Today's adolescents continue to be at risk for cardiovascular disease later in life, and need assistance in avoiding cigarettes. Health promotion initiatives need to be behaviour-specific to maximise their effectiveness.

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Adolescent smoking: Behavioural risk factors and health beliefs

The study extends previous research on adults by assessing the role of cognitive factors of smoking behaviour in 885 teenagers.

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Cardiovascular disease is the leading cause of death in the UK, accounting for over 200,000 deaths each year.

Health experts now accept that cigarette smoking is one of the main modifiable risk factors for cardiovascular disease and it is estimated that smoking accounts for about one in five of these deaths. While the percentage of adult cigarette smokers continues to decline, the prevalence of regular smoking among secondary school girls (11%) has shown little decrease since 1982, although smoking in boys has fallen slightly (11% to 8%). Since many health-compromising habits have their origins in adolescence, identifying the psychological predictors of smoking in this age group may have significant implications for public health.

Current health behaviour models propose that health-related decisions are determined by (i) perceptions of vulnerability to ill health, (ii) the seriousness of disease, (iii) the benefits of preventive action in averting disease, and (iv) capacity to adopt preventive behaviour. Risky behaviour (such as smoking) is least probable when people believe that the danger is serious (severity), feel that they are personally at risk (vulnerability), believe that preventive action will effectively diminish the risk (benefits), and perceive few obstacles to or feel capable of taking preventive action (self- efficacy). Thus, people are least likely to smoke if they feel vulnerable to cardiovascular disease (or other risks), perceive the disease as life-threatening, believe that not smoking will reduce the risk, and feel able to perform these preventive behaviours.

Several studies focusing on adults have compared the predictive profiles of cognitive factors of cigarette use. By and large, this literature has shown strong relations between risk behaviours and cognitive factors (especially self-efficacy). Risk perceptions have fared relatively poorly as predictors, especially in analysis accounting for self-efficacy, perceived benefits, and past behaviour. Predictive power has differed across risk behaviours. For example, some researchers have found that perceived susceptibility to serious illness predicts cigarette use, but not physical activity, or consumption of fried foods. By contrast, perception of health benefits predicted fried food intake and exercise, but not smoking. Self-efficacy predicted dietary fat consumption and smoking cessation but not physical exercise. A number of conditions may account for these differentials. For instance, in behaviours where the benefits are widely understood, (such as smoking), risk perceptions may play a more crucial role.

Our own research in this area has explored the extent to which perceptions of risk, benefits, and self-efficacy, predict cardiovascular risk behaviours in adolescents. Our focus has been on intention rather than behaviour in view of

the growing acceptance that health behaviour models are primarily concerned with explaining people's motivation to perform a health behaviour. In one of our studies we gave out a questionnaire to 885 teenagers (aged 13 to 17 years; mean age 14.47 years) that assessed health beliefs, behavioural risk factors, intentions, and demographic variables. Cigarette use was measured with five options adapted from previous surveys of school children. These were 'never smoked', 'tried smoking once', 'used to smoke', 'occasional smoker', and 'regular smoker'. Perceptions of vulnerability and severity were assessed in relation to heart disease and stroke. Our respondents were also asked to rate the seriousness to their own health of each disease on a 10-point scale ranging from 'not at all serious' to 'very serious'. They were also asked to estimate the probability that they would contract each disease by the age of 40, using a 10-point scale from 'not at all likely' to 'very likely'. Assessing people's perceptions of risk concerning CHD and stroke may be problematic if they are unaware of these particular health problems. However, research suggests that young people are generally aware of the link between cardiovascular disease and associated behavioural risk factors, especially smoking.

Perceived benefits and self-efficacy were assessed in relation to behavioural risk factors, Participants indicated the degree to which they believed not smoking reduced their chances of developing health problems. Responses were made on a 10-point scale from 'no, not at all' to 'yes, very much'. Respondents also estimated the extent to which they thought they could avoid smoking cigarettes if they wanted to. Answers were also made on a 10-point scale from 'no I don't' to 'yes, I do'. To assess behavioural intention, participants indicated on another 10-point scale the extent to which they intended to smoke cigarettes during the next two months ('no, I don't' to 'yes, I do').

Evidence suggests that young people more closely associate cigarette use with lung cancer than with chronic heart disease.

So what did we find? Just over a third of respondents (35%) had never smoked, 19% had tried smoking once, 17% used to smoke, 8% were occasional smokers, and 21% were regular smokers. Preliminary analyses showed that demographic factors and past behaviour were significantly associated with intentions measures across smoking. Health beliefs about smoking also showed significant correlations with intentions, with perceived self-efficacy and benefits showing the strongest associations.

We also tried to identify important predictor variables. Age and measures of past behaviour predicted intended cigarette use, with older age, occasional smoking, regular smoking, and having smoked in the past, relating to stronger intentions to smoke. The addition of cognitive factors revealed self-efficacy and severity of cardiovascular disease as important factors. Lower perceived ability to avoid smoking and higher perceived severity of cardiovascular illness predicted stronger intentions to smoke. Age, occasional smoking, regular smoking and having smoked previously remained significant, but no other cognitions were salient.

So what did our results tell us? Prevalence patterns for smoking were roughly comparable to trends reported in other surveys. Just over a third of our respondents had never smoked while just over one in five were regular smokers. Our study demonstrated perceived self-efficacy consistently predicted smoking intentions, and that severity estimates were predictive of smoking intentions. Our study extends previous research on adults by assessing the role of cognitive factors of smoking behaviour in adolescents. The consistent association between self-efficacy and intentions endorses previous reviews of empirical tests of this construct.

The significance of self-efficacy suggests a diminished role for perceived benefits of smoking, reflecting the view of outcome expectancies as antecedent cognitions which serve to stimulate self-efficacy considerations. Previous experimental research has found that information about health benefits affects intentions only under conditions of low self-esteem. While cross-sectional correlations do not determine directional inferences, the relationship of perceived severity of CHD with smoking intentions suggest that adolescents based their risk perceptions on future risk behaviour.

Interestingly, perceptions of vulnerability were unrelated to intentions. Previous studies have reported positive associations between adolescents' perceived vulnerability to lung cancer and cigarette smoking. Evidence suggests that young people more closely associate cigarette use with lung cancer than with CHD. This seems to be reflected in risk perception-intention relations, and mirrors national statistics showing that, while 90% of all lung cancer mortality is attributable to cigarette use, only 18% and 11% of deaths from CHD and stroke, respectively, are connected with smoking. In short, it appears that although smoking increases the likelihood of cardiovascular disease the threat is simply too remote to be. Nevertheless, adolescents anticipating future

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risk behaviour expect the consequences, no matter how improbable, to be dire. Demographic factors were also predictive of intentions, with older respondents being more prone to smoke than younger teenagers.

In conclusion, our findings demonstrate the predictive profile of cognitive factors in relation to smoking and cardiovascular risk behaviours in adolescents.

Health promotion initiatives need to be behaviour-specific to maximise their effectiveness. Today's adolescents continue to be at risk for cardiovascular disease later in life, and need assistance in avoiding cigarettes. Improving self-efficacy beliefs may encourage healthier habits although, considering the importance of past behaviour, efforts to discourage smoking ought to target younger adolescents before they