Review

Epidemiology Of Smoking Among Medical Students in Iran: A Systematic Review Study

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Abstract:

Introduction: Smoking is recognized as one of the most significant health threats. Nowadays, the smoking rate is raising among educated youth. Since medical students are the messengers of health in the future, this systematic review study was conducted to examine the epidemiology of smoking in Iranian medical students.

Methodology: The present research project is a systematic review article. We searched words such as “smoking”, “students”, “medical sciences” in the Persian journal's database about the epidemiology of smoking among medical students in Iran; and then reviewed them using the PRISMA checklist. We searched through Google Scholar, Sid, and Magiran databases regardless of the time limit.

Findings: In this research, 13 articles were selected and their titles and abstracts were reviewed. The highest prevalence of smoking was in students of Shahid Beheshti University of Medical Sciences in Tehran with 23.8% and the lowest in students of Isfahan University of Medical Sciences with 4.6%. The most significant factor of smoking in the 4 articles was curiosity, in 4 articles, communication with smoking friends, and in 2 articles, fun and entertainment. Most studies discover a remarkable connection between age, gender, and smoking. There was no remarkable connection between marital status and smoking. Some studies stated a remarkable connection between the variables of parents' education level and smoking, and some studies stated a mismatch.

Conclusion: Even though the rate of smoking among medical students in Iranian universities is not higher than some other researches in other countries, but compared to previous years in Iranian universities of medical sciences, demonstrates a growing increase. Taking into account the growing trend of admission of medical students in Iran, and the high prevalence of smoking among students, special attention should be paid to this group of young people in order to carry out smoking control interventions.

Keywords: Smoking, Students, Medical Sciences, Iran

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Introduction

Smoking is one of the most significant factors threatening people's health. Every year, 5 million people die from smoking worldwide (1). Smoking is the reason for 20% of preventable deaths in developed countries and

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that's why some researchers think that smoking is the most significant health problem (2). Smoking is one of the most remarkable factors threatening the health of people, particularly young people (3) and the connection between smoking and essential diseases such as oral cancer, lung cancer, emphysema, and atherosclerosis is well known (4). The prevalence of smoking among Iranian youth is increasing (5). In Iran, 12% of men and 7% of women between the ages of 19 and 41 smoke (6). The prevalence of smoking has increased among young people, particularly in the age group of 18 to 24 years, which make up the majority of students in this group (7). Many research projects have been done on the prevalence of smoking and its predisposing factors among students, most of which show the rise in the prevalence of smoking in universities (8-9). Researches demonstrate that the prevalence of smoking among students of some medical universities in Iran is more than 10%, which is a considerable amount (10-12). The researchers of this study decided to review the studies on the prevalence of smoking in medical students and the key reasons of smoking among medical students as health messengers in society, due to the increasing prevalence of smoking among medical students and due to the high importance of smoking prevention among medical students and also because students, as an educated group of society can contribute an effective role in preventing and reducing smoking in society.

Methods:

The present research is a systematic review article on the epidemiology of smoking in Iranian medical students. For conducting this research, the authors considered keywords such as "smoking", "students" and "medical sciences". We looked for related literature until the 20th of March 2021 in three databases: Google Scholar, Sid, and Magiran. We only considered Persian articles published in Iranian journals on smoking among Iranian medical students.

Article Selection Criteria and Article Eligibility

Two of the researchers reviewed the titles and abstracts of the articles found in the search and selected related articles for possible inclusion. They, then, read these articles for further review to match the inclusion requirements. Inclusion criteria were: the article should be in Persian, published in reputable Iranian journals (exclusion of gray literature from the study), articles whose titles include smoking, and University of Medical Sciences. The authors deleted articles with no full text available and articles published in conference sessions. Researches that were in the form of letters to the editor or short reports were also not included in the study. In cases where there was disagreement between the two authors in charge of article search, the issue was resolved through discussion to reach a consensus.

Data extraction and synthesis

To extract data from each article, we prepared a form in line with the inclusion criteria. Data extraction for each research was performed independently by two authors and the disagreement was resolved by the third author. Study data extraction variables included the name of the first author, year of the research, type of the research, place of the research, statistical population, prevalence of smoking, and the most significant reason for smoking. In addition, an important connection was found between smoking and age, gender, marital status, and parental education. One of the authors reviewed the extracted data to categorize articles if feasible.

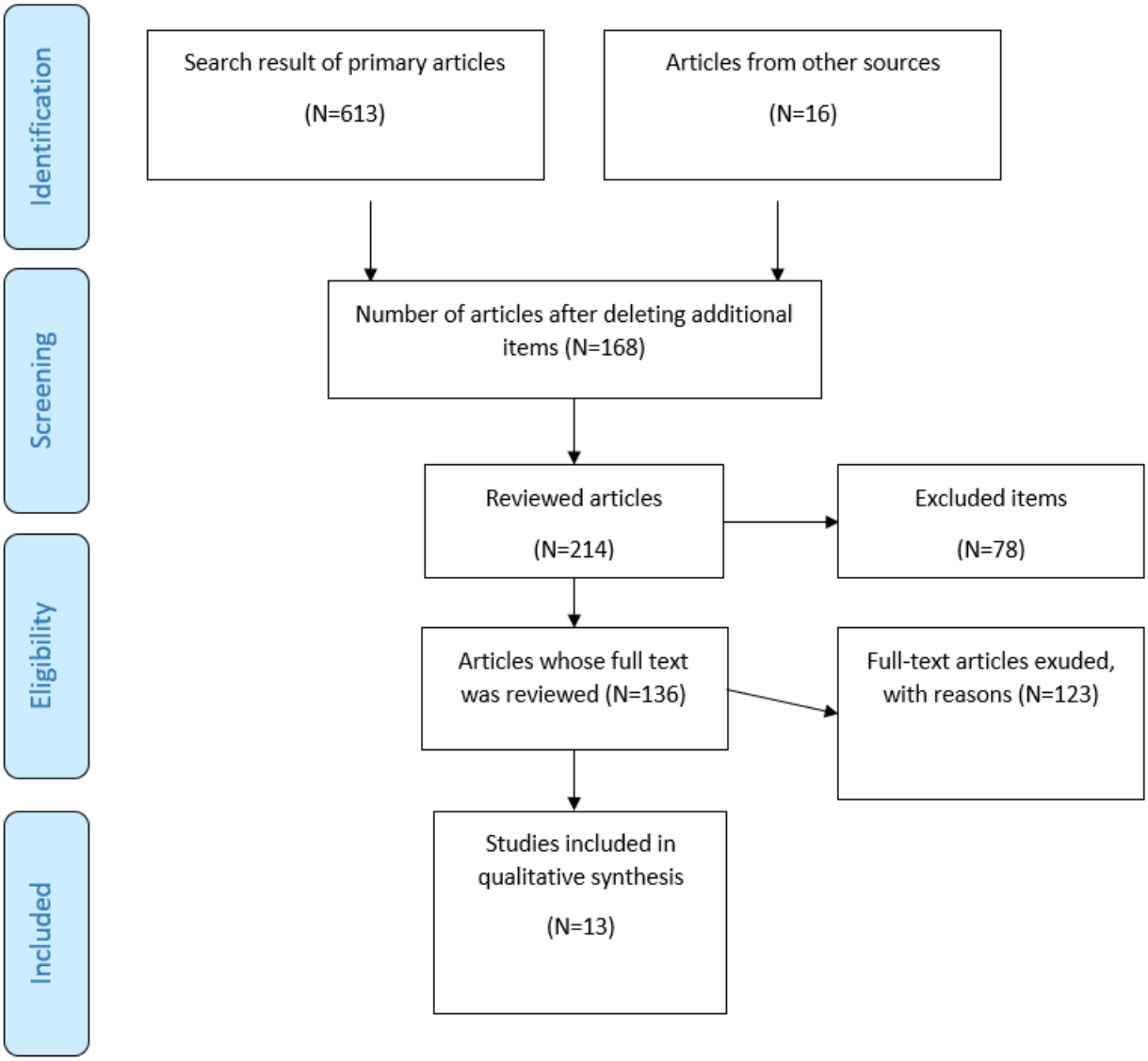
Results

In this research project, after reviewing the titles and abstracts of several articles, 13 studies were selected. We considered the year range of 2001 to 2020 for the selection of articles. The 2020 article is related to Shahid Beheshti University of Medical Sciences in Tehran (Figure 1).

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Figure 1: Prisma flowchart in search of articles



After deleting low-quality studies based on study quality review criteria and deleting researches that had deficiencies in data reporting, 13 studies entered our qualitative synthesis. Out of 13 articles, 3 studies in Tehran University of Medical Sciences, 3 studies in Isfahan University of Medical Sciences, and one study from each of the following universities: Tabriz University of Medical Sciences, Guilan University of Medical Sciences, Golestan University of Medical Sciences, Ahvaz Jondishapur University of Medical Sciences, Hormozgan University of Medical Sciences, Ardabil University of Medical Sciences and Yasuj University of Medical Sciences. Among the reviewed articles; 7 were descriptive-analytical studies, 5 were cross-sectional descriptive studies and the type of one of the articles was not mentioned. The prevalence of smoking varied in different articles. The highest prevalence of smoking was in Shahid Beheshti University of Medical Sciences in Tehran with 23.8% and the lowest in Isfahan University of Medical Sciences with 4.6%.

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Table 1: Studies included in the systematic review

Authors/year of study	Study title	type of study	Statistical Society	Study place	Prevalence of smoking	The most important factor in smoking
Rahman Panahi et al. / 2020 (13)	Adoption of smoking prevention behaviors and related factors in dormitory students of Shahid Beheshti University of Medical Sciences in Tehran in 2016	Descriptive-analytical	355	Shahid Beheshti Tehran	23.8%	Existence of a smoker in the family
Attari et al. / 2014 (14)	Prevalence of smoking in medical students of Isfahan University of Medical Sciences and its relationship with demographic characteristics and psychiatric symptoms	Descriptive-cross-sectional	305	Esfahan	4.6%	Friendly parties
Rezakhani / 2012 (15)	Prevalence and causes of smoking and hookah use in students of Tehran University of Medical Sciences in the academic year 2010-2011	Descriptive-analytical	720	Tehran	22%	entertainment
Shamsipoor et al. / 2012 (16)	Smoking status and factors affecting the tendency to quit in dormitory students of Tabriz University of Medical Sciences	Descriptive-cross-sectional	523	Tabriz	8.9%	Curiosity
Ghodsi et al. / 2012 (17)	Prevalence of smoking and its related factors in male students of Guilan University of Medical Sciences	Descriptive-analytical	222	Gilan	23%	Curiosity
Rayaa et al. / 2012	Factors affecting the tendency to smoke in students of Isfahan University of Medical Sciences	Descriptive-cross-sectional	305	Esfahan	*	personal interest
Zareipour et al. / 2012(19)	Investigating the Factors Affecting Smoking Behavior Based on BASNEF Model in Male Students of Tehran University of Medical Sciences in 2009	Descriptive-analytical	200	Tehran	*	Having smoking friends

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Kasiri et al. / 2011 (20)	Epidemiological study of smoking in male students of Jundishapur Ahvaz University of Medical Sciences	Descriptive-analytical	745	Ahwaz	19.1%	Sense of curiosity
Shojae et al. / 2009 (21)	Frequency of smoking and causes of smoking in students living in dormitories of Golestan University of Medical Sciences in 2009	Descriptive-cross-sectional	538	Golestan	6.2%	Connect with smoking friends
Sharifi Rad / 2007 (22)	Factors affecting smoking behavior based on BASNEF model in dormitory students of Isfahan University of Medical Sciences	Descriptive-analytical	100	Esfahan	*	Connect with smoking friends
Abedini et al. / 2007 (23)	Evaluation of smoking status in students of Bandar Abbas University of Medical Sciences, 2007	Descriptive-cross-sectional	200	Bandar Abbas	9%	Entertainment
Majidpour / 1384 (24)	Prevalence and causes of smoking tendency in students of Ardabil University of Medical Sciences	Descriptive-analytical	1106	Ardabil	۷/۴٪	Connect with smoking friends
Nazir Hashemi et al. / 2001 (25)	Evaluation of the tendency to smoke and its causes in male students of Yasouj University of Medical Sciences	*	206	Yasuj	۱۵/۶٪	Sense of curiosity

***Not mentioned**

Table 2: Demographic variables studied in the included studies

Author	Age	Prevalence of gender	marital status	Father's level of education	Mother's education level
Rahman Panahi	has it	boys	does not have	has it	does not have
Attari	has it	boys	does not have	*	*
Reza Khani	has it	boys	*	*	*
Shamsipoor	has it	boys	does not have	*	*
Ghodsi	has it	boys	does not have	does not have	has it
Rayaa	*	*	*	*	*
Zareipour	does not have	boys	*	has it	has it

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Kathiri	does not have	boys	*	does not have	does not have
Shojae	has it	boys	does not have	*	*
Sharifi Rad	*	*	*	*	*
Abedini	has it	has it	*	*	*
Majidpour	*	boys	does not have	*	*
Nazir Hashemi	has it	boys	does not have	does not have	does not have

*Not mentioned

The most significant reason for smoking in 4 articles was curiosity, in 4 researches, the reason was communication with smoking friends, in 2 researches, the reason was fun and entertainment and in three articles, the reason was the presence of a smoker in the family, friendly parties and personal interest, respectively (Table 1). Most researches find an important connection between age, gender and smoking, that is, boys had the highest rate of smoking. There was no remarkable connection between marital status and smoking. Some of the articles also stated some remarkable consistencies and some inconsistencies between the variables of parents' education level and smoking (Table 2).

Discussion

Researchers conducted around the world have largely demonstrated that tobacco use is on the rise. Because the young population of any country is considered the human capital and support of that country, and given that Iran is one of the young communities in the world, tobacco consumption can be a serious threat to the country (15). The results of this research demonstrated that the prevalence of smoking among medical students in Iran is different. The highest prevalence of smoking was in Shahid Beheshti University of Medical Sciences in Tehran with 23.8% and the lowest in Isfahan University of Medical Sciences with 4.6% (Table 1).

It appears that if education is done at an early age when family roles can still be influential, it will practically help reduce smoking in students. Moreover, if the officials of the Ministry of Health and Medical Education in Iran equip the university environment and dormitories, hold camps and competitions, and diversify the range of youth entertainment and recreational activities, they will be able to propose different alternatives for young people to replace cigarettes. Conferences and workshops can also motivate students to abstain from smoking. Besides, authorities can provide a smoking-free environment. The major reason for smoking in 4 researches was curiosity, in 4 researches, the reason was the relationship with smoking friends. Two articles cited fun and entertainment as the reason for smoking, and in three researches, they cited the presence of a smoker in the family, friendly parties, and personal interest as the reasons for smoking (Table 1).

Evidence and research demonstrate the impact of friends and peers on smoking (26) and having smoking friends increase the risk of smoking behavior by two to four times (27). Because one of the main reasons for the inclination to smoke is the personal interest and smoking friends, it appears that the emphasis of families and cultural officials of universities is helpful for choosing non-smoking friends when making friends upon entering

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universities. In some cases, it can appear difficult for some students to say “No” to a friend request. Most of the students think that saying “No” means not cooperating or not accepting, and rejecting friends' requests affects their progress and interpersonal relationships. The results of the present research project demonstrated that in most of the reviewed articles, there is a remarkable connection between gender and smoking. The prevalence of smoking was higher in boys than in girls.

Research has demonstrated that girls are more influenced by their peers to become smokers (28) and boys are more influenced by depression as well as movies and mass media (29). Abedini thinks that women smoking is antisocial behavior, and this can be one of the reasons that women smoke less than men (23). Boys seem to be more on the verge of smoking than girls. Boys who experience smoking for once are far more likely to smoke than girls who experience it. The fact that Iranian female students smoke less than men may be due to its abnormality in Islamic countries. Another reason for the underestimation of smoking in women can be the application of self-report method (30). Smoking is normally an antisocial behavior among women. Women, especially young women and adolescents in Iran, smokeless in public. And if they tend to smoke, they do it occasionally, so the ratio of smoking among them is much lower (31).

The results of this research demonstrated that in most of the reviewed articles, there is a remarkable connection between age and smoking and the prevalence of smoking was higher in boys than girls (Table 2). As a consequence of role modeling of young people from each other at this age, the need for parents to be careful about their children's socialization and full knowledge of their friendly relations increases. The results of the research demonstrated that some researches stated remarkable and some inconsistent connections between the variables of parents' education level with smoking (Table 2).

Educated parents appear to be more aware of the dangers of smoking or the dangers of secondhand smoke than illiterate parents.

Medical students are, actually, the future of the healthcare community and are the ones who are responsible for the main axis of health services in the community. At the same time, their behavior is considered a model of health for people. That is why, if medical students start smoking, they are more likely to continue smoking after graduation and at work and in the hospital, and this factor promotes unhealthy and dangerous behavior in people.

Conclusion:

Despite the fact that the rate of smoking among medical students in Iran is not higher than some other researches in other countries, but compared to previous years in medical universities in Iran, researches demonstrate an increasing growth in smoking. Bearing in mind the increasing trend of admission of medical students in Iran and the high prevalence of smoking among students, special attention must be paid to this group of young people in order to carry out smoking control interventions.

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Authors Contributions:

All the authors met the criteria of authorship based on the recommendations of the International Committee of Medical Journal Editors.

Conflict of interest:

There are no conflicts of interest in this study.

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