Smoking cessation: A public health necessity and every pharmacist’s concern

Hannelie (JC) Meyer, BPharm, MSc(Med) Pharmacy, PhD (Pharmacy), Associate Professor
Natalie Schellack, BCur, BPharm, PhD (Pharmacy), Associate Professor
Elmien Bronkhorst, BPharm, MSc(Med) Pharmacy, Senior Lecturer
Department of Pharmacy, Faculty of Health Sciences, Sefako Makgatho Health Sciences University
Correspondence to: Hannelie Meyer, e-mail: hannelie.meyer@smu.ac.za
Keywords: smoking, smoking cessation, intervention, nicotine replacement therapy

Abstract
Tobacco smoking is a global public health problem, estimated to cause over 6 million deaths per year, including more than half a million non-smokers, dying of second-hand tobacco smoke. Smoking rates in South Africa have been declining over the last 20 years since the implementation of tobacco control measures, although the current prevalence of smoking is high (18.9%) with rates amongst males being five times higher than females. Similar to the rest of the world, smoking is also a leading cause of death in South Africa, with its risk factors exacerbated by tuberculosis, human immunodeficiency virus infection and non-communicable diseases. Tobacco control has major economic benefits for the health system, hence the importance of key policies combatting tobacco use as well as smoking cessation interventions. An overview of the pharmacological and non-pharmacological treatment interventions is provided, with a focus on the application of smoking cessation interventions in routine practice to ensure successful quitting.

Introduction
Current tobacco use, which refers to the use of any tobacco product, smoking and smokeless, is the world’s leading cause of preventable disease and death. Globally, tobacco is responsible for killing approximately 6 million people per year, including 600 000 non-smokers, mostly women and children, dying of second-hand environmental tobacco smoke. Many of these deaths are premature deaths.

Globally, 6 trillion cigarettes are smoked per year, which is nearly double of what was smoked about 40 years ago. Tobacco smoking is also associated with ill health, disability and death from communicable and non-communicable diseases. Cigarettes further cause thousands of deaths from residential fires, spontaneous abortions, cancers in multiple organs, and gangrene of the feet as well as diseases influencing quality of life, like erectile dysfunction and macular degeneration.

From these figures it is evident that the global tobacco epidemic is now moving towards a pandemic, with enormous healthcare, social and cost implications. Should urgent action not be taken to control tobacco use, tobacco will kill an estimated 8 million people annually, by 2030. The global economic damage caused by smoking is estimated at US$500 billion per year. These costs include health- and non-health related costs for affected individuals and families, their employers and for society at large.

“Tobacco: deadly in any form or disguise” Tobacco smoking entails the combustion of the tobacco leaves and inhaling of the smoke. A wide range of tobacco smoking products are available and include manufactured cigarettes, cigars, pipes, waterpipes, electronic nicotine delivery systems, kreteks, and roll-your-own. Smokeless tobacco is consumed through the mouth or nose, without combustion or burning. Examples of smokeless tobacco include chewing tobacco, snus, moist snuff, dry snuff and dissolvables.

Tobacco is the only legal drug on the market that actually kills many of its users, when used exactly as intended by the manufacturer. Tobacco products contain nicotine, which is a highly addictive substance that produces dependence in smokers. Nicotine affects the dopaminergic system in the brain, causing a sense of well-being, and also increases the number of nicotinic receptors. Nicotine may be as addictive as heroin, cocaine or alcohol, and yet is viewed as the most socially accepted form of chemical dependence. Due to its mechanism of action it has both positive reinforcing effects and nicotine withdrawal symptoms during abstinence. Nicotine withdrawal symptoms, including headaches, coughing, cravings and increased appetite, can be a major barrier to smoking cessation. Sudden mood changes, irritability and restlessness may also cause resistance from the patient’s support system or close relatives of the patient who is trying to quit.
Smoking is an addictive habit, with a strong association with emotions and thoughts, but is also intimately linked to the smoker’s daily activities and rituals, like driving or having meals. For this reason, it is important to address the actual nicotine dependence of a patient, but also to introduce cognitive behavioural therapy to address the emotional attachment to smoking.

**Tobacco smoking – a public health problem**

Tobacco smoking is a global public health problem. In 2012, 21% of the global population aged 15 years and above smoked. The rate of smoking in men (36%) was five times higher than in women (7%). These figures indicate some progress over the last three decades when compared to 1980, when 41% of men and 11% of women were smoking. However, due to population growth, the actual number of smokers has increased from 720 million in 1980 to nearly 1 billion in 2012.

Although tobacco use is a leading cause of morbidity and mortality in adults, it can be viewed as a disease that starts in adolescence. More than half of new smokers have their first cigarette before the age of 18 years. The vast majority (99%) of adult smokers started using tobacco before the age of 26 years. With relatively few of them quitting smoking, annual tobacco-attributable deaths will rise from about 5 million in 2010 to more than 10 million in a few decades. This also explains why only 1 in 3 of today’s young smokers will reach middle and old age. Most of the smoking epidemic actually lies in the future, because disease rates as a result of smoking normally peak approximately 30 years after peak rates of consumption. Hence, it may be worthwhile targeting this population group when developing smoking cessation strategies.

South Africa has a particularly high prevalence of smoking compared to the rest of the world. Smoking rates in South Africa have declined from 32% in 1994 to 16.4% in 2012. However, according to the latest WHO estimates, the prevalence of current tobacco smoking for those aged 15 years or more, is 18.9%, with a much higher prevalence amongst males (31.9%) than females (7.0%). The prevalence rate for current cigarette smoking specifically is 13.3% (24.0% for males; 3.6% for females). The prevalence of current smokeless tobacco use amongst adults is 6.5% and 7.9% amongst the youth, aged 14 years.

Similar to the rest of the world, tobacco is also a leading cause of death in South Africa, responsible for an estimated 7% of annual deaths between 1999 and 2007. Tobacco smoking is the primary risk factor for chronic obstructive pulmonary disease (COPD), estimated to be the third highest cause of death globally by 2030. The effects of smoking are exacerbated by infectious risk factors for COPD, like tuberculosis and human immunodeficiency virus (HIV), of which South Africa has one of the highest burdens globally. The mortality rate for current smokers in South Africa is nearly double that of non- or ex-smokers. Up to a third of all male deaths in South Africa, in adults aged 35 years and older, have recently been attributed to tobacco use. The cost of smoking-related disease to the South African economy is estimated to be R1.2 billion annually.

**Tobacco use and non-communicable diseases**

A mandate of the United Nations is to address the global non-communicable diseases (NCDs) burden, primarily cancers, diabetes, cardiovascular disease and chronic lung disease, referred to as the quadruple burden of disease. The WHO has called for a 25% reduction in the probability of dying from a NCDs between the ages of 30 years and 70 years, for the period 2008 to 2025. The use of tobacco is the largest external cause and preventable risk factor for NCDs. As part of the global action plan on NCDs, the World Health Assembly has called for a 30% reduction in tobacco use (smoking and smokeless) by people aged 15 years and above, by 2025. Meeting this target would avoid more than 200 million deaths as a result of tobacco smoking during the remainder of the century.

Countries, like South Africa, should use these WHO targets as an opportunity to set and adapt tobacco policies, at the same time monitoring progress towards achieving the target. Considering South Africa’s current smoking trends, and should efforts to control tobacco continue, an estimated 16% of the population will smoke in 2025. A concern is that should South Africa adopt the global NCDs target, the smoking component of the target will not be achieved. The current goal set by the National Department of Health for 2020, is to reduce tobacco use by 20%. This underscores the importance of strong tobacco control efforts and interventions, to decrease prevalence rates further and eliminate the most important and leading preventable cause of death.

**Tobacco use in human immunodeficiency virus and tuberculosis**

Smoking accounts for approximately 15% of deaths from tuberculosis among African men. Tobacco use has multiple effects on the immune system, as it affects the circulating immune cells, mucosal surface defences and other immune cell functions, which results in it being a leading cause of respiratory infections. Evidence from research showed that HIV-positive patients who used tobacco products had a significantly increased mortality rate, almost double compared to those who had never smoked. HIV is already a major concern in South Africa with an estimated 11.2% of the population living with HIV, and 30.5% of deaths in 2015 attributed to acquired immune deficiency syndrome.

HIV-positive patients who smoke have a 20 times greater risk of developing tuberculosis than non-smokers who are infected with HIV. Smoking cessation has been shown to reduce the risk of bacterial pneumonia and Pneumocystis pneumonia in HIV-positive patients by approximately 27%.

**Tobacco control**

In South Africa, the Tobacco Products Control Act (Act 83 of 1993), as amended, governs comprehensive tobacco control measures. It is now just more than 10 years since the WHO Framework Convention on Tobacco Control (WHO FCTC) came into force in February 2005, seen as a landmark in global health to address
the burden of tobacco use and exposure. This treaty was signed by 180 countries across the world, including South Africa. In 2008, the WHO introduced six evidence-based tobacco control strategies to assist countries in fulfilling the WHO FCTC demands. These measures are tobacco-demand driven and were identified with a focus on cost-effectiveness, practicality and impact and known under the acronym MPOWER (see Figure 1).

Although much progress has been made since the implementation of the MPOWER measures, less than 10% of the global population is covered by the most effective tobacco control measure, which is excise tax levels at the recommended level. Furthermore, only 15% of the world’s population have access to smoking cessation programmes.

In 2015, the Lancet launched a campaign calling for a tobacco-free world by 2040, with a less than 5% global tobacco use prevalence amongst people 15 years and older. Having a world essentially free of tobacco in the next 25 years, would mean that the sales of tobacco are phased out and in essence that ‘tobacco is out of sight, out of mind, and out of fashion—yet not prohibited’. This call to action emphasised the unacceptability of the damage done by the tobacco industry and that the present tobacco control efforts will not be sufficient to achieve this goal. A so-called ‘turbo-charged approach’ will be a necessity. This would mean a number of additional priority actions and steps will have to be taken, which will complement FCTC actions and accelerate the implementation of MPOWER measures, with strengthened UN leadership, engagement by all sectors, and increased investment in tobacco control.

- Double efforts to reduce smoking prevalence amongst girls and young women
- Reach vulnerable or already smoking groups through social media and information and communication technology (ICT) (mobile technology) to show that smoking is ‘not cool’
- Limit smoking by actors/actresses in the media and entertainment to remove the ‘glamorous’ image that such peers might give to the use of tobacco
- Tighter controls on cigarette smuggling and illicit trade, to reduce contraband cigarettes entering the country by using sophisticated stamps and tracking procedures for cartons of cigarettes
- Excise duty and price elasticity of demand for cigarettes. Raise excise duties on cigarettes to reach at least 75% of the total cost of a pack of cigarettes within the next 10 years
- Introduce plain packaging for cigarettes and health warning labels to change the attitude of smokers
- Introduce total prohibition of smoking in public places and enforce the law prohibiting smoking in a vehicle when children <12 years are passengers
- Enforce strict control of electronic cigarettes, as people may also become addicted to nicotine and these device may serve as a ‘gateway drug’ to cigarette smoking and not as an aid to stop smoking
- Pan-African collaboration in tobacco control and fully employ the MPOWER strategy of the WHO
- Collaborate with other BRICS countries in tobacco control programmes, including crop substitution to reduce the cultivation of tobacco in BRICS countries
- Establishment of a South African Health Promotion Foundation (HPF). A surcharge could be levied on the tobacco and alcohol industries to generate funds for a HPF

Tobacco control has major economic benefits, because for every day lost to a tobacco-related death there are 20 lost to tobacco-related illness. Evidence from research demonstrated the impact of tobacco control policies and other interventions in South Africa over the last two decades. A recent Policy Brief from the Human Sciences Research Council recommended a number of key policies for South Africa, in support of combatting tobacco use in the country (Figure 2).

### Pharmacological treatment interventions

The aim of pharmacological treatment in smoking cessation is to reduce the intensity of nicotine withdrawal symptoms and reduce the desire to smoke, thereby minimising the rate of relapse. The pharmacological treatment options that are currently available in South Africa for smoking cessation include nicotine replacement therapy (NRT), varenicline (nicotine receptor partial agonists) and bupropion (antidepressant). The use of these drugs in practice is summarised in Table I (Table I).

There are a few drugs currently not registered for smoking cessation in South Africa, but used elsewhere in the world. Nortriptyline is a tricyclic antidepressant and an active metabolite of amitriptyline. It is used in patients who have failed nicotine replacement therapy, bupropion and varenicline. Another two drugs currently being used for smoking cessation, but not yet available in South Africa, are cytisine and dianicline. These agents act as partial...
agonists of the central, high-affinity, α4β2-containing, nicotinic acetylcholine receptors (nAChRs). This should relieve withdrawal symptoms and cravings in individuals when they attempt to stop smoking by activating the α4β2 nAChRs and competing for the nicotine at its binding site.

**Effectiveness of pharmacological therapy**

Strong evidence from a number of review studies supports the effectiveness of pharmacological therapy for smoking cessation. The absolute benefits of the individual drugs are dependent upon how cessation is defined, at what point in time it is measured, and whether it was used in conjunction with behavioural support. Using a combination NRT (patch and short acting form) and varenicline are most effective. The choice of treatment though should ultimately be determined by the specific patient’s personal preference, precautions and contraindications.

In terms of cost-effectiveness of pharmacological treatment, effective smoking cessation aids are highly cost-effective, considering the health-related costs of smoking (morbidity and mortality) as well as non-health-related costs. The exact cost per life year saved from the use of pharmacological treatment

---

### Table 1: Pharmacological therapy for smoking cessation

<table>
<thead>
<tr>
<th>Class of drug</th>
<th>Nicotine replacement therapy (NRT)</th>
<th>Nicotine receptor partial agonists</th>
<th>Antidepressants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacological therapy</td>
<td>Nicotine</td>
<td>Varenicline</td>
<td>Bupropion</td>
</tr>
<tr>
<td><strong>Dosage form</strong></td>
<td><em>Long acting:</em> Transdermal patches</td>
<td>Tablets</td>
<td>Tablets</td>
</tr>
<tr>
<td>Short acting: Chewing gum, tablets, sub-lingual tablets, metered dose spray solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>Nicorette®</td>
<td>Champix®</td>
<td>Zyban®</td>
</tr>
<tr>
<td>Quit®</td>
<td>Wellbutrin®</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicotinell®</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>Over the counter</td>
<td>Prescription</td>
<td>Prescription</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>• Substitution for nicotine inhaled via tobacco smoke, if &gt;10 cigarettes smoked per day</td>
<td>• Lessen the pleasure from smoking and reduce symptoms of withdrawal</td>
<td>• Blocking the effects of nicotine, relieving withdrawal symptoms, or reducing depressed mood</td>
</tr>
<tr>
<td>• More effective when combined with behavioural therapy</td>
<td>• Use in combination with behavioural therapy</td>
<td>• Adjunct to supportive counselling and psychotherapy</td>
<td></td>
</tr>
<tr>
<td><strong>Mechanism of action</strong></td>
<td>• Partially provide nicotine that would otherwise be ingested from cigarettes, which acts by relieving the psychological and physical withdrawal syndrome.</td>
<td>• Acts as a partial agonist of nicotinic acetylcholine receptors, thereby maintaining moderate levels of dopamine to counteract the withdrawal symptoms.</td>
<td>• Increases dopamine activity in the nucleus accumbens, by acting as a reuptake inhibitor of dopamine. It is also a weak uptake inhibitor of both serotonin and noradrenaline.</td>
</tr>
<tr>
<td><strong>When to start</strong></td>
<td>• On Quit Day</td>
<td>• At least one week before Quit Day</td>
<td>• At least one to two weeks before Quit Day</td>
</tr>
<tr>
<td>• Longer period prior to the Quit Day may be more effective</td>
<td>• Initial: 0.5mg once daily at night</td>
<td>• Increase over 1 week to 1mg twice daily</td>
<td>• 150mg daily for 3 days; increase to 150mg twice daily</td>
</tr>
<tr>
<td>• Lower doses associated with fewer adverse effects but lower effectiveness</td>
<td>• Period of actively trying to quit; normally 8-12 weeks, followed by gradual weaning</td>
<td>• Period of actively trying to quit; normally 12 weeks</td>
<td>• Period of actively trying to quit.</td>
</tr>
<tr>
<td>• Combination (patch and short acting form) more effective</td>
<td>• More effective than recommended 12 weeks, for people experiencing difficulty to become abstinent</td>
<td>• Longer periods (24 weeks) more effective than recommended 12 weeks, for people experiencing difficulty to become abstinent</td>
<td>• No additional benefits with higher doses. (Hughes)</td>
</tr>
<tr>
<td>• More dependent smokers: Higher doses more effective</td>
<td>• Longer treatment course not more effective</td>
<td>• Slightly more effective when used in combination with NRT, but not more effective than NRT alone</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>• Post myocardial infarction and acute stroke</td>
<td>• Avoid in pregnancy and breastfeeding</td>
<td>• Avoid in pregnancy and breastfeeding</td>
</tr>
<tr>
<td>• Severe cardiac arrhythmia</td>
<td>• History of seizures or conditions predisposing seizures (brain tumour, alcohol, benzodiazepine withdrawal)</td>
<td>• History of seizures or conditions predisposing seizures (brain tumour, alcohol, benzodiazepine withdrawal)</td>
<td></td>
</tr>
<tr>
<td>• Unstable or progressive angina / Prinzmetal’s angina</td>
<td>• Current or previous bulimia or anorexia nervosa</td>
<td>• Current or previous bulimia or anorexia nervosa</td>
<td></td>
</tr>
</tbody>
</table>
Interventions vary per country and is dependent on factors such as the comparator used and assumptions made.6,27 Commitment of the smoker to totally abstain from smoking from the Quit Day, is of utmost importance, for successful pharmacotherapy.27 Evidence suggests though that pharmacotherapy should not be stopped because of a person’s initial failure to quit, as these drugs assist in recovery from lapses.27

**Pharmacotherapy combined with behavioural interventions**

Both behavioural- and pharmacotherapy interventions are successful in improving smoking cessation rates among the general adult population, alone or in combination.14 A recent Cochrane review of 52 studies indicated that interventions combining pharmacotherapy and behavioural treatment, increase the success of smoking cessation compared to a minimal intervention of usual care, brief advice or less intensive behavioural support.33 Hence, to increase the likelihood of successful smoking cessation, pharmacological therapy should be instituted in conjunction with cognitive behavioural and supportive therapy.27 In practice, a combination of these two types of interventions, has been shown to be both clinically effective and cost-effective, particularly when compared to usual care.6,27

**Non-pharmacological interventions**

Smoking is a highly complex behavioural pattern, rather than just a habit. Non-pharmacological interventions or other approaches to quit smoking hold great promise, especially when these are integrated into clinical practice. Non-pharmacological approaches to quitting smoking mostly involve motivational interviewing and counselling, but other measures include cognitive behavioural therapy, hypnotherapy and acupuncture or electrostimulation.9,14

**Motivational interviewing** is an evidence-based approach to assisting patients to change their tobacco habits.18 The aim is to assist patients who lack the motivation to quit or who express lack of readiness to quit, for various reasons. With motivational interviewing the patient is encouraged to explore their feelings and elicit self-motivation. It is therefore different from the traditional advice-giving approach where the patient plays a passive role.14

**Counselling** can be performed in several ways, including telephone or on-line counselling, and group or one-on-one patient counselling.6,9 This method has shown success when at least three or more sessions were attended, or when the counselling was supported by the use of medication to treat nicotine withdrawal.6,14

**Cognitive behavioural therapy** assists the patient with changing habits associated with smoking, and helps to motivate patients to quit.9

**Hypnotherapy** has been proposed widely as an aid to reduce the desire to smoke and/or improve the will to stop. However, there has not been convincing efficacy data from clinical trials to indicate that there is an advantage to be gained from hypnosis for smoking cessation.9,14
Acupuncture or acupressure and electrostimulation are promoted to aid in smoking cessation by reducing withdrawal symptoms. Benefit with respect to the number of people who successfully quit smoking as a result of these therapies compared to placebo, has not been demonstrated in review studies. Strong evidence exists for the effectiveness of brief behaviour change counselling by healthcare providers, in changing NCD risk behaviours such as smoking. Brief behaviour change counselling is recommended to take place as part of routine practice. An effective approach is for the healthcare provider to deliver brief tobacco interventions using the 5A’s model to help patients ready to quit and the 5R’s model to increase motivation to quit. The 5A’s model and the 5R’s model are evidence-based frameworks, which are used in primary health care settings, to facilitate the process of smoking cessation.

Smoking cessation in routine practice

Identifying patients who are ready to quit smoking and using motivational measures to assist patients to quit smoking are every healthcare provider’s responsibility. Smoking cessation interventions, whether non-pharmacological or pharmacological, can be instituted in patients after they have been identified as a first step. When patients present to primary care facilities and need to have their vital signs assessed, they can be asked whether or not they smoke. Encouragement and assistance provided by members of the multidisciplinary healthcare team increases the likelihood of abstinence.

The long-term success of smoking cessation depends on the decision to quit smoking, which should come from the smoker. A specific day to quit smoking should be identified. Ways to deal with withdrawal symptoms should be learnt. Most importantly, the person should then strive to stay smoke-free. Statistics has shown that many initially successful quitters relapse over time. This emphasises the importance of social and psychological support as part of smoking cessation.

According to the WHO toolkit for brief tobacco interventions, the primary healthcare provider can use the 5A’s (Figure 3) to identify patients who are ready to quit. The process can also be used to determine which patients are not prepared to stop smoking, or

![Figure 3: Delivering brief tobacco cessation interventions in practice: Using the 5A’s and 5R’s model](image-url)
who do not think that it is important to do so. The 5R’s model (Figure 3) can be used for the latter patients using a motivational counselling intervention to prepare them to change their minds about smoking cessation. If the patient is a non-smoker, the 5A’s model (Figure 3) can be used to help them avoid exposure to second-hand smoke.

The 5A’s model: To help patients ready to quit

The 5 A’s model can assist in identifying patients who are ready to quit and assist them with advice about tobacco use:

1. Ask: By asking about their use of tobacco, all smokers visiting the healthcare facility will be systematically identified. Enquiries should be made in a friendly, non-accusing way, and tobacco use indicated on the medical notes.

2. Advise: The advice given should be tailored to the specific patient, must be clear and strong, and aimed at persuading the patient to quit.

3. Assess: An assessment is undertaken to determine the willingness of the patient to make an attempt to quit.

4. Assist: This refers to the actions of the healthcare worker with regard to supporting the patient and helping him/her to develop a specific plan to quit, as well as providing support and recommendations on the use of medication.

5. Arrange: Arranging or planning a follow-up visit or contact with the patient, either in person or by telephone is important.

The 5R’s model: To increase motivation to quit

The 5 Rs model can be used as a motivational intervention tool to assist patients who are not ready to quit:

1. Relevance: It is important demonstrate to the patient how quitting would be personally relevant to him or her.

2. Risks: Highlighting the risks associated with smoking encourages the patient to understand the potentially negative consequences of tobacco use which are relevant to him or her. These risks may include cardiovascular threats, like myocardial infarction (MI) and strokes, and other illnesses such as lung cancer and COPD. Risks also include the threat to wealth or the ensuing financial burden.

3. Rewards: The patient must be made aware of the potential benefits of stopping tobacco use, for example having improved health and sense of smell and taste, saving money and a general improvement in their well-being.

4. Roadblocks: It is important to identify barriers that prevent patients from quitting tobacco products, and to provide advice on treatment options that will address these, i.e. withdrawal symptoms, weight gain, depression and the negative presence of other tobacco users.

5. Repetition: Repetition is indicated if the patient is still not prepared to stop smoking. If this is the case, at a later stage, he or she should be re-assessed for his or her readiness to quit and the intervention repeated.

The 5A’s model: To avoid exposure to second-hand smoke

The 5 A’s model can assist in providing advice to patients who are non-smokers and help them avoid exposure to second-hand smoke:

1. Ask: Ask all non-smoking patients at every visit to the healthcare facility if they are exposed to second-hand smoke. Enquiries should be made in a friendly, non-accusing way. Include information on second-hand smoke in medical notes.

2. Advise: The advice given should be tailored to the specific patient, must be clear and strong, and aimed at educating the patient about the dangers of second-hand smoke and how to avoid it.

3. Assess: An assessment is undertaken to determine where the patient is exposed to second-hand smoke, whether there is a possibility to reduce exposure and the willingness of the patient to reduce his/her exposure to second-hand smoke.

4. Assist: This refers to the actions of the healthcare worker with regard to supporting the patient and helping him/her to develop a specific plan to reduce exposure to second-hand smoke.

5. Arrange: Arranging or planning a follow-up visit or contact with the patient, either in person or by telephone, after around one week.

Other interventions

Financial incentives

Providing smokers with financial incentives showed some benefit with an increase in the proportion of smokers who attempted to quit, used smoking cessation treatments, and succeeded in quitting, compared to no financial intervention.

Mobile Health (mHealth)

The use of mobile technology in health promotion and interventions is growing. According to a meta-analysis of 13 text message-based interventions for smoking cessation, smoking quit rates were 36% higher in the SMS (short-message service) intervention group compared to the control groups. These results suggest the future potential benefit of using SMS to improve smoking cessation outcomes. Future research into this type of intervention is necessary to determine which components of the intervention (e.g. message frequency, content tailoring, behavioural change technique, motivational message) are most effective.

Future developments: Nicotine vaccines

The rationale for the development of nicotine vaccines is to reduce the amount of, and subsequently the effects of, nicotine in the brain. The vaccine induces antibodies that bind to nicotine, thereby reducing the availability of nicotine that can bind to the central receptors. Indications for such a vaccine would be to quit
smoking or prevent relapse. To date, no nicotine vaccines are currently licensed for public use, but there are a number of such vaccines under development. Current evidence from nicotine vaccine trials does not support the idea that these vaccines will enhance long-term smoking cessation.

Role of the pharmacist in smoking cessation

Tobacco use is a public health problem in South Africa and pharmacists at all levels of service can be an integral part of the drive against smoking. The pharmacist is ideally placed as part of the health care team, often being the first point of contact with the patient. Furthermore, one of the pharmacist’s most important roles, according to their scope of practice, is to identify patients who need smoking cessation and provide counselling to these patients on pharmacological and non-pharmacological treatment. Pharmacists can advise patients on lifestyle modification that will improve their quality of life.

According to the first South African National Health and Nutrition Examination Survey only 29.3% of current smokers reported that they had been advised to quit the use of tobacco products. Clearly healthcare professionals have to increase their efforts in advising tobacco users to quit and not miss any opportunity for prevention of disease. Pharmacists are in the ideal position and suitable to guide or drive smoking cessation initiatives, as they have detailed knowledge of medicines, they are accessible to patients, especially in the community pharmacy setting, where they are also present when NRT products are bought over the counter or when dispensing prescription medicines for smoking cessation. The community pharmacy is in the ideal setting to deliver a range of public health interventions, including smoking cessation. Community pharmacy-delivered smoking cessation interventions have been shown to be effective and cost-effective, especially when compared to self-quit or standard care, and when pharmacotherapy and behavioural support are combined.

Pharmacists, especially those in academia, can play an important role in strengthening research on tobacco use to inform policy, as well as the monitoring and assessment of interventions, which are locally relevant. At policy level, pharmacists can play a role in the motivation for the inclusion of NRT for the treatment of tobacco dependence, on the South African Essential Medicines List. Treatment of tobacco dependence is one of the WHO’s MPOWER measures to reduce the tobacco demand and since 2013, NRT has been included in the WHO Model List of Essential Medicines.

Conclusion

Evidence has shown the effectiveness of pharmacotherapy and behavioural therapy for smoking cessation. The pharmacist is in the ideal position to implement both these types of smoking cessation interventions as part of their routine practice. As a first step potential patients who should quit must be identified. Smoking cessation interventions can be implemented through brief behavioural counselling using tools such as the 5A’s model for patients who desire to quit, the 5R’s model for those who need to be motivated to quit and the 5A’s model for those who need to avoid exposure to second-hand smoke. A combination of the appropriate pharmacotherapy and behavioural support, has been shown to be the most effective and cost-effective to quit smoking.

References


27. Hartmann-Boyce J. Drugs for smoking cessation. BMJ. 2016;352:i571. doi: 10.1136/bmj.i571.


