Meta-Analysis of Tobacco-Related Articles with Emphasis on Students and Academics (2001–2022)

* Abazar Ashtari Mehrjardi iD   ** Mohammad Reza Masjedi iD

❋ Assistant Professor, Department of Social Studies, Technology, Institute of Cultural and Social Studies, Tehran, Iran. ashtari@iscs.ac.ir
❋❋ Professor of pulmonary medicine, Tobacco Control Research Center (TCRC), Iranian Anti-Tobacco Association, Tehran, Iran. mrmasjedi@gmail.com

Abstract

According to reports from the World Health Organization, tobacco kills nearly 9 million people every year. More than 8 million people die each year as a direct result of tobacco use, while about one million deaths are due to exposure to secondhand smoke. Notably, about 70% of the world's cigarette smokers (from a total of 1.4 billion people), meaning over one billion individuals, live in low- and middle-income countries.

Between 2010 and 2020, scattered studies indicated an increasing absolute rate of consumption and changes in usage patterns, such as a decrease in the age of initiation, the entry of girls and women into this cycle, increased family use of waterpipes, and the prevalence of electronic cigarettes and hookahs. Furthermore, research on the prevalence of tobacco use among adolescents and youth in Iran has issued warnings, showing that these age groups include secondary school students (adolescents) and university students (youth). Accordingly, this study seeks to identify the most important and frequent concepts regarding tobacco use among university students and evaluates student- and university-related articles in this field over the past two decades. In this regard, we evaluated and meta-analyzed 35 articles published on students and within the university environment in Iran, focusing on various forms of tobacco use.

The results show that among the four categories of factors—social, cultural, psychological, and economic—the following had the greatest influence on the tendency toward and use of tobacco among adolescents (students): the real or perceived experience of relative deprivation (coefficient: 0.381), social control (coefficient: 0.361), media consumption, especially the use of virtual social networks (coefficient: 0.316), and finally, a sense of alienation, including issues related to identity and the formation and expression of personality (coefficient: 0.236).

Corresponding Author: Abazar Ashtari Mehrjardi– Ashtari@iscs.ac.ir

Introduction and Statement of the Problem

Due to the involvement of developing societies and their prolonged transitionary states, citizens' sensitivity to social phenomena and issues (as compared to fundamental issues, especially political and economic) has decreased. Accordingly, the rate of tobacco consumption in these countries is rising relative to developed countries.

Thus, the tobacco epidemic is considered one of the greatest global health threats the world has ever faced. Tobacco kills half of its users and is one of the leading preventable causes of death globally. According to the World Health Organization, tobacco kills about 9 million people each year; more than 8 million die directly due to tobacco use, and about one million deaths result from exposure to secondhand smoke (WHO, 2022). If the current pattern continues, this number is projected to increase to 10 million annual deaths by 2030 (Yeh ML, 2002). Studies have identified 4,000 chemical compounds in tobacco smoke, 250 of which are known to be harmful, and over 50 are carcinogenic. Nearly half of all children are regularly exposed to secondhand smoke in public spaces, and in 2004, about 28% of tobacco-related deaths occurred among children (WHO, 2018). Based on WHO statistics in 2017, since 2014, Iran has been among the countries that monitor tobacco prevalence with a high degree of success. Iran has also achieved success in comprehensive legislation, tobacco cessation treatment, and health warnings, although it has not been as successful in conducting media campaigns and imposing taxes on tobacco (WHO Report on THE Global Tobacco Epidemic, 2017). Additionally, many statistics from 2021 (which will be discussed later) indicate an increase in the consumption of certain tobacco products and changes in patterns of cigarette and hookah use.

The primary goal of this study is to understand the status and prevalence of various types of tobacco use among students and academics over two decades through a meta-analysis of relevant articles.

Research Methodology

This research uses quantitative meta-analysis, reviewing literature and studies conducted between 2001 and 2022, focusing on the consumption of tobacco products among university students in Iran. Initially, using the Simorgh library software and keywords such as tobacco and university, tobacco and students, cigarette and hookah and students, 400 articles were identified. Out of these, 47 were selected, and eventually, after reviewing abstracts and keywords, 35 articles were deemed acceptable. These articles were further evaluated for methodology, credibility, validity, and scientific findings and categorized based on method, sample size, correlation coefficients and significance level, research population, year, etc. After identifying the correlation coefficients, sample size, and significance level of the studies, the final effect size of each study and the overall effect were calculated using Fisher's and Cohen's formulas. A funnel plot and the Q-test were used to determine study homogeneity or heterogeneity, and upon proving heterogeneity, moderator variables were used to assess their impact on the tendency to consume various tobacco products.

Research Findings
A. Descriptive Findings

- Most studies were conducted between 2013 and 2016 (1392–1395 in the Iranian calendar).
- In terms of authors' academic disciplines, most studies were led by researchers in psychology (various branches), followed by sociology.
- The most common sampling methods were cluster and simple random sampling. Except for four cases, all studies used probabilistic sampling, allowing for greater generalizability. Almost all research was conducted among students at the national university level.

B. Inferential Findings

Results show that:

1. There is a significant relationship between social factors and the tendency to consume all kinds of tobacco. Differential association (0.148), family disruption (0.144), social capital (0.132), and social control (-0.361) all play a role, with social control having the strongest (inverse) effect, nearly three times greater than the other factors.

2. There is a significant relationship between cultural factors and the tendency to use tobacco. Religiousness (0.134), advertising and cinema (0.288), and media consumption (0.316) are all influential.

3. Psychological factors such as social isolation (0.112), a sense of alienation (0.236), and personality disorders (0.113) significantly affect tendencies toward tobacco use.

4. Economic factors have an inverse and significant relationship with the tendency to use tobacco. Economic capital (-0.102), income (-0.189), relative deprivation (0.381), and job security (-0.134) all play roles.

In summary, among the four categories—social, cultural, psychological, and economic—relative deprivation (coefficient 0.381), social control (coefficient 0.361), media consumption, especially social media (coefficient 0.316), advertising and cinema (coefficient 0.288), and finally, a sense of alienation (coefficient 0.236) have the greatest influence on the tendency to use tobacco among adolescents (students).

Overall Effect of Studies (Factors Affecting Tendency Toward Tobacco Use)

The results indicate that social (0.126), cultural (0.137), psychological (0.155), and economic (0.169) factors are all associated with the tendency to use tobacco. As the above results extracted, statistical tests (with minor differences) also show economic, social, psychological, and cultural factors as the main determinants, in that order.

The Effect of Gender on the Tendency to Use Tobacco

There is a significant relationship between gender and the tendency to use tobacco; the overall effect is 0.14. The tendency to consume tobacco is higher among men (0.19) than women (0.17).

Discussion and Conclusion

Ultimately, the results show:

• The more interaction individuals have with subcultural groups, the greater the likelihood of a tendency to use tobacco.

• The higher the level of family disruption, lack of good relationships among family members, absence of one parent, or tobacco use among family members, the greater the tendency for tobacco consumption.

• Social capital, including elements such as social networks, participation, and social cohesion, can have a dual role: such peers may either encourage tobacco use or, conversely, promote non-use or cessation. Here, it was shown that the more interaction with peer groups and social networks, the greater the likelihood of tobacco use.

• Social control can also have a dual effect; on one hand, effective social control—such as warning signs, public awareness, smoke-free environments, and collective social pressure—can reduce tobacco use by up to one-third. On the other hand, if social controls are negative (i.e., direct pressure on individuals), increased social pressure may actually increase consumption.

• Greater religious faith, religious rituals, and participation in religious groups are associated with a lower tendency to use tobacco.

• Increased exposure to indirect advertising and watching films and cinema is associated with a lower tendency to use tobacco. In other words, more exposure to indirect advertising and cinema correlates with less tobacco use.

• The more one uses media, especially social media, the more likely they are to use tobacco.

• The greater one's feelings of loneliness and lack of social networks, the higher the likelihood of depression and, in turn, tobacco use.

• A stronger sense of belonging to family, social groups, and society is associated with a lower tendency to use tobacco.

• Greater psychological and personality stability is associated with a lower tendency to use tobacco.

• Higher economic capital—including a good job, adequate income, suitable housing, car, etc.—is associated with a lower tendency to use tobacco.

• The higher the actual or perceived relative deprivation among individuals (in this study, adolescent students), the higher the tendency toward and usage of tobacco. Conversely, lower levels of deprivation are associated with lower tendencies and usage.

• Greater job insecurity and income instability are associated with higher psychological and personality instability and, ultimately, higher tobacco use.