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## Smoking Among A Sample Of Australian Teenagers: Perceptions Of Social And Health Consequences



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### Abstract

*Australian national prevalence studies indicate that despite reductions in rates of smoking among younger secondary students, the proportion of smokers among older students remains unchanged in recent years and figures overall give cause for serious concern. This study examines the beliefs underlying adolescents' behaviour in relation to smoking and provides information about which beliefs should be targeted in persuasive communications designed to reduce adolescent smoking. One hundred and thirty adolescents in their second last year of high school were surveyed and results revealed that smokers were largely differentiated from others in relation to the perceived social consequences of smoking. They endorsed the beliefs that smoking would make them feel relaxed, gain personal enjoyment, look cool, and help with weight loss rather than beliefs regarding the health consequences. An important implication of the findings is that interventions may need to focus more on the perceived positive consequences of smoking, on changing social norms by correcting false beliefs about smoking prevalence and consequences, and by incorporating more skills-based components in prevention programs.*

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National prevalence studies in Australia indicate that despite reductions in adult smoking rates over the last few decades (Australian Institute of Health and Welfare, 1999), patterns of cigarette use among adolescents still give serious cause for concern. National prevalence studies have been conducted every three years among representative samples of Australian students aged from 12 to 17 years (Hill, Willcox, Gardner, & Houston, 1987; Hill, White, Pain, & Gardner, 1990; Hill, White, Williams, & Gardner, 1993; Hill, White, & Segan, 1995; Hill, White, & Letcher, 1999; Hill, White, & Effendi, 2002). Overall, there has been an encouraging decline in smoking rates over the period of the first three surveys based on data collected from 1984 to 1990, with a slight increase in the 1993 figures. Hill et al. (2002) note that while fewer 12- to 15-year-olds were current smokers in 1999, the proportion of current smokers (i.e., smoked in the last week) among 16- and 17-year-olds was similar in both 1999 and 1996 (approximately 30%). Comparisons with other surveys are difficult due to different questions used to assess smoking and different age groups being combined. The most recent National Drug Strategy Household Survey found that about 16% of 14- to 19-year-olds were regular smokers (i.e., smokes daily/most days) and about 9% smoked less often than daily/most days (Australian Institute of Health and Welfare, 1999). Given that the longer the time spent as a smoker, the greater the risk of developing smoking-related diseases (United States Department of Health & Human Services, 1994), it is important that the onset of smoking be delayed for as long as possible. Hill and colleagues (2002) estimate that if all of the current 12- to 17-year-old smokers continue to smoke, 134 000 will die prematurely, further highlighting the importance of preventive action. Although research has been conducted into a wide array of factors that are either directly or indirectly related to adolescent smoking (see Mayhew et al., 2000 for a review), one area that has received little attention in relation to Australian adolescents is the nature of their beliefs about the

consequences of smoking. This study examines the beliefs underlying adolescents' smoking behaviour and provides information about which beliefs should be targeted in persuasive communications designed to reduce smoking.

### **Beliefs Underlying Smoking by Adolescents**

A major aim of gaining further information regarding the beliefs underlying adolescents' smoking behaviour is that education programs may target relevant beliefs in their attempts to bring about changes in prevalence rates. Previous investigations of adolescents' attitudes towards smoking have found that, although both smokers and nonsmokers generally expressed negative attitudes, smokers expressed more favourable attitudes than others (Bhatia, Hendricks, & Bhatia, 1993; Meier, 1991; Oei, 1990). More positive attitudes toward smoking and/or smokers tend to increase the likelihood of cigarette use (Botvin, Baker, Goldberg, Dusenbury, & Botvin, 1992; Lo, Blaze-Temple, Binns, & Ovenden, 1993; Zhu, Liu, Shelton, Liu, & Giovino, 1996). Adolescents who have tried cigarettes view smokers more favourably than do nonsmokers, frequently describing them as exciting and cool (Bowen, Dahl, Mann, & Peterson, 1991). As noted by Hill et al. (1995), the belief that smoking is part of the adolescent's desired image is an important motivation for taking up smoking.

Beliefs about the social consequences of smoking may be more influential in differentiating smokers and nonsmokers than health-related beliefs. In a longitudinal study of Year 7 students, it was found that beliefs about the physical consequences of smoking (e.g., getting lung disease, having heart trouble) were not significantly related to future smoking (Collins et al., 1987). The significant predictors included expectations of greater approval from others for smoking, giving higher estimates of the prevalence of smoking amongst important others, and having higher scores for risk-taking/rebelliousness. More recently, Piko (2001) found that an antismoking attitude (e.g., I don't want my friends to think I smoke; I don't want to be addicted to nicotine) and beliefs about harmful effects of smoking (e.g., Smoking makes you poor at sports) have been shown to be strong inhibiting influences on adolescent smoking (Piko, 2001).

Examination of adolescents' normative beliefs also provides important insights into the motivations of smokers and nonsmokers. Normative beliefs concern the influence of significant others' opinions on the adolescent's decision to engage in a particular behaviour. Significant others may serve as important role models of smoking behaviour and/or they may exert pressure on adolescents to give up smoking. Adolescents are more likely to smoke if their parents, siblings, and friends are smokers (Mayhew et al., 2000; Tyas & Pederson, 1998). Girls who have tried cigarettes are more likely to become regular smokers if they perceive their friends as having more positive attitudes towards their smoking (Chassin, Presson, Montello, Sherman, & McGrew, 1986). Those with more friends who smoke are more likely to believe that smoking will be enjoyable and make them popular, and less likely to believe that smoking will affect their health (McAlister, Krosnick, & Milburn, 1984).

In research involving the prediction of the transition to smoking from never smoking, the extent of perceived disapproval of smoking (for example, in the form of others' reactions, and pressure from friends to smoke) and motivation to comply with the expectations of important others were significant predictors (Collins et al., 1987). Some research suggests, however, that the effect of normative pressure on adolescent smoking may be due to the lack of

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perceived disapproval from friends rather than active encouragement of this behaviour (Urberg, Shyu, & Liang, 1990).

This research highlights the importance of reducing the uptake of smoking by adolescents, before they, in their turn, provide a new generation of adolescents with role models who are smokers. One important issue is the need to regularly monitor the beliefs underlying adolescents' decisions to smoke in order to more effectively tailor prevention strategies to such beliefs.

### **The Attitude-Behaviour Relationship**

The theory of reasoned action (TRA; Fishbein & Ajzen, 1975) has been successfully used to explain a range of behaviours, including smoking and other drug use among adolescents (de Vries & Kok, 1986; Laflin, Moore-Hirschl, Weis, & Hayes, 1994). It provides a useful theoretical framework within which various influences on smoking intentions and behaviour can be examined. According to the TRA, the immediate determinant of behaviour is behavioural intention. Intention, in turn, is predicted by the individual's attitude and subjective norms (the individual's perception of what important others think they should do). The attitudinal component is predicted by a belief-based measure that consists of behavioural beliefs (e.g., Smoking makes me feel relaxed) weighted by an evaluation of each belief (e.g., Feeling relaxed is a pleasant outcome). Similarly, the normative component is determined by normative beliefs (e.g., My best friend thinks I should smoke) weighted by the individual's motivation to comply with each significant other (e.g., How much do you want to do what your best friend thinks you should do?). The beliefs that are relevant to the particular group being investigated are elicited by means of a pilot study involving a smaller group of people who are representative of those of interest in the major investigation. The beliefs of smokers and nonsmokers may then be compared. It is these beliefs that were investigated in the current study.

### **Method**

Participants in the study consisted of a convenience sample of 130 students (65 females and 65 males) in their second last year at a state government secondary school identified as being from a middle socio-demographic area. Approval to conduct the research was obtained from a university ethics committee and the principal of the school involved. Students participated voluntarily and were given assurances of confidentiality and anonymity, as well as completing informed consent forms. Students ranged in age from 15 to 17 years, with an average of 16 years.

In order to determine the relevant beliefs underlying the attitudinal and normative variables, a pilot study was conducted among 30 students (15 males and 15 females; average age = 16.2 years) from another state government secondary school that was considered to be socio-economically similar to the one involved in the main investigation. They listed the advantages and disadvantages of smoking cigarettes and the important people who might approve or disapprove of their smoking. The advantages and disadvantages were then used to form the attitudinal belief items for the main study, while the people nominated as significant others in relation to smoking were used in the questions assessing normative beliefs.

### **Measures**

All measures were operationalised in accordance with Ajzen and Fishbein's (1980) guidelines for constructing questionnaire items. Intention was measured by the question "How likely is it that you will smoke cigarettes in the next month?" This was rated on a 7-point *unlikely-likely* scale from -3 to +3. To measure attitudinal beliefs, students were asked, "How good or bad do you think each of the following things would be?" Responses consisted of the four advantages and seven disadvantages that were provided in the pilot study (i.e., relieve stress/feel relaxed; gain personal enjoyment; look cool/boost my image; reduce appetite and help with weight loss; cause harm to health and fitness; risk becoming addicted; get stained teeth and fingers; get bad breath; smell bad; spend a lot due to cost of cigarettes; and cause harm to others through passive smoking). They were rated on a 7-point scale from *extremely bad* to *extremely good*. Each item was then multiplied by an evaluation of the likelihood of it occurring as a result of smoking cigarettes (e.g., "How likely is it that you would feel relaxed if you smoked cigarettes in the next month?") These evaluations were rated on a 7-point *unlikely-likely* scale from -3 to +3.

Normative beliefs were measured by the question "How likely is it that your mother (father/brother(s)/sister(s)/close friends) thinks it would be OK for you to smoke cigarettes in the next month?" These items were rated on a 7-point *unlikely-likely* scale. Motivations to comply with each of these significant others were rated on a 7-point scale from *not at all* (-3) to *very much* (+3) (e.g., "How much do you want to do what your mother thinks you should do?").

All students were also asked how many times they had smoked cigarettes in the past month. Responses consisted of not at all, only one time for the whole month, two times in the whole month, one time each week, 2-3 times each week, once every day, and more than one time every day. Those who did not smoke were classified as non-smokers (63.1%) and the remainder as smokers (34.6%; a few students did not answer this question).

### **Procedure**

Questionnaires were administered to class groups by the researcher and a visiting school nurse who gave the same set of instructions and followed the same procedure. Upon completion, questionnaires were collected by the researcher or the nurse and placed in a sealed envelope.

### **Results**

The frequency of smoking is shown in Table 1. Approximately 35% smoked in the past month while almost 17% of students smoked more than once each day. Several multivariate analyses of variance (MANOVAs) were initially performed in order to examine gender differences in beliefs. Non-significant results were obtained for both attitudinal ( $F=1.024$ ,  $p=.435$ ) and normative beliefs ( $F=.819$ ,  $p=.586$ ). The differences in underlying beliefs of smokers ( $N=45$ ) and non-smokers ( $N=82$ ) were then examined.

**Table 1**  
***Frequency of Smoking in the Past Month (N=130)***

	Frequency	Males	Females	Persons
1.	Did not smoke in past month	66.8	57.8	63.1
	Did smoke in past month	30.1	40.6	34.6
2.	Only one time for the whole month	1.6	7.8	4.6
3.	Two times in the whole month	1.6	10.9	6.2
4.	One time each week	1.6	1.6	1.5
5.	2-3 times each week	6.3	3.1	4.6
6.	Once every day	1.6	0	.8
7.	More than one time every day	15.6	17.2	16.9
8.	No answer	3.1	1.6	2.3

### **Differences In Beliefs Of Smokers And Nonsmokers**

Analysis of the four attitudinal beliefs concerning the perceived positive outcomes of smoking (relieve stress/feel relaxed, gain personal enjoyment, look cool/boost my image, and help with weight loss) showed that smokers differed significantly from non-smokers ( $F(4,122) = 23.04$ ;  $p < .001$ ). In comparison to non-smokers, smokers believed more strongly that smoking would relieve stress/make them feel relaxed, lead to personal enjoyment, and help with weight loss. There was also a significant overall difference between smokers and non-smokers in terms of the combination of negative beliefs about smoking ( $F(7,119) = 3.61$ ;  $p < .001$ ), but there were no individual negative beliefs that differentiated the two groups.

Significant findings were also found in relation to the normative beliefs. Smokers believed that all significant others were more likely to approve of their smoking than did non-smokers ( $F(4,122) = 14.35$ ;  $p < .001$ ).

### **Discussion**

This study of the beliefs underlying adolescents' behaviour in relation to smoking provides a number of insights that have important practical implications. First, it is noteworthy that the prevalence of smoking among this sample is comparable to other much larger studies (Hill et al., 1995, 1999) and is consistent with previous findings indicating higher rates of smoking among females (approximately 30% of males vs. 40.6% of females had smoked in the past month). These results therefore indicate a disturbing number of students who would be considered to have a serious smoking habit.

The greater importance of the social consequences of smoking, in comparison to the health-related consequences, is also highlighted. Smokers were differentiated from others by the beliefs that smoking would relieve stress/make them feel relaxed, lead to personal enjoyment, lead them to look cool/boost their image, and help with weight loss. Although the latter outcome relates to a physiological effect of smoking, the desired outcome is largely social,

that is, the desire to be slim in order to gain social approval. Previous research has also found that belief in smoking as a weight control strategy was related to regular smoking among both male and female adolescents (Camp et al., 1993; Robinson et al., 1997). These beliefs are candidates for persuasive communications to strengthen or increase the intention to refrain from smoking. These may need to focus particularly on the perceived positive consequences of smoking because it was these aspects that adolescents primarily focused on.

Smokers also believed that all significant others were more likely to approve of their smoking than did other respondents. This shows that a reduction in smoking would depend on a change in social norms, suggesting that raising awareness of the influence of modelling of parental behaviours, enhancing parenting skills (White, Johnson, & Buyske, 2000), and taking into account the role of the wider social environment, which includes family, school and community influences (Kumpfer & Turner, 1990-1991) may help to reduce the prevalence of adolescent smoking. This may involve attempts to include parents in classroom programs, or to provide explanatory sessions in the evenings for adults, so that they may gain information about relevant issues for themselves as well as provide appropriate and long-term support for the goals of the program. Programs based on increasing awareness and providing information alone are not sufficient to produce changes in behaviour (De Jong & Langford, 2002; Ellickson, 1995) and there is little support for the efficacy of values clarification (Larimer & Crouce, 2002). Encouraging results have been achieved in the alcohol prevention area with programmes that provide personalized feedback and advice (Wechsler, Molnar, Davenport, & Baer, 1999) and normative re-education programs that correct false beliefs about the prevalence and acceptability of substance use among the adolescent's peers (Donaldson, Graham, & Hansen, 1994; Donaldson, Graham, Piccinin, & Hansen, 1995). Such programs have yet to be widely tested, however (Larimer & Crouce, 2002). Skills-based interventions have also shown some success and brief motivational feedback interviews have also been shown to be effective in a variety of contexts including the school setting (Larimer & Crouce, 2002). Since it is virtually impossible to prevent adolescents from being exposed to the use of cigarettes by personalities in the media, it is even more important that the potentially powerful influence of parents, siblings and peers is utilized in order to reinforce a non-smoking image. It is also important to provide programs early enough to reach students who have not yet even experimented with smoking. For example, studies have revealed that between 75% (O'Connor & Daly, 1985) and 90% (Russell, 1985) of adolescents who have experimented with smoking were later found to have become regular smokers in adulthood.

The findings of the current study are limited by the restricted nature of the sample involved and by the fact that the categorisation of students as smokers if they smoked in the past month may have included those for whom smoking was a once-only experimental event, thus introducing error into this classification.

## **Conclusion**

Overall, the findings highlight the need for a stronger emphasis in prevention programs on the perceived positive social consequences of smoking and for a greater involvement of significant others in reinforcing non-smoking messages. Early intervention programs for younger students are crucial so that the uptake of smoking may be delayed for as long as possible. The findings also highlight the need for programs to more powerfully address adolescents' social anxiety and concerns about their weight – concerns that are being addressed by smoking rather than by a range of healthy alternatives.

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