

4 Tobacco

4.1 Comorbidity with tobacco

- Smoking is much more common amongst people with mental disorders compared with those without a mental disorder in Australia.
- Smoking cessation strategies that are effective in the general population can be implemented and are effective at the same time as treatment for mental disorders.
- People with mental disorders are able to quit smoking if their mental disorder is under control and other psychotropic medication dosing remains stable.

While tobacco smoking rates have dropped significantly in the general community, the rate amongst people with mental illness is still very high.

This has been highlighted by a number of studies:

- “*People with psychotic illness: An Australian study 1997-98*” found that 73% of males and 56% of females with psychotic illness smoke tobacco and over 80% of these people smoke more than 20 cigarettes per day⁽⁶⁷⁾.
- Conversely, the National Survey of Mental Health and Wellbeing⁽⁶⁸⁾ found that 35% of smokers between 18–39 years had a mental disorder⁽⁶⁹⁾.

The incidence of smoking amongst those with a mental disorder appears to be culturally related and varies between countries⁽⁷⁰⁾.

4.1.1 Effects of tobacco on mental disorder

There are many theories about why people with mental disorders have a high rate of tobacco use. Nicotine may help to:

- Relieve some of the symptoms of different mental disorders by:
 - Briefly improving auditory gating (the ability to block out irrelevant every day sounds, e.g. ticking clock) in smokers with schizophrenia⁽⁷¹⁾ and other extrapyramidal side effects⁽²⁾.
 - Reducing symptoms of anxiety and depression⁽⁷²⁻⁷⁵⁾.
- Improve cognitive function^(71, 76).
- Reduce side effects of some medications such as akathisia or restlessness⁽⁷⁷⁾.
- Suppress appetite in an attempt to lose weight in those with eating disorders⁽⁷⁸⁻⁸¹⁾.

Most of these effects are likely to be caused directly by nicotine. However, for some symptoms such as depression and anxiety, it can be difficult to separate the effects of nicotine from the relief of withdrawal⁽⁸²⁻⁸⁴⁾. While more recent research has enabled separation of withdrawal relief and direct effects of nicotine, nicotine withdrawal at times can present in a similar manner to some of the symptoms of the mental disorder (particularly depression and anxiety). As a result, it can occasionally be misinterpreted by the person with the mental disorder as well as the clinician and must be taken into consideration.

It is also likely that external social and environmental factors contribute significantly to, and account for, the high rates of smoking amongst individuals with mental disorders. These include higher rates of smoking amongst family, friends and within mental health services, the perceived role of smoking in relieving stress and as a coping mechanism, in aiding low self esteem and social mixing, and in dealing with boredom^(70, 83). In addition, people with mental disorders may have more difficulty quitting or reducing tobacco use because of limited support from health workers. They may have more difficulty coping with withdrawal symptoms and may lack the support and confidence needed to persist with their quitting efforts.

People with mental disorders have identified other effects of tobacco smoking including barriers to community involvement, accommodation difficulties, stigma and shame, the negative effects on appearance and other people, stained fingers and teeth, the smell of tobacco, and the added stress caused by living with an addiction⁽⁸⁵⁻⁸⁸⁾.

As well as the serious impact on physical health, many people with mental disorders are spending a significant percentage of their income on cigarettes. As a result they have very little money for food, recreation, public transport, clothing and health care^(85, 87, 89, 90).

The affordability of nicotine replacement therapy (NRT) and other treatments may, therefore, be a significant factor in restricting access. While the cost of NRT has been implemented so that it is more economical than continuing to smoke, the cost may be viewed in the same manner that clients perceive costs associated with methadone and buprenorphine dispensing. That is, individuals with mental disorders and substance use disorders are often unable to prioritise aspects of their life which include the inability to budget and rationalise treatment benefits. Therefore, they may perceive the cost of NRT to be prohibitive despite being a cheaper alternative than continuing to smoke.

A history of mental disorders does not necessarily mean, however, that individuals do not wish to quit smoking⁽⁹¹⁾. Evidence also suggests if the above mentioned factors such as demographics, diagnosis and concurrent medication are taken into account, smoking cessation strategies that are effective in the general population can be implemented and are effective at the same time as treatment for mental disorders^{****(92-101)}. People with mental health disorders are able to quit smoking if their mental disorder is under control and other psychotropic medication dosing remains stable^{****(92, 99)}. Improvements in anxiety and depression have also been observed in those who cease smoking⁽¹⁰⁰⁾.

4.1.2 Tobacco use in combination with other substance-use disorders

Tobacco use amongst people with alcohol and other substance-use disorders may be as high as three times that of the general community^(102, 103). As comorbid tobacco consumption amongst individuals with other substance-use disorders (and mental disorders) is common, it is accepted as 'normal' by clinicians. As a result, individuals with other substance-use issues or mental disorders do not receive support to address tobacco consumption⁽⁷⁰⁾. These people are often not asked about their tobacco use and little information is provided to them on the risks of smoking and benefits of quitting. They are also rarely offered the opportunity to quit.

Traditionally, the drug treatment culture has explicitly excluded smoking cessation treatments and dissuaded individuals from attempting cessation out of concern that concurrent treatment of multiple drugs of abuse is too difficult and may compromise sobriety. Tobacco use has few immediate consequences (including lack of direct psychoactive effects), and thus has not been a priority for treatment.

Yet, the use of tobacco accounts for greater morbidity than alcohol and all other drugs combined⁽¹⁰⁴⁾. Among individuals treated for alcohol dependence, tobacco-related diseases were responsible for half of all deaths – greater than alcohol-related causes.

In a 24-year study of long-term users, the death rate among cigarette smokers was four times that of non-smokers. Although the magnitude of the problem of tobacco use in this patient population is clear, questions of when and how to best intervene remain⁽¹⁰⁵⁾.

However, evidence suggests that smoking cessation strategies can be implemented and are effective at the same time as treatment for alcohol and other drug use if patients are established and stable in treatment^{***⁽¹⁰⁶⁾}.

Studies have shown that people with substance-use disorders are able to quit smoking especially if their other substance use is abating. Quitting smoking may also help control their use of other substances^{****^(102, 107, 108)}.

4.1.3 Interactions between tobacco and therapeutic agents used for mental disorders

The hydrocarbons in cigarette smoke (not the nicotine) have been shown to increase the body's ability to metabolise some medications via the cytochrome P450 system, resulting in reduced plasma concentrations of these medications^{xx⁽¹⁰⁹⁾}. As a result, people who stop smoking may find that plasma levels of certain medications increase significantly.

Nicotine can significantly decrease plasma concentrations of antipsychotics, resulting in increased dosing requirements of these medications in known smokers⁽²⁾.

The metabolism of the following medications is known to be affected by cigarette smoke: clozapine^(110, 111), fluphenazine, haloperidol and olanzapine^{xx^(112, 113)}. Clinically, it is recommended that the plasma levels of these medications and the presence of side effects should be monitored before and after smoking cessation^(114, 115).

Antipsychotics are known to lower seizure threshold and bupropion has been known to induce seizures and psychosis. Individuals receiving these two combinations of substances are therefore more vulnerable to seizures and should be monitored closely^{x⁽²⁾}.

Please refer to P450 website to observe possible interactions between smoking and therapeutic agents:

<http://medicine.iupui.edu/flockhart/table.htm>

4.1.4 Implications for management

The World Health Organization (WHO) has recommended three broad strategies for assisting people to quit or reduce tobacco use⁽¹⁰⁸⁾:

1. The routine delivery for all smokers of brief opportunistic intervention by health professionals.
2. Intensive support provided as a backup for brief intervention, including quit/reduce groups, coping skills information and support.
3. Pharmacological aids.

These three strategies are discussed in the following paragraphs.

All forms of treatment may require a degree of modification to accommodate those with mental disorders who have impaired cognitive ability.

1. Brief intervention

All smokers should be asked regularly about their tobacco use and offered at least brief intervention.

The *Smoking cessation guidelines for Australian general practice (2004)* recommended the 5As model for brief intervention⁽⁶⁶⁾:

- **Ask** about smoking and keep an up-to-date record of smoking status.
- **Advise** smokers to stop smoking in a clear, straightforward and non-judgemental manner.
- **Assess** motivation to quit or reduce tobacco use.
- **Assist** the smoker by offering support and information about ways to quit/reduce, withdrawal symptoms, coping strategies, pharmacotherapy aids and other supports.
- **Arrange** follow-up if possible.

2. Support

Smokers need a range of cognitive and behavioural strategies to address their tobacco use. They may require:

- Support to plan their quitting attempt.
- Information regarding trigger situations and how to cope with them.
- Information regarding withdrawal symptoms and cravings.
- Help to identify and work through barriers to quitting.
- Relapse prevention skills.
- Coping skills.

Motivational interviewing is an effective way to help increase commitment to quitting.

The Stages of Change Model is a valuable model for assessing a person's readiness to change and suggests interventions targeted to the person's current stage in the Stage of Change. In the model the patient is at one of several stages relevant to changing their behaviour. The stages are:

- Precontemplation: the patient is not intending to change.
- Contemplation: the patient is thinking about changing.
- Determination: the patient has decided to change.
- Action: the patient is taking active steps towards changing.
- Maintenance: the changed behaviour has been established.
- Relapse: the patient has reverted to the previous behaviour.

Each stage requires a different intervention from the clinician.

For further information concerning motivational interviewing and stages of change models, please refer to:

Putting prevention into practice: Guidelines for the implementation of prevention in the general practice setting⁽¹¹⁶⁾:

<http://www.racgp.org.au/Content/NavigationMenu/ClinicalResources/RACGPGuidelines/TheGreenBook/RACGPgreenbook2nd.pdf>

3. Pharmacological aids

Nicotine replacement therapy

Nicotine replacement therapy (NRT) aims to replace some of the nicotine obtained from cigarettes. This reduces physical withdrawal symptoms when stopping smoking, helps the person resist the urge to smoke⁽⁸⁴⁾ and is acceptable in those with mental disorders^{****(93, 96)}:

- It is available in patches, lozenges, inhalers, sublingual tablets and gum.
- It does not contain other toxic substances found in cigarettes, such as tar and carbon monoxide.
- It does not produce the dramatic surges of plasma nicotine concentrations.
- It does not produce dependence.
- It has been shown to increase quit rates by approximately 1.5–2 times, regardless of the setting⁽¹¹⁷⁾.

Combination NRT or high dose NRT

People who are heavy smokers (smoke more than 20 cigarettes a day) can use combined treatments if they are still experiencing withdrawal symptoms and are unable to quit using a single type of NRT. For example, using a combination of a patch with gum, lozenge or inhaler may be more effective.

NRT is contraindicated and medical advice is recommended for people who;

- Have had a recent heart attack or stroke.
- Have ischaemic heart disease with current active angina.
- Experience cardiac arrhythmias.
- Are under the age of 12 years.

In addition, specific products are not recommended for some people, including:

- *Patches*: for those with severe skin disease or an allergy to the patch.
- *Lozenges*: for those with phenylketonuria.
- *Inhalers*: for those who are hypersensitive to menthol.
- *Gum*: for those who have difficulties chewing gum⁽⁸⁴⁾.

NRT for pregnant women and nursing mothers is indicated with precaution and medical advice should be sought regarding the appropriate product and dosage.

Bupropion (Zyban)

Bupropion is a non-nicotine oral therapy to assist smoking cessation. Its mechanisms of action are still unclear; however, it is thought to inhibit the reuptake of noradrenaline and dopamine. It has been shown to reduce the withdrawal symptoms associated with stopping smoking. In a number of clinical trials, bupropion demonstrated a significant effect in increasing long-term abstinence from smoking⁽⁶⁶⁾ as well as proving its effectiveness and acceptability for use in those with mental disorders^{****(94-97, 99)}.

The greatest risk associated with bupropion use is the lowering of the seizure threshold. Therefore, it should not be used by people with a predisposing risk factor for seizures unless the potential benefit of smoking cessation outweighs the increased risk of seizure^(66, 108). Predisposing risk factors for seizure include:

- Any seizure disorder, past or current.
- Concomitant use of medications known to lower seizure threshold, for example, antipsychotics, antidepressants (including SSRIs and tricyclics), antimalarials, tramadol, theophylline, systemic steroids, quinolones, sedating antihistamines✘.
- Excessive alcohol or benzodiazepine consumption✘.
- Withdrawal from alcohol or benzodiazepines.
- History of recent head injury.
- Diabetes treated with oral hypoglycaemics or insulin.
- Use of stimulants or anorectic products.
- Known central nervous system tumours.

In addition, major drug interactions occur with *monoamine oxidase inhibitors* (MAO-I) (both reversible and non-reversible). Therefore, bupropion should be avoided if these have been taken within the last 14 days.

Bupropion is further contraindicated, or its use needs be taken under strict consideration, in the following situations:

- Allergy to bupropion.
- Current or previous history of anorexia nervosa.
- Pregnant or breast-feeding women.
- Opioid dependence.
- Bipolar affective disorder, psychosis.
- Cardiac disease, hypertension.
- Renal disease.
- Liver disease.

For full prescribing information on bupropion, please see the Pharmaceutical Benefit Scheme (PBS) website:

<http://www.pbs.gov.au/html/healthpro/home>

Varenicline (Chantix/Champix)

Varenicline is a new non-nicotine oral therapy to assist smoking cessation and is the first approved nicotinic receptor partial agonist. It has been shown to be an efficacious and well-tolerated smoking-cessation pharmacotherapy that is superior to both placebo and bupropion in helping to maintain long-term abstinence from cigarettes^{***(118)}.

Varenicline interactions with other drugs appear to be minimal. However, the safety of the combination of varenicline and bupropion has not been established. The combination of varenicline and NRT has caused the discontinuation of treatment due to side effects such as nausea, headache, vomiting, dizziness, dyspepsia and fatigue and should not be used.

The most common side effect of varenicline is nausea. This has been described as mild to moderate and often transient.

Varenicline is contraindicated, or its use needs to be taken under strict consideration, in the following situations:

- Renal disease.
- Pregnant or breast-feeding women.

For full prescribing information on varenicline, please see the PBS website:

<http://www.pbs.gov.au/html/healthpro/home>

Complementary therapies

There is little evidence to suggest that complementary or alternative therapies such as acupuncture or hypnotherapy are effective in the management of smoking cessation.

There is no consistent evidence that shows that acupuncture (or any particular acupuncture technique) is superior in comparison to no treatment, other anti-smoking interventions, or sham acupuncture in the prevention of smoking⁽⁸¹⁾.

Different types of hypnotherapy are used to try and help people quit smoking. Some methods try to weaken people's desire to smoke, strengthen their will to quit, or help them concentrate on a quit program. There are conflicting results for the effectiveness of hypnotherapy compared to no treatment or to advice against smoking. Hypnotherapy has not been shown to have a greater effect on quit rates than other interventions or no treatment at all.

For further information please consult:

Smoking cessation guidelines for Australian general practice⁽⁶⁶⁾:

http://www.quitsa.org.au/cms_resources/documents/AustralianGeneralPracticeGuidelineHandbook.pdf