

9 Reducing tobacco use

9.1 Background

Smoking prevalence in Australia is now among the lowest in the world. Nevertheless, tobacco smoking in Australia remains the leading cause of preventable death. It is estimated that approximately 19,000 people died as a result of smoking in Australia in 1998 (Ridolfo and Stevenson 2001). Smoking was responsible for 13 per cent of cardiovascular deaths in Australia in 1996 (AIHW 2000). Smoking is also associated with increased risk of lung cancer and respiratory diseases such as bronchitis and emphysema. Declining rates of smoking among men over the last four decades have contributed to reduced rates of cardiovascular disease among men (AIHW 2002a).

Smoking levels and trends

The proportion of the adult population who smoke declined from 37 per cent in 1977 to 24 per cent in 2001 (ABS 2002b). The decline in the number of smokers between 1995 and 2001 was mainly due to reductions in smoking among older age groups. In 2001, smoking rates were highest among 25–34 year olds (32 per cent), declining to 11 per cent among 65–74 year olds, and 6 per cent among people aged 75 years and over. Smoking rates remain higher among men (27 per cent) than women (21 per cent), but over the period 1998–90 to 2001 the decline in smoking has been greater among men than women (ABS 2002b).

Rates of smoking among Indigenous men (49 per cent) and women (50 per cent) are more than twice the rate for all Australian men and women (AIHW 2003b). Tobacco use accounts for a substantial proportion of morbidity and premature mortality among Indigenous Australians (Ivers 2003).

People from the most disadvantaged socioeconomic areas in Australia are twice as likely to smoke than people from the least disadvantaged areas. Similarly, smoking is more prevalent among unemployed adults and people without a tertiary qualification. Up until the mid 1980s the Socioeconomic Status (SES) disparity in smoking rates increased, but since the mid 1980s smoking rates in all SES groups have declined at similar rates. Most of the SES differences are due to higher smoking commencement rates among lower SES groups, rather than differences in cessation rates (Borland and Balmford 2004).

Who is more likely to smoke?

- Men
- Young adults
- People with low socioeconomic status
- Unemployed adults
- People with lower levels of education
- Indigenous Australians

Costs of smoking

Tobacco use is responsible for around 12 per cent of the total burden of disease in males and seven per cent in females (Mathers et al. 1999). Direct health care costs attributable to tobacco in 1998–9 were estimated to be \$1.1 billion (Collins and Lapsley 2002).

Reducing tobacco use

Reductions in smoking rates in Australia in recent decades have been achieved by a range of individual focused and population-wide interventions designed to reduce tobacco use initiation, increase tobacco use cessation, and reduce exposure to environmental tobacco smoke (ETS). Mercer et al (2003) listed five key elements of effective tobacco control as: (1) clinical intervention and management, (2) educational strategies, (3) regulatory efforts, (4) economic approaches, and (5) comprehensive programs that combine all of these elements.

Overview of evidence reviewed

Comprehensive tobacco control strategies incorporate a range of interventions. Evidence for the effectiveness of interventions to reduce tobacco use is described in the following areas:

- Educational strategies
 - Counselling
 - Counselling plus exercise
 - Interventions targeting smoking cessation during pregnancy
 - Mass media campaigns and mass media combined with other interventions
 - Population-based interventions that involve incentives
 - Multi-strategy community based interventions
- Regulatory efforts
 - Interventions for preventing smoking in public places
- Economic approaches
 - Increase in cigarette prices
- Statewide comprehensive tobacco control programs
- Tobacco cessation interventions for Indigenous Australians

9.2 Educational strategies (counselling)

Intervention description

Telephone counselling, group counselling and individual face-to-face counselling.

Population group/setting

Tobacco smokers in the general population.

Effectiveness

Good evidence that proactive telephone counselling, group counselling, and individual counselling are effective in smoking cessation. Reactive support (client initiates all contact) was less effective than proactive support (contact or follow-up initiated by a clinician or counsellor). A review of studies that included partner support as part of the smoking cessation program found that partner support did not lead to improved smoking cessation rates (Park et al. 2003). Group behaviour therapy programs are more effective than self-help and other less intensive interventions, but there is insufficient evidence on their effectiveness compared to intensive individual counselling.

Comments

Reviews that focused only on advice and resources provided by health care practitioners (principally doctors and nurses) to patients to quit smoking has been excluded from this review because it involves individual consultations in clinical settings. These interventions have been reviewed by Rice and Stead (2003) for advice provided by nurses, and Miller and Wood (2003) for advice and resources provided by health care providers in clinical and hospital settings. These reviews found good evidence that these interventions can be effective, but commented that barriers to implementation need to be addressed. There is insufficient evidence for the effectiveness of practitioner advice in the absence of patient education materials.

Reference

Stead and Lancaster (2000).

9.3 Educational strategies (counselling plus exercise)**Intervention description**

Cardiovascular activity in a group, or as individuals, in a facility or at home, 1-5 times per week, for 15-45 minutes at 70-85 per cent of maximal heart rate (vigorous intensity) for 4-24 weeks, plus a smoking cessation program.

Population group/setting

Adults wishing to quit smoking. All eight studies included were from north America.

Effectiveness

Most studies had methodological limitations. Only one study was able to provide substantial evidence for exercise aiding smoking cessation. Post-treatment follow-up varied from six to sixteen months. As all studies included both group and individual exercise, it is difficult to determine if one approach is more successful than the other.

Implementation issues

Compliance with the exercise program was high in most studies, but exercise participation was not monitored after the formal, supervised program ended. Studies with exercise programs of less than six weeks may be too short to encourage long-term exercise participation.

Comments

- Most studies used vigorous-intensity exercise. Short and frequent bouts of moderate intensity activity may be preferable for improving both psychological and physical wellbeing.
- Further trials are needed with larger sample sizes, control groups that have equal contact time, tailored and lifestyle exercise programs, and measures of exercise adherence.

Reference

Ussher et al. (2000) (systematic review).

9.4 Educational strategies (interventions targeting smoking cessation during pregnancy)

Intervention description

Strategies included information about the risks of continued smoking, advice to quit, more intensive advice or individual counselling, group counselling, self-help manuals on strategies for quitting, peer support, telephone follow-up, rewards or incentives.

Population group/setting

Women who were pregnant in any health care setting, commonly hospital or community antenatal clinic. Studies were conducted in the US, UK, Norway, South America, Australia and New Zealand, with most studies conducted in the US. A small number of studies focused on disadvantaged or minority populations, but impacts were not reported separately for these populations.

Effectiveness

The principal outcome measure was continued smoking in late pregnancy. Smoking cessation programs in pregnancy appear to reduce smoking, low birthweight and preterm birth. No effect was found for very low birthweight or perinatal mortality. The summary finding was that of 100 women still smoking at the time of recruitment into the study (usually at the first antenatal visit) about 10 will stop smoking with 'usual care' and a further six or seven will stop as a result of a formal smoking cessation program. The authors recommended that smoking cessation programs should be implemented in all maternity care settings. *Reach* is potentially high, as the majority of Australian women who are pregnant receive antenatal care. *Sustainability* of smoking cessation postpartum is generally poor.

Implementation issues

- Transfer of an intervention from one setting to another may reduce its effectiveness if the program is changed, or some aspects of the materials are culturally inappropriate.
- Local piloting is recommended for programs developed elsewhere.
- Interventions involving group sessions (in addition to individual counselling) during pregnancy are poorly attended and should be abandoned.

- To avoid ‘victim-blaming’, or the perception of victim-blaming, programs need to take account of women’s concerns about negative impacts of stopping smoking (for example, loss of a means of stress management and coping, and perceived advantages of smaller babies).

Comments

- There was substantial variation in the intensity of the intervention and extent of reminders and reinforcement through pregnancy.
- Priority groups were not discussed, but the authors noted that programs may not be transferable across culturally diverse groups.

References

Lumley et al. (2002) (systematic review).

9.5 Educational strategies (mass media campaigns and mass media combined with other interventions)

Intervention description

Paid advertising campaigns using television, radio or print media to promote anti-tobacco and quit smoking messages. Other interventions included price increases, community education, and school-based education.

Population group/setting

Non-smokers (aimed at reducing tobacco use initiation) and smokers (aimed at increasing tobacco use cessation). One review focused on adolescents and young adults. Studies were conducted in the US, Norway and Finland.

Effectiveness

Long duration, high intensity mass media interventions when combined with other interventions were effective in reducing tobacco use initiation and increasing tobacco use cessation. The evidence for short-term, mass media campaigns alone is less convincing one review concluded that there is insufficient evidence, while another review found that mass media campaigns of moderate intensity generally produced modest effects. The review of nine studies focusing on adolescents and young adults found that mass media interventions of two or more years duration accompanied by other interventions were effective in reducing tobacco use. Mass media campaigns have high population *reach*. Campaigns require on-going funding for sustainability. *Sustainability* of impact is likely to be high in the case of the prevention of tobacco uptake among young people, as, if adolescents are kept tobacco-free, most will never start using tobacco.

Implementation issues

- The main barrier to implementation of mass media campaigns is the cost of purchasing broadcast time.
- The costs of developing and testing media messages can be offset by using existing resources.

References

Hopkins et al. (2001a); Hopkins et al. (2001b).

9.6 Educational strategies (population-based interventions that involve incentives)

Intervention description

Community-based, statewide or national smoking cessation programs that involved incentives (cash incentives, cash and holiday prizes). Community-based programs generally used a contest approach ('quit and win' contests).

Population group/setting

Tobacco smokers in the general population aged at least 16 years.

Effectiveness

Quit rates ranged from 13 per cent to 45 per cent depending partly on length of follow-up, with longer length of follow-up resulting in lower quit rates. Program *reach*: interventions generally attracted one to two per cent of the target population and might only attract smokers who are already motivated to quit. *Sustainability*: follow-up periods ranged from one month to one year and quit rates declined over time. Estimates of the *cost* per quitter ranged from less than \$20 to over \$400.

Implementation issues

Participation rates and quit rates were not dependent on the type of incentive, but the size of the incentive was important.

References

Bains et al. (1998).

9.7 Educational strategies (multi-strategy community based interventions)

Intervention description

Community interventions consisting of coordinated, multidimensional programs aimed at changing adult smoking behaviour, often in the wider context of CVD risk factor reduction. Components included mass media, counselling, self-help materials, support groups, audiotapes, videotapes, quit lines and policy advocacy. Interventions were conducted in a defined geographical area such as a town, city, county or other administrative district.

Interventions were based on social cognitive theory, communication theory, diffusion of innovation theory and community participation. Processes of community involvement included coalitions of planning groups, employment of local community staff and task forces.

Population group/setting

Studies involved men and women over 18 years of age. Studies were conducted in Europe, north America, Australia, South Africa and India in urban and rural communities. Three studies targeted African Americans and two focused on Vietnamese men. The population size varied from a few thousand to hundreds of thousands of people.

Effectiveness

Limited evidence of an effect on smoking prevalence (ie smoking levels at the population level). A number of studies found an overall trend in favour of a program effect, that was not statistically significant. The most successful methods of program delivery appeared to be mass media interventions and smoking cessation referral services and resources. High program *reach* is necessary to achieve an impact at the population level - community awareness or program participation rates of approximately 30 per cent were associated with positive program outcomes at the population level. In terms of *sustainability* of impacts, interventions lasting for at least two years appeared to be as effective as programs lasting longer (2-5 years). Program sustainability (evidence of continuation of program components) was found for 31 per cent of studies. *Cost-effectiveness* or cost-benefit ratios were favourable.

Implementation issues

- Smoking needs to be recognised by the community as an important issue.
- Community organisation, assessment of community capacity, and the identification of individuals and organisations interested in supporting smoking interventions are important during project development.
- Community members and staff need skills in working with diverse groups and in health education.
- Coalitions need several months to form, and a year or more to become effective change agents in their community.
- Resources for smoking cessation and support for remaining a non-smoker should be readily available throughout the community.
- The use of mass media (print, radio, television) is especially useful for modelling behaviour change, and for changing community norms about smoking.

Comments

- One Australian study found a significantly greater quit rate in men but not in women. This was attributed to targeting more male-oriented settings (for example, workplaces, community organisations, clubs and hotels).

- This study recommended that community-based programs target already motivated communities rather than attempting to motivate less interested communities.

References

Secker-Walker et al. (2003).

9.8 Interventions for preventing smoking in public places

Intervention description

Bans or restrictions on smoking in enclosed public spaces such as health centres, workplaces, educational institutions, restaurants, shops and public transport. Commonly comprises an internal no-smoking policy, that may include a total ban on smoking, or restrictions with signs warning of restrictions and clearly marked areas specifically for smokers. Smoking bans and restrictions can be implemented with additional interventions such as education and tobacco use treatment programs.

Population group/setting

Users of public places where restrictions or bans on smoking were implemented. Most studies were conducted in the United States.

Effectiveness

Good evidence that smoking bans or restrictions in workplaces produce small to moderate reductions in the prevalence of smoking and cigarette consumption. Totally smoke-free workplaces were about twice as effective in reducing smoking prevalence as policies that allowed smoking in some areas. Passive smoking in workplaces was eliminated. Smoking bans supported by multicomponent implementation strategies are effective, but there is little effect from regulation or signage not supported by other measures (for example, educational and enforcement strategies promoting compliance with a non-smoking policy).

Implementation issues

Compliance with both voluntary restrictions and regulations is dependent on changes in public attitudes to smoking.

A major barrier to the adoption of local, state and national smoking bans is political opposition by smokers, businesses concerned about possible loss of revenue, and tobacco industry sponsored groups.

Comments

These findings might not apply in countries with different attitudes to tobacco use, but are likely to apply to most public settings in Australia.

References

Fichtenberg (2002) (systematic review); Hopkins et al (2001a); Serra et al. (2003).

9.9 Economic approaches: Increase in cigarette prices

Intervention description

Government legislation to increase the excise tax on cigarettes.

Population group/setting

The general population.

Effectiveness

An increase in cigarette prices is an effective method for reducing tobacco use prevalence and consumption among adolescents and young adults, and for increasing tobacco use cessation. One review estimated that a 10 per cent increase would reduce consumption by 10 per cent. Another review estimated that a \$2 increase is the single most effective method of reducing tobacco consumption. A review of eight studies of adolescents and young adults concluded that higher tobacco product prices were associated with lower levels of tobacco use. Some studies have reported evidence of effectiveness among whites, blacks and Hispanics.

Comments

- Increasing the price of tobacco products is effective with or without other interventions such as mass media campaigns.
- Increasing the price of tobacco products is effective in reducing population consumption of tobacco.
- Some studies demonstrated effectiveness among Caucasians, African Americans and Hispanics.
- Two studies found that interventions were more effective in males than females.
- Findings are likely to be generalisable to most adolescents and young adults in the US and similar countries.

References

Hopkins et al 2001a; Hopkins et al 2001b.

9.10 Statewide comprehensive tobacco control programs

Intervention description

Mercer et al. (2003) describe comprehensive tobacco control programs as encompassing clinical intervention and management, educational strategies, regulatory efforts, and economic approaches. This approach to comprehensive tobacco control includes regulatory and economic measures that can only be implemented at national, state or regional levels. Consequently, the impact of a comprehensive strategy cannot be measured using randomised controlled trials, because whole countries or states cannot be randomised into 'treatment' and 'control' groups. However, evidence of the effectiveness of comprehensive tobacco control programs at the population levels is available from study

designs more suited to the evaluation of policy, regulatory and environmental interventions that reach the whole population. This section describes this evidence.

Population group/setting

The general population.

Effectiveness

Biener et al. (2000) assessed the impact of the Massachusetts tobacco control program which commenced in 1993 funded by an extra tax of 25 cents per pack of cigarettes. Population based trend analysis of adult smoking prevalence in Massachusetts compared with the remaining 48 US states (excluding California) demonstrated that a strongly implemented, comprehensive tobacco control program can significantly reduce tobacco use.

Implementation issues

- The program was implemented at a cost of about \$39m per year, representing an annual expenditure of about \$6.50 per person – the ‘highest per capita expenditure for tobacco control in the world.’ (Biener et al. 2000).
- The cost of the program (\$39m per year) compared favourably with the estimated smoking related health care cost to the state of \$2.4 billion per year.

Reference:

Biener et al. (2000).

9.11 Tobacco cessation interventions for Indigenous Australians

A recent review identified only four reports of evaluations of tobacco interventions for Indigenous Australians. None of the studies measured smoking cessation as an outcome, and three out of four used qualitative methods only (Ivers 2003).

Effectiveness

Out of the four studies, two were unable to conclusively show any effect of the interventions. A program that trained health professionals to give advice on smoking resulted in some changes to practice; and the evaluation of a mainstream advertising campaign showed an increase in knowledge about tobacco.

Implementation issues

- Many Indigenous health workers and community workers are smokers, and do not always feel comfortable delivering advice to smokers in their community.
- Smoking advice was not always accepted, and culturally appropriate.
- Non-coercive methods of counselling were advocated.
- Up to seven per cent of pregnant Indigenous women smoke, and Indigenous people often see programs for pregnant women as a priority.

- Indigenous people believed that media campaigns needed to be locally developed, should involve elders and significant community members in their design and delivery, and that they must have a broad community focus.
- Indigenous health promotion materials have been developed to help smokers quit. They include poster, videos, pamphlets, flip charts, felt boards, CD-ROM, stickers and T-shirts. The use of these materials may help smokers to quit, but the evidence is unclear (Ivers 2003).

A recent report of the National Aboriginal and Torres Strait Islander Tobacco Control Project, funded under the National Tobacco Strategy (Lindorff 2002), reported that requirements for effective programs included:

- tobacco programs must be holistic
- tobacco programs must be comprehensive
- tobacco must be given a higher priority – specific programs
- tobacco must be given a higher priority – across all programs
- tobacco programs must be long term and adequately funded
- training for tobacco control must be improved
- tobacco programs must effectively address stress.

The report also outlined specific commendations for tobacco control within Indigenous communities, together with the following four overarching principles as a guide for future work in this area:

1. Aboriginal and Torres Strait Islander tobacco control programs should seek to maximise community control.
2. All individuals and organisations working on programs in Aboriginal and Torres Strait Islander tobacco control should understand and respect the social context in which Aboriginal peoples and Torres Islanders live their lives and programs should reflect this understanding.
3. Tobacco control programs for Aboriginal and Torres Strait Islander communities should be holistic in nature and consider the social determinants of health.
4. Tobacco control programs for Aboriginal and Torres Strait Islander communities should be as comprehensive as possible within given resources.

(Lindorff 2002)

9.12 Resources

- Victorian tobacco action plan (2002) (<http://www.tobaccoreforms.vic.gov.au/actionplan.htm>)
- Quit Victoria (<http://www.quit.org.au/>)
- VicHealth Position Statement on Tobacco Control (<http://www.vichealth.vic.gov.au/>)