

The Importance of Partner Support and Psychological Status in Smoking Cessation

Onur Turan¹, Pakize Ayşe Turan², Arzu Mirici³

¹Clinic of Pulmonology, İzmir Katip Çelebi University Atatürk Training and Research Hospital, İzmir, Turkey

²Clinic of Pulmonology, Menemen State Hospital, İzmir, Turkey

³Department of Pulmonology, Çanakkale Onsekiz Mart University School of Medicine, Çanakkale, Turkey

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Abstract

Objective: The habit of smoking is more common in members of a family living in the same house. People with psychiatric symptoms smoke more cigarettes. We conducted a study to examine whether the psychological status of couples and partner support affects smoking cessation success.

Methods: The outpatients who started taking a therapy for smoking cessation between July 2014 and January 2015 in our clinic were included in this prospective, single-center study. Each couple was assessed on the basis of the Marital Adjustment Scale (MAS) and Hospital Anxiety-Depression Scale (HADS). The smoking status of the participants was assessed after 6 months, and they filled out the Partner Interaction Questionnaire (PIQ).

Results: Of 141 volunteers, 55% joined the smoking cessation program as couples. A total of 55.3% of the participants managed to quit smoking. Further, 42.3% of couples quit smoking. Nearly 96.2% of couples had the same result regarding smoking cessation. The smoking cessation rate was significantly lower in couples with high anxiety depression scores (participant: $p=0.028$ and 0.037 ; partner: $p=0.003$ and 0.007), smoker partners ($p<0.01$), and participants with low marital adjustments ($p<0.01$). Logistic regression analysis showed that the independent parameters affecting smoking cessation success were support and the smoking status of partners ($p<0.001$ and 0.021 , respectively).

Conclusion: Partner support and psychological status were important parameters associated with smoking cessation. The presence of non-smoker partners made quitting smoking easier. Reducing anxiety and depressive symptoms and support of partners may help in smoking cessation.

Keywords: Marital adjustment, partner support, psychological status, smoker partner, smoking cessation



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Corresponding Author

Onur Turan

E-mail: onurtura@yahoo.com

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INTRODUCTION

Smoking is one of the most preventable causes of death in the world (1). Worldwide, tobacco use causes nearly 5 million deaths per year (2). The total tobacco consumption continues to increase in developing countries, including Turkey, which makes smoking a major public health problem (2).

Smoking is a complicated behavior, which may be influenced by biological factors, social status, and family relationships (3). The most influential relationship with regard to this habit is known to be marriage (4). The habit of smoking is more common in members of a family living in the same house, especially partners. The behaviors and actions of every couple are strongly influenced by each other; therefore, they generally have similar characteristics and behaviors (5). Smokers generally marry people who smoke. On the other hand, people who have never smoked often have non-smoker partners (6).

People generally smoke to help ease the signs and symptoms of stress; therefore, people with anxiety and depressive symptoms have been known to smoke more cigarettes (7). It has been shown that psychological factors may also play a part in the habit of smoking. The attitude of family members about smoking may affect the decision of smoking cessation and the ability to quit smoking. Smokers who receive positive support from their spouses are more successful in quitting smoking (8). The smoking status of the partners is also a major determinant of success in smoking cessation efforts. Smokers are more likely to quit smoking with a non-smoker partner (9).

We conducted a study to examine whether partner support, spouse smoking status, and psychological factors affect smoking cessation success.

METHODS

This was a prospective, single-center study to assess the effects of partner support and psychological status on smoking cessation. The study was reviewed and approved by the ethics committee of the institution.

The participants for the study were chosen from the outpatients who admitted to smoking cessation polyclinics of our hospital between July 2014 and January 2015. The participants of the study were required to satisfy the following inclusion criteria:

1. Current smokers (who smoked either daily or occasionally at the time of meeting the patient),
2. Individuals aged 18 years or older,
3. Individuals who started taking a therapy for smoking cessation,
4. Individuals who completed an informed consent form.

The participants who were not literate, could not fill out the surveys, had contraindications for using a smoking cessation therapy, did not have a partner or spouse living in the same house, and did not accept to join the study were excluded. Written informed consent for the involvement in the study was obtained from all the participants.

With the use of previous trial data as a guide, we estimated that we would need to enroll at least 140 participants for a study with 80% power and at an alpha level of 0.05.

The demographic data of the participants and their partners were recorded. All the interviews included a detailed assessment of smoking status. We assessed smoking status of the partners with the following question: "Do you have a partner who currently smokes (yes or no)?" The partners of the participants also filled out a survey including their opinions about smoking and partner support in terms of smoking cessation. The participants filled out Fagerstrom test for nicotine dependence (FTND). In FTND, the first and the fourth questions are scored in a 4-point system (0–3 points), whereas the remaining 4 questions with a 2-point system (0–1). Nicotine dependence according to FTND was divided into low, moderate, high, and very high dependent groups (0: no dependence; 1–2: low; 3–5: moderate; 6–8: high; 9–10: very high) (10).

Pharmacological options for smoking cessation treatment were offered to the participants with at least moderate nicotine dependence level. Medications currently approved by the US Food and Drug Ad-

ministration for smoking cessation including nicotine replacement therapy (patch, gum etc.), bupropion, or varenicline were planned for the participants (11).

Marital Adjustment Scale (MAS) and Hospital Anxiety-Depression Scale (HADS) were performed by each couple at the first visit. The MAS is a 15-item scale that measures marital and relationship satisfaction (12). It includes 15 questions that assess level of happiness, agreement, and ways of handling disagreements. The 15 items were answered on a variety of response scales by each couple. The MAS was validated in the Turkish language (13).

Hospital Anxiety-Depression Scale is a self-report scale including 14 questions to determine the risk of anxiety and depressive states among medical patients (14). Each question has a four-point (0–3) response category, so the possible scores range from 0 to 21 for anxiety and 0 to 21 for depression. A score of 11 or higher is a valid case for anxiety, while it is 8 or higher for depression.

The following visits were performed at the first, second, and sixth months. The patients' data about cessation were recorded (present smoking status, side effects of the pharmacotherapy, and withdrawal symptoms). Smoking cessation was evaluated by using self-report and exhaled carbon monoxide measurement (to verify cessation) at the sixth month. Exhaled carbon monoxide levels were measured by Micro CO Smokerlyzer (15).

The participants also filled out Partner Interaction Questionnaire (PIQ) at the sixth month of pharmacotherapy for quitting smoking. PIQ is a survey that shows abstinence-specific partner support measured with 20 items (8). The test included 10 positive and 10 negative behaviors a partner might show. For each item, subjects responded on a 5-point scale to how frequently their partner provided positive and negative support. Response options were 0=never, 1=almost never, 2=sometimes, 3=fairly often, and 4=very often.

Statistical Analysis

Statistical analysis was performed using SPSS (Statistical Package for the Social Sciences) version 22.0[®] (IBM Corp.; NY, USA). The mean \pm standard deviation, frequencies, and percentages were used to present the results. The nonparametric Mann-Whitney U test was used for the analysis among groups without normal distribution. The Spearman correlation was used to investigate the relationship between the variables. The chi-square test or Fisher's exact test was used to compare proportions. Multiple logistic regression analysis was performed to examine the association of partner and participant characteristics with smoking cessation. In all tests, p values of <0.05 were considered statistically significant.

RESULTS

There were 141 participants [87 men (61.7%) and 54 women (38.3%)] with a mean age of 39.8 \pm 9.5 years in the study. About 55% of the volunteers joined the smoking cessation program as couples, and 45% wanted to quit on their own. The demographics are shown in Table 1.

The most important reason for the quitting decision was existing or possible health problems (68.8%); financial problems (37.5%) and the request of partners (9.4%) were other popular factors for admission to smoking cessation clinics.

The participants (n=102) told that they had known about the risks

Table 1. Demographics and characteristics of participants

Demographics and characteristics	Participants n, (%)
Age ± SD (min–max)	39.8±9.5
Male/female (n,%)	87/54 (61.7/38.3)
Presence of pulmonary symptoms	108 (76.7)
Fagerstrom test point	6.13±2.25
Presence of comorbidities	18 (12.8)
Smoking (pack-year)	24.21±10.77
Smoking at home	103 (73.3)
Having smoker partners	93 (66)
Patients with high anxiety scores (HADS)	57 (40.4)
Patients with high depression scores (HADS)	78 (55.3)
MAS score	43.53±7.39
PIQ score	56.17±21.68

HADS: Hospital Anxiety and Depression Scale; MAS: Marital adjustment scale; PIQ: partner interaction questionnaire; SD: standard deviation

of smoking. Passive smoke exposure was known as a risk to 86.7% of the participants, and 122 specified that they had ever heard about chronic obstructive lung disease.

Nearly 66% of the participants had smoker partners. Partner support was subjectively expressed by 93.3% of spouses. The most common reasons for cessation support were said to be protection of the smoker's (participant's) health (90%), financial correction (40%), and getting rid of passive smoking exposure (36.7%).

The participants used varenicline (74.5%), bupropion (12.8%), or nicotine gum (2.1%) or had taken only behavior support (10.6%). There were side effects of therapies in 9.8% of the participants. None of them stated a major side effect.

Seventy-eight patients (55.3%) managed to quit smoking with the help of the smoking cessation therapy; 42.3% of couples quitted smoking and 96.2% of partners in couples had the same result with regard to smoking cessation (both managed to quit or ongoing smoking).

There was no significant difference between the methods used in smoking cessation in terms of smoking cessation success (p=0.077).

There was a significant relationship between successful smoking cessation and high marital adjustment (p<0.001), presence of non-smoker partners (p<0.001), absence of anxiety (p=0.028), and absence of depressive symptoms (p=0.037). The properties and comparison of successful and unsuccessful quit attempters are shown in Table 2.

Half of the participants who managed to quit smoking had non-smoker partners; on the other hand, this rate was 14.3% in the participants who continued smoking (p<0.001). Partners of the participants who quitted smoking had a significantly higher PIQ score (p<0.01).

Logistic regression analysis showed that the independent parameters affecting smoking cessation success were support and smoking status of the partners (p<0.001 and 0.021, respectively) (Table 3).

Table 2. Comparison of successful and unsuccessful quit attempters

Parameters	Unsuccessful quit attempters (n, %)	Successful quit attempters (n, %)	p
Patients with low anxiety scores (n)	30, 21.3	54, 38.3	0.03*
Patients with high anxiety scores (n)	33, 23.4	24, 17	
Patients with low depression scores (n)	21, 14.9	42, 29.8	0.04*
Patients with high depression scores (n)	42, 29.8	36, 25.5	
Partners with low anxiety scores (n)	33, 23.4	63, 44.7	<0.01*
Partners with high anxiety scores (n)	30, 21.3	15, 10.6	
Partners with low depression scores (n)	24, 17	51, 36.2	<0.01*
Partners with high depression scores (n)	39, 27.7	27, 19.1	
Partners with low MAS scores (n)	45, 32	21, 14.9	<0.01*
Partners with high MAS scores (n)	18, 12.8	57, 40.3	
Non-smoker partners (n)	9, 6.4	39, 27.7	<0.001*
Smoker partners (n)	54, 38.2	39, 27.7	

*Statistically significant (p<0.05)
MAS: Marital adjustment scale

Table 3. Relationship between success in smoking cessation and some parameters of participants and their partners analyzed by multiple logistic regression tests

Parameters	OR (95% CI)	p
Gender (M/F)	0.264 (0.065–1.072)	0.062
Age (continuous)	1.031 (0.968–1.097)	0.342
Anxiety (+/–)	1.046 (0.253–4.327)	0.951
Depression (+/–)	1.998 (0.410–9.748)	0.392
Smoker partner (+/–)	0.205 (0.054–0.788)	0.021*
Marital adjustment (+/–)	1.280 (0.263–6.228)	0.760
PIQ score (continuous)	1.083 (1.039–1.130)	<0.001*

*Statistically significant (p<0.05)
CI: Confidence interval; F: female; M: male; OR: odds ratio; PIQ: partner interaction questionnaire

DISCUSSION

Social support has been known to encourage smoking cessation (8). Support from romantic partner is one of the most influential types of social support (4). Smokers who receive positive support from their partners are more likely to quit smoking (16). The positive support of partners had been showed to increase the success rate of smoking cessation programs (17). Our results revealed a positive correlation between PIQ

score and success in quitting smoking, which means that high PIQ scores and positive support may predict greater quitting success.

Besides partner support, smoking habit of the spouse is a decisive factor about smoking status and tobacco cessation. Couples tend to be concordant for smoking status (4). Smoking people generally have partners who smoke too (18). In addition, smokers with non-smoker partners are more likely to quit smoking (9, 19). Smoker partners may be less supportive during their spouse's attempt to quit because they may think that they have to change their own smoking behaviors (20). Our study, which had the result of low smoking cessation rate with smoker partners, supports this idea.

Relationship quality and marriage adjustment may influence health, health-related behaviors, and addictive behaviors of the couples. It has been demonstrated that marriage quality, concern for the partner's health, and partner motivation for smoking cessation were positively associated with quitting rates (20). Partners who are happy in their relationships are much concerned about their spouse's health and support him/her for quitting smoking. Smoking cessation rate was significantly lower in patients with low MAS score in our study, which means that marriage adjustment is also an important parameter affecting the success of smoking cessation.

The presence of anxiety and depressive symptoms has been known to negatively affect tobacco quitting attempts. Glassman et al. demonstrated that the patients with unsuccessful attempts at smoking cessation had significantly higher anxiety and depression scores than quitters (21). We have a similar result, which shows the importance of the couples' psychological status at smoking cessation.

There are some limitations of the study. Smoking is a complex behavior, which may be influenced by many parameters. There may be unpredictable factors that may affect the success of smoking cessation during a 6-month period. Secondly, self-reports on others' behaviors may poorly predict an objective data. For example, the PIQ survey, which was performed after 6 months, may include subjective answers according to the result of quit attempts. Successful attempters may declare that their partners were supportive about smoking cessation; oppositely, patients who could not manage quitting may tell that they had a low support from their partners.

CONCLUSION

The partner support and psychological status were important parameters associated with smoking cessation. The presence of non-smoker partners made quitting smoking easier. The relationship quality is another important factor that can affect the success of quit attempts. The positive support of partners and less anxiety and depressive symptoms may be related with higher smoking cessation rates.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Çanakkale Onsekiz Mart University.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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