female and the remaining 155 (37.6%) were male. The mean age was 19.23±2.82 (min=17, max=48) for the female

students and 20.65±4.7 (min=17,max=43) for the male students. The mean age of the study population was 19.76 ± 3.7 years(min=17, max=48).

Of the 412 students, 180 (43.7%) had used a tobacco product at least once in their lives (ever-smoker), whereas 232 (56.3%) had never used a tobacco product (never-smoker). While 113 (27.4%) of the 412 students were current smokers, 299 (72.6%) were non-smokers. Of the 257 female students, 45 (17.5%) were current smokers. Of the 155 male students, 68 (43.9%) were current smokers. Male students were found to show a higher smoking rate than female students (χ^2=33.755, df=1, p<0.001).

Of the 252 first-year students, 68 (27%) were current smokers and 184 (73%) were non-smokers. Furthermore, among the 160 second-year students, 45 (28.1%) were current smokers and 115 (71.9%) were non-smokers. There was no significant difference between first-year and second-year students with regard to smoking rate (χ^2=0.064, df=1, p=0.8). In addition, no significant difference was found between students of daytime and evening programs in terms of smoking rate (χ^2=0.439, p=0.508)(Table 1).

The age of starting to smoke was below 15 years in 49 (27.2%), 16-17 years in 85 (47.2%), 18-19 years in 38 (21.2%), ≥20 years in 8 (4.4%) students. The mean age of starting to smoke was 16.3±1.8 years. The smoking prevalence relative to age groups was as follows: 65 (22.4%) students were of 17-19 years of age, 34 (36.6%) were of 20-22 years of age, and 14 (48.3%) were of ≥23 years age. The prevalence of smoking was observed to soar with increasing age (χ^2=13.891,df=2,p=0.001) (Table 1).

Among the 412 students in our study, the mothers were non-working housewives in 376 (91.3%) and working women in 36 (8.7%). Furthermore, the father was a worker in 114 (27.7%), civil servant in 75 (18.2%), shopkeeper in 65 (15.7%), and retiree in 158 (38.4%) students.

There was no significant relationship between parental educational background and smoking status of the students (X^2=3.327, p=0.505, X^2=1.197, p=0.754, respectively)(Table 1).

Of the 412 students, 278 (67.5%) were exposed to tobacco smoke at their domicile, whereas 134 (32.5%) did not.

Of the 180 ever-smokers, 125 (69.4%) reported not smoking in the presence of non-smokers, whereas 55 (30.6%) reported not showing such a behavior.

The cause of starting to smoke among these 180 students was peer influence in 102 (56.7%), pretension in 25 (13.9%), parental influence in 4 (2.2%), and other reasons in 49 (27.2%).

No significant relationship was found between having smoker parents and starting to smoke (X^2=0.817, p=0.366, X^2=0.076, p=0.783, respectively) (Table 1). The students with a smoker closest friend were also smokers(X^2=69.754, p<0.001) (Table 1).

Please insert Table 1 here

Also according to the logistic regression analysis conducted in terms of smoking behavior and related factors; gender (being male) and the best friend being a smoker were determined to be risk factors. (Table 2)

Please insert Table 2 here

Fifty-five (30.6%) students reported never trying to quit smoking, whereas 65 (36.1%) reported trying once, 26 (14.4%) reported trying twice, 14 (7.8%) reported trying thrice, and 20 (11.1%) reported trying ≥4 times.

Among the 180 ever-smokers, 67 had quitted smoking. The reason of smoking cessation was current health problems in 10 (14.9%), soaring cigarette prices in 9 (13.4%), physician recommendation in 1 (1.5%), and future health concerns associated with smoking in 47 (70.2%).

Of the 67 quitters, 21 (31.3%) had not smoked for ≤6 months, whereas 46 had not smoked for >6 months.

Among our study sample, 402 (97.6%) regarded smoking as harmful for health, whereas 10 (2.4%) did not regard smoking as a harmful habit (2.4%).

According to the Fagerström nicotine dependence test, 86 (76.1%) of the participants had low level of dependence, whereas 27 (23.9%) had moderate or high dependence. In review of the relationship between gender and dependence, males were found to have higher nicotine dependence than females (χ^2=4.586,df=1,p=0.032). No significant difference was determined between those who tried and not tried to stop smoking with regard to Fagerström test results (χ^2=2.397,df=1,p=0.122).The Fagerström dependence level of those recognizing the harmful nature of smoking were lower than those regarding smoking as not harmful for health (χ^2=7.865,df=1,p=0.005).(Table 3).

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Vol:1, No:4, 2016 Web: http://www.turjoem.com ISSN : 2149-4711

DISCUSSION

The consumption of tobacco products is a serious public health issue that is widespread both in Turkey and abroad. Our study consisted of 412 students at the Cukurova University VSHS in 2012-2013 academic year. Of the 412 participants, 113 (27.4%) were current smokers, whereas 299 (72.6%) were non-smokers. These findings are consistent with those of the other studies conducted on higher education students in our country [1,26].

The mean age to start smoking was 16.3±1.8 years. It was 16.9 ±2.9 years in the study of Mayda et al. which consisted of Duzce School of Medicine students and 16.8±2.8 years in the study of Picakciefe et al. which consisted of Mugla School of Health students [2,27]. These rates are similar to that found in our study.

In our study, regarding gender difference, 43.9% of the males and 17.5% of the females were smokers. The prevalence of smoking was significantly higher in males than in females. The prevalence of smoking among male students was found to be higher than that of females in the study of Ilhan et al. (Gazi university) and Atilla et al. (Duzce School of Medicine), as well [2,3].

There was no significant difference between first-year and second-year students in smoking prevalence. Picakciefe et al. conducted a study on Mugla School of Health and observed increasing smoking prevalence from first-year to fourth-year [27].

We found a significant relationship between smoking prevalence and increasing age. Ogus et al. determined higher smoking prevalence in sixth-year medical school students as compared to those in first-year [28].

In this study, smoking status of parents was found to have no effect on their children's smoking status. Similarly, Kaya et al. observed no relationship between parents' and children's smoking status in students of Marmara University School of Medicine [29].

In our study, parental educational background was determined to have no influence on children's smoking status. Similarly, Celik et al. determined no relationship between parental educational background and smoking status of children in high school in Manisa province [30]. Furthermore, in their study, Goksel et al. determined no such relationship, as well [31]. However, several studies have shown the impact of parental educational background on smoking behavior of children [32,33].

In this study, the relationship between having a smoker closest friend and smoking status was found to be significant. In their study, Valente et al. found that 93.1% of the smokers influenced their friends to start smoking [34]. Similarly, Marakoglu et al. determined high rates of starting to smoke due to peer influence in teachers in Konya province [35]. Two

studies involving medical school students at the Gazi and Duzce Universities indicated peer influence as the most common cause to start smoking [2,3].

In our study, of the 180 ever-smoker students, 67 were former smokers. The reason to quit smoking was future health concerns in 70.2%, current health problems in 14.9%, soaring cigarette prices in 13.4%, and physician recommendation in 1.5%. Acikel and Gencer showed that more than ¾ of the participants in their study had tried to quit smoking at least once. The most common causes to quit smoking were future health concerns and economic reservations [36,37]. In the present study, these two were the most common causes to quit smoking, as well.

According to the Fagerström nicotine dependence test applied on current smokers, 86 (76.1%) had low dependence, whereas 27 (23.9%) had moderate-high dependence. Pirincci et al. applied Fagerström nicotine dependence test on students at the Firat University School of Health and observed the following scores: very low in 55.2%, low in 9.0%, medium in 13.4%, high in 11.9%, and very high in 10.5% [38]. Kutlu et al. determined low/very low dependence based on Fagerström test among students of the Seydisehir Vocational School [39]. In our study, males were more dependent on nicotine than females. Other studies in our country have shown a relationship between gender and nicotine dependence levels, as well [40].

CONCLUSION

In conclusion, both in Turkey and abroad, smoking is a serious health problem among the youth. As observed in our study, many young people start or continue smoking despite knowing the harmful effects of smoking. One of the most important causes of starting to smoke is peer influence. Therefore, family and school environments as well as circle of friends appear to play significant roles in the prevention of smoking. In order to raise awareness for the harmful effects of smoking, educational programs and lessons should be increased and improved, and the students attending higher education associated with healthcare fields should be taught to act like role models to the society in this regard.

Conflict of interest

The authors declare that there is no conflict of interest

Ethical considerations

Before starting the study, all participants were informed and their consent was obtained as well as the approval of the VSHS administration.

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