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ABSTRACT

This study investigated whether or not high or low risk youths differed on previous items discriminative of problem-prone youth, particularly problem-prone attitudes and preferences, and social and environmental smoking. In addition, the study examined whether high or low use youths differed on items related to a health orientation including health risk factors, sense of coherence items, and health value items. A group identification approach was used to obtain a sample of high risk youth among 1,200 high school students from rural and urban Southern California. A total of 82 youths identified themselves as belonging to a high risk group. High school-aged high risk youth showed the problem-prone distinguishing characteristics of relatively high risk-taking, noninvolvement with sports, and greater use of cigarettes and alcohol. The youths also showed greater socio-environmental use of cigarettes, a greater likelihood to violate norms to protect their friends, greater self-reported family conflict, and greater likelihood to use revenge or have a party as coping strategies. These youths were somewhat lower on risk factor items, sense of coherence items, and health values. However, aside from three of the risk factor items (likelihood of becoming a smoker, likelihood of becoming a drinker, and getting exercise), the youths did not differ from the other groups on the health-related items. Consideration of the social context of high risk youths along with the value they place on their health seems of major importance to decrease the likelihood that they will become regular smokers. (28 references) (LLL)

Identification of Which High Risk Youth Smoke Cigarettes Regularly

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Abstract

Youth who identify themselves as members of particular adolescent groups (e.g., druggies), report having friends who smoke cigarettes and use other drugs, tend to be low in self-esteem, are high in risktaking preference, and are noninvolved with school. These youth are at highest risk for adult smoking. Still, at the high school level only 50% of these high risk youth are weekly cigarette smokers. Perhaps, variables that identify those high risk youth who are or are not weekly smokers are of etiological value or indicate a need for novel prevention education strategies. The present study used a group identification approach to obtain a sample of high risk youth among 1200 high school-aged subjects from rural and urban Southern California. A total of 82 youths identified themselves as belonging to a high risk group. These youth, although composing only 7% of the total sample, accounted for 21% of all weekly cigarette smokers. Controlling for alpha inflation of using multiple tests, light smokers among this group differed from weekly (or greater) users in two respects--by reporting a lesser likelihood of having a close friend who smoked, as in previous work, and by reporting placing a higher value on health. Apparently, a health values formulation is of importance in describing those adolescents in high risk groups who are most likely to be regular users. Development of prevention strategies to place an increased importance on health values is discussed.

Identifying factors predictive of adolescent cigarette smoking has been an important avenue of research for the last several years because those youth who smoke also tend to be involved in other risky behavior (Donovan & Jessor, 1985), this information reveals potential mediators of successful multicomponent prevention programs (MacKinnon et al., in press; McCaul & Glasgow, 1985), and this information suggests new intervention possibilities (Sussman, 1990). The adolescent peer group plays a major role in the development of teenagers' self-identities and imparts values which encourage experimentation with tobacco products (e.g., Sussman, 1989). Groups of youth who engage in cigarette and other drug use have been reported to be those whose members report general problem-prone feelings and values, including high family conflict and risk-taking preferences (e.g., Jessor, 1984).

Two empirically-based investigations of discrete adolescent groups helped disclose precise information about which groups use tobacco products. Mosbach and Leventhal (1988) and Sussman et al. (1990) examined the relation of cigarette smoking to adolescent peer group identification. Their data indicated that youth who are most likely to use cigarettes are those who hold problem-prone values (whom these authors labelled "dirts"). Dirts primarily were a combination of two self-identified subgroups, "rockers/heavy metalers" and "stoners". They were similar to that type of youth portrayed by problem behavior theory (Jessor, 1984). Across both studies approximately 50% of the dirts (who ranged in grade from 7th to 10th) were weekly smokers, whereas among the other self-identified groups of youth less than 25% were weekly smokers. Over 70% of youth who smoke regularly are likely to become smokers as adults (Chassin, Presson, Sherman, & Edwards, 1990). Clearly, youth who were at highest risk for adult smoking labelled themselves as belonging to discrete groups.

Still, not all youth who identified themselves as dirts were weekly cigarette smokers; 50% smoked cigarettes at a much lower frequency (up to 30% had not even tried cigarettes). At least

two possibilities exist regarding how low use dirts (i.e., those who smoke less than once a week) differ from high use dirts. First, low use dirts simply could rate themselves at lower levels of risk along those same psychosocial dimensions which discriminate them from other groups (as found by Mosbach & Levanthal and Sussman and colleagues). They may report having fewer close friends who use cigarettes, lower risk-taking preference, and so on. If this is the case, then it would be relevant to continue to focus educational efforts on countering normative and informational social influences conducive to using cigarettes (e.g., as described in Sussman, 1989), based on the notion that acquisition-oriented prevention programming is essential to maximize preventive effects (Chassin, Presson, & Sherman, 1985).

Alternatively, some other theoretical constructs could explain these results. Even though social influence-oriented programming may be relevant for the prevention of cigarette smoking among most youth (Glynn, 1989), other programming may need to be considered to deter use among higher risk youth (Newcomb & Bentler, 1989). In particular, intrapersonal factors may become more relevant for those at higher risk for regular substance use. Perceived stress and coping (Wills, 1986) have been found to be important intrapersonal antecedents of tobacco use. Other potentially important intrapersonal variables include those related to global or specific attitudes towards health.

The salutogenic paradigm (Antonovsky, 1979) provides one global-type health-related concept, referred to as "sense of coherence (SOC)". Antonovsky asserts that SOC is a general attitude that which discriminates between those at risk who do or do not engage in health threatening behavior or suffer a disease consequence. SOC is composed of three elements: (1) comprehensibility (stimuli that confront a person make cognitive sense), (2) manageability (the person has the resources needed to meet demands posed by environmental stimuli), and (3) meaningfulness (that there are aspects of life worthy of commitment). Persons high in SOC report

that their world makes cognitive sense, can be managed, and is worth some commitment. High risk individuals may be less likely to smoke if they exhibit this healthy general attitude.

Lau, Hartman, & Ware (1986) describe a second more specific intrapersonal concept relevant to understanding why some high risk youth may or may not take healthy actions: the value placed on health. If the person places a greater importance on immediate pleasure versus other values such as wisdom (Rokeach's work, 1973; Schwartz & Inbar-Saban, 1988), or believes that good health is only of minor importance in a happy life, SOC or some other construct (such as internal locus of control) will be a relatively less important determinant of health-directed action. Conversely, the higher the value placed on health the greater will be the pursuit of healthy activities. The value placed on health is not uniformly high among children (Bush & Iannotti, 1985, p. 61) or adults (Lau, Hartman, & Ware, 1986), as some researchers might assume. Thus, this specific attitude of placing a value on health may discriminate between those who are or are not weekly smokers.

Lack of value place on one's health is likely tc be associated with a tendency to neglect one's health. Youth who smoke may fail to achieve good health practices such as those practices measured by the Human Population Laboratory (Eelloc & Breslow, 1972; Matarazzo, 1984). Specifically, youth who smoke are also likely to drink alcohol, not exercise, not sleep well, not eat breakfast, keep a poor diet and feel stressed.

The present study investigated whether or not high or low risk dirts differed on previous items discriminative of problem-prone youth, particularly problem-prone attitudes and preferences, and social environmental smoking. In addition, the present study examined whether high or low use dirts differed on items related to a health orientation including health risk factors, SOC items, and health value items.

Method

Subjects

The sample consisted of 1245 high-school students in grades 9 through 12. The subjects were 52% male, 59% White, 21% Hispanic, and 20% other ethnicities. Students were sampled in equal numbers from 12 high schools in Southern California. One classroom of students per grade was randomly selected from each school to be in the survey. A total of 82% of those enrolled were present on the day of the evaluation, which is equivalent to other school-based studies.

Procedure

Students were asked to complete voluntarily an anonymous health questionnaire. The anonymity of responses was emphasized in verbal instructions to the students. Previous research (e.g., Murray & Perry, 1987) has shown that adolescents can be expected to provide valid self-reports of smoking when their anonymity is fully guarenteed.

Questionnaire Items

The questionnaire consisted of seventeen pages, which were completed by 85% of the sample. The items of interest included basic demographic and behavioral information: gender, age, parents' socioeconomic status (defined by two 6-point level of education scales, one regarding the father and one regarding the mother), and current use of cigarettes (Stacy et al., 1990b). Further items of interest which previously have been shown to distinquish dirts from the other groups included the group identification item (described below), and several psychosocial items including involvement in sports (3 item index coded as "1" (at least one category checked) or "0" (no category checked), requesting the subject to indicate on a checklist format activity participation at school such as team sports, and outside of school such as team or individual sports), risk-taking preferences (an index consisting of the mean of 2 4-point rating scales; including "I enjoy doing things people say should not be done" ("strongly agree" to "strongly disagree") and "It is worth getting in trouble

to have fun" ("strongly agree" to "strongly disagree"; inter-item r = .55)", and self-esteem (Rosenberg's 10-item scale of self-esteem (Cronbach's alpha = .85; Rosenberg, 1972). An additional item assessed socioenvironmental smoking (requesting the subject to indicate on a checklist format which persons they knew who currently smoke, including their father, mother, sibling, other relative, close friend, and other adult). Most of these items are summarized in Sussman et al. (1990).

Other psychosocial items which may discriminate dirts from other groups, evaluated in the present study, included two coping strategy items (two binary indicators taken from categories used by Wills, 1986; "When I have a problem,..": "I get revenge" or "I party"), peer commitment items (two items: "If you found that your group of friends was leading you into trouble, would you still hang around with them?" ("yes" or "no") and "If your group of friends got into trouble, would you lie to protect them?" ("yes" or "no") and family conflict (three items: "My family looks for things to nag me about" ("true" or "false"), "My family doesn't understand me" ("true" or "false"), and "I have a lot of arguments with my family" ("true" or "false").

Finally, a third set of health-related items were included to explore potential differences between dirts of high and low use rates. These included risk factor items (seven binary indicators adapted for adolescents based on Belloc & Breslow, 1972), sense of coherence items (three binary items based on Antonovsky, 1979), and health value items (two items adapted from Lau, Hartman, & Ware, 1986). All health-related items are shown in Table 1.

Group categories and description.

The group categories were created by using the following procedure. Group names previously were identified by youth as an open-ended item (Sussman et al., 1990). The 21 most popular responses, which accounted for approximately 90% of all group names mentioned, were retained for use as a multiple choice item. Students were asked "People often hang out in different groups at school. Please choose the one group below which most closely matches the group you

belong to. (Check only one.)" The categories were recoded to conform to a five-group typology based on Brown & Lohr (1986), Mosbach & Levanthal (1989), and Sussman et al. (1990). Thus, several group labels included multiple descriptors (e.g., the general group label "dirts" was composed of "stoners", "druggies" and "burnouts"). Two additional categories were included: "Other" and "I am not part of any group." Raters are consistent on coding these categories into the five-group typology and show 93% agreement when coding open-ended responses into the same five categories: hot-shots, regulars, jocks, dirts, and skaters.

Analysis

First, five group identification categories were created as described in the previous section. Next, dirts were compared with other groups on demographic variables including gender, ethnic status, and educational status of father and mother; psychosocial variables including self-esteem, sports participation, and risktaking; and behavioral variables including trying cigarettes and alcohol, and weekly use of cigarettes and alcohol, as has been accomplished in previous studies. The data also was examined to compare the dirts with the other groups on additional variables: (a) deviancy-type items including coping responses to party or get revenge, peer commitment, and family conflict; (b) socioenvironmental smoking; and (c) health-related items, including the seven risk factors, SOC, and health values. This set of analyses were either chi-square tests or logistic regression tests (predicting group) using CATMOD (SAS, 1985) followed by LSD t-test comparisons of the dirts with the other groups. To control for the overall alpha inflation of multiple tests the Bonferroni Multistage Procedure was used. The alpha level of .05 was divided by the number of tests completed to provide an overall alpha level at each stage of the procedure. Tests found to meet that overall level would be removed at subsequent stages (Larzelere & Mulaik, 1977). A total of 36 analyses were calculated comparing the groups on five sets of variables (4 demographic, 7 "previous" psychosocial, 7 "additional" psychosocial, 6 socio-environmental, and 12 health-related). At the first

stage of the procedure, then, an overall alpha level was set at .001. The final-stage alpha level was set at .003. All analyses meeting this final-stage level are presented in the text with an asterisk (*).

The sample of dirts were retained for the next set of analyses. First, current smoking was binary coded into "1" (weekly smoking or greater) or "0" (less than weekly smoking). Next, a series of chi-square analyses and logistic regression tests followed by LSD t-test comparisons were completed to examine whether or not, among the dirts, which of the above items discriminated weekly smokers (or above) from lower levels of use. A total of 32 tests were calculated comparing high to low use dirts (4 demographic, 3 "previous" psychosocial, 7 "additional" psychosocial, 6 socio-environmental, and 12 health-related). Again, the Bonferroni Multistage Procedure was used. At the first stage the overall alpha level was set at .0015, and the final-stage alpha was .002. All analyses meeting this final-stage level are presented in the text with an asterisk (*).

Finally, logistic regression models were calculated with predictors found to be significant in the univariate models, using the Bonferroni procedure. This comparison was accomplished using CATMOD, and the dependent variable was the binary coded weekly use of cigarettes.

Results

Differences of the Dirts from the other groups.

Demographic variables. The dirts were composed of 82 youths, who were 60% female and 60% white. While gender varied across the groups (from 13% females among the jocks to 62% female among the regulars; chi-square(6) = 142.9, $p < .0001$*), both genders were roughly equally represented from among the dirts. Ethnic status (white/nonwhite) did not vary significantly across the groups (from 53% white among the jocks to 74% white among the skaters; chi-square(6) = 9.39, $p > .1$). An LSD T test (p is set at $< .05$) indicated that reported educational status of father was lower among the regulars (mean = 3.6) than jocks and skaters (means = 3.1; all attending "some college"), but did not differentiate the dirts from the rest of the groups. The logistic regression test

for this item was not significant (chi-square(6)=10.57, p>.1). A second LSD T test indicated that reported educational status of mother was lower among the regulars and dirts (means=3.5 and 3.3, respectively) than hotshots (means=3.1; all attended "some college"), but did not differentiate the dirts meaningfully from the rest of the groups. Here, the logistic regression test was significant (chi-square(6)=19.61, p<.03). Only gender was statistically different given the overall last-stage p value of .003.

Psychosocial variables and behavior. Contrary to most studies, but consistent with Mosbach & Levanthal (1988), dirts were not found to differ significantly in level of self-esteem from any of the groups (mean of dirts=2.28; means varied from 2.28 to 2.35; logistic regression chi-square (6) = 2.93, p>.1). As found in previous studies, the dirts were least likely to be involved in sports (46% compared to 53 to 95%; chi-square(6)=88.9, p<.0001*), most likely to enjoy taking risks (logistic regression chi-square (6) = 44.0, p<.0001*), and most likely to smoke cigarettes.

Dirts were most likely to try cigarettes (88% versus 67 to 82%; chi-square(6)=18.90, p<.002*) and alcohol (along with skaters; 95% versus 85 to 90%; chi-square(6)=19.37, p<.002*), and were most likely to be weekly cigarette smokers (51% versus 8 to 23%; chi-square(6)=76.78, p<.0001*) and alcohol drinkers (71% versus 27 to 48%; chi-square(6)=74.15, p<.0001*).

In addition, regarding preference of coping responses when "I have a problem" dirts were most likely to get revenge (26% versus 9 to 22% (skaters); chi-square(6)=23.84, p<.0001*) or "party" (36% versus 9 to 27%; chi-square(6)=42.08, p<.0001*). Dirts were most likely to report that they would hang around with their friends even if they were being led into trouble (53% versus 12 to 26%; chi-square(6)=32.81, p<.0001*) and would be most likely to lie to protect their friends (82% versus 60 to 71%; chi-square(6)=21.16, p<.001*). Dirts were most likely to report that their family nags them all the time (55% versus 28% to 46%; chi-square(6)=16.38, p<.006), that they have lots of family arguments (56% versus 33 to 47%; chi-square(6)=12.80, p<.03), and that their

family doesn't understand them (56% versus 27 to 37%; chi-square(6)=25.90, p<.0001*).

Socio-environmental smoking. Of six socio-environmental categories (father, mother, sibling, other relative, close friend, and other adult), three differentiated the dirts from the other groups. Dirts were highest regarding mother's smoking (43% versus 25% to 36% among the other groups; chi-square(6)=14.3, p<.03), sibling's smoking (40% versus 15% to 21% among the other groups; chi-square(6)=23.8, p<.001*), and close friend's smoking (68% versus 19% to 50% among the other groups; chi-square(6)=71.2, p<.0001*).

Health-related items. In terms of risk factors, dirts reported being least likely to sleep well (52% versus 67 to 71%; chi-square(6)=9.63, p<.09), least likely to eat breakfast (as were those in the "other" category; 38% versus 41 to 53%; chi-square(6)=10.68, p<.06), worst at handling stress (51% versus 56 to 71%; chi-square(6)=12.63, p<.03), most likely to become a smoker (53% versus 12 to 29%; chi-square(6)=57.12, p<.0001*), most likely to become a heavy drinker (33% versus 7 to 12%; chi-square(6)=55.63, p<.0001*), and least likely to exercise (along with regulars (67% versus 71 to 90%; chi-square(6)=37.73, p<.0001*). They did not differ from other groups in likelihood of eating junk food (72% versus 67 to 79%; chi-square(6)=6.35, p>.1).

Dirts were lowest among the groups to endorse the statement "If you don't have your health, you don't have anything" (50% versus 62 to 72%; chi-square(6)=11.67, p<.04), and "I want to take care of my health now so my future will be good" (83% versus 92 to 97%; chi-square(6)=21.20, p<.001*). Dirts also were lowest in SOC; that the world is comprehensible (51% versus 57 to 75%; chi-square(6)=16.43, p<.006), that the world is manageable (80% versus 88 to 94%; chi-square(6)=10.95, p<.05), and that aspects of the world were worthy of commitment (85% versus 85 to 94%; chi-square(6)=11.13, p<.08).

Differences between high and low use dirts.

Smoking behavior. The mean level of current smoking for the high risk dirts involved

smoking around 10 cigarettes each day with a standard deviation extending from smoking a few times each week to smoking a pack or more per day. The mean response for low use dirts involved smoking none in the last year with a standard deviation extending from never smoked to smoked a few times this year. The distribution spread indicated that for low use dirts, 60% never used, 10% did not use in the last year, and 30% used a few times this year; for high use dirts, 18% used a few times each month, 18% used a few times each week, 10% used a few times most days, 28% used about 10 cigarettes each day, and 28% used a pack of more each day. Thus, high and low use dirts were quite different in the extent of their involvement with tobacco use.

Demographic variables. High use dirts did tend to be female (69% versus 40%; chi-square(1)=6.01, $p<.01$), although parent's education status (logistic regression chi-squares(6)<0.10, $ps>.1$) did not differ between the two groups, and ethnic group differed only marginally between the groups (60% of whites, and 38% of nonwhites, were high use dirts; chi-square(1)=3.5, $p<.06$).

Psychosocial variables. In ways investigated previously, high and low use dirts were quite similar. High or low use status failed to predict risktaking (logistic regression chi-square(1)=1.75, $p>.1$) or self-esteem (logistic regression chi-square(1)=0.04, $p>.1$). High use dirts were less likely to participate in sports (chi-square(1)=5.4, $p<.02$). Of the coping strategies, high and low use dirts did differ significantly. High use dirts were more likely to get revenge (chi-square(1)=4.7, $p<.03$) or "party" (chi-square(1)=3.7, $p<.05$) as coping strategies. High versus low use dirts did not differ regarding the likelihood they would hang around with their friends even if they were being led into trouble (chi-square(1)=1.3, $p>.1$) and be likely to lie to protect their friends (chi-square(1)=0.84, $p>.1$). High and low use dirts were found to differ regarding their reports that their family looks for things to nag them about (chi-square(1)=5.9, $p<.02$), but not regarding whether or not they have lots of family arguments (chi-square(1)=1.6, $p>.1$), and that their family doesn't understand them (chi-square(1)=0.7, $p>.1$). Thus, 6 of 9 psychosocial characteristics distinquishing the dirts

from other groups through individual univariate tests were not found to distinguish high from low use dirts.

Socio-environmental use. Only one of the six categories differentiated high and low use dirts. High use dirts were more likely to have close friends who smoked (chi-square(1) = 11.62, p<.001*).

Health-related items. Table Two presents a summary of the univariate health-related differences between high and low use dirts. Several of these items distinguishrf high from low use dirts. Of the risk factor items, high and low use dirts differed on likelihood of eating breakfast, becomming a regular smoker, becomming a heavy drinker, and engaging in exercise. Of the three sense of coherence items, the low use dirts scored higher on commitment. Low use dirts scored higher on both health value items, "I feel that if I don't have my health I don't really have anything" and "I want to take care of my health now so my future will be good". Only 4 of 32 relations in this set of analyses held up to the Bonferroni procedure: having a close friend who smoked, feeling likely to become a smoker in the future, and the two health values items.

Comparison of socio-environmental versus health-related items. To compare the predictive precedence of socio-environmental versus health-related items, a logistic regression model was calculated using CATMOD, predicting risk status from two variables in a main effects model. Both the health value item, "If I don't have my health, I don't have anything" item (chi-square(1)= 10.33, p<.001) and the cigarette use by close friend item (chi-square(1)= 9.20, p<.002) were significant nonredundant predictors of cigarette use status (intercept chi-square(1) = 0.42, p>.1; residual chi-square(3)=1.86, p>.1). A second model, adding the other health values item did not alter the statistical effects of the other two items on smoking or achieve a significant effect for this item (chi-square(1)=2.49, p>.1).

Discussion

The present study found that, as with previous cohorts, high school-aged high risk youth (the

dirts) show the problem-prone distinguishing characteristics of relatively high risk-taking, noninvolvement with sports, and greater use of cigarettes and alcohol. Consistent with the findings of these previous studies dirts showed greater socio-environmental use of cigarettes (particularly among close friends), a greater likelihood to violate norms to protect their friends, greater self-reported family conflict, and greater likelihood to use revenge or have a party as coping strategies. Not surprisingly, dirts were somewhat lower on risk factor items, SOC, and health values. Even when the Bonferroni Multistage Procedure was used, 17 of 36 findings remained significant, including most of the psychosocial and socio-environmental type items. However, aside from three of the risk factor items (likelihood of becomming a smoker, likelihood of becomming a drinker, and getting exercise), dirts did not differ from the other groups on the health-related items.

Only 50% of all dirts used cigarettes frequently. We explored whether or not the value placed on health and health risk factors would discriminate between those who did and did not smoke regularly. High use dirts were less likely to participate in sports, were more likely to have a close friend who smoked, were more likely to "party" or get revenge as coping strategies, and feel that their family nags them, and were lower on 8 of 12 health-related items. The Bonferroni-adjusted results indicated that, aside from the obvious risk factor item "I will never become a smoker", having a close friend who smoked and the two health value items discriminated between high and low use dirts. In other words, youth who otherwise show the features of being high risk are less likely to be cigarette smokers if they value their health. Given the results of previous studies (e.g., Chassin et al., 1990), they also are less likely to become adult smokers.

Simply placing a greater importance on health over other values appears to be an important difference between high and low use dirts. From a univariate perspective, youth who valued their health also felt a commitment to some aspect of their lives and they were relatively likely to be involved in sports. Perhaps, youth who are committed to activities which demand good health care

are those who will value health. Alternatively, youth who are threatened with poor health may come to value their health more (as suggested by Lau, Hartman, & Ware, 1986). These interpretations suggest that strategies which direct youth either to pursue a healthy lifestyle or avoid an unhealthy lifestyle are those which lead to youth to place relatively greater importance on health. According to Millstein & Irwin (1987), older youth think of health as more of a holistic concept than do younger youth, who view health more simply as the absense of illness. Perhaps, health-directed strategies are more relevant for older youth, including those of high school age.

There are several prevention program implications of these results. First, simply focusing on a usual social influences-oriented prevention program may not succeed in dissuading high risk youth from smoking regularly. Various strategies which directly or indirectly increase the relative importance of the value placed on health probably need to be developed. Possibly, some social influence techniques can be used to create a change in this intrapersonal variable. For example, using the "normative restructuring" method (Sussman, 1989), youth could stand under signs which indicate their opinions of the value of health, for example, and the class may be confronted with the importance the majority places on health. In addition, students may be confronted with the lack of agreement regarding positive social images associated with unhealthy behavior. This activity is likely to represent an informational source of social influence toward a more positive value placed on health.

A second strategy might be to confront youth with their mortality, perhaps through role-play situations, so that they are confronted with a need for placing a greater value on health. Alternatively, trying to enable high risk youth to achieve a commitment to some positive activity may steer them away from smoking and other unhealthy activities. Alternatives programs may serve this goal. Increasing accessibility to health value information in memory may direct youth in a more healthful direction (e.g., Stacy et al., 1990a). A third strategy might be to induce associations

between health values and values high risk youth greatly admire. For example, they may find, through use of a media presentation, that a value placed on health is essential to continue an ongoing "exciting" life (e.g., that rock and roll singers who continue to survive are those who come to value health).

In summary, consideration of the social context of high risk youths along with the value they place on their health seems of major importance to decrease the likelihood that they will become regular smokers. This study suggests that much more research should be completed regarding formation of health values and how such values come to achieve relative importance among other life values including pleasure or success.

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Table One: Health-Related Questionnaire Items

Risk factors
I almost always sleep well at night (true or false)

I almost always eat breakfast (true or false)

I almost always am good at handling stress (true or false)

I will never become a smoker (true or false)

I will never become a heavy drinker (true or false)

I almost never eat lots of french fries, butter, or candy (true or false)

I almost always get lots of exercise (true or false)

Health values
I feel that if I don't have my health I don't really have anything (true or false)

I want to take care of my health now so my future will be good (true or false)

Sense of coherence
I understand my world. When I enter new situations I know that things won't get crazy (true or false)

I can meet the demands in my life, through my own skills, and through the help of my family and friends (true or false)

There are some activities in my life that I am really involved in (true or false)

Table Two: Health-Related Differences Between High and Low Use Dirts

Risk factors	
Sleep	chi-square(1)=0.0,
Breakfast	chi-square(1)=3.7+
Stress	chi-square(1)=1.1,
Smoking	chi-square(1)=56.3***
Drinking	chi-square(1)=5.6*
Eating	chi-square(1)=1.0
Exercise	chi-square(1)=3.5+
Health values	
Health worth	chi-square(1)=15.7***
Health future	chi-square(1)=10.8***
Sense of coherence	
Comprehensibility	chi-square(1)=0.5
Manageability	chi-square(1)=2.1
Commitment	chi-square(1)=4.2*

Note. +p<.06, *p<.05, **p<.001, ***p<.0001