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Status of Smoking Research in Jordan: Scoping Review and Evidence Synthesis

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Background

Jordan has one of the highest smoking rates in the world. Despite this, there is a limited understanding of the scope and nature of smoking research in Jordan. In this scoping review, we assessed the status of research on smoking in Jordan, identifying research gaps and opportunities for future studies, and informing the development of evidence-based interventions to reduce smoking prevalence and related health harms in the country.

Methods

We searched Scopus database to identify papers covering various aspects of smoking research in Jordan, including nicotine, smoke, cigarette, tobacco, and waterpipe. We assessed several outcomes, including sample characteristics size, data characteristics included data type (quantitative, qualitative), data collection methodology (survey, clinical measurements) and data collection sites.

Results

From 410 studies screened, we included 125 studies. We classified included studies according to the main topics covered in the articles, where 32 studies assessed the clinical impact of smoking, 24 studies assessed aspects of smoking cessation, 19 articles included the perception and knowledge of smoking, 19 studied the prevalence of different types of smoking in different age population, 16 articles studied the factors affecting smoking, 9 studied the relation with oral health, diseases, and cancer, 6 of them handled different aspects of smoking and smoking research tools and training of healthcare workers.

Conclusions

This scoping review provided valuable insights into the various aspects of smoking research among Jordanians and highlighted gaps where research is needed. The results can be used to inform policies and programs on areas of needed evidence, in terms of topic and geographic distribution.

INTRODUCTION

Smoking is associated with all-cause morbidity and mortality among adults.¹ It was found to be associated with higher mortality risk in lower socioeconomic status.² The Middle East and North Africa (MENA) region has the highest prevalence of tobacco use in the world,³ with smoking being a leading cause of morbidity and mortality. Jordan has a high smoking prevalence, with estimates suggesting that nearly half of the adult men and one in ten adult women smoke.^{4, 5} Despite this, there is a limited understanding of the scope and nature of smoking research in Jordan. A 2011 systematic review found limited evidence regarding prevalence.⁴ By synthesizing the available literature on this topic, this

scoping review will provide a comprehensive overview of the current state of research on smoking in Jordan, identify research gaps and opportunities for future studies, and inform the development of evidence-based interventions to reduce smoking prevalence and related health harms in the country.

METHODS

This review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) Extension for Scoping Reviews guidelines.⁶

The search was conducted in the Scopus database on the 21st of January 2023. We restricted the search for articles to

Jordanian authors. We built our search strategy on available keywords that reflect smoking and nicotine ingestion, including nicotine, smoke, cigarette, tobacco, and waterpipe. We used operators and truncations as needed to account for any variations of used keywords. The final search strategy was as follows:

(TITLE (*nicotine*) OR TITLE (*smoke*) OR TITLE (*cigarette*) OR TITLE (*tobacco*) OR TITLE (*waterpipe*)) AND (LIMIT-TO (AFFILCOUNTRY, "Jordan"))

We excluded papers on animals, labs, studies done outside of Jordan, and collaborative studies.

We collected data about article characteristics (titles, link of article, year of publication, and study type). Sample characteristics included the type of sample (students, health care professionals, general population) and sample size. Data characteristics included data type (quantitative, qualitative), data collection methodology (survey, clinical measurements), and data collection sites. The study aims and findings and whether a pilot study was used or not were also collected.

RESULTS

SELECTION OF A SOURCE OF EVIDENCE

The total number of articles identified by searching through Scopus was 410, one duplicate article was found and excluded, the number of articles reviewed was 409, and the number of excluded articles was 284 as distributed in [Figure 1](#). The final number of articles included in this study was 125. [Figure 1](#) shows the number of screened and included studies.

Of the studies excluded 71 articles were laboratory studies (25%), 52 articles were no smoking assessment (18.3%), animal studies were 51 articles (17.9%), 39 articles were non-Jordanian studies (13.7%), 32 articles were collaborative studies (11.3%), 12 articles were agricultural and planet (4.2%), 10 articles were review studies (3.5%), 5 articles were chemical studies (1.8%), 5 articles have no abstract (1.8%), 3 articles were mathematical studies 1%, Editorial, insects, economical, and non-English studies have the same number of studies excluded (1 article for each) with (0.35%) for every category.

CHARACTERISTICS OF SOURCES OF EVIDENCE

The 125 included articles focused mainly on 8 aspects related to smoking among Jordanians. 32 articles (25.6%) focused on the impact of smoking on health; supplement table 1. 24 articles (19.2%) focused on smoking cessation; supplement table 2. 19 articles (15.2%) focused on the perception and knowledge of smoking among Jordanians; supplement table 3. 19 articles (15.2%) focused on the prevalence of smoking among Jordanians in different subgroups; supplement table 4. 16 articles (12.8%) focused on the factors that affect smoking among Jordanians; supplement table 5. 9 articles (7.2%) focused on the effect of smoking on the oral health of Jordanians, 1 article (0.8%) focused on teaching healthcare workers and assess the effectiveness of the workshop on healthcare workers, and 5 articles (4%)

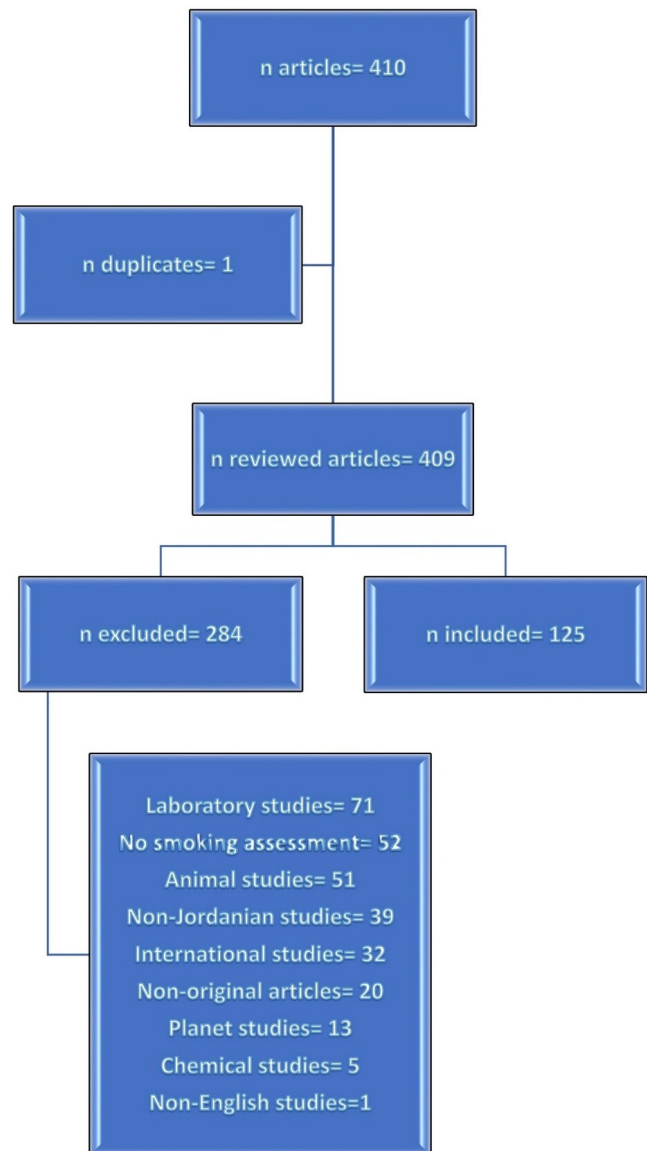


Figure 1 shows the number of screened and included studies.

focused on different other aspects of smoking; supplement table 6.

Each of the articles in the categories covered a range of different subgroups, including but not limited to school adolescents, university students, pregnant women, neonates, children, healthcare workers, and a sample of the adult population. In addition, they covered different types of smoking including 37 articles (29.6%) on cigarette smoking, 25 articles (20%) waterpipe smoking, both of them were included in 20 articles (16%), E-cigarettes in 9 articles (7.2%), and secondhand smoking in 3 articles (2.4%), 2 articles involved 3 and more types of smoking (1.6%). 29 articles (23.2%) didn't specify the type of smoking that was assessed. [Figure 2](#) shows the number of studies that assessed each type of smoking method

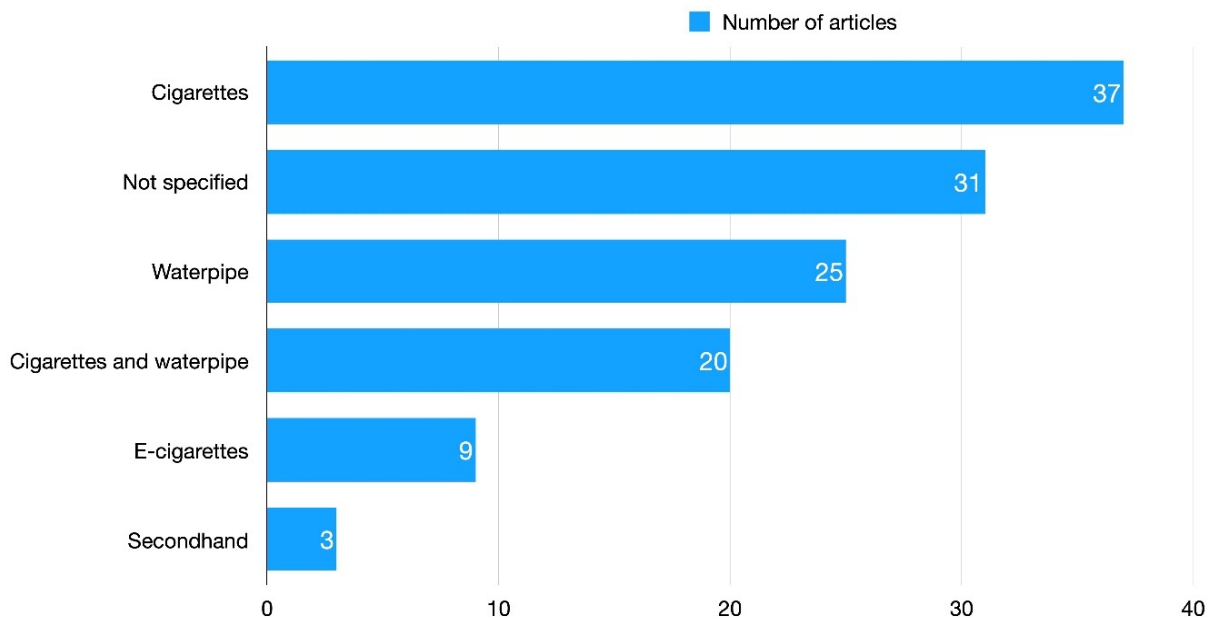


Figure 2 shows the number of studies that assessed each type of smoking method.

RESULTS OF INDIVIDUAL SOURCES OF EVIDENCE

Most of the articles that studied the clinical impact of smoking on health found that smoking has an adverse effect on the health of different systems and organs including the eyes, lung function, cardiovascular parameters and risk factors, cancer development, pregnant and breastfeeding ladies, neonates and preterm neonates, fertility, psychiatric diseases and withdrawal symptoms of smoking cessation; supplement Table 1. Regarding smoking cessation, articles found that in general, policies and counseling are not well implemented in Jordan, people are aware of the hazards of smoking but unable to cease, and discussed factors that may affect cessation, supplement Table 2 provides a more extensive summary of the results.

Although there is a good perception and knowledge regarding cigarette smoking, the perception and knowledge of the effects of E-cigarettes was poor. In addition, the harmful effects of cigarette smoking and cessation as well perceived among Jordanians; supplement Table 3. The prevalence of smoking among different subgroups in Jordan was studied; supplement Table 4 provides a summary in this regard. Social factors, demographic characteristics, age, income, and different other factors that may affect either smoking or smoking cessation have been also discussed in the articles; supplement Table 5. Articles found that smoking has a negative impact on oral health and on the response to treatment, and the probability of developing oral cancer. The results of a workshop and other different articles with different aspects are also summarized in supplement Table 6.

SYNTHESIS OF RESULTS

We included original articles related to smoking and its impact, cessation, and other aspects. We categorized included articles by the main of their coverage. 32 articles discussed the clinical impact of smoking on health, most of them found that smoking has a negative outcome on health, some of them compared the impact of each type of smoking on health, 21 articles studied many different aspects of smoking cessation including the implementation in healthcare provider places, awareness of cessation, barriers to cessation, and knowledge of modalities that are used to help with cessation. 18 articles included the perception and knowledge of smoking and other aspects regarding smoking like the effects of different types of smoking on health. 19 of the articles studied the prevalence of different types of smoking in different age populations. 16 articles studied the factors that could have affected smoking of different types in different age populations. 9 of the articles studied the relationship between smoking and oral health, diseases, and, cancer. 6 articles handled different aspects of smoking and smoking research tools and training of health-care workers.

DISCUSSION

The synthesis of the results showed that the main focus of the articles was on the impact of smoking on health, followed by smoking cessation, perception and knowledge of smoking, and prevalence of smoking. These findings highlight the importance of studying the various aspects of smoking among Jordanians, as well as the need for policies and programs to address the issue and promote smoking cessation in the country. We also observed a limited geo-

graphical distribution, as the majority of studies were restricted to the capital city Amman.

The results of the individual sources of evidence showed that smoking has a negative impact on multiple systems and organs of the human body, including the cardiovascular system, respiratory system as well as eyes, and is a major risk factor for cancer development. Articles also found that policies and counseling for smoking cessation are not carried out very often in Jordan,⁷ and yet Jordanians are mindful of the dangers of smoking but are unable to quit.⁸ Furthermore, there was a good insight perception and knowledge of the negative effects of smoking and smoking cessation,⁹ but the perception and knowledge of the effects of electronic cigarettes were poor.¹⁰ The prevalence of smoking among different subgroups was studied, where socio-demographic factors, such as age and income, were found to impact smoking and cessation. Finally, smoking was also found to have a negative impact on oral health, including the response to treatment and the probability of developing oral cavity cancers.¹¹

The main limitation of our scoping review is its dependence on a single literature database (i.e., Scopus). While the Scopus database is comprehensive and provides wide coverage of literature,¹² future studies should consider other literature databases. An example article that could be included by searching other databases is a recent study by Al Oweidat et al.¹³ Moreover, future studies should compare such findings with other populations.

CONCLUSION

This scoping review provides precious insights into the multiple aspects of smoking among Jordanians and highlights the need for more research in this field. The results can be used to inform policies and programs aimed at reducing the negative impact of smoking on the health of Jordanians and promoting smoking cessation. The results can guide policy and practice by giving decision-makers a thorough grasp of the issue and the body of research supporting potential solutions. The findings can serve as a starting point for future research by suggesting areas that require more investigation.

CONFLICT OF INTEREST

None.

SUPPLEMENTARY MATERIAL

Supplementary material tables provide the characteristics of the 125 included studies.

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SUPPLEMENTARY MATERIALS

Supplementary material

Download: https://hymr.scholasticahq.com/article/74854-status-of-smoking-research-in-jordan-scoping-review-and-evidence-synthesis/attachment/157936.docx?auth_token=4sO7eD8J0pEZg1kuEAWd
