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## Tobacco Use and Health Hazards: A Literature Review for Smoking Cessation

**Dana Anwer Abujaber, MSN, RN <sup>1</sup> ; Rami A. Elshatarat, PhD, RN <sup>2,\*</sup> ; Majed S. Al-Za'areer PhD, RN <sup>3</sup> ; Naif Salem Al Tarawneh, PhD, RN <sup>4</sup> ; Khaled M. Al-Sayaghi, PhD, RN <sup>2,5</sup> ; Hanan Mohamed Younis, PhD, RN <sup>2,6</sup> ; Abdullah D. Alhujaili, MSc, RN <sup>7</sup> ; Bader Hameed Aljuhani <sup>7</sup> , Ibrahim Mohammad Ghulam <sup>7</sup> ; Adnan Dhaifallah Alamri <sup>7</sup> ; Maha Hdaib, MSc, RN <sup>8</sup> ; Zyad T. Saleh, PhD, RN <sup>9,10</sup>**

<sup>1</sup> Nursing Department, Applied Science Private University, Amman, Jordan

<sup>2</sup> Department of Medical and Surgical Nursing, College of Nursing, Taibah University, Madinah, Saudi Arabia

<sup>3</sup> College of Health Science and Nursing, Al-Rayan Colleges, Madinah, Saudi Arabia

<sup>4</sup> Department of Psychiatric Nursing, College of Nursing, Taibah University, Madinah, Saudi Arabia

<sup>5</sup> Nursing Division, Faculty of Medicine and Health Sciences, Sana'a University, Sana'a, Yemen

<sup>6</sup> Medical Surgical Nursing, Faculty of Nursing, Cairo University, Cairo, Egypt.

<sup>7</sup> College of Nursing, Taibah University, Madinah, Saudi Arabia

<sup>8</sup> Allied health science Department, Faculty of Zarqa collage, Al-Balqa Applied university, Zarqa, Jordan

<sup>9</sup> Department of Clinical Nursing, School of Nursing, The University of Jordan, Amman, Jordan

<sup>10</sup> Department of Nursing, Vision College, Riyadh, Saudi Arabia

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\* **Corresponding Author:** Rami A. Elshatarat, PhD, RN

Department of Medical and Surgical Nursing, College of Nursing, Taibah University, Madinah, Saudi Arabia.

Email: [elshatrat@hotmail.com](mailto:elshatrat@hotmail.com); [rshatarat@taibahu.edu.sa](mailto:rshatarat@taibahu.edu.sa)

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## Abstract

**Background:** Smoking remains a leading global health issue, contributing to millions of preventable deaths each year and imposing substantial economic and healthcare burdens. Despite widespread awareness of its risks, smoking continues to be prevalent, particularly in low- and middle-income countries, where cessation resources are often inadequate. This study aims to examine the harmful effects of tobacco use on both physical and mental health and highlight the role of clinical professionals in smoking cessation efforts.

**Objectives:** The study explores the range of health issues caused by tobacco use, including its impact on the cardiovascular, respiratory, and psychosocial domains. It also focuses on the crucial role clinical professionals play in assisting individuals to quit smoking and reducing secondhand smoke exposure.

**Methods:** A comprehensive literature review was conducted to assess the health hazards of tobacco use and the effectiveness of smoking cessation interventions, with a focus on clinical strategies and public health policies. The review included studies on both direct and secondhand smoke exposure, as well as intervention outcomes in various population groups.

**Results:** Tobacco use is linked to numerous severe health problems, including cardiovascular diseases, respiratory conditions, and multiple cancers. It also leads to psychosocial issues such as addiction, increased stress, and a lower quality of life. Secondhand smoke exposure further contributes to these risks, affecting non-smokers as well. Despite significant advancements in smoking cessation techniques, gaps remain in understanding how to best support diverse populations in quitting.

**Clinical Implementations:** Clinical professionals, including physicians, nurses, and mental health providers, are integral to smoking cessation. They should implement personalized, evidence-based interventions such as pharmacotherapy, cognitive-behavioral therapy, and counseling. Additionally, integrating technology like mobile health apps and telehealth can enhance the accessibility and effectiveness of these interventions, particularly in underserved regions.

**Conclusions:** The study emphasizes the importance of clinical professionals in delivering smoking cessation interventions and advocating for smoke-free environments. Further research is needed to develop culturally tailored cessation programs and assess long-term outcomes of interventions. Stronger public health policies, including comprehensive smoking bans, higher taxes, and stricter advertising regulations, are also recommended to reduce tobacco use and its associated health risks globally.

**Keywords:** Smoking cessation, tobacco use, clinical interventions, public health, health hazards.

## Introduction

During the 20th century, tobacco-related diseases claimed approximately 100 million lives. Tobacco use is a leading cause of cardiovascular disease, responsible for at least one-quarter of all deaths from heart disease worldwide. In the United States, approximately 61 million people suffer from cardiovascular disease, with a death rate of one in 33 seconds due to cardiovascular conditions<sup>1-3</sup>. Tobacco use not only impacts physical health but also leads to reduced life expectancy, decreased productivity, and increased medical costs. Over 15 billion cigarettes are smoked daily worldwide, with tobacco-related healthcare expenses amounting to approximately \$81 billion annually<sup>2,4</sup>.

Despite the well-documented harmful effects of tobacco, its consumption continues to rise globally, with approximately 1,200 new adolescent smokers each day. If current trends persist, smoking is expected to cause one in six deaths worldwide. Efforts to quit smoking remain challenging; in 2005, only 4 to 7 percent of American adults who attempted to quit were successful<sup>2,4,5</sup>. This difficulty in quitting is exacerbated by the widespread and persistent nature of smoking habits, particularly in developing countries where resources and support for cessation are limited. Moreover, about one-third of adult men smoke globally, including approximately 45 million (21%) adult Americans<sup>2,5,6</sup>.

In addressing this pervasive issue, health professionals play a critical role. Health professionals, as frontline healthcare providers, are uniquely positioned to implement and advocate for effective tobacco cessation strategies<sup>7,8</sup>. Their comprehensive understanding of patient care, coupled with their ability to build therapeutic relationships, makes them instrumental in facilitating behavior change and providing support to individuals seeking to quit tobacco. Health interventions encompass a range of approaches, from direct counseling and education to the integration of evidence-based cessation programs and pharmacotherapy<sup>8-11</sup>.

This literature review aims to examine the hazards associated with tobacco use and evaluate the role of health interventions in promoting cessation. By synthesizing existing research on the health risks of tobacco and the effectiveness of health-led cessation strategies, this review seeks to provide a comprehensive overview of current knowledge and identify gaps in the literature. The findings will offer valuable insights for healthcare practitioners, policymakers, and researchers, contributing to the development of more effective tobacco cessation programs and ultimately improving public health outcomes<sup>8,12,13</sup>. The subsequent sections will explore the various hazards of tobacco use, delve into the diverse health interventions available, and analyze their efficacy in achieving successful cessation. Through this review, we hope to highlight the essential contributions of health professionals in combating tobacco addiction and underscore the importance of continued research and innovation in this critical area of public health.

### **Background and Overview of the Hazards of Tobacco Use**

Tobacco use represents a significant public health crisis, with profound and multifaceted impacts on both physical and psychosocial well-being. Despite substantial efforts to reduce smoking rates globally, tobacco consumption remains a leading cause of preventable morbidity and mortality, affecting individuals across various demographics and regions<sup>2,4,14</sup>. The physical health risks associated with tobacco use are extensive and well-documented. Tobacco smoke contains over 7,000 chemicals, many of which are toxic and carcinogenic<sup>15</sup>. These substances contribute to a range of severe health conditions. Tobacco use is a major cause of chronic respiratory conditions, including COPD and emphysema. The inhalation of tobacco smoke damages the airways and lung tissues, leading to inflammation, mucus production, and impaired lung function. Additionally, smoking is the leading cause of lung cancer, a highly lethal disease with a poor prognosis<sup>15-18</sup>.

Smoking accelerates the development of atherosclerosis, where plaque builds up in the arteries, increasing the risk of coronary artery disease, stroke, and peripheral vascular disease. Tobacco smoke causes endothelial dysfunction, promotes blood clot formation, and increases heart rate and

blood pressure, all of which contribute to cardiovascular damage<sup>1,17</sup>. Moreover, beyond lung cancer, tobacco use is associated with various other cancers, including those of the mouth, throat, esophagus, bladder, and pancreas. Carcinogens in tobacco smoke induce genetic mutations and contribute to the development of cancerous cells in these organs<sup>1,15,17</sup>.

Tobacco use adversely affects overall health, leading to decreased immune function, slower wound healing, and diminished bone density. It also exacerbates conditions such as diabetes and increases the risk of complications from existing health issues<sup>18,19</sup>.

The psychosocial impacts of tobacco use are equally significant and often interlinked with the physical health risks. Tobacco use is frequently associated with mental health conditions, including depression, anxiety, and stress. The neurochemical effects of nicotine can alter mood and exacerbate existing psychological issues. Additionally, smoking can be a coping mechanism for dealing with emotional distress, leading to a cycle of dependency and worsening mental health<sup>15,20,21</sup>. Moreover, nicotine is highly addictive, leading to physical and psychological dependence. This addiction can make cessation efforts particularly challenging, with withdrawal symptoms such as irritability, difficulty concentrating, and cravings further complicating the process of quitting<sup>1,22,23</sup>. Furthermore, tobacco use can affect social relationships and economic stability. Smokers may face stigma and social isolation due to their habit, and the economic burden of purchasing tobacco products, coupled with healthcare costs related to smoking-related illnesses, can strain personal finances<sup>4,18</sup>.

The combined physical and psychological effects of tobacco use can significantly diminish an individual's quality of life. Chronic illnesses, frequent medical visits, and the stress associated with managing a smoking addiction can impact overall well-being and daily functioning<sup>15,24-26</sup>.

## **Treatment of Tobacco Use**

Health professionals play a critical role in tobacco cessation efforts, given their frequent interactions with patients and their position as trusted healthcare providers. As front-line

practitioners, health professionals are uniquely positioned to assess, educate, support, and motivate individuals to quit smoking. Effective health interventions for tobacco cessation can be categorized into several key strategies, including assessment and counseling, pharmacotherapy support, behavioral interventions, patient education, follow-up care, and policy advocacy <sup>7,8,10,27</sup>.

The first step in tobacco cessation is a thorough assessment of the patient's smoking status, history, and readiness to quit. Health professionals should evaluate the frequency and duration of tobacco use, previous quit attempts, triggers for smoking, and any existing co-morbid conditions that may affect cessation efforts. Understanding these factors allows for the development of a personalized cessation plan <sup>8,11,28</sup>. Motivational Interviewing (MI) is a patient-centered counseling technique that helps individuals explore their ambivalence about quitting and enhances their motivation to change. Health professionals use open-ended questions, reflective listening, and affirmation to encourage patients to articulate their reasons for quitting and to set achievable goals. MI has been shown to be effective in increasing cessation rates, particularly when combined with other interventions <sup>23,29-31</sup>. Moreover, the 5 A's framework (Ask, Advise, Assess, Assist, and Arrange) is a structured approach used by health professionals to guide tobacco cessation counseling. First, they systematically identify all tobacco users during each visit. Then, they strongly encourage these individuals to quit smoking. Next, they assess the patient's readiness to make a quit attempt. If the patient is willing, the healthcare professionals offers assistance, such as providing resources or referring them to cessation programs. Finally, they schedule follow-up appointments to support the patient's quit attempt <sup>23,30,31</sup>.

Nicotine Replacement Therapy (NRT) products, such as patches, gum, lozenges, inhalers, and nasal sprays, help reduce withdrawal symptoms and cravings by providing a controlled dose of nicotine. Health professionals play a vital role in educating patients about the correct use of NRT, monitoring for side effects, and encouraging adherence to the therapy <sup>22,23,30,32</sup>. Moreover, health professionals can support the use of prescription medications like bupropion (Zyban) and varenicline (Chantix) by educating patients on their benefits, potential side effects, and the

importance of adherence. These medications work by reducing cravings and withdrawal symptoms, making it easier for patients to quit. Health professionals should collaborate with physicians to ensure appropriate prescribing and follow-up<sup>22,30,32</sup>. Moreover, in some cases, combining NRT with prescription medications can be more effective than using either treatment alone. Health professionals should assess the patient's needs and work with healthcare providers to implement combination therapy when indicated, monitoring the patient closely for effectiveness and side effects<sup>30,32</sup>.

Cognitive-Behavioral Therapy (CBT) helps patients identify and change negative thought patterns and behaviors associated with smoking. Health professionals trained in CBT can guide patients through strategies to manage stress, cope with triggers, and develop healthier habits. CBT can be delivered in individual or group settings, and it is often used in conjunction with other cessation methods<sup>23,30,31</sup>. Since stress is a common trigger for smoking, health professionals can teach patients stress management techniques such as deep breathing, progressive muscle relaxation, and mindfulness meditation. These techniques help patients cope with cravings and reduce the likelihood of relapse<sup>22,30,31</sup>. Health professionals can facilitate or refer patients to support groups where individuals share their experiences, challenges, and successes in quitting smoking. Peer support has been shown to improve cessation outcomes by providing encouragement and accountability<sup>23,30,31</sup>. Furthermore, educating patients about the health risks associated with smoking, such as cardiovascular disease, respiratory issues, and cancer, is essential in motivating them to quit. Health professionals should also highlight the benefits of quitting, including improved health, increased life expectancy, and enhanced quality of life<sup>11,30</sup>. In addition, health professionals can help patients develop a quit plan that includes setting a quit date, identifying triggers, and planning for challenges. A written quit plan provides a roadmap for the patient and increases the likelihood of success<sup>22,23,30</sup>. Furthermore, providing patients with educational materials, such as brochures, websites, and mobile apps, can reinforce the information discussed during counseling sessions. Health professionals should also refer patients to specialized tobacco cessation programs,

helplines, and community resources as needed <sup>7,8,22</sup>. Consistent follow-up is crucial for sustaining tobacco cessation efforts. Health professionals should schedule follow-up appointments or phone calls to monitor the patient's progress, address challenges, and provide ongoing support. Follow-up care helps identify early signs of relapse and offers an opportunity to reinforce positive behaviors <sup>7,8,22,23</sup>. Relapse is common in tobacco cessation, and health professionals should be prepared to offer support and guidance if a patient returns to smoking. Discussing strategies for dealing with triggers and reinforcing the benefits of quitting can help patients regain their commitment to cessation <sup>23,30</sup>.

Health professionals can advocate for smoke-free policies in hospitals, workplaces, schools, and public spaces to reduce exposure to secondhand smoke and create supportive environments for quitting. By participating in policy-making and community outreach, health professionals contribute to broader public health efforts to reduce tobacco use <sup>14,30,31</sup>. Health professionals can take an active role in community education campaigns that raise awareness about the dangers of tobacco use and promote cessation resources. These campaigns can be tailored to specific populations, such as youth, pregnant women, or individuals in low-income communities, to address their unique needs and challenges <sup>23,27,32</sup>. Health professionals should advocate for the integration of tobacco cessation interventions into routine healthcare practices. This includes incorporating smoking status into electronic health records, training healthcare providers in cessation techniques, and ensuring that all patients are screened for tobacco use and offered support to quit <sup>33,34</sup>. Health professionals can recommend and assist patients in using mobile apps and online platforms designed for tobacco cessation. These tools often provide personalized quit plans, daily tips, progress tracking, and access to virtual support communities <sup>4,6,7</sup>. The use of telehealth for counseling and follow-up care has become increasingly important, especially in reaching patients in remote or underserved areas. Health professionals can conduct virtual consultations, provide remote monitoring, and offer digital resources to support patients in their quit journey <sup>4,6,7,22</sup>.

In summary, health interventions for tobacco cessation encompass a comprehensive approach that includes assessment, counseling, pharmacotherapy, behavioral support, education, follow-up care, and advocacy. By utilizing these strategies, health professionals can effectively support patients in their efforts to quit smoking, ultimately reducing the burden of tobacco-related diseases and improving public health outcomes.

## Discussion

This study emphasizes the crucial role of health professionals in tobacco cessation, recognizing their unique position to contribute meaningfully at every stage of the intervention process, from initial assessment to long-term follow-up care. Health professionals, being in frequent and direct contact with patients, have the potential to identify smokers early and provide personalized support tailored to individual needs<sup>23,30</sup>. Their involvement is essential in conducting comprehensive assessments that not only evaluate the physical health effects of tobacco use but also address the psychosocial dimensions, such as addiction, stress, and motivation to quit. Integrating tobacco cessation strategies into routine healthcare practice is critical to addressing the widespread and multifaceted impact of smoking on health. Health professionals should be equipped with the skills and knowledge to implement evidence-based interventions effectively<sup>17,23,35</sup>. Key approaches include motivational interviewing, which helps patients explore their reasons for smoking and encourages behavior change; cognitive-behavioral therapy (CBT), which focuses on altering smoking-related thoughts and behaviors; and pharmacotherapy support, involving medications like nicotine replacement therapy, varenicline, or bupropion, to help manage withdrawal symptoms and reduce cravings<sup>23,29-31,35</sup>. Additionally, the incorporation of technology into smoking cessation interventions offers new opportunities to enhance care<sup>23,30,31</sup>. Mobile health apps, telehealth platforms, and digital communication tools can provide continuous support and resources to individuals trying to quit, especially those in underserved or remote areas where access to healthcare is limited. These technologies can facilitate regular check-ins, deliver educational

content, track progress, and offer reminders for medication adherence, making the quitting process more manageable<sup>25,26,30</sup>. To ensure the success of tobacco cessation efforts, healthcare institutions must prioritize the training and continuous education of health professionals in cessation techniques. This includes offering workshops, certification programs, and access to the latest research on effective interventions<sup>24-26,30</sup>. By staying informed on best practices, health professionals can deliver patient-centered, evidence-based care that improves outcomes and increases the likelihood of successful smoking cessation<sup>1,6,11,29,30</sup>.

In addition to their role in direct patient care, health professionals are uniquely positioned to shape public health policies and advocate for smoke-free environments, which are essential in reducing both tobacco use and exposure to secondhand smoke. Given their frontline experience and understanding of the harmful effects of smoking, health professionals can serve as influential voices in public health advocacy<sup>12,13,30</sup>. This study recommends that health professionals take an active role in policy-making at local, national, and global levels, contributing their insights to the development and promotion of stronger tobacco control measures. Their involvement in policy discussions can help ensure that legislation is rooted in evidence-based practices and aligns with the goal of reducing smoking prevalence. Health professionals can advocate for comprehensive smoking bans in public and workplace settings, which not only protect non-smokers from secondhand smoke but also create environments that discourage tobacco use<sup>8,12,13,30</sup>. In addition, pushing for higher tobacco taxes has proven to be one of the most effective strategies for reducing smoking rates, particularly among younger populations and those in low- and middle-income regions. Health professionals should also support stricter regulations on tobacco advertising and marketing, especially in areas with high smoking prevalence, to limit the exposure of vulnerable populations, such as adolescents and low-income communities, to pro-tobacco messaging. Beyond policy advocacy, health professionals can play a key role in public health education through community-based campaigns<sup>17,36</sup>. Leading educational initiatives allows health professionals to raise awareness about the dangers of tobacco use and the significant health benefits of quitting.

These campaigns can target various demographics, including school-aged children, families, and at-risk adults, fostering a culture of prevention and health promotion. Through public seminars, social media outreach, and partnerships with local organizations, health professionals can disseminate information on the risks of smoking, strategies for quitting, and available support resources, ultimately contributing to a more informed and health-conscious society. By actively engaging in both policy advocacy and community education, health professionals can extend their impact beyond the clinical setting, helping to reduce the overall burden of tobacco-related diseases. Their leadership in these areas is critical to promoting a smoke-free future and creating healthier environments for all <sup>1,6,11,29,30,37</sup>.

The study underscores the critical need for ongoing research to address existing gaps in the literature concerning tobacco cessation, particularly regarding the effectiveness of interventions across diverse populations. While significant progress has been made in understanding the general strategies for smoking cessation, there is still a lack of comprehensive data on how these interventions perform within specific demographic groups, including those in low- and middle-income countries, where smoking rates are often higher, and access to healthcare services may be limited <sup>14,23,35</sup>.

### **Study Implications and Recommendations**

This study underscores the critical role of comprehensive tobacco cessation interventions in reducing the global burden of tobacco-related diseases. The findings highlight the multifaceted impact of smoking, not only on physical health but also on psychosocial well-being, reinforcing the need for integrated cessation programs that address both dimensions <sup>27,30,33</sup>. Clinical professionals, including physicians, health professionals, and mental health providers, are in a unique position to implement evidence-based interventions such as pharmacotherapy, cognitive-behavioral therapy, and motivational interviewing. To maximize the effectiveness of these interventions, healthcare

systems should prioritize the training of clinical professionals in tobacco cessation techniques and promote the integration of cessation strategies into routine patient care. Moreover, the use of digital health tools, including mobile apps and telehealth, should be expanded to provide continuous support to individuals attempting to quit, particularly those in underserved areas. These implications point to the necessity of a coordinated, multidisciplinary approach in tackling tobacco use at both the individual and population levels <sup>2,30,35,36</sup>.

Based on the gaps identified in the literature, this study recommends ongoing research to explore the effectiveness of culturally tailored cessation programs, especially in low- and middle-income countries where smoking prevalence remains high. Future studies should assess how tobacco cessation strategies can be adapted to suit diverse populations, considering factors such as cultural beliefs, socioeconomic status, and access to healthcare services. Additionally, long-term research is needed to examine the impact of clinical interventions on relapse prevention and sustained health improvements, as well as the role of continuous support systems in promoting long-term abstinence <sup>11,23,30</sup>. Finally, policy advocacy remains crucial, and healthcare professionals should be active in promoting stronger tobacco control measures, such as comprehensive smoking bans, higher taxes, and restrictions on tobacco marketing. By combining research, clinical practice, and public policy, these efforts can lead to more effective tobacco cessation programs and a significant reduction in tobacco-related harm worldwide.

### **Conclusion**

Tobacco use continues to be a leading cause of preventable death and illness worldwide, contributing significantly to the global burden of non-communicable diseases such as cardiovascular disease, respiratory disorders, and various cancers. This literature review has highlighted the wide range of physical and psychosocial hazards associated with tobacco use, as well as the persistent challenges of smoking cessation, particularly in low- and middle-income countries. Clinical professionals play a pivotal role in the implementation of effective tobacco

cessation interventions, including pharmacotherapy, cognitive-behavioral therapy, and motivational interviewing. Their engagement at every stage of the cessation process, from initial assessment to follow-up care, is essential for addressing both the physical and psychological aspects of smoking addiction.

The study also emphasizes the need for culturally tailored cessation programs and long-term research on the effectiveness of various interventions across diverse populations. Given the complexities of tobacco addiction and the diverse needs of individuals, a multidisciplinary and patient-centered approach is critical to reducing tobacco use globally. In addition to clinical interventions, the active involvement of healthcare professionals in policy advocacy for stronger tobacco control measures will further support public health efforts to curb tobacco-related harm. Ongoing research, coupled with the commitment of clinical professionals and policymakers, will be essential in developing more effective and sustainable strategies to combat tobacco use and improve global health outcomes.

## References

1. Camenga DR, Klein JD. Tobacco use disorders. *Child and Adolescent Psychiatric Clinics*. 2016;25(3):445-460.
2. Chen, Girvalaki, Mechili, Millett, Filippidis. Global patterns and prevalence of dual and poly-tobacco use: a systematic review. *Nicotine and Tobacco Research*. 2021;23(11):1816-1820.
3. Elshatarat RA. *Knowledge, attitudes and beliefs about smoking in Jordanian men who are smokers and hospitalized with a cardiovascular diagnosis*. University of California, San Francisco; 2010.
4. Bilano V, Gilmour S, Moffiet T, et al. Global trends and projections for tobacco use, 1990–2025: an analysis of smoking indicators from the WHO Comprehensive Information Systems for Tobacco Control. *The Lancet*. 2015;385(9972):966-976.
5. Gallaway MS. Surveillance for cancers associated with tobacco use—United States, 2010–2014. *MMWR. Surveillance Summaries*. 2018;67.
6. Adams JM. Smoking cessation—progress, barriers, and new opportunities: the Surgeon General’s report on smoking cessation. *Jama*. 2020;323(24):2470-2471.
7. Bialous SA, Sarna L, Wells MJ, et al. Impact of online education on nurses’ delivery of smoking cessation interventions with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing*. 2017;14(5):367-376.
8. Kazemzadeh Z, Manzari Z, Pouresmail Z. Nursing interventions for smoking cessation in hospitalized patients: a systematic review. *International Nursing Review*. 2017;64(2):263-275.

9. Almarwani AM, Elshatarat R. Understanding learning styles in undergraduate nursing programs of the Kingdom of Saudi Arabia: An integrative literature review. *The Open Nursing Journal*. 2022;16(1).
10. Choi S-H, Kim Y-H. Factors affecting Korean registered nurses' intention to implement smoking cessation intervention. *Osong public health and research perspectives*. 2016;7(1):63-70.
11. Duaso MJ, Bakhshi S, Mujika A, Pursell E, While AE. Nurses' smoking habits and their professional smoking cessation practices. A systematic review and meta-analysis. *International journal of nursing studies*. 2017;67:3-11.
12. Al-Akash H, Aldarawsheh A, Elshatarat R, et al. "We do others' Jobs": a qualitative study of non-nursing task challenges and proposed solutions. *BMC nursing*. 2024;23(1):478.
13. Aldarawsheh AA, Saifan AR, Sawalha MA, et al. Exploring the causes and consequences of non-nursing tasks among nurses in Jordan: An in-depth qualitative investigation. *Applied Nursing Research*. 2024;77:151791.
14. Chen D, Wu L-T. Smoking cessation interventions for adults aged 50 or older: a systematic review and meta-analysis. *Drug and alcohol dependence*. 2015;154:14-24.
15. West R. Tobacco smoking: Health impact, prevalence, correlates and interventions. *Psychology & health*. 2017;32(8):1018-1036.
16. Asma S. The GATS atlas: global adult tobacco survey. 2015.
17. Eriksen M. The tobacco atlas. *American Cancer Society*. 2012.
18. World Health Organization. *WHO report on the global tobacco epidemic 2015: raising taxes on tobacco*. World Health Organization; 2015.
19. World Health Organization. *Tobacco: poisoning our planet*. World Health Organization; 2022.
20. Thurgood SL, McNeill A, Clark-Carter D, Brose LS. A systematic review of smoking cessation interventions for adults in substance abuse treatment or recovery. *Nicotine & Tobacco Research*. 2016;18(5):993-1001.
21. Waziry R, Jawad M, Ballout RA, Al Akel M, Akl EA. The effects of waterpipe tobacco smoking on health outcomes: an updated systematic review and meta-analysis. *International journal of epidemiology*. 2017;46(1):32-43.
22. Elshatarat RA, Saleh ZT. Treatment of nicotine dependence. *Journal of Drug Addiction, Education, and Eradication*. 2015;11(3/4):213.
23. Elshatarat, Yacoub MI, Khraim FM, Saleh ZT, Afaneh TR. Self-efficacy in treating tobacco use: A review article. *Proceedings of Singapore Healthcare*. 2016;25(4):243-248.
24. Saifan AR, Hayeah HA, Ibrahim AM, et al. Experiences on health-related quality of life of Jordanian patients living with heart failure: A qualitative study. *Plos one*. 2024;19(4):e0298893.
25. Saleh ZT, Elshatarat RA, Alhurani AS, et al. Perceptions related to cardiovascular disease and physical activity behavior in Arab men: a qualitative study. *Heart & Lung*. 2018;47(4):345-350.
26. Saleh ZT, Elshatarat RA, Almarwani AM, et al. Predictors of physical activity behavior change among patients with heart failure enrolled in home-based cardiac rehabilitation intervention. *Heart & Lung*. 2023;61:16-21.
27. Li M, Koide K, Tanaka M, Kiya M, Okamoto R. Factors associated with nursing interventions for smoking cessation: A narrative review. *Nursing Reports*. 2021;11(1):64-74.
28. Mak YW, Loke AY, Wong FK. Nursing intervention practices for smoking cessation: a large survey in Hong Kong. *International Journal of Environmental Research and Public Health*. 2018;15(5):1046.
29. Barth J, Jacob T, Daha I, Critchley JA. Psychosocial interventions for smoking cessation in patients with coronary heart disease. *Cochrane Database of Systematic Reviews*. 2015(7).
30. Elshatarat, Abdelkader R, Alahmadi HA, et al. Prevention, Control and Treatment of Tobacco use Addiction: A Literature Review Article. *Research Journal of Pharmacy and Technology*. 2024;17(2):927-933.
31. Hartmann-Boyce J, Livingstone-Banks J, Ordóñez-Mena JM, et al. Behavioural interventions for smoking cessation: an overview and network meta-analysis. *Cochrane Database of Systematic Reviews*. 2021(1).

32. Rigotti NA, Kruse GR, Livingstone-Banks J, Hartmann-Boyce J. Treatment of tobacco smoking: a review. *Jama*. 2022;327(6):566-577.
33. Kalkhoran S, Benowitz NL, Rigotti NA. Prevention and treatment of tobacco use: JACC health promotion series. *Journal of the American College of Cardiology*. 2018;72(9):1030-1045.
34. West R, Raw M, McNeill A, et al. Health-care interventions to promote and assist tobacco cessation: a review of efficacy, effectiveness and affordability for use in national guideline development. *Addiction*. 2015;110(9):1388-1403.
35. Elshatarat, Saleh. Treatment of nicotine dependence. *Journal of Drug Addiction, Education, and Eradication*. 2015;11(3/4):213.
36. Elshatarat. *Knowledge, attitudes and beliefs about smoking in Jordanian men who are smokers and hospitalized with a cardiovascular diagnosis*. University of California, San Francisco; 2010.
37. Rojewski AM, Bailey SR, Bernstein SL, et al. Considering systemic barriers to treating tobacco use in clinical settings in the United States. *Nicotine and Tobacco Research*. 2019;21(11):1453-1461.