



Research Article/Özgün Araştırma

Evaluation of the quality of sexual life among smoking and non-smoking women of 18-49 ages

18-49 yaş aralığındaki sigara içen ve içmeyen kadınlarda cinsel yaşam kalitesinin değerlendirilmesi

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Abstract

Aim: This study aimed to determine the prevalence of smoking among women aged 18–49, assess nicotine dependence levels, and evaluate the relationship between smoking and sexual quality of life.

Materials and Methods: A cross-sectional study was conducted between June 12, 2023, and January 21, 2024, with a sample of 845 women. Data were collected using a literature-based questionnaire, the Fagerström Test for Nicotine Dependence, and the Quality of Sexual Life Scale.

Results: The prevalence of smoking was found to be 48.2%. Smoking was significantly more common among unmarried women ($p=0.001$). There was no statistically significant difference in sexual quality of life between smokers and non-smokers ($p=0.828$).

Conclusion: The findings of this study suggest that smoking duration and dependence level have no significant impact on sexual quality of life. Further rigorous and multidimensional research is warranted to elucidate this relationship.

Keywords: Smoking; Women; Sexuality; Sexual life; Turkey.

Öz

Amaç: Bu çalışma, 18–49 yaş arası kadınlar arasında sigara kullanım yaygınlığını belirlemeyi, nikotin bağımlılığı düzeylerini değerlendirmeyi ve sigara kullanımı ile cinsel yaşam kalitesi arasındaki ilişkiyi incelemeyi amaçlamaktadır.

Gereç ve Yöntem: 12 Haziran 2023 – 21 Ocak 2024 tarihleri arasında 845 kadından oluşan örneklemle kesitsel bir çalışma yürütülmüştür. Veriler, literatüre dayalı bir anket formu, Fagerström Nikotin Bağımlılık Testi ve Cinsel Yaşam Kalitesi Ölçeği kullanılarak toplanmıştır.

Bulgular: Sigara içme prevalansı %48,2 olarak bulunmuştur. Sigara kullanımı, evli olmayan kadınlarda anlamlı düzeyde daha yaygındır ($p=0,001$). Sigara içen ve içmeyenler arasında cinsel yaşam kalitesi açısından istatistiksel fark bulunmamıştır ($p=0,828$).

Sonuç: Çalışma bulguları, sigara kullanım süresi ve bağımlılık düzeyinin cinsel yaşam kalitesini belirgin şekilde etkilemediğini göstermektedir. Kadınlarda sigara kullanımı ve nikotin bağımlılık düzeylerinin cinsel yaşam kalitesi üzerinde anlamlı fark yaratmaması, bu konuda kapsamlı ve çok boyutlu çalışmaların gerekliliğini göstermektedir.

Anahtar Kelimeler: Sigara; Kadın; Cinsellik; Cinsel yaşam; Türkiye.

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intihal incelemesinden geçirilmiştir.



Introduction

In recent years, the prevalence of smoking among women has been increasing worldwide and it is considered a major public health problem.¹ Studies show that more than 30% of women of reproductive age smoke and that the toxic properties of cigarettes contribute to the etiology of many diseases, including disorders regarding the respiratory, nervous, and circulatory systems.^{2,3} Smoking is a significant risk factor that adversely affects multiple systems in the body. In women who smoke, the risk of developing systemic conditions such as cervical cancer, osteoporosis, cardiovascular diseases, atherosclerosis, diabetes, lung cancer, and early menopause is known to increase.⁴⁻⁶

The harmful effects of smoking are not limited to systemic health issues; it also has serious negative impacts on reproductive health and the course of pregnancy. Women who smoke before and during pregnancy have an increased risk of preterm delivery, abnormal fetal growth, low birth weight, miscarriage, and fetal death.^{7,8}

Sexuality and sexual health are complex processes that involve multiple dimensions and play an important role in human life. Sexual health is a key part of the overall health and quality of life of individuals, couples, and families.^{9,10} The World Health Organization (WHO) defines sexual health not merely as the absence of disease, disability, or dysfunction, but as a state of complete physical, mental, emotional, and social well-being in relation to sexuality.¹¹ Physical and mental health, self-esteem, body image perception, and current lifestyle behaviors (such as smoking, alcohol use, eating habits, and exercise status) may have an impact on an individual's sexual health, and disruptions in these areas may lead to sexual dysfunction, which is defined as a decrease in sexual desire and arousal, an inability to reach orgasm, and pain during sexual intercourse.^{3,12} Physiological, anatomical, psychological, social and cultural factors are effective in the etiology of sexual dysfunctions.^{13,14} Also, diabetes, obesity, the presence of cardiovascular disease, alcohol, drugs and smoking are major risks for sexual dysfunction.^{15,16} Most women experience

sexual dysfunction at some point in their lives.¹³ Sexual dysfunctions may have a negative impact on the quality of sexual life of women and their prevalence in women varies between 40-45%.^{17,18}

Long-term smoking can negatively affect the sexual health of both men and women, and is considered among the significant causes of erectile dysfunction in men.^{19,20} For women, different pathophysiologies have been asserted as the effects of smoking on sexual health. Some of these pathophysiologies include the disruption of vascular endothelium due to smoking, increasing the risk of developing atherosclerosis, exhibiting anti-estrogenic effects, reducing blood flow to the female genital system, increasing the level of reactive oxygen in the bloodstream, reducing nitric oxide (NO) synthesis from endothelial cells, causing hormonal disorders, and nerve imbalances.^{16,21-23} The common ground of all these pathophysiologies is that for women smoking has an impact on sexual function, decreases sexual desire and arousal, orgasm and vaginal lubrication.^{3,9,23}

As observed in the literature, whether a woman smokes or not can impact their sexual health and quality of sexual life. The problems experienced by women regarding sexuality cannot be expressed openly. This may cause women to experience sexual function problems. The aim of this study is to determine the prevalence of smoking among women aged 18-49 and to evaluate the impact of smoking on the quality of sexual life.

Materials and Methods

Study design

This study was designed as a cross-sectional descriptive study and was conducted online through social media platforms (Facebook, Instagram, and WhatsApp) targeting women. Data were collected using the snowball sampling method.

Population and sample

The study population consisted of women aged 18-49 with an active sexual life who voluntarily agreed to participate. A power analysis was conducted using the G*Power 3.1 program to determine the sample size of the

study. In the analysis designed to test the difference of a single group's mean from a fixed value, parameters of 0.20 effect size (Cohen's d), 5% significance level ($\alpha=0.05$), and 99% power ($1-\beta=0.99$) were used. As a result of the analysis, the required minimum sample size was calculated as 396 participants. Data collection took place between June 12, 2023, and January 21, 2024. A total of 902 women completed the questionnaire, but 57 were excluded due to being outside the 18–49 age range or providing incomplete responses, resulting in a final sample of 845 women. Increasing the sample size enhances the statistical power of the study and raises the likelihood of detecting even small effect sizes as significant.

Data collection Tools

Data were collected using a self-administered questionnaire developed based on the literature^{21,24,25}, the Fagerstrom Nicotine Dependence Test²⁷, and the Female Sexual Quality of Life.²⁹

In this study, women who smoke at least one cigarette a day are defined as "smokers" and women who has never smoked or has not smoked in the last 6 months are defined as "non-smokers".²⁶

Women who were actively working for an income-generating job were defined as "working". Their household income was evaluated as "good, medium and bad" based on the women's personal perceptions. Those with an enthusiastic-impatient-impetuous personality were considered as "Type A" personality and those with a quiet-calm-planned-systematical personality were considered as "Type B" personality".³¹

Fagerstrom Tolerance Questionnaire (FTQ) was used to assess nicotine dependence in women. This scale was developed by Fagerstrom et al.²⁷ in 1990 and its validity and reliability study in Turkey was conducted by Aksakal and Khorshid²⁸ in 2006. The scale consists of 6 questions, with questions 1 and 4 scored on a scale of 0-1-2-3 points whereas questions 2, 3, 5, and 6 scored on a scale of 0-1 points. The scores that may be obtained from the scale vary between 0-10, and the higher the score means the higher the level of nicotine

dependence. If the score from this scale is 0-2, nicotine dependence is very low; if it is 3-4 points, it is low; if it is 5 points, it is medium; if it is 6-7 points, it is high; if it is 8-10 points, it is very high.

The Female Sexual Quality of Life Scale was developed by Symonds In our study, the quality of sexual life for women has been evaluated with the Quality of Sexual Life Scale (Female). The scale was developed by Symonds et al.²⁹ and Turkish validity and reliability study was conducted by Tuğut and Gölbaşı.³⁰ The scale consists of 18 six-point Likert-type items and each item is answered by considering sexual life in the last four weeks. Each item in the scale is evaluated with a score between 1-6. The answers are scored as follows: 1=Strongly agree, 2=Agree, 3=Somewhat agree, 4=Somewhat disagree, 5=Disagree, 6=Strongly disagree. The scores that can be obtained from the scale vary between 18-108. The scores of items 1, 5, 9, 13 and 18 are inversely calculated before calculating the total score. For converting the total scale score to 100; (Raw score from the scale-18) x (100/90) formula is used. A high score on the scale indicates a good quality of sexual life. The scale has no cut-off point and a high score on the scale indicates a good quality of sexual life. Cronbach α internal consistency coefficient of the scale was found to be 0.83.

Data analysis

The data obtained were assessed by using IBM SPSS Statistical Package Program in computer environment. Descriptive statistics including numbers and percentages, mean and standard deviation, median (min-max) values were used in the study. The conformity of the data to normal distribution was ensured with the Kolmogorov-Smirnov test. Chi-square test, Mann-Whitney U test and Kruskal-Wallis test were used for the analyses. $p \leq 0.05$ was accepted as statistical significance value.

Ethics committee approval

An approval was received from the Ethics Committee of Ankara Yıldırım Beyazıt University for the study (decree number 02-45 dated 15.02.2023). The study was conducted by complying with the applicable data

protection regulations and the principles of the Declaration of Helsinki. The subject and purpose of the study were presented to the participants in detail via an online written briefing, and written informed consent was obtained from those who agreed to participate. The participants' identities were kept confidential, and the data obtained were used solely for research purposes. Furthermore, all necessary ethical and legal measures regarding data security and participant privacy were implemented.

Results

The ages of the women in the study group ranged between 18-49 years with a mean of 31.2 ± 6.7 years. Half of the women (50.8%) approximately had postgraduate education. The number of married women was 489 (57.9%), 575 (68.0%) were employed in an income-generating job, and 695 (82.2%) had a nuclear family structure. In this study, the prevalence of smoking was found to be 48.2% (n=407) (Table 1).

Table 1. The distribution of smokers and non-smokers in the study group per some sociodemographic characteristics.

Sociodemographic Characteristics	Smoking			Test Value $\chi^2; p$
	Not smoking n (%)*	Smoking n (%)*	Total n (%)**	
Age group				
≤24	62 (55.4)	50 (44.6)	112 (13.3)	2.325; 0.508
25-29	157 (54.0)	134 (46.0)	291 (34.4)	
30-34	110 (48.2)	118 (51.8)	228 (27.0)	
≥35	109 (50.9)	105 (49.1)	214 (25.3)	
Education level				
High school and below	42 (47.7)	46 (52.3)	88 (10.4)	3.986; 0.136
Two-year/Bachelor's Degree	184 (56.1)	144 (43.9)	328 (38.8)	
Postgraduate	212 (49.4)	217 (50.6)	429 (50.8)	
Marital status				
Married	282 (57.7)	207 (42.3)	489 (57.9)	16.147; 0.001
Single	141 (44.3)	177 (55.7)	318 (37.6)	
Separated/widowed	15 (39.5)	23 (60.5)	38 (4.5)	
Working status				
Not working	147 (54.4)	123 (45.6)	270 (32.0)	1.083; 0.298
Working	291 (50.6)	284 (49.4)	575 (68.0)	
Occupation				
Housewife	77 (53.8)	66 (46.2)	143 (16.9)	15.754; 0.003
Worker	49 (38.6)	78 (61.4)	127 (15.0)	
Civil Servant	220 (55.3)	178 (44.7)	398 (47.1)	
Self-employed (tradesmen)	71 (48.3)	76 (51.7)	147 (17.4)	
Retired	21 (70.0)	9 (30.0)	30 (3.6)	

In the study group, 41.6% of smoking women reported that friends were the most effective reason for starting smoking (Table 2).

Table 2. Reasons for starting smoking among the smokers in the study group.

Reasons for starting smoking	Number (%)
Circle of friends	262 (41.6)
Personal and family problems	90 (14.3)
Curiosity-envy	118 (18.7)
For pleasure	129 (20.5)
For weight loss	8 (1.3)
Other	23 (3.6)
Total	630 (100.0)

*Numbers are calculated based on the responses.

The number of women who reported smoking for 30 years or longer was 157 (38.6%) in the study group. Women's scores on the Fagerstrom Nicotine Dependence Scale have ranged between 0-10, with a mean of 3.1 ± 2.5 points (Table 3). The distribution of the scores from the Fagerstrom Nicotine Dependence Scale, obtained by the members of the study group, based on their smoking durations is shown in Table 3.

Women's scores on the Quality of Sexual Life Scale have ranged between 0-93.3, with a mean of 19.1 ± 18.6 (median: 13.3) points (Table 4).

Table 3. The distribution of the scores from the Fagerstrom Nicotine Dependence Scale, obtained by the members of the study group, based on their smoking durations.

Duration of smoking (years)	Number (%)	Fagerstrom Nicotine Dependence Scale Score Median (min-max)
24 and below	125 (30.7)	2.0 (0.0-9.0)
25-29	125 (30.7)	3.0 (0.0-8.0)
30-34	66 (16.2)	2.5 (0.0-10.0)
35 and above	91 (22.4)	3.0 (0.0-10.0)
Total	407 (100.0)	3.0 (0.0-10.0)

KW= 3.533; 0.317

Table 4. The distribution of the scores on the Quality of Sexual Life Scale by smoking and non-smoking participants in the study group.

Smoking status	Number (%)	Quality of Sexual Life Scale Score Median (min-max)
Not smoking	438 (51.8)	12.8 (0.0-93.3)
Smoking	407 (48.2)	13.3 (0.0-88.9)
Total	845 (100.0)	13.3 (0.0-93.3)

z=0.217, 0.828

The scores from the Fagerstrom Nicotine Dependence Scale shows that 195 of the women (47.9%) are very low, 97 of them are (23.8%) are low, 27 of them (6.6%) are

moderately, 64 of them (15.7%) are highly, and 24 of them (5.9%) are very highly nicotine dependent (Table 5).

Table 5. Distribution of smokers' scores on the Quality of Sexual Life Scale based on the nicotine dependence level.

Nicotine Dependence level	Number (%)	Quality of Sexual Life Scale Score Median (min-max)
Very low	195 (47.9)	13.3 (0.0-88.9)
Low	97 (23.8)	13.3 (0.0-80.0)
Medium	27 (6.7)	17.8 (0.0-63.3)
High	64 (15.7)	11.1 (0.0-61.1)
Very high	24 (5.9)	14.4 (0.0-71.1)
Total	407 (100.0)	13.3 (0.0-88.9)

KW: 4.309; 0,366

Discussion

Despite widespread knowledge regarding the dangers of smoking, smoking remains a public health concern and is among the leading causes of preventable death worldwide.³² Smoking is globally the most common form of tobacco use. WHO report indicates that 22.3% of the world's population will be using tobacco in 2020.³³ In the report published by the Convention on the Organization for Economic Co-operation and Development (OECD) in 2021, it was stated that 16.5% of individuals at the age of 15 and above in OECD countries smoked cigarettes every day whereas this figure was 28% in Turkey.³⁴ Turkish Statistical Institute (TÜİK) data shows that the prevalence of tobacco use in our country was 31.4% in 2019 and 32.1% in 2022.³⁵ In our study, the prevalence of smoking was found to be 48.2% and it was identified that single women had a higher prevalence of smoking. It is also reported in the literature that smoking

prevalence is higher in unmarried groups.^{36,37} Based on the results of the National Health Interview Survey (NHIS), it was reported that the smoking prevalence of single individuals (23.1%) was higher than married individuals (18.2%).³⁷ Zhang et al.³⁶ reported that the prevalence of smoking was lower in married women compared to unmarried women. It is observed that the results of the studies in the literature are compatible with our study results. In our study, the impact of spousal support on smoking status was not questioned, but it may be asserted that spousal support in marriage may be an important factor in coping with problems and single individuals are more at risk for unhealthy life behaviors.

In our study, it has been found that the highest prevalence of smoking among occupations is among workers and the lowest prevalence is among retired people (Table 1). In a study conducted by Tuncer et al.³⁸ when smoking status was compared per occupational

group, it was reported that smoking prevalence was highest in private sector employees (workers) with 33.6% and lowest in the retired group with 4.1%. In the study conducted by Garnett et al.³⁹ it was reported that smoking prevalence was higher in workers than in retirees. The results of the study are following the literature. While an individual working in OECD countries works for 35 hours on average,⁴⁰ this figure exceeds 50 hours in our country.⁴¹ Long working hours, intense and stressful environments may trigger smoking in workers.

Personality traits, one of the important determinants of behavior, are long-term characteristics.⁴² It has been reported that personality traits both encourage healthy life behaviors and are associated with health risk behaviors.⁴³ In our study, it was observed that the frequency of smoking was higher among those with type A personality than those with type B personality (Table 1). Enthusiastic, impetuous individuals with type A personality may be more stressful and ambitious. This may increase their tendency to smoke. On the other hand, quiet, calm individuals with type B personality can cope with stress better. Therefore, the frequency of smoking may be low in those with type B personality. In the literature, no study was found that investigates the smoking habits of individuals with Type A and Type B personalities.

In this study group, it was found that the frequency of smoking was higher in individuals with smokers in their families compared to those without smokers in their families (Table 1). The existence of smokers in the family may have an impact on the smoking habits of individuals. A child whose parent smokes is more likely to smoke, and a child whose sibling smokes is more likely to smoke. In addition, similar smoking habits among family members may result from having common genes.⁴⁴ In literature, studies on this subject show that the likelihood of being a smoker is higher in individuals whose families smoked compared to those whose families did not smoke.^{45,46} In a study conducted in our country, it was reported that 65.1% of the smoking students' mothers and 44.3% of the smoking students' fathers smoked.⁴⁷ The

results of our study are in compliance with the literature. Family members have sociocultural impact on each other, and they can see each other as role models. Therefore, it is considered that those who have smokers in their families may be more likely to smoke.

In this study, 41.6% of smokers reported that friends were the most effective reason for starting smoking (Table 2). When the literature is examined, the most common reason for individuals to continue smoking is having a friend who smokes in the immediate vicinity.^{48,49} In a study, it was reported that peer pressure ranked first among the reasons that trigger smoking.⁴⁸ In a systematic review and meta-analysis study conducted by Leshargie et al.⁴⁹ it was reported that individuals who felt peer pressure were more likely to smoke than those who did not feel peer pressure. In a study conducted in Turkey, participants reported the most common reason for starting smoking was "to take pleasure".⁵⁰ In another study conducted in Turkey, it was found that the most common reason for smoking was due to its "effectiveness in reducing stress".²⁵ There are some similar and different results between our study and the literature. This may be due to the difference in the sample.

In our study, it was found that nicotine dependence level was higher in those who have been smoking for 25 years and longer than those who have been smoking for 24 years and less (Table 3). In the studies conducted on this subject, longer smoking duration has been associated with higher nicotine dependence levels.^{51,52} The results of our study resonate with the literature. The reason for this resonance is that the longer the duration of smoking, the longer the exposure to nicotine. This may have an impact on increasing the level of addiction.

The quality of sexual life is known to be affected by many factors.⁵³ In this study, it was observed that women who smoked had a better sexual quality of life compared to non-smokers (Table 4). When the literature is reviewed, there are differences in the results of studies on the impact of smoking on the quality of sexual life. In a systematic collection and meta-analysis, it was reported that smoking women

were more susceptible to sexual dysfunction compared to non-smokers.²³ In another study, it was reported that approximately one third of the participants were dissatisfied with their sexual life and almost all the dissatisfied participants were smokers. In the same study, it was reported that sexual dissatisfaction was higher in smokers compared to non-smokers.²⁴ Choi et al.²¹ reported in their study that sexual dysfunction was significantly higher in smokers than in non-smokers. In a study by Jaafarpour et al. it was reported that smoking had no impact on female sexual dysfunction.⁵⁴ In another study on female sexual dysfunction, it was reported that smoking was not associated with sexual dysfunction.⁵⁵ One of the reasons for the differences in the study results is thought to result from the fact that women in the working groups belong to different socio-cultural backgrounds.

In our study, sexual quality of life scores were similar across different levels of nicotine dependence, with no significant differences observed. (Table 5). In a study on whether smoking is a risk factor for sexual dysfunction, it was reported that the frequency of sexual dysfunction was higher in smokers with moderate to heavy nicotine dependence than in smokers with mild dependence.²¹ Differences in study results may be due to variables such as the demographic and cultural characteristics of the sample groups, the socioeconomic contexts in which the data were collected, and the duration of participants' smoking habits.

Limitations

In this study, the views of smoking and non-smoking women on sexuality and sexual life were discussed. The first limitation of this study is that the majority of the participants were at the young age group (with a mean age of 31.2±6.7 years). The second limitation is that the answers by women to questions about sexuality may be misleading because sexuality is a taboo in Turkey.

Conclusion

Smoking among women is a significant public health problem. The prevalence of smoking was found to be higher in unmarried women, workers, women with Type A personality and with a history of smoking in

the family. No difference was observed in sexual quality of life between women who smoke and those who do not. Sexual quality of life scores were also similar according to nicotine dependence levels, with no significant differences detected. The lack of a significant effect of smoking prevalence and nicotine dependence levels on sexual quality of life among women highlights the need for more comprehensive and long-term studies in this area. Future research should consider psychosocial, cultural, and biological factors together to examine in greater detail the impact of smoking on sexual quality of life.

Ethics Committee Approval

Ethical approval was obtained prior to the commencement of the study through the Ankara Yıldırım Beyazıt University Faculty of Health Sciences Non-Invasive Ethics Committee (decree number 02-45 dated 15.02.2023).

Informed Consent

Informed consent was obtained from all participants prior to the participation in the study.

Author Contributions

All authors contributed equally to the article.

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None

Conflict of Interest

The authors have no conflicts of interest to disclose.

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