



## The Effect of Smoking on Family Functions

### Sigara Kullanma Durumunun Aile İç Fonksiyonlara Etkisi

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#### Abstract

**Aim:** Family is the most natural environment where people can meet their needs of love, compassion, affection and care for mental and physical health. In this study, we aim to investigate the relation between smoking and family functions.

**Material and Method:** Ninety seven patients between 18-60 years age who were admitted to the Ankara Training and Research Hospital, live with at least one family member and agreed to participate in the study were included in this study. Cross-sectional, observational and analytic methods were applied. The recorded data of the participants were as follows: age, sex, occupation, marital status, education level, the family members whom living with, the status of smoking at home, chronic diseases and current medication. McMaster Model of Family Functioning (MMFF) and Fagerström Test for Nicotine Dependence (FTND) were used.

**Results:** Statistically significant differences between MMFF scores of smoking patients in the subscales of "Roles" and "Affective Involvement" were found ( $p=0.004$ ,  $p=0.002$ , respectively). We have seen in the subscale of "Problem Solving" that single members were negatively affected ( $p=0.033$ ). The negative effects of smoking were found to be decreasing by age in the "Communication" subscale ( $p=0.002$ ). The "Roles" subscale was observed to be negatively disturbed in the group of smokers with chronic diseases ( $p=0,050$ ). We also found that being single and having a chronic disease negatively affected "Affective Responsiveness" subscale ( $p=0.050$ ,  $p=0.020$ , respectively).

**Conclusion:** Smoking affects the family functions negatively. Thus, the fight against smoking might be thought to make a favorable effect on the family functions.

**Keywords:** Family functions, family medicine, smoking

#### Öz

**Amaç:** Aile, insanların ruh ve beden sağlığı için sevgi, şefkat ve bakım ihtiyaçlarını karşılayabilecekleri en doğal ortamdır. Bu çalışma ile, sigara ile aile işlevleri arasındaki ilişkiyi araştırmayı amaçladık.

**Gereç ve Yöntem:** Bu çalışmaya Ankara Eğitim ve Araştırma Hastanesi'ne başvuran, en az bir aile üyesi ile yaşayan ve çalışmaya katılmayı kabul eden 18-60 yaş arası 97 hasta dahil edildi. Kesitsel, gözlemsel ve analitik yöntemler uygulandı. Katılımcıların: yaş, cinsiyet, meslek, medeni durum, eğitim durumu, birlikte yaşadığı aile bireyleri, evde sigara içme durumu, kronik hastalıkları ve kullandığı ilaçları kaydedildi. Katılımcılara Mc Master Aile İç Fonksiyon ölçeği ve Fagerström Nikotin Bağımlılık Ölçeği uygulandı.

**Bulgular:** Sigara içen hastaların 'Roller' ve 'Gereken ilgiyi gösterme' alt ölçeklerinde Mc Master ölçek skorları arasında istatistiksel olarak anlamlı fark bulundu (sırasıyla,  $p=0,004$ ,  $p=0,002$ ). 'Problem çözme' alt ölçeğinde bekar olanların olumsuz etkilediği görüldü ( $p=0,033$ ). 'İletişim' üzerine sigaranın olumsuz etkisinin yaş ilerledikçe azaldığı tespit edildi ( $p=0,002$ ). Kronik hastalığı olan sigara içicisi grupta 'roller' alt ölçeğinin olumsuz etkilendiği bulundu ( $p=0,050$ ). 'Duygusal tepki verme' alt ölçeğinin bekar olunması ve kronik hastalık varlığından olumsuz etkilendiği saptandı (sırasıyla,  $p=0,050$ ,  $p=0,020$ ).

**Sonuç:** Sigara, aile fonksiyonlarını olumsuz yönde etkilemektedir. Bu nedenle sigarayla mücadelenin aile işlevlerine iyileştirici yönde etki yapacağı düşünülebilir.

**Anahtar Kelimeler:** Aile işlevleri, aile hekimliği, sigara



## INTRODUCTION

Smoking, which is widely used around the world and adversely affects the health of individuals, is one of the most important and preventable causes of mortality and morbidity.<sup>[1]</sup> Substances in cigarette smoke lead to many diseases and disorders in humans, as well as cancer. These include symptoms that affect the quality of life, such as halitosis (bad breath), changes in taste and smell, discoloration of the nails and teeth, headache and fatigue.<sup>[2]</sup> Studies have shown that smoking negatively affects the quality of life.<sup>[3,4]</sup>

Family is the most natural environment where people can meet their needs of love, compassion, affection and care for mental and physical health. Individuals' life satisfaction, effective fulfillment of their family functions and adaptation to the society are first provided in the family environment.<sup>[5]</sup> Individuals' being healthy is possible by fulfilling the functions of the family they live in. External factors such as unexpected changes in the socioeconomic structure, crisis situations and diseases may also have a detrimental effect on family health.<sup>[6]</sup> It is crucial to perform a biopsychosocial examination on the patient in family health centers. Questioning the family life, social environment and smoking status of patients or the individuals with whom they live together is therefore important for preventive medicine.<sup>[7]</sup> In this study, we aimed to investigate the possible effects of smoking status on family functions in a single-center experience.

## MATERIAL AND METHOD

### Subjects

This study included 97 patients aged 18-60 years who were admitted to the central and district outpatient clinics of Ankara Training and Research Hospital between August and November 2014 and who agreed to participate in the study. Patients living alone at home, in collective centers (dormitories, nursing homes, etc.) or living at home with non-family members were excluded from the study. The study group was evaluated cross-sectionally, observationally and analytically.

### Data collection

A sociodemographic data form, McMaster Model of Family Functioning (MMFF) and Fagerström Test for Nicotine Dependence (FTND) scales were applied to the patients.

**Sociodemographic data form:** The questions of this form are intended to collect the sociodemographic data of the participants. In addition to sociodemographic data such as age, gender, marital status, educational status, occupation and number of children, information on smoking, other members at home, smoking status at home, chronic diseases and drug use were also questioned by the form.

**Fagerström Test for Nicotine Dependence:** Fagerström first proposed the Fagerström Tolerance Questionnaire in 1978 to measure nicotine dependence. In 1992, Heatherton

and Kozlowski developed the new version "Fagerström Test for Nicotine Dependence" by reviewing and revising this instrument.<sup>[8]</sup> The Turkish validity and reliability study of the test was conducted by Uysal et al. in 2004.<sup>[9]</sup> The Fagerström Test for Nicotine Dependence consists of 6 questions, and a certain score is given based on the response to each question. The test is evaluated in 5 groups as low dependence (0-2 points), low to moderate dependence (3-4 points), moderate dependence (5 points), moderate to high dependence (6-7 points) and high dependence (8-10 points) according to the total scores obtained.

**McMaster Model of Family Functioning (Family Assessment Device):** The Family Assessment Device is a scale that determines on which subjects the family can or cannot fulfill its functions. This scale was obtained by clinically applying the McMaster Model of Family Functioning on families, and consists of 7 subscales including problem solving, communication, roles, affective responsiveness, affective involvement, behavior control and general functioning. Six of the subscales evaluate each problem in family functions separately, while one of them focuses on general functioning.<sup>[10]</sup> The Turkish version of the scale developed by Bulut was used in this study.<sup>[11]</sup>

### Ethical Approval

The study was approved by Ankara Training and Research Hospital Local Ethic Committee. (Date: 07/09/2017 Decision No: 2017/21-44). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

### Statistical Analysis

SPSS 16.0 (SPSS Inc. Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.) software was used for the creation of a database and statistical analyses in the study. Normality was tested with Kolmogorov-Smirnov test. Comparison between the continuous variables in the studied groups was achieved using student t-test or Mann-Whitney U-test as appropriate and Chi-square test was used to compare categorical data. All negatively worded items were reverse scored, and the mean subscale scores were calculated in the McMaster Model of Family Functioning. Descriptive analyses of the participants were then performed. In the analytical analyses, the factorial ANOVA model was used to analyze other factors that may affect the subscales of the McMaster Model of Family Functioning. A p-value of <0.05 was considered statistically significant.

## RESULTS

Of the 97 patients participated in the study, 52 (53.6%) were smokers. The mean age of the smokers was 34.02±9.9 years, while the mean age of non-smokers was 39.31±10.8 years. The demographic data and chronic diseases of the patients by the smoking status variable are given in **Table 1**.

**Table 1: Demographic of the participants and family assessment device scale scores**

	All N: 97	Smoker N: 52	No-smoker N: 45	p-value (smoker v.s. no-smoker)
Age (years)	36.47±10.65	34.02±9.9	39.31±10.8	0.013
Gender				
Male	53 (54.6%)	28 (53.8%)	25 (55.5%)	>0.05
Female	44 (45.4%)	24 (46.2%)	20 (44.5%)	
Marital status				
Single	36 (37.1%)	29 (55.7%)	7 (15.5%)	<0.001
Married	61 (62.9%)	23 (44.3%)	38 (84.5%)	
Education status				
Non-academic	46 (47.4%)	30 (57.7%)	16 (35.5%)	0.001
Academic	51 (52.6%)	22 (42.3%)	29 (64.5%)	
Monthly income (TL)	2250.1±1599.3	1757±1142.5	2819±1857.4	0.001
Chronic disease	26	14	12	
HT	11 (11.3%)	4 (7.7%)	7 (15.5%)	>0.05
DM	4 (4.1%)	1 (1.9%)	3 (6.6%)	
KAD	6 (6.1%)	5 (9.6%)	1 (2.2%)	
KOLD	4 (4.1%)	3 (5.7%)	1 (2.2%)	
Malignancy	1 (1.03%)	1 (1.9%)	0 (0)	
Family Assessment Device (McMaster Model)				
Problem solving	1.5±0.49	1.5±0.54	1.5±0.43	>0.05
Communication	1.8±0.42	1.7±0.47	1.8±0.36	>0.05
Roles	2.0±0.46	2.1±0.47	1.84±0.39	0.004
Affective responsiveness	1.7±0.61	1.8±0.69	1.7±0.51	>0.05
Affective involvement	1.8±0.48	1.9±0.52	1.6±0.41	0.002
Behavior control	1.9±0.34	1.9±0.37	1.8±0.30	>0.05
General functioning	1.4±0.48	1.5±0.55	1.4±0.36	>0.05

Data were presented as mean ± SD, and n (%); SD: Standard deviation. HT: hypertension, DM: diabetes mellitus, CAD: coronary arterial disease, KOLD: chronic obstructive lung disease.

A significant difference was observed in the roles, and affective involvement subscales in the comparison of McMaster Model of Family Functioning scores by smoking status ( $p=0.004$ ,  $p=0.002$ , respectively) (**Table 1**).

No difference was observed among smokers in terms of Fagerström score, cigarette pack year, cigarette per year and amount of smoking at home by gender but significant difference was observed in terms of cigarette per day outside home, smoking monthly cost and another smoker at home (**Table 2**).

**Table 2: General characteristic of smokers**

	Smoker N: 52	Female Smokers N:24	Male Smokers N:28	p-value (female v.s. male)
Fagerström score	4.02±2.54	4.0±2.60	4.04±2.53	>0.05
Cigarette pack year	11.83±10.73	10.38±6.85	13.07±13.19	>0.05
Cigarette per day	17.81±8.09	15.58±5.83	19.71±9.30	>0.05
Cigarette per day at home	7.15±4.47	7.00±4.70	7.29±4.35	>0.05
Cigarette per day at outside home	10.6±5.96	8.5±5.05	12.43±6.16	0.016
Smoking monthly cost (TL)	186±106.4	147±69.3	221±121.1	0.008
Another smoker at home	32 (61.5%)	18 (75%)	14 (50%)	0.032

Data were presented as mean ± SD, and n (%); SD: Standard deviation.

When the effect of variables on the problem-solving subscale of McMaster Model of Family Functioning was examined, the scores were significantly higher in smokers who were single (Mean±SD: 1.68±0.57 vs 1.28±0.31,  $p=0.033$ ). Regarding

the effect of variables on the "roles" subscale, the scores of smokers with chronic diseases were significantly higher than those of participants without chronic diseases (Mean±SD: 2.38±0.50 vs 2±0.38,  $p=0.015$ ). Considering the effect of variables on the "affective responsiveness" subscale, the scores of smokers were significantly higher than those of non-smokers in the single group (Mean±SD: 1.98±0.77 vs 1.56±0.52,  $p=0.028$ ). Considering the effect of variables on the "affective involvement" subscale, the scores of smokers with chronic diseases were significantly higher compared to those without (Mean±SD: 2.22±0.62; 1.76±0.39,  $p=0.011$ ). When the effect of variables on the "general functioning" subscale was examined, the scores of smokers with chronic diseases were significantly higher compared to those of participants without chronic diseases (Mean±SD: 1.79±0.69; 1.47±0.45,  $p=0.050$ ).

## DISCUSSION

In our study, smoking was found to have an adverse effect on different subscales of the McMaster Model of Family Functioning. This was particularly evident in the roles, and affective involvement factors.

The effect of smoking on quality of life has often been the subject of interest for researchers. Nesrin Sen et al. investigated the effects of smoking status on the quality of life of university students and showed that smoking negatively affected the quality of life.<sup>[12]</sup> In another study, Zahran et al. examined risky health behaviors and health-related quality of life among secondary or higher education students aged 18–24 years and found that smoking status negatively affected the quality of life.<sup>[13]</sup> In our study, which is consistent with the

literature, we addressed the social aspect of smoking and showed how it could affect family functions considered as a dimension of the quality of life.

Some studies have emphasized the relationship of smoking with depression and anxiety. A study conducted in Tunisia found a significant increase in anxiety scores in 22.9% of the patients with cigarette addiction, in depression scores in 20%, and in anxiety and depression scores in 7.1%.<sup>[14]</sup> In another study, the authors applied the Beck Depression Inventory (BDI) to 690 medical students before graduation and observed depression in 34.7% of smokers. They found that depressive symptoms were 2.2 times higher in smokers compared to non-smokers.<sup>[15]</sup> It is open to discussion whether smoking causes any psychological disorders or people with psychological problems consume more cigarettes. In this case, it can be thought that family functions may also have an effect on smoking as the effect of smoking on family functions.

A study conducted in Japan showed that the family functions of depressed people were significantly impaired, and this impairment was particularly on problem solving, communication and general functioning. There are very few studies in the literature investigating the effect of anxiety disorder on family functions, and these studies have demonstrated that anxiety has no significant effect on family functions.<sup>[16]</sup> In our study, the family functions of smokers were significantly impaired, and this impairment was particularly on roles, and affective involvement. This has led to the thought that smoking may have an effect on family functions independent of depression and anxiety.

In our study, the negative effect of smoking on family functions was affected by the marital status and was more evident in single individuals. The fact that single individuals live with their parents and do not perceive themselves as parents can also be considered as late adolescence. As our knowledge current study was the first study in this respect since our result was original. Considering that adult individuals over 18 years of age, who are single and living with their family, are in the period of separating from their parents and establishing their own family, it can be interpreted that family functions may be negatively affected during this transition period. In our study, the effect of smoking on family functions was affected by age, and the negative effect on the communication function decreased with age in smokers. In a study on university students, students who tried smoking were found to have poorer communication with their families according to the Family Structure Assessment Scale. Good communication in the family is related to self-disclosure, self-expression and correct understanding of the messages received, which increases the overall harmony of the family.<sup>[17]</sup> The fact that the negative effect of smoking decreases with age can be interpreted as a result of increasing experience and maturity in later ages, and thus improving communication.

In a study investigating the communication function in families of children with chronic diseases, Branstetter et al. stated that the presence of a child with chronic diseases in the family might affect the roles and relationships of family members in line with the needs of the child as well as posing challenges in communication.<sup>[18]</sup> Another study examined the family functions of parents of children diagnosed with epilepsy and revealed that parents with children diagnosed with epilepsy were more dysfunctional in terms of family functions (roles, affective responsiveness, affective involvement and general functioning) compared to parents with healthy children.<sup>[19]</sup> Similarly, our study showed that the negative effect of smoking on family functions was affected by the presence of chronic diseases, and this (roles, affective responsiveness, affective involvement) became more evident in those with chronic diseases.

In our study, the number of people at home had a negative effect on affective involvement, while it had a positive effect on behavior control. As the number of people living together increases, the time allocated to each individual decreases and the individual may think that sufficient attention is not devoted to himself/herself. As the number of people living together increases, the living space per individual is limited, and behavior control may increase a little more, similar to the general rules that are paid more attention in public areas. Our study also revealed an original result in this respect. In addition, the presence of chronic diseases had a negative effect on affective involvement. This can be interpreted as the fact that an individual with chronic diseases at home is thought to need more attention, and more attention is paid to him/her, while the interest shown to other individuals may decrease.

## CONCLUSION

Our results reveal that smoking affects family functions negatively, as well as its other negative effects. This was particularly evident in single individuals and individuals with chronic diseases. Therefore, it would be appropriate to address the fight against smoking with this perspective. It is important to consider family functions within the scope of family guidance in family medicine practices. Our study provides a new perspective to this subject. Although other factors that may affect family functions need to be investigated more comprehensively and with a larger number of patients, we believe that our study will shed light on further studies in this regard.

## ETHICAL DECLARATIONS

**Ethics Committee Approval:** The study was approved by Ankara Training and Research Hospital Local Ethic Committee. (Date: 09/07/2014 Decision No: 4623).

**Informed Consent:** All patients signed the free and informed consent form.

**Referee Evaluation Process:** Externally peer-reviewed.

**Conflict of Interest Statement:** The author has no conflicts of interest to declare.

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**Author Contributions:** All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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