

## ORIGINAL RESEARCH

## marital satisfaction according to spouse's smoking status

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**Abstract:** **Introduction:** One of the key aspects of mental health is one's overall health and lifestyle. Longitudinal studies have shown that dissatisfaction with life causes long-term health damage and increases mortality, suicide tendency, unintentional injuries, disability at work, and diseases such as those of cardiovascular nature. Amongst all forms of satisfaction, that of marital is of utmost importance. On a separate note, inhalation of cigarette smoke exposes passive smokers to many chemical and toxic carcinogens, and it can negatively affect the non-smokers present. Furthermore, in psychiatric counseling sessions, many women report that they hate smoking. If we can show that inhaling cigarette smoke in men can have an impact on marital satisfaction, it can increase the consistency of family foundations and have positive effects on the health and spirit of family members by informing families. **Methods:** In this study, 200 housewives, who had smoking husbands that smoked at home, were subjected to pre-determined conditions, alongside 200 housewives who had non-smoking husbands and were therefore not exposed to smoking by their husbands at home. They were divided into two groups and were assessed by Marital Conflict Questionnaire (MCQ). For a closer look at the level of marital satisfaction, the questionnaire results were divided into three subgroups which were marked as low, moderate, and good. **Results:** After calculating the total score of the questionnaire and statistical analysis, the results showed a higher rate of marital satisfaction in women who had non-smoking husbands compared to those who had smoking husbands and this difference was considered significant at P-value <0.001. **Conclusion:** Inhaling cigarette smoke in men in the family environment may seem to make a good impression on the smokers, but as the results of our study suggest, it also has adverse effects on marital satisfaction.

**Keywords:** Marital Conflict; Passive Smoking; Secondhand Smoking; Environmental Tobacco Smoke Pollution; Smoke Inhalation Injuries

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## 1. Introduction

Experience has shown that health of the body, both in individuals and in a social context, must be in terms of their mental and psychological issues. Lack of mental health in

peoples' lives can lead to suicide (1), unintentional injuries (2), inability to work (3), and various diseases, such as cardiovascular disease (4). Past studies have shown that life satisfaction is dependent on a variety of factors, including good health, inner well-being, and better psychosocial functioning, especially social support (5, 6). It has been proven that there is a relationship between poor mental health, depression, frustration, neuroticism, stress, adverse life events, and increased mortality in individuals (7). One of the most important types of satisfaction is marital satisfaction. Marital satisfaction means feeling good about living together. In other words, marital satisfaction is a good feeling in life after marriage. In a study by Gottman and Levensong, seventy-nine couples whose discussions were supervised by a third

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party and re-monitored four years later, it was found that men had less positive and negative effects on family conflicts than women. Women are more easily involved in positive communication in comparison to men, and therefore appear to have a more effective role in marital satisfaction (8). Marital satisfaction refers to the degree of satisfaction between couples in the same marital relationship. This satisfaction can be a sign of a man's vision and embodiment of his wife and a woman's embodiment of her spouse in life. In the Iranian society, in many cases, women are forced to continue living with their husbands due to their dependence on men, and the fear of losing their children makes them continue to live with their male partners, even though they may not be satisfied. Studies show that marital problems and destructive marital strife are major contributing factors to many mental disorders (9). It is not surprising that many social scientists have given a strong reason to answer various models of what ends a marriage. Marital satisfaction is a central and determining factor in life satisfaction. Lack of marital satisfaction not only has a negative impact on socio-psychological status of the couple after marriage, but also on children and adolescents (10). In some societies such as Iran, marital strife and divorce are considered to be societal traumas that cause psychological stress. Positive psychological well-being is associated with a reduced risk of developing chronic diseases, which may also include risk factors for sexuality and gender. Satisfaction can be divided into two distinct parts, which include emotional satisfaction, the sense of happiness and pleasure, and eudaemonia, the sense of independence and purposeful interaction with life. One study assessed the relationship between emotional satisfaction, eudaemonia, and biomedical changes, in a large scale of older adults. Their results showed that positive psychological satisfaction had a direct relationship with one's biological conditions and health, and smoking was one of the most influential factors (11). Inhaling cigarette smoke, both directly and indirectly, involves many chemical and toxic carcinogens (12). Studies show that fifty thousand deaths are recorded each year due to secondhand smoke exposure, with no protective factor. It was also shown that one hundred and twenty-six million people were exposed to second-hand smoke involuntarily (13). Indirect inhaling of cigarette smoke causes cancers, heart disease, and respiratory diseases. It has also been proven to be a major source of indoor air pollution (14). Children who are exposed to third-hand cigarette smoke by someone else or their family, in environments such as a car or home, may also be harmed. Third-hand smoke is the same as tobacco smoke in terms of remaining after quitting. The toxins can stay in the house for several months and have negative impacts on people. Although many public places such as workplaces, stadiums, or other recreational areas, have allocated a designated space for smoking, this strategy is not possible

in a home environment. This causes family members, including spouses and children, to be exposed to the dangers of smoking. As a result, home is one of the most important places where the smokers' families are particularly exposed (15).

A considerable number of studies and articles have been published on the harmful effects of inhaling cigarette and nicotine smoke. Most of these studies have focused on the toxic and physical effects of cigarette smoke. However, only few studies have reported on its psychological effects on men and its impact on marital satisfaction. Identifying the micro factors that influence marital satisfaction, with cigarettes as one of the most important ones, can lead to strategies to increase this satisfaction. As often seen in psychiatric counseling sessions, many women report that they dislike smoking. According to the explanations provided, inhaling habits among male smokers may decrease marital satisfaction at home. For this reason, in this study, we attempted to cross-examine the satisfaction of women who were unwillingly exposed to their husbands' cigarette smoke.

## 2. Material and Method

### *2.1. Marital satisfaction in passive smoker women and non-passive smoker women*

The purpose of the present study was to determine the level of marital satisfaction in women who have spouses that smoke at home, and in women who have spouses that do not smoke at home, and to then compare these two groups. To this end, 200 Iranian housewives whose smoking husbands were smoking at home, with 200 Iranian women who had non-smoking wives and were not exposed to cigarette smoke by their husbands at home, were assessed by Marital Conflict Questionnaire (MCQ), a questionnaire which included a test of marital satisfaction. The questionnaires were randomly distributed among housewives in Mahdijeh Hospital in Tehran, Iran.

### *2.2. Divide the results of women's marital satisfaction into three subgroups: low, moderate, and good*

To better examine women's satisfaction in both groups, the questionnaire results were divided into three subgroups, in terms of the degrees of satisfaction with the marital quality, which were marked as low, moderate, and good. The percentage of satisfaction in all three subgroups was determined, and it was examined whether marital satisfaction was significantly different in the good subgroup or not.

### *2.3. Control of Confounding*

To control other disruptive factors, the individuals in both groups had predetermined conditions which are given be-

low:

Their spouses were employed and had modest income rates, disability and generally did not have any specific illness, were not addicted to drugs, other stimulants, or alcohol, had no other husbands or wives, had at least diploma education or a bachelor's degree, had no history of infidelity or severe marital discord, and they also had no history of mental illness, depression, or suicide. There was also a section on the questionnaire that indicated whether the husband was smoking and the rate of smoking, as well as whether he smoked at home.

### 2.4. Statistical Analysis

T-Test and Mann-Whitney statistical test were used to evaluate the results, and the data were expressed as mean  $\pm$  standard deviation (SD). Level of  $p \leq 0.05$  was considered as statistically significant and performed in each group.

## 3. Results

### 3.1. The difference between marital satisfaction in passive smoking women and non-passive smoking women

After calculating the total score of the questionnaire, it was found that the mean scores for the non-passive and passive smoking groups were 69.03 and 59.96, respectively. Also, standard deviation and standard error of the two groups were determined. Then, by performing the T-Test, the marital satisfaction score was compared in the two groups. Subsequently, P-Value  $< 0.001$  was determined, which indicates a higher level of marital satisfaction in women who have non-smoking spouses compared to the other group, namely women who have smoking spouses (Figure 1).

### 3.2. The percentage of marital satisfaction in the three subgroups of the non-passive smoking group and passive smoking group

After dividing the results of the questionnaires into three subgroups of low, moderate, and good, on the extent of their satisfaction with their marital quality, it was shown that in the non-passive smoker group, the low subgroup was 0.05%, the moderate subgroup was 39.8%, and the good subgroup was 59.7%. Also, in the passive smoker group, the percentage of marital satisfaction in the low subgroup was 2.5%, in the moderate subgroup was 61.8%, and in the good subgroup was 35.7%. The difference in the percentage of marital satisfaction in the three subgroups of the non-passive smoking group compared with the three subgroups of the passive smoking group was calculated by the Mann-Whitney U test, and it was shown that there is a significant difference at P-Value  $< 0.001$  (Figure 2).

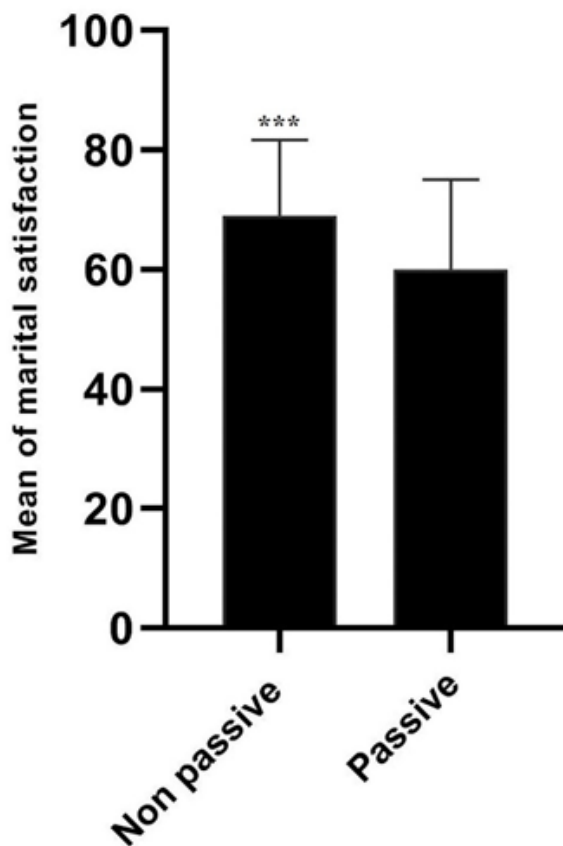
**Table 1:** Demographic and clinical characteristics of patients

Characteristics	
Age, mean $\pm$ SD	37.1 $\pm$ 12.4
BMI, mean $\pm$ SD	25.7 $\pm$ 3.6
<b>Stone laterality, No. (%)</b>	
Right	65(60)
Left	38(36.1)
Bilateral	2(1.9)
stone diameter, mm, mean $\pm$ SD	4.2 $\pm$ 2.1
<b>Stone location, No. (%)</b>	
Upper	11(10.4%)
Middle	56(53.3%)
Lower	41(39%)
Mild	48(45.7%)
Moderate	15(14.3%)
Sever	3(2.9%)
Cr, mean $\pm$ SD	1.1 $\pm$ 0.3
<b>GFR</b>	
60-89, n (%)	3(2.9%)
30-45, n(%)	91(86.7%)
15-29, n (%)	10(9.5%)
<15, n (%)	1(1.1%)
<b>U/A</b>	
WBC>105, n (%)	10(9.5%)
RBC>104, n (%)	15(14.3%)
WBC>105+ RBC>104, n (%)	30(28.3)
Abnormal urine PH	50(47.6)

## 4. Discussion

Due to the importance of smoking men's role in their marital life as well as the mental and physical future of their children, we decided to conduct this study. We have shown that inhaling cigarette smoke in men can affect marital satisfaction, and we have also raised awareness that it can have negative effects on the strength of family foundations as well as on the health of the body and mind of family members. Not only does smoking and its related toxins have adverse effects on one's health, but it is also a gateway to drug abuse and various other social issues, since most drug addicts consider cigarette smoking to be the start of their addiction. Over the next 50 years, it is estimated that 500 million people will die from the effects of smoking and its consequences (16). There have been many studies on humans' tendency to use tobacco products, such as cigarettes, and their various associated issues which can sometimes lead social problems. Inhaling cigarette smoke in the family environment may often boost one's confidence for a short period of time, but as our results suggest, it can have adverse effects on marital satisfaction. Kaplan and Maddux believe that marital satisfaction is a personal experience in marriage that can be assessed by responding to the amount of marital pleasure each person has. They believe it depends on the individual's expectations, which include the needs and wishes of the indi-

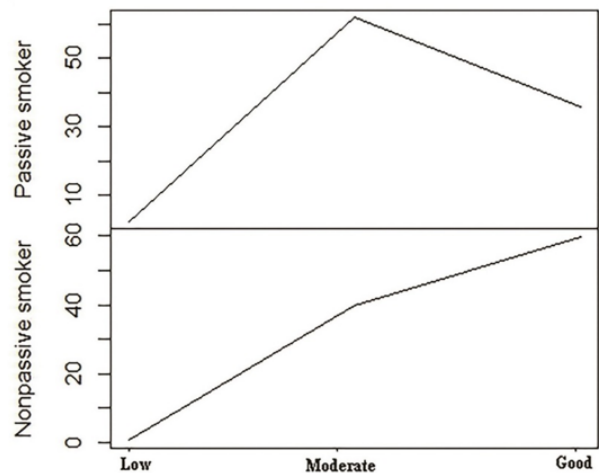




**Figure 1:** The results of the questionnaire showed that marital satisfaction was significantly higher in non-passive smoker group than passive smoker group (Mean  $\pm$  SD; \*\*\*: p-value < 0.001).

vidual in their marriage (17). Based on Shaditalab's views, in the contemporary and modern Iranian society, women's dissatisfaction depends on engaging in social activities, marrying non-relatives, raising their awareness and knowledge, their partner's involvement in housekeeping, and opposing polygamy. For men with a literate spouse, a high level of education increases marital satisfaction because of the their expectations of one another, the connection between their beliefs, and their overall security (18).

Keeping a family happy is the primary goal of any community (19). Marriage is a social phenomenon and the most important event after birth that is formed to develop the personality, the abilities of each couple, the relative independence, and emotional needs. But during marital life, factors such as income, employment, child health, illness, and sexual satisfaction, can have positive or negative effects on the quality of the relationship (20). The results show that married men have a lower rate of psychological problems than married women. Single men have a higher rate of mental illness than single women, and men have been shown to have better mental health than women after marriage. Therefore, it



**Figure 2:** The figure shows the difference in marital satisfaction in all three subgroups of both groups and this satisfaction was significantly different between the two groups at p-value < 0.001.

is important to consider what causes the decline in women's mental health after marriage (21). In saying that, a few studies believe that the divorce rate in Iran is substantially low. However, a low divorce rate is not a rational reason to ignore widespread marital disorders based on marital dissatisfaction. Getting divorced in Iran is more difficult than in many other countries. Thereby, many marriages which are not legally recognized as divorced, have broken down psychologically (22).

In a research in 2000 that took about 20 years, scientists examined the role of life satisfaction and its associations with mortality. This research showed that life dissatisfaction was linearly associated with increased mortality, and that life dissatisfaction should be considered as an indicator of endangered health. Various factors were found to influence this dissatisfaction (7). Cigarette and marijuana smoking alongside alcohol abuse are associated with increased marital problems and increased divorce rates among couples. Using addictive substances such as these three can increase the risk of fights and disputes between couples, and the likelihood of aggressive and violent behavior as a result (23, 24). Cigarettes contain 250 toxic gases, chemicals, and hazardous metals, such as hydrogen cyanide, monoxycarbonate, butane, ammonia, toluene, arsenic, lead, chromium, cadmium, and polonium (13). In a report, Mugglime and colleagues explained that cigarette smoke contains a highly hazardous radioactive polonium substance (Polonium-210 or Po-210), which can also be carcinogenic (25). Concerning the relationship between lung function and mortality, Ki Moon Bang et al showed that smoking, as a factor that has a direct relationship with lung function, can ultimately affect the life expectancy of smokers (26). Cigarette smoking has

many systemic effects such as atherosclerosis and Chronic Obstructive Pulmonary Disease (COPD). Prolonged exposure to cigarette smoke can impair systemic oxidant-antioxidant balance, increase lipid peroxidation products, and reduce antioxidant levels. Cigarettes can alter the concentration of many markers and functional molecules in the body, and can clearly reduce the level of inflammatory responses (27). Smoking increases the risk of kidney and urinary tract cancers (28). It is also capable of causing methylation changes in the DNA of peripheral blood mononuclear cells, which can ultimately impair inflammatory and immune functions (29). Passive smoking has many detrimental effects on women, which have been proven by various studies, with the most well-known effect being lung cancer (30). It has been shown that exposure to smoke can adversely affect the health of the non-smokers by its toxic substances (31). In the United States, the smoke found in the environment, or environmental tobacco smoke (ETS), has caused lung cancer in healthy non-smokers. ETS increases the risk of brain death and heart disease by up to 30% among non-smokers living with those who smoke. ETS also reduces cellular respiration at the mitochondrial level, and interestingly, even non-smokers seem to be more sensitive to ETS than smokers. In the United States, there are about 53,000 deaths each year from passive smoking, which means one passive smoker for every eight non-passive smokers (32). Matt GE et al showed that indoor smoking can trigger the release of harmful substances which will remain in the house, and this can affect the health of family members, especially children (33). Parental smoking can be an inappropriate pattern for children and may motivate them towards smoking at a later age (34). The toxic and harmful substances of cigarettes can remain indoors for hours and even up to several days after use. For example, almost all of the sorbed nicotine and most of the sorbed cresol remain in the environment for up to three days after smoking (35). Millions of toxic particles enter the body by each time of smoking, and it takes a long time for the remaining cigarette smoke to pass from the lungs to the next breath after smoking. These remaining substances in the body are not only a source of contamination for the individual, but are also considered as indoor pollutants for the environments in which they live (36). A study of a population of non-white American women in 2015 showed that exposure to direct cigarette smoke could increase the risk of asthma (37). Smoking affects even women's genetics. A study of 1122 white women showed that smoking can decrease telomere length in white blood cells (38). Infertility is one of the most important and well-known factors leading to couples' discouragement and family problems. Smoking at different ages has negative effects on various fertility factors in both men and women. Based on the evidence, quitting smoking and not being exposed to smoke are important ways to prevent infertility (39).

One of the best solutions to protect against the dangers of cigarette smoke for non-smokers living with a smoker in a particular home or environment, is to define restrictions on smoking at home (40). For instance, spouse relationship is one of the most important options to achieve this goal. In 2009, Homish G and colleagues demonstrated the direct relationship between smoking and its effect on marital satisfaction. They compared the relationship between the pattern of smoking in newly married couples and their satisfaction within their first 7 years of marriage. Their results showed the couples' marital satisfaction decreased over time due to cigarette smoking, and the extent of this decrease was dependent on their level of consumption (41). It is worth mentioning that these results are consistent with the findings of our study. In this study, for a detailed examination of the two groups, we divided them into three subgroups in terms of marital satisfaction: low, moderate, and good. Our results clearly showed that in the good subgroup, non-passive smoker women had a higher percentage of marital satisfaction than the other group. Also, the percentage of those in the low subgroup, especially the subgroup with moderate marital satisfaction, was higher in the passive smoker group. This type of study can contain useful information on the negative psychological consequences effects of smoking. Informing these people about the harm of smoking, both physically and especially psychologically, can encourage smokers to quit smoking and improve their behavior. For example, a man can understand how smoking, especially at home, can have negative impacts on his relationship with his wife. The results of our study can be one of the important and effective informing factors. Quitting smoking increases global quality of life (QOL) and health-related global quality of life (health-related-QOL). Quitting smoking has been shown to improve physiological health indicators and reduce stressors and can increase the life satisfaction without smoking (42). Due to the present culture in Iran, women are often regarded as the main educator of their children and responsible for many domestic and family affairs. These cases can be affected by the woman's dissatisfaction and can eventually lead to the family not going the right way in terms of upbringing and achieving the goals it deserves. The dissatisfaction and success of each family can, in turn, affect the larger society as a whole. Marital relations can be an important motivating factor for smoking cessation and can modify the behavior of smoking spouses, and the important role that the spouse has in helping his or her partner to quit smoking cannot be ignored.

## 5. Conclusion

We have shown that not only inhaling cigarette smoke in men at home and in the family has negative effects on their health, but also impacts their relationships with their spouses. It can



reduce marital satisfaction, which can lead to other detrimental consequences for individuals, families, and the community. These results suggest that the psychological consequences of smoking are among the most important ones that need to be addressed in the field of the negative effects of smoking.

## 6. Appendix

### 6.1. Acknowledgements

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### 6.2. Author contribution

All the authors have the same contribution.

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### 6.4. Conflict of interest

No conflict of interest.

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