Available online **www.ijpras.com**

International Journal of Pharmaceutical Research & Allied Sciences, 2022, 11(1):21-28
https://doi.org/10.51847/MDYniAlk8A

Research Article

ISSN : 2277-3657
CODEN(USA) : IJPRPM

Smoking Cessation Interventions in Primary Healthcare Settings

Sarah Rushdi Khunfur[1]*, Reem Ebraheem Aldaheri[2], Aljuaid Faisal Hadid M[3], Seddiqa Abdulghani Husain Ali[4], Gaida Mohammadamen B Felemban[5], Abdulrahman Ahmed Hadadi[6], Nawaf Abdulmohsen Al-Kuait[7], Moath Sulieman Aljabri[8], Abdulaziz Musaad Aldayel[9], Hamdan Ayed Hamdan Albathali[10], Bassam Sameer Molawi[11], Saleh Abdulaziz Saleh Alduhayan[12]

[1]Faculty of Medicine, King Khalid University, Abha, KSA.
[2]Faculty of Medicine, King Abdulaziz University, Jeddah, KSA.
[3]Emergency Department, King Faisal Medical Complex, Taif, KSA.
[4]Faculty of Medicine, Mansoura University, Mansoura, Egypt.
[5]Emergency Department, King Faisal Hospital, Makkah, KSA.
[6]Department of Family Medicine, Primary Health Care Center, Jazan, KSA.
[7]Faculty of Medicine, King Faisal University, Al Ahsa.
[8]Department of Family Medicine, Primary Health Care Center, Shaqra, KSA.
[9]Department of Family Medicine, Primary Health Care Center, Huraymila, KSA.
[10]Faculty of Medicine, Northern Border University, Arar, KSA.
[11]Faculty of Medicine, Umm Al Qura University, Makkah, KSA.
[12]Intern, Faculty of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, KSA.

***Email:** Sara.ru997 @ gmail.com*

ABSTRACT

In the United States, tobacco use, mostly cigarette smoking, is the primary cause of preventable disease and death. It is commonly known that smoking raises the risk of a variety of cancers, including lung, liver, and colorectal cancers. Smokers account for 85% of lung cancer cases. Quitting smoking has been shown to lessen the risk of having a smoking-related disease among active smokers. A combination of therapy and one or more drugs is more helpful than either counseling or medication alone in helping individuals quit smoking. To provide an adequate evaluation of the different aspects of smoking cessation and the possible interventions in primary healthcare settings. We used the PubMed database for selecting articles, and the following keys were used in the mesh ((“smoking cessation"[Mesh]) AND (“interventions”[Mesh]) OR (“primary healthcare"[Mesh])). To help smokers quit smoking, it is important to recognize that nicotine addiction is the root of their problem. Individuals with severe nicotine addiction may become mentally unstable and experience vague uneasiness. Such patients may benefit most from nicotine replacement therapy (NRT). By temporarily replacing the nicotine absorbed from smoking during smoking, the patient reduces the distressing withdrawal symptoms that occur during smoking cessation, leading to easier smoking cessation. Moreover, varenicline and sustained-release bupropion can be also used as first-line treatments for smoking cessation. In addition to pharmacological, behavioral therapies should also be provided to enhance the chances of quitting smoking.

Key words: *Smoking cessation, Smoking, Management, Family physician*

INTRODUCTION

In the United States, tobacco use, mostly cigarette smoking, is the primary cause of preventable disease and death. It is commonly known that smoking raises the risk of a variety of cancers, including lung, liver, and colorectal

cancers. Smokers account for 85% of lung cancer cases. Additionally, smoking raises the risk of respiratory and cardiovascular disorders (such as chronic obstructive pulmonary disease). it shows that the risks of miscarriage, stillbirth, premature birth, fetal growth retardation, and congenital anomalies, among other things, are increased in smoking during pregnancy. Sudden infant death syndrome and poor lung function in children, such as asthma, are two neonatal and pediatric consequences of cigarette smoking. Despite the significant illness burden associated with smoking, according to statistics from the National Health Interview Survey from 2013, 42.1 million individuals in the United States smoke cigarettes. As a result, quitting smoking is one of the most essential yet difficult acts a person can take to enhance his or her health, and most smokers struggle to quit numerous times before finally succeeding [1-3]. The majority of smokers in Canada (sixty-four percent) say they intend to quit smoking, and (49.6 percent) say they tried to stop smoking last year. However, only around 5% of such attempts lead to long-term cessation [4, 5].

Quitting smoking has been shown to lessen the risk of having a smoking-related disease among active smokers. A combination of therapy and one or more drugs is more helpful than either counseling or medication alone in helping individuals quit smoking [6, 7]. Therefore, we aim in this article to review smoking cessation interventions in primary healthcare and provide an adequate evaluation of the different aspects of smoking cessation.

MATERIALS AND METHODS

PubMed database was used for the selection of relevant papers, and the following keys were used in the mesh ("quit smoking" [mesh]) and "interventions" [mesh]) or ("primary health care" [mesh]).

the inclusion criteria included the following topics: smoking cessation interventions in primary healthcare. Exclusion criteria were all other articles that did not have one of the inclusion criteria as their topics' main endpoint.

Around 167 publications were chosen as the most clinically relevant out of 1499 articles indexed in the last decade, and their full texts were evaluated. A total of 29 of the 167 were included after a thorough examination. Additional research and publications were found using reference lists from the recognized and linked studies. Expert consensus recommendations and commentary were added where relevant to help practicing physicians assess cirrhosis most simply and practically possible.

RESULTS AND DISCUSSION

When inhaled nicotine in tobacco smoke binds to receptors in the brain and releases dopamine and other neurotransmitters, in smoking individuals, reduced stress and anxiety, presence of pleasure, and enhanced certain physical and mental processes are the common experiences. Abstinence from smoking causes nicotine withdrawal symptoms such as impatience, anger, depression, restlessness, and anxiety as well as the need for smoking. Although smoking is a response to nicotine addiction, it is also a completely conditional behavior: moods, events, or specific locations are associated with the pleasurable effects of nicotine, and relapsing is common [8].

Primary healthcare practitioners can play an important role in inspiring people to quit smoking and improving their chances of success. Even though effective therapies exist for individuals who are determined to quit, just thirty to thirty-five percent of smokers say they intend to stop smoking in the next 30 days. A new study shows that treatments for smokers who are not motivated to stop but want to cut quit smoking habits, as well as programs to enhance interest among the unmotivated, are beneficial [9, 10]. As a result, doctors now have the skills they need to help the vast majority of smokers they see in practice [11].

Tobacco smoking prevalence and burden Tobacco smoking were responsible for roughly 45,500 fatalities (18% of all deaths in Canada) in 2012. Smoking is still a primary cause of mortality and disability that may be avoided. Cancers, cardiovascular disease, and respiratory disorders accounted for the majority of smoking-related fatalities. Nearly one out of every seven individuals in the world are reported to smoke tobacco regularly [12, 13].

Based on the Canadian Community Health Survey (CCHS) in 2017, 5 million (sixteen percent) of Canadians above twelve years of age use tobacco. In Canada, males are more likely than females to smoke on a daily or sometimes basis (19% vs. 13%), especially among those aged 20 to 34. (24%). Females aged 50 to 64 years old are the most likely to smoke (17%). Smoking rates are higher in individuals with lesser educational level (Highschool education: twenty percent, college graduation: 10%) and poorer incomes (lowest family income: 23%; highest family income: 12%). In 2012, the total cost of tobacco use in Canada was estimated at $ 16 billion CDN. This figure includes direct costs (hospital charges, medical treatment, pharmaceuticals) and indirect costs

(economic losses due to premature death and disability), which amount to $ 6.5 billion and $ 9.5 billion, respectively.

Smoking cessation, which is defined as stopping or ceasing to smoke tobacco, lowers the risk of smoking-related illnesses and mortality [4]. Quitting at the age of 30 boosts life expectancy by a decade, whereas quitting when you're 40 and 50 increases it by 9 and 6 years, respectively [14]. One person will prevent a tobacco-related death for every two who quit smoking [12].

Smoking cessation guidance guidelines

To help smokers quit smoking, it is important to recognize that nicotine addiction is the root of their problem [15]. Tobacco contains nicotine, which is as addictive as opioids and alcohol. Smoking is a tobacco-related habit, and nicotine was classified in 1992 by the WHO International Classification of Diseases 10th Revision (ICD-10) as a cocaine-like psychedelic drug. In addition, the Diagnostic and Statistical Manual of Mental Disorders (DSM). In 1994, IV classified "tobacco dependence" as nicotine dependence. Tobacco dependency screens are a useful tool for determining whether a person is addicted to nicotine [16].

Individuals with severe nicotine addiction may become mentally unstable and experience vague uneasiness. Furthermore, promoting smoking cessation while providing information on effective treatment techniques for smoking cessation is essential for patients who are unable to quit smoking due to withdrawal symptoms. Prochaska *et al*. suggested a five-step model of behavior change for smoking cessation: preparation, contemplation, pre-contemplation, maintenance, and action [17]. The effectiveness of providing smoking cessation guidelines to patients who are reluctant to quit smoking in the pre-thinking phase is low, but the success rate of quitting smoking increases as patients go through the stages. Patients are motivated to stop smoking using the '5A technique' (ask, advise, assess, assist, and arrange). In daily outpatient clinics and during medical examinations, the 5A technique may be used in a short period [18, 19]. Motivational counseling adopting the '5R Approach' (relevance, risks, rewards, roadblocks, repetition) can help smokers who are unwilling to stop [18].

Following that, at the first appointment, an overview of a smoking cessation program is illustrated for the patients. After completing a questionnaire, the patient is advised on how to cope with the urge to smoke, problem-solving skills training, and instructions on how to maintain a smoking cessation journal. The NRT is then explained to the patient. The concentration of carbon monoxide in the exhaled breath is measured and its importance is explained. The patient and the health care provider talk about how to deal with the re-smoking situation. The patient and the health care provider also set a starting date for quitting smoking and set realistic goals. Finally, the patient and the health care provider agree on the time of the next appointment. If the interview period is extended and the interviews occur as often as possible, doctors will be more successful in treating smoking. It is critical to foster a clear knowledge of tobacco usage to handle smoking desires. To break free from psychological dependence, the patient must find a method that works for them. Nicotine dependence is self-titled, meaning that if the patient reduces the number of cigarettes smoked, they will involuntarily inhale deeply and repeatedly while smoking. As a result, reducing the number of cigarettes smoked is not an effective way to quit smoking, and doctors should not recommend it to patients who are unable to quit smoking. Repeated contact with health care providers, like treating other lifestyle-related disorders, is critical to effective smoking cessation. Help prevent relapse when recurrence is essential to continue smoking cessation (usually 3 months after quitting) [15].

Behavioral treatments

Patients should be provided both pharmacological and behavioral therapies to enhance their chances of quitting smoking [20, 21]. Long-term cessation rates approach 25%–30% when multiple therapies are used [22]. A 30% improvement in the chance of short-term abstinence can be achieved with just a few words of guidance. When compared to quick recommendations, smokers who receive aggressive cessation instruction and counseling are more likely to quit [4]. Practical counseling for complex-issue solving skills (eg, regulating smokers, controlling addiction, foreseeing conditions where smoking is high [eg, low mood, alcohol consumption]), and psychological support (eg, showing faith in the patient's ability to quit, to admire the efforts and achievements made) leads to a significantly higher abstinence rate. Provider-delivered therapies might benefit from customized self-help resources [22, 23].

Additional behavioral treatments

Those who desire to stop smoking can be referred to community providers for single or group counseling. Group counseling adds components of peer support to problem-solving skills, relaxation training, and coping methods.

When compared to self-help, individual or group counseling enhances abstinence rates [23, 24]. Telephone quitlines are available free of charge in all states and provinces in Canada. Despite the proof of their usefulness, only less than 2% of smokers contact quitlines [4]. When compared to self-help or single-session short therapy, a 2013 review of research on telephone counseling indicated that interventions including numerous sessions of proactive counseling had beneficial results [25]. A review of studies comparing self-help resources or standard care to Internet-based smoking cessation programs indicated a substantial benefit at 6 months or longer follow-up [26].

Special considerations for treatment choices

It is critical to develop daily patterns that promote a constant, methodical approach to nicotine therapy. The Ottawa smoking cessation model, a valid technique for integrating tobacco dependence therapies into clinical settings, is a strategy that has been widely used in more than 350 areas in Canada [26, 27]. The Ottawa smoking cessation model ensures that providers are trained in tobacco addiction treatment and provides reminders (e.g., requests from e-medical records) and exercise facilities to ascertain that all individuals are questioned regarding their smoking status, with clear, non-judgmental suggestions to give up smoking, provided medication and behavioral assistance and provided ongoing follow-up (at least six months). The Ottawa model for smoking cessation is associated with major gains in long-term cessation as well as health and health care benefits among smokers in hospitals and primary care settings [9, 10, 27].

Even though full cessation is the main goal, only 30 to 35 percent of smokers are ready to quit within the next 30 days. Smokers may have one of four possible goals for their smoking behavior: they want to quit smoking suddenly on the target date, they want to reduce their smoking cessation date on the target date, and They don't want to set a target date for quitting smoking but they want to reduce their smoking, or they don't want to quit or reduce their smoking. Intervention should be tailored to the therapeutic aim, with the understanding that sound guidance and support might help unsure individuals [9, 10].

Smokers who are unwilling to stop

In the case of non-motivated patients, the 5 Rs are suggested as a way for physicians to boost motivation within a quick dialogue. the 5 Rs": Check the personal "relevance" of smoking cessation, the potential "risks" of continued tobacco use, the potential "reward" of quitting, the "roadblocks" of smoking cessation, and the "repetition" of a motivational intervention at each clinic visit; Follow the offer every 6 to 12 months. After this conversation, you can check your interest in quitting or lowering smoking. Tobacco users who have failed to quit in the past should be reminded that most individuals attempt to quit many times before succeeding. Knowing whether a patient is willing to quit smoking depends on many factors. Therapeutic preferences, smoking history, cessation history, available Treatment, contraindications, pregnancy, and the history of mental illness and/or other substance use disorders are all important issues to consider.

Many smokers have attempted to quit smoking in the past; their attempts are valuable sources of knowledge. The use of abstinence drugs, commitment, and causes for relapse are all important factors to consider when creating a treatment plan. People who smoke above twenty-five cigarettes per day and/or smoke their first cigarette less than 30 minutes after waking up, as well as those who suffer from mental disorders, may take more doses. And require longer periods of cessation medication, as well as more follow-up [21].

Smoking cessation treatment options

Smoking habits are closely linked to nicotine addiction. The US Department of Health and Human Services' clinical performance guidelines recommend NRT, varenicline, and bupropion with sustained-release as first-line treatments for smoking cessation [15, 28].

Nicotine replacement therapy (NRT)

Patients who are strongly addicted to nicotine and experience withdrawal symptoms (such as irritability/frustration/anger, anxiety, concentration problems, restlessness/impatience, moodiness/depression, insomnia, increased hunger, and weight gain) may benefit most from NRT. The patient is eased of the uncomfortable withdrawal symptoms that arise during smoking cessation by temporarily substituting the nicotine absorbed from cigarettes during smoking cessation, leading to easier smoking cessation [15].

Patients with moderate to severe nicotine addiction should use adequate amounts of nicotine in their alternative preparations as withdrawal symptoms may occur from a few days to two weeks after quitting smoking. Nicotine

preparations (such as chewing gum, nicotine lozenge or patches, and their combinations) replace nicotine in cigarettes and reduce the severity of cravings and withdrawal symptoms [29].

NRT simply contains nicotine and releases less nicotine than cigarette smoke, even if cigarette smoke contains about 200 harmful chemicals. Nicotine is toxic to humans, so NRT is not recommended for non-smokers as well as people with unstable angina, myocardial infarction, severe arrhythmias, or early stages of cerebrovascular impairment. Smoking during pregnancy is very dangerous, but if a written agreement is reached consciously, NRT may be used for pregnant women. The benefits of this intervention were confirmed in the literature [30].

Nicotine gum's nicotine content may be easily changed by cutting it (with scissors) or reducing the number of bites. Intraoral problems, sore throats, and stomach aches are all listed as side effects. In addition, nicotine gum addiction has been recorded [31, 32]. If nicotine gum is consumed quickly, it can cause symptoms of acute nicotine poisoning. Because nicotine is not readily absorbed in acidic environments, the risk of acute nicotine poisoning is limited, even if inadvertently ingested, and it is reasonably not dangerous. A nicotine patch is introduced with the recommended amount and subsequently reduced based on the intensity of the "craving". Contact dermatitis, headache, general weariness, and insomnia have all been reported as side effects. In addition, smoking while using nicotine patches can lead to coronary artery disease including myocardial infarction, arrhythmia, and angina you experience acute nicotine poisoning, remove the adhesive immediately and clean the area with water. Soap is not currently recommended because it improves nicotine absorption in alkaline conditions. Because nicotine concentration remains unaltered for two hours after smoking cessation and subsequently decreases with a half-life of five to seven hours, plasma nicotine levels do not decrease rapidly. As a result, relief of symptoms may take hours, and medical attention is required if severe symptoms occur. Nicotine pressurized metered-dose inhalers (pMDI) are a popular form of pulmonary nicotine administration because they are safe, effective, and affordable. Caldwell *et al*. found that the group receiving nicotine pMDI with a nicotine patch had a much higher abstinence rate than the placebo plus nicotine patch group [33].

Sustained-release bupropion

The stable release is a non-nicotine agent of bupropion (amfebutamone). Bupropion with a long half-life is an effective and tolerable treatment for smoking cessation. Bupropion is an antidepressant medication licensed to treat severe depression and seasonal affective disorder [34]. According to population-based research, smokers are more likely to develop symptoms of emotional disorders than non-smokers, hence antidepressants or anxiolytics appear to be effective quitting aids. Hart *et al*. found that the group that received 300 mg of bupropion per day for 7 weeks had a considerably greater abstinence rate than a placebo group. At 12 months, the prevalence of abstinence was 16.4% in the nicotine patch group, 30.3% in the bupropion group, and 35.5% in the bupropion plus nicotine patch group, compared with 15.6% in the placebo group. In a meta-analysis, there was no major disparity in the prevalence of abstinence between bupropion and NRT [35].

As a result, bupropion appears to be a good option for individuals who want to quit smoking but do not enjoy or cannot use NRT. In addition, bupropion treatment is associated with shorter intervals between attempts to quit smoking and may increase the prevalence of short-term abstinence. Side effects of insomnia (42.4%) and dry mouth (10.7%) are expected in bupropion users.

Varenicline

Varenicline is a partial agonist/antagonist that binds to α4β2 nicotinic acetylcholine receptors with high affinity and selectivity. Varenicline aids in the quitting of smoking by lowering cravings/withdrawal symptoms as well as smoking pleasure [36]. Varenicline medication was linked to a greater incidence of continued abstinence at 4 weeks than placebo and sustained-release bupropion administration. Varenicline in conjunction with NRT was linked to a greater prevalence of continuous abstinence at 12 and 24 weeks, as well as point prevalence abstinence at 6 months when compared to placebo [37].

Only skin reactions were significant in the combination-treatment group. When focused on major adverse events, a meta-analysis of 14 varenicline studies found no difference between the varenicline and placebo arms, and subgroup analyses revealed no substantial increase in neuropsychiatric or cardiac incidents [35]. Patients should stop using varenicline and consult a clinician right away if they have a sad mood, anxiety, irritability, excitement, behavioral changes, or suicide ideas.

Clonidine

Clonidine was developed as an antihypertensive drug that acts on the central nervous system to minimize withdrawal symptoms in people who are addicted to a variety of substances. In a primary healthcare setting, Frank *et al*. Conducted a double-blind randomized trial of clonidine for smoking cessation. At 4 weeks, 18% of clonidine-treated individuals quit smoking, compared with 14% of placebo-treated people.
In research by Hilleman *et al*., the number of smokers who dropped out was not significantly higher with clonidine than with placebo (9% versus 7%, respectively) [38]. However, at all subsequent appointments, women taking clonidine were significantly more likely to abstain than men receiving clonidine. As a result, clonidine may only benefit women smokers.

CONCLUSION

To help smokers quit smoking, it is important to recognize that nicotine addiction is the root of their problem. People with severe nicotine addiction may become mentally unstable and experience vague uneasiness. Such patients may benefit most from nicotine replacement therapy (NRT). The patient is eased of the uncomfortable withdrawal symptoms that arise during smoking cessation by temporarily substituting the nicotine absorbed from cigarettes during smoking, leading to easier smoking cessation. Moreover, varenicline and sustained-release bupropion can be also used as first-line treatments for smoking cessation. In addition to pharmacological, behavioral therapies should also be provided to enhance the chances of quitting smoking.

ACKNOWLEDGMENTS : None

CONFLICT OF INTEREST : None

FINANCIAL SUPPORT : None

ETHICS STATEMENT : None

REFERENCES

1. Dinh PC, Schrader LA, Svensson CJ, Margolis KL, Silver B, Luo J. Smoking cessation, weight gain, and risk of stroke among postmenopausal women. Prev Med. 2019;118:184-90. doi:10.1016/j.ypmed.2018.10.018.
2. Daoud N, Jung YE, Sheikh Muhammad A, Weinstein R, Qaadny A, Ghattas F, et al. Facilitators and barriers to smoking cessation among minority men using the behavioral-ecological model and Behavior Change Wheel: A concept mapping study. PloS one. 2018;13(10):e0204657. doi:10.1371/journal.pone.0204657.
3. Baskerville NB, Struik LL, Hammond D, Guindon GE, Norman CD, Whittaker R, et al. Effect of a mobile phone intervention on quitting smoking in a young adult population of smokers: randomized controlled trial study protocol. JMIR Res Protoc. 2015;4(1):e10. doi:10.2196/10893.
4. Reid RD, Pritchard G, Walker K, Aitken D, Mullen KA, Pipe AL. Managing smoking cessation. CMAJ. 2016;188(17-18):E484-92. doi:10.1503/cmaj.151510.
5. Hughes JR, Keely J, Naud S. Shape of the relapse curve and long-term abstinence among untreated smokers. Addiction. 2004;99(1):29-38. doi:10.1111/j.1360-0443.2004.00540.x.
6. Alkhudhayri OS, Hejres AJ, Huraib SG, Abdullah SM, Al Adalah LS, Huraib AG, et al. An overview on the effect of cigarettes smoking on gingivae: Literature Review. Ann Dent Spec. 2020;8(4):66-8.
7. Yaseen MO, Saif A, Khan TM, Suleiman AK. A survey of smoking habits among university students and its susceptibility among various diseases. Arch Pharm Pract. 2020;11(4):32-42.
8. Benowitz NL. Nicotine addiction. N Engl J Med. 2010;362(24):2295-303. doi:10.1056/nejmra0809890.
9. Papadakis S, Gharib M, Hambleton J, Reid RD, Assi R, Pipe AL. Delivering evidence-based smoking cessation treatment in primary care practice: experience of Ontario family health teams. Can Fam Physician. 2014;60(7):e362-71.
10. Papadakis S, McDonald PW, Pipe AL, Letherdale ST, Reid RD, Brown KS. Effectiveness of telephone-based follow-up support delivered in combination with a multi-component smoking cessation intervention in family practice: a cluster-randomized trial. Prev Med. 2013;56(6):390-7. doi:10.1016/j.ypmed.2013.02.018.
11. Richter KP, Ellerbeck EF. It's time to change the default for tobacco treatment. Addiction. 2015;110(3):381-6. doi:10.1111/add.12734.

12. Hersi M, Traversy G, Thombs BD, Beck A, Skidmore B, Groulx S, et al. Effectiveness of stop smoking interventions among adults: protocol for an overview of systematic reviews and an updated systematic review. Syst rev. 2019;8(1):1-21. doi:10.1186/s13643-018-0928-x.
13. Baliunas D, Patra J, Rehm J, Popova S, Kaiserman M, Taylor B. Smoking-attributable mortality and expected years of life lost in Canada 2002: conclusions for prevention and policy. Chronic Dis Can. 2007;27(4):154-62.
14. Jha P, Peto R. Global effects of smoking, of quitting, and of taxing tobacco. N Engl J Med. 2014;370(1):60-8. doi:10.1056/nejmra1308383.
15. Nagano T, Katsurada M, Yasuda Y, Kobayashi K, Nishimura Y. Current pharmacologic treatments for smoking cessation and new agents undergoing clinical trials. Ther Adv Respir Dis. 2019;13:1753466619875925. doi:10.1177/1753466619875925.
16. Kawakami N, Takatsuka N, Inaba S, Shimizu H. Development of a screening questionnaire for tobacco/nicotine dependence according to ICD-10, DSM-III-R, and DSM-IV. Addict Behav. 1999;24(2):155-66. doi:10.1016/s0306-4603(98)00127-0.
17. Ramo DE, Thrul J, Chavez K, Delucchi KL, Prochaska JJ. Feasibility and quit rates of the tobacco status project: a Facebook smoking cessation intervention for young adults. J Med Internet Res. 2015;17(12):e291. doi:10.2196/jmir.5209.
18. Chai W, Zou G, Shi J, Chen W, Gong X, Wei X, et al. Evaluation of the effectiveness of a WHO-5A model based comprehensive tobacco control program among migrant workers in Guangdong, China: a pilot study. BMC Public Health. 2018;18(1):1-2. doi:10.1186/s12889-018-5182-6.
19. Hung DY, Shelley DR. Multilevel analysis of the chronic care model and 5A services for treating tobacco use in urban primary care clinics. Health Serv Res. 2009;44(1):103-27. doi:10.1111/j.1475-6773.2008.00896.x.
20. Schlam TR, Baker TB. Interventions for tobacco smoking. Annu Rev Clin Psychol. 2013;9:675-702. doi:10.1146/annurev-clinpsy-050212-185602.
21. Prochaska JJ, Benowitz NL. The past, present, and future of nicotine addiction therapy. Annu Rev Med. 2016;67:467-86. doi:10.1146/annurev-med-111314-033712.
22. Panel TU, Dependence Guideline. Treating Tobacco Use and Dependence: 2008 Update. PsycEXTRA Dataset, 2009. doi:10.1037/e566222009-001.
23. Stead LF, Buitrago D, Preciado N, Sanchez G, Hartmann-Boyce J, Lancaster T. Physician advice for smoking cessation. Cochrane Database Syst Rev. 2013;(5). doi:10.1002/14651858.cd000165.pub4.
24. Lancaster T, Stead LF. Individual Behavioural Counselling for Smoking Cessation. Cochrane Database Syst Rev. 2005. doi:10.1002/14651858.cd001292.pub2.
25. Stead LF, Hartmann-Boyce J, Perera R, Lancaster T. Telephone counselling for smoking cessation. Cochrane Database Syst Rev. 2013(8). doi:10.1002/14651858.cd002850.pub3.
26. Civljak M, Stead LF, Hartmann-Boyce J, Sheikh A, Car J. Internet-Based Interventions for Smoking Cessation. Cochrane Database Syst Rev. 2013. doi:10.1002/14651858.cd007078.pub4.
27. Papadakis S, Cole AG, Reid RD, Coja M, Aitken D, Mullen KA, et al. Increasing rates of tobacco treatment delivery in primary care practice: evaluation of the Ottawa Model for Smoking Cessation. Ann Fam Med. 2016;14(3):235-43. doi:10.1370/afm.1909.
28. Hays JT, Ebbert JO, Sood A. Treating tobacco dependence in light of the 2008 US Department of Health and Human Services clinical practice guideline. Mayo Clin Proc. 2009;84(8):730-6. doi:10.4065/84.8.730.
29. Lindson N, Chepkin SC, Ye W, Fanshawe TR, Bullen C, Hartmann-Boyce J. Different doses, durations and modes of delivery of nicotine replacement therapy for smoking cessation. Cochrane Database Syst Rev. 2019(4). doi:10.1002/14651858.cd013308.
30. Livingstone-Banks J, Norris E, Hartmann-Boyce J, West R, Jarvis M, Chubb E, et al. Relapse prevention interventions for smoking cessation. Cochrane Database Syst Rev. 2019;(10). doi:10.1002/14651858.cd003999.pub5.
31. Murray RP, Bailey WC, Daniels K, Bjornson WM, Kurnow K, Connett JE, et al. Safety of nicotine polacrilex gum used by 3,094 participants in the Lung Health Study. Chest. 1996;109(2):438-45. doi:10.1378/chest.109.2.438.
32. Schneider NG, Jarvik ME, Forsythe AB, Read LL, Elliott ML, Schweiger A. Nicotine gum in smoking cessation: a placebo-controlled, double-blind trial. Addict Behav. 1983;8(3):253-61. doi:10.1016/0306-4603(83)90020-5.

33. Caldwell BO, Crane J. Combination nicotine metered dose inhaler and nicotine patch for smoking cessation: a randomized controlled trial. Nicotine Tob Res. 2016;18(10):1944-51. doi:10.1093/ntr/ntw093.
34. Foley KF, DeSanty KP, Kast RE. Bupropion: pharmacology and therapeutic applications. Expert Rev Neurother. 2006;6(9):1249-65. doi:10.1586/14737175.6.9.1249.
35. Cahill K, Stevens S, Perera R, Lancaster T. Pharmacological Interventions for Smoking Cessation: An Overview and Network Meta-Analysis. Cochrane Database Syst Rev. 2013;2015(7). doi:10.1002/14651858.cd009329.pub2.
36. Garrison GD, Dugan SE. Varenicline: a first-line treatment option for smoking cessation. Clin Ther. 2009;31(3):463-91. doi:10.1016/j.clinthera.2009.03.021.
37. Koegelenberg CF, Noor F, Bateman ED. Efficacy of Varenicline Combined with Nicotine Replacement Therapy vs Varenicline Alone for Smoking Cessation: A Randomized Clinical Trial. J Vasc Surg. 2014;60(4):1096. doi:10.1016/j.jvs.2014.08.086.
38. Franks P, Harp J, Bell B. Randomized, controlled trial of clonidine for smoking cessation in a primary care setting. Jama. 1989;262(21):3011-3. doi:10.1001/jama.1989.03430210053029.