

Relations between self-generated positive and negative expected smoking outcomes and smoking behavior: An exploratory study among adolescents

Anderson CB; Pollak KI; Wetter DW. *Psychology of Addictive Behaviors* 16(3): 196-204, 2002. (58 refs.) The expected outcomes of drug use figure prominently in models of drug motivation. This report presents the relations between self-generated expected outcomes of smoking and smoking behavior in 674 adolescents. Expected outcomes of smoking were related to current smoking, experimentation, and susceptibility among never-smokers, even after controlling for key correlates of smoking behavior, including gender, grade, ethnicity, and peer smoking. Although more negative than positive smoking outcomes were accessible from memory, more positive than negative expected outcomes were correlated with smoking behavior. Both the content and number of self-generated expected outcomes provided unique associative information. In sum, greater elaboration of smoking-related memory networks, as well as the specific content of those networks, appear to be associated with smoking behavior. Copyright 2002, American Psychological Association.

Adolescents' acquisition of cigarettes through noncommercial sources.

Castrucci BC; Gerlach KK; Kaufman NJ; Orleans CT. *Journal of Adolescent Health* 31(4): 322-326, 2002. (19 refs.)

Purpose: To examine the association between demographic and smoking behavior variables and the likelihood of acquiring cigarettes through non-commercial sources. Methods: The Robert Wood Johnson Foundation's 1996 National Study of Tobacco Price Sensitivity, Behavior, and Attitudes among Teenagers and Young Adults was the data source in this analysis. Respondents were high school students (grades 9 through 12) ages 13 to 19 years. The sample sizes, respondent selection procedures, and weighting procedures were designed to develop national estimates of adolescent smoking behaviors and attitudes. The questionnaire, modeled on previous surveys and input from leading tobacco control experts, was self-administered. Logistic regression was used to model the independent effects of each variable on the outcome while controlling for the influence of all other variables in the model. Results: An inverse relationship was found between age and the likelihood of acquiring cigarettes through noncommercial sources. Females were 58%

more likely to acquire cigarettes through noncommercial sources than were males. There were no differences among adolescents of different racial/ethnic groups in acquisition through noncommercial sources. Those who believed that cigarettes were difficult to acquire were more likely to obtain cigarettes by noncommercial means. Conclusions: Although point-of-sale restrictions have been a focal point of tobacco control legislation, these data suggest that younger smokers and those who view commercial purchase to be difficult are not using commercial sources. Therefore, more comprehensive approaches to limiting access may be required to address all sources of adolescents' acquisition. The proliferation of point-of-sale restrictions may have contributed to increases in noncommercial acquisition by creating the impression that cigarettes were more difficult to purchase. This reinforces the need for educational programs, interventions, and policies that more effectively target noncommercial sources of cigarettes.

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Examining the effects of academic beliefs and behaviors on changes in substance use among urban adolescents.

Bryant AL; Zimmerman MA. *Journal of Educational Psychology* 94(3): 621-637, 2002. (81 refs.)

This study examines substance use between 10th and 12th grades in a predominantly African American sample of 785 adolescents from an urban environment. Psychological distress, academic factors, and perceptions of parents and peers are used to explain 10th-grade substance use and changes in use using hierarchical linear modeling. Results indicate that low achievement and motivation, high truancy, and perceptions of peer substance use are associated with higher 10th-grade substance use. Growth curve analyses reveal that adolescents who perceive negative school attitudes among peers are more likely to increase their cigarette and marijuana use. Among high-achieving students, low motivation is a risk factor for increased cigarette use. Implications focused on enhancing motivation, reducing truancy, and understanding adolescents' perceptions of their peers. Copyright 2002, American Psychological Association.

Prior cigarette smoking initiation predicting current alcohol use: Evidence for a gateway drug effect among California adolescents from eleven ethnic groups.

Chen XG; Unger JB; Palmer P; Weiner MD; Johnson CA; Wong MM; Austin G. *Addictive Behaviors* 27(5): 799-817, 2002. (70 refs.)

Gateway drug theory provides a useful framework for understanding drug use among adolescent populations.

Studies have reported a gateway effect of cigarette smoking on alcohol use among adolescents; but there is a lack of knowledge regarding ethnic differences in this effect. Using data from a cross-sectional survey in California, 11,239 subjects (46.3% male) from 31 high schools with at least 25% of total enrollment of Asian and at least 200 students with Asian ancestry entered the analysis. Among them, 6016 were ninth graders (mean age=14.3, S.D.=0.49) and 5223 were twelfth graders (mean age=17.3, S.D.=0.54). After controlling for seven variables, the risk ratio of last 30-day alcohol use among prior smoking initiators vs. noninitiators was 5.82 for non-Hispanic Whites, 4.25 for Blacks, 8.37 for Asian Indians, 3.99 for Chinese, 3.45 for Filipinos, 3.48 for Japanese, 5.41 for Koreans, 7.57 for Vietnamese, 4.02 for Mexicans, 2.64 for South/Central Americans, and 5.95 for adolescents with multiethnic background. Comparison of the 11 ethnic groups indicated that adolescents from different ethnic groups but with similar cultural background had a similar risk level; such pattern existed after controlling for acculturation, parents' monitoring, and school performance. The risk ratio did not differ by gender and grade. There is an association between prior cigarette smoking initiation and current alcohol use among adolescents from different ethnic backgrounds, including those of multiethnicity, which supports the generalizability of gateway drug effect of cigarette smoking on alcohol use. Studies should be conducted to investigate factors attributable to the ethnic variations of this association. Copyright 2002, Elsevier Science Ltd.

In conversation: High school students talk to students about tobacco use and prevention strategies.

Clark VLP; Miller DL; Creswell JW; McVea K; McEntarffer R; Harter LM et al. *Qualitative Health Research* 12(9): 1264-1283, 2002

The purpose of this multi-site qualitative study is to explore how adolescents talk about tobacco use. Sixty-six students in four high schools became co-researchers and led focus group interviews with 205 fellow students. From the interviews, the authors develop a story line that reports how adolescents begin smoking, how smoking becomes a pervasive influence, how attitudes form about smoking, what it means to be a smoker, and, ultimately, student suggestions for tobacco use prevention. Embedded within this story line are complex questions and contradictions. We explore whether peers really are influential, if the media is important, whether smoking is a matter of personal choice, if schools actually promote tobacco use, and whether adolescents can quit smoking. Copyright 2002, Sage Publications.

Tobacco point of sale advertising increases positive brand user imagery.

Donovan RJ; Jancey J; Jones S. *Tobacco Control* 11(3): 191-194, 2002. (30 refs.)

Objectives: To determine the potential impact of point of sale advertising on adolescents so as to inform changes to the Tobacco Control Act. Design: Participants were randomly assigned to one of two conditions. In the control condition, students were exposed to a photograph of a packet of cigarettes; in the intervention condition, students were exposed to an ad for cigarettes, typical of point of sale advertising posters. All students then rated the brand user on a set of 12 bipolar adjectives. Two brands were used in the study: Benson & Hedges, and Marlboro. Subjects: One hundred year (grade) 6 and 7 students (age range 10-12 years), from four Western Australian metropolitan primary schools, participated in the study. Results: In a majority of the brand user descriptions, the cigarette advertisements increased brand user imagery in a positive way, especially for Benson & Hedges. For example, participants viewing the Benson & Hedges advertisement, as distinct from those viewing the Benson & Hedges pack only, were more likely to describe the Benson & Hedges user as relaxed, interesting, cool, rich, adventurous, and classy. Relative to the Marlboro pack only, the Marlboro ad increased positive perceptions of the Marlboro user on adventurous, interesting, and relaxed. Conclusions: The results presented here support restrictions being placed on advertising at point of sale, since such ads have the potential to increase positive brand user imagery directly in the situation where a product purchase can take place, and hence the potential to increase the likelihood of impulse purchasing. Copyright 2002, BMJ Publishing Group.

Comparison of psychosocial influences on substance use in adolescents: Implications for prevention programming.

Fearnow-Kenney M; Hansen WB; McNeal RB Jr. *Journal of Child & Adolescent Substance Abuse* 11(4): 1-24, 2002. (43 refs.)

This paper compares the potential for twelve psychosocial variables to act as change agents (mediators) in substance use prevention programs. A sample (N = 4,412) of students in grades six through eleven were surveyed during two consecutive years of a longitudinal study. A five-factor model of psychosocial influences was used to predict subsequent alcohol, cigarette, and marijuana use. Structural equation modeling revealed that a factor labeled Drug Attitudes most consistently related to decreased future use of all three substances. The four variables composing this factor were beliefs about consequences, normative beliefs, lifestyle incongruence, and commitment. In several cases, current use mediated the relationship between a mediator factor and

future use. Relationships between psychosocial factors and substance use varied little across age groups (middle school vs. high school students). Some effects were substance-specific. Implications for substance use prevention programming are discussed.

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Differentiating stages of smoking intensity among adolescents: Stage-specific psychological and social influences.

Lloyd-Richardson EE; Papandonatos G; Kazura A; Stanton C; Niaura R. *Journal of Consulting and Clinical Psychology* 70(4): 998-1009, 2002. (64 refs.)

Researchers' understanding of the impact of sociocultural and psychological factors on the various stages of adolescent smoking uptake is limited. Using national data, the authors examined transitions across smoking stages among adolescents (N = 20,747) as a function of interpersonal, familial, and peer domains. Peer smoking was particularly influential on differentiating regular smoking, whereas alcohol use was most influential on earlier smoking. Although significant, depression and delinquency were attenuated in the context of other variables. Higher school grade was more likely to differentiate regular smoking from earlier smoking stages, whereas African American ethnicity and connectedness to school and family were protective of smoking initiation. Results tend support for an interactional approach to adolescent smoking, with implications for stage-matched prevention and intervention applications.

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Bidis - hand-rolled, Indian cigarettes: Effects on physiological, biochemical and subjective measures.

Malson JL; Pickworth WB. *Pharmacology, Biochemistry and Behavior* 72(1-2): 443-447, 2002. (28 refs.)

Bidis, hand-rolled cigarettes imported from India, have become increasingly popular among US teenagers. These cigarettes are perceived as a safer, more natural alternative to conventional cigarette smoking. The present study was conducted to determine whether the acute effects of bidis and conventional cigarettes are similar. Undergraduate cigarette smokers with a history of bidi smoking were tested in two experimental sessions, using a within-subject design. Subjects smoked both a bidi and a conventional cigarette. Physiological and biochemical measures, subjective evaluations of smoking behavior characteristics were obtained before, during, and after smoking each experimental cigarette. Although time to smoke and puffs per cigarette were significantly higher after the

bidi, physiological and biochemical effects of bidi smoking were similar to those of smoking conventional cigarettes. Bidis were rated less satisfying than the conventional cigarette. However, there were no significant differences between the cigarettes in other subjective measures. Our results do not support the belief that bidis are a safe alternative to conventional cigarettes. Furthermore, bidi smoking, like conventional cigarette smoking, may lead to nicotine dependence.

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Family relationships and adolescent cigarette smoking: Results from a national longitudinal survey.

Miller TQ; Volk RJ. *Journal of Drug Issues* 32(3): 945-972, 2002. (26 refs.)

The current study used national survey data to identify which aspects of family relationships are predictive of experimental and daily cigarette smoking. A multiwave longitudinal survey periodically assessed adolescents aged 11 to 17 (N = 1,725) over a seven year follow-up period. Parent interviewers were obtained at the initial screening. Nineteen indicators of family relationships were used based on parent and child interviews. Several indicators of smoking were used including first time cigarette smoking, a nine-point scale of intensity of experimentation with cigarettes, an indicator of daily smoking, and an indicator of smoking at least five or more cigarettes per day. Logistic and multiple regression analyses that controlled for ethnicity, gender, and socioeconomic status found that family relationships were only predictive for subjects under the age of 18. Significant predictors were (a) indices of parental attachment, (b) indices of time spent with one's family, (c) having older siblings who smoke, (d) family structure, (e) family stress, (g) parental negative labeling of the child, and (h) parental leniency towards delinquent acts. We conclude that several aspects of family relationships are important predictors of adolescent cigarette smoking and predict daily smoking more strongly than initial smoking. Copyright 2002, Journal of Drug Issues, Inc.

Is smoking a communicable disease? Effect of exposure to ever smokers in school tutor groups on the risk of incident smoking in the first year of secondary school.

Molyneux A; Lewis S; Antoniak M; Hubbard R; McNeill A; Godfrey C et al. *Tobacco Control* 11(3): 241-245, 2002. (28 refs.)

Objective: To estimate the effect of joining a first year secondary school tutor group with a high prevalence of ever smoking on the risk of incident smoking in school children. Design: Cross-sectional questionnaire survey. Setting: 10 randomly selected secondary schools in Nottinghamshire, UK. Participants: Pupils in years (grades) 7-11 (aged 11-16 years). Main outcome measure: Incident smoking in the first

year of secondary education, defined as pupils who reported smoking their first cigarette during year 7. Results: Of 6522 pupils (75% of those eligible) who completed the questionnaire, 17% were current smokers and 49% had ever smoked, of whom 23% had started smoking in year 7. Incident smoking in year 7 was more common in girls, in children with parents or siblings who smoke, and in more deprived children, and was independently increased in relation to the proportion of ever smokers in the year 7 tutor group joined by the child (adjusted odds ratio of incident smoking for a child joining a year 7 tutor group in the highest relative to the lowest quartile of ever smoking prevalence 1.45, 95% confidence interval (CI) 1.11 to 1.89). Exposure to ever smokers in year 7 tutor groups also accounted for most of the increased risk of incident smoking associated with socioeconomic deprivation. Conclusions: The risk of incident smoking in children entering secondary education is independently increased by exposure to other ever smokers in school tutor groups. Incident smoking in adolescents is thus to some extent a communicable disorder, and may be partly preventable by policies that reduce exposure to smoking at school. Copyright 2002, BMJ Publishing Group.

Does tobacco marketing undermine the influence of recommended parenting in discouraging adolescents from smoking?

Pierce JP; Distefan JM; Jackson C; White MM; Gilpin EA. *American Journal of Preventive Medicine* 23(2): 73-81, 2002. (37 refs.)

Objective: The tobacco industry contends that parenting practices, not marketing practices, are critical to youth smoking. Our objective was to examine whether tobacco-industry marketing practices undermine the protective effect of recommended authoritative parenting against adolescent smoking. Design and setting: Receptivity to tobacco advertising and promotions was assessed in 1996 from a representative sample of California adolescent never-smokers aged 12 to 14 years. A follow-up survey of 1641 of these adolescents was conducted in 1999 that included measures of the key components of authoritative parenting: parental responsiveness, monitoring, and limit setting. Main outcome measure: Smoking initiation in adolescents. Results: Adolescents in families with more-authoritative parents were half as likely to smoke by follow-up as adolescents in families with less-authoritative parents (20% vs 41%, $p < 0.0001$). In families with more-authoritative parents, adolescents who were highly receptive to tobacco-industry advertising and promotions were significantly more likely to smoke (odds ratio=3.52, 95% confidence interval = 1.10- 11.23),

compared to those who were minimally receptive. This effect was not significant in adolescents in families with less-authoritative parents. The overall attributable risk (adjusted for exposure to peer smokers) of smoking from tobacco-industry advertising and promotions was 25%. However, an estimated 40% of adolescent smoking in families with more-authoritative parents was attributable to tobacco-industry advertising and promotions; this was five times the attributable risk seen in families with less-authoritative parents (8%). Conclusion: The promotion of smoking by the tobacco industry appears to undermine the capability of authoritative parenting to prevent adolescents from starting to smoke.

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Predicting initiation of smoking in adolescents: Evidence for integrating the stages of change and susceptibility to smoking constructs.

Prokhorov AV; de Moor CA; Hudmon KS; Hu SH; Kelder SH; Gritz ER. *Addictive Behaviors* 27(5): 697-712, 2002. (24 refs.)

We examined the concurrent and predictive validity of stages of change and susceptibility to smoking with respect to smoking onset among adolescents. We also sought to determine whether concurrent use of the two constructs, in the form of an integrated stage/susceptibility index, would predict adolescent smoking acquisition better than either construct alone. Data were examined from two study populations: a prospective study of 1124 elementary- school through senior-high-school students and a cross-sectional study of 5624 high-school students. Both constructs demonstrated good concurrent and predictive validity. A measure integrating the stages of smoking acquisition and susceptibility to smoking constructs was created by dividing the precontemplation group as a function of susceptibility. This new classification system yielded better concurrent and predictive validity than did either stage of smoking acquisition or susceptibility to smoking alone.

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What motivates adolescent smokers to make a quit attempt?

Riedel BW; Robinson LA; Klesges RC; McLain-Allen B. *Drug and Alcohol Dependence* 68(2): 167-174, 2002. (28 refs.)

A sample of 120 adolescent smokers (80 males, 40 females), most of whom were referred by school personnel after being caught with cigarettes at school ($n = 113$), reported motivations for making a quit attempt during a smoking cessation project. Most students ($n = 76$) were randomly assigned to a four session cessation program that included discussion of a number of motivational topics, and the remaining students were assigned to a self-help control

group that received a pamphlet recommending strategies for quitting. Reported motivations for quitting did not differ significantly across the two treatment conditions. Concern about future health (73%) was the most popular reason given for making a quit attempt, followed by concern about current health (65%). Concerns about physical appearance (59%), the cost of cigarettes (52%), and athletic performance (51%) were also listed as motivators by a majority of the participants. Future health was the most popular choice for the most important motivator to quit (35%). Females and participants with fewer best friends smoking were more likely to report that the prevalence of non-smoking teenagers, the relationship between smoking and weight, and physical appearance concerns were motivators to quit. African Americans were more likely than Whites to list current health concern as the most important motivator. Copyright 2002, Elsevier Scientific Publishers Ireland, Ltd.

Struggling to understand: The experience of nonsmoking parents with adolescents who smoke.

Small SP; Brennan-Hunter AL; Best DG; Solberg SM. *Qualitative Health Research* 12(9): 1202-1219, 2002

Smoking among adolescents is a major public health concern. Most parents would not want their children engaged in this risk-taking behavior. Although a majority of parents of smokers are themselves smokers, many are nonsmokers. The purpose of this grounded theory study was to understand what nonsmoking parents experience due to their adolescent children's smoking behavior. The purposive sample consisted of 25 parents. The interview data generated the theory that nonsmoking parents struggle to understand their adolescents' smoking. They experienced four stages: discovering the smoking, facing the problem, reflecting, and waiting it out. Their experience can be examined from a stress paradigm. Programs are needed that provide parents with the knowledge and skills required for effective prevention and intervention strategies. Copyright 2002, Sage Publications.

A longitudinal study of the effects of tobacco and cannabis exposure on lung function in young adults.

Taylor DR; Fergusson DM; Milne BJ; Horwood LJ; Moffitt TE; Sears MR; Poulton R. *Addiction* 97(8): 1055-1061, 2002. (21 refs.)

Aim To assess the possible effects of tobacco and cannabis smoking on lung function in young adults between the ages of 18 and 26. Setting and participants A group of over 900 young adults derived from a birth cohort of 1037 subjects born in Dunedin, New Zealand in 1972/73 were studied at age 18, 21 and 26 years.

Measurements Cannabis and tobacco smoking were documented at each age using a standardized interview. Lung function, as measured by the forced expiratory volume in one second/vital capacity (FEV1/VC) ratio, was obtained by simple spirometry. A fixed effects regression model was used to analyse the data to take account of confounding factors. Findings When the sample was stratified for cumulative use, there was evidence of a linear relationship between cannabis use and FEV1/VC ($P < 0.05$). In the absence of adjusting for other variables, increasing cannabis use over time was associated with a decline in FEV1/VC with time; the mean FEV1/VC among subjects using cannabis on 900 or more occasions was 7.2%, 2.6% and 5.0% less than non-users at ages 18, 21 and 26, respectively. After controlling for potential confounding factors (age, tobacco smoking and weight) the negative effect of cumulative cannabis use on mean FEV1/VC was only marginally significant ($P < 0.09$). Age ($P < 0.001$), cigarette smoking ($P < 0.05$) and weight ($P < 0.001$) were all significant predictors of FEV1/VC. Cannabis use and daily cigarette smoking acted additively to influence FEV1/VC. Conclusions Longitudinal observations over 8 years in young adults reveal-ed a dose-dependent relationship between cumulative cannabis consumption and decline in FEV1/VC. However, when confounders were accounted for the effect was reduced and was only marginally significant, but given the limited time frame over which observations were made, the trend suggests that continued cannabis smoking has the potential to result in clinically important impairment of lung function. Copyright 2002, Society for the Study of Addiction to Alcohol and Other Drugs.

Influences on adolescent smoking behaviour: Siblings' smoking and norms in the social environment do matter.

von Bothmer MIK; Mattsson B; Fridlund B. *Health & Social Care in the Community* 10(4): 213-220, 2002. (33 refs.)

The prevalence of smoking among adolescents has stopped declining in spite of all preventative efforts. There is a need for further knowledge and understanding of why adolescents initiate and continue tobacco use. The aim of the present study was to investigate important facets of adolescents' tobacco use, such as their reasons for smoking, and their smoking patterns in relation to smoking habits in the family and the social environment. This study was part of a larger one that used a descriptive, cross-sectional design with questionnaires to 216 pupils in grade 5 (11 years of age) and 225 pupils in grade 8 (14 years of age) in a south-western county in Sweden. Thirteen per cent of the pupils in grade 8 were regular tobacco users. Smoking habits by relatives, especially siblings, influenced tobacco use by adolescents. An association was found between smoking by adolescents and mother's employment, and between the smoking status of girls and family status. The pupils valued their parents'

opinions, and wanted parents and other adults to take a clear stand against tobacco. The present study reinforces the importance of norm setting by parents and siblings for adolescents' tobacco use. Preventive measures may be more appropriately directed towards those with the highest risks, i.e. pupils with smoking siblings and smoking peers. Copyright 2002, Blackwell Scientific Publications.

Psychosocial correlates of alternate tobacco product use during early adolescence.

Tercyak KP; Audrain J. *Preventive Medicine* 35(2): 193-198, 2002. (31 refs.)

Background. The objective was to assess psychosocial correlates of alternate tobacco product (chew/snuff, cigar, pipe, bidi, kretek) use. Methods. Measures of alternate tobacco product use, cigarette smoking, environmental smoking exposure, and depression were included in a school-based self-report survey completed by 1,107 ninth graders. Results. The current (past 30 days) use rate for one or more alternate tobacco products was 8.3% and the current use rate for cigarettes was 11%; 45% of current cigarette smokers also used alternate tobacco products. After controlling for demographic factors and current cigarette smoking, adolescents exposed to peers who smoke and those with greater depressive symptoms were two to three times more likely to currently use an alternate tobacco product

than adolescents without exposure to peer smoking and those with lesser depressive symptoms. Conclusions. Social and psychological associations with alternate tobacco product use should be further evaluated as this information could be helpful in developing anti-tobacco messages targeted to high-risk youth..

Intraclass correlation among measures related to cigarette use by adolescents: Estimates from an urban and largely African American cohort.

Murray DM; Alfano CM; Zbikowski SM; Padgett LS; Robinson LA; Klesges R. *Addictive Behaviors* 27(4): 509-527, 2002. (28 refs.)

This paper presents the first estimates of school-level intraclass correlation (ICC) for smoking-related variables from an urban and largely African American population. Seventh graders (n = 6967) from 39 middle schools in Memphis, TN, were measured at baseline in 1994 and annually through 1997. Mixed model regression methods were used to estimate variance components for school and residual error. School-level ICCs were large enough, if ignored, to substantially inflate the Type I error rate in an analysis of treatment effects. We show how those correlations can be reduced using regression adjustments and used to determine sample size for future school-based smoking prevention studies. Copyright 2002, Elsevier Science Ltd. Copyright 2002, Academic Press, Inc.
