SHORT REPORTS

Group Self-Identification and Adolescent Cigarette Smoking: A 1-Year Prospective Study

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As an extension of previous work, we analyzed the longitudinal relations between group self-identification and adolescent cigarette smoking. The predictive precedence of cigarette smoking and identification with 6 different types of peer groups was examined. Results indicated that 7th-grade group self-identification predicted 8th-grade cigarette smoking, whereas 7th-grade cigarette smoking did not predict 8th-grade group self-identification. Group self-identification also was compared with 7 other psychosocial variables as predictors of smoking 1 year later. The pattern of results suggests that group self-identification is about as good a predictor of smoking as other psychosocial variables, and that group self-identification is more than a mere proxy of other psychosocial variables.

Among the best predictors of adolescent cigarette smoking are peer group influence-related variables. One peer group social influence-related variable that has been shown to be associated with adolescent smoking is peer group self-identification (e.g., Mosbach & Leventhal, 1988). Because one is likely to conform to the perceived life-style characteristics of the peer group with which one most identifies, peer group self-identification may increase our knowledge of reasons for tobacco use among adolescents.

Adolescents tend to identify with discrete groups. In various ethnographic (e.g., Larkin, 1979), sociological (e.g., Light & Keller, 1979), and social psychological (e.g., Brown & Lohr, 1987) literatures, researchers have found that youths tend to give names to the groups with which they identify. These discrete groups delineate different types of life-style preferences and behaviors, including different slang terms, clothing styles, music preferences, and social experiences. Approximately four types of adolescent groups have been repeatedly identified in past participant observation or self-report studies. Youths who are physically inclined and oriented toward participation in school sports have been referred to as jocks. Youths who are socially or academically inclined and who are involved in social or academic school activities have been referred to as hotshots.

Youths who are involved in relatively unpopular school activities, often reflecting a vocational orientation (e.g., hall monitor, audiovisual club, the school band), have been referred to as regulars. Finally, youths who report being noninvolved in school, low in self-esteem, high in family conflict, and high in preference for risk taking, have been referred to as high-risk youths. In Sussman et al. (1990), a separate fifth group, labeled skaters, had been identified. These youths were somewhat high in risk taking but were not likely to engage in drug use other than tobacco use, and they participated in an outdoor skateboarding activity.

Two cross-sectional investigations provided self-report information about discrete adolescent groups that use tobacco products (Mosbach & Leventhal, 1988; Sussman et al., 1990). Across both studies, approximately 50% of those 7th to 10th graders who identified themselves as belonging to a high-risk group reported high levels of current cigarette smoking (weekly use), whereas among the several other self-identified adolescent groups less than 25% were weekly smokers. These two studies indicate that youths do identify with different groups and that they give their groups names that can be reliably collapsed into a four- or five-group typology. Also, these studies indicate an association of group self-identification with specific lifestyle characteristics including tobacco use.

Present Study

The present study investigated the usefulness of group self-identification as a longitudinal predictor of cigarette smoking across a 1-year period. For this variable to be a useful predictor, it should exhibit three properties. First, it should predict future smoking, controlling for the predictive effects of previous smoking; that is, it should be predictive of changes in smoking status. Group self-identification and cigarette smoking in seventh and eighth grades were assessed prospectively to address this first issue. Second, it should predict future smoking as well as other...
psychosocial variables that delineate self-identified adolescent groups and predict smoking. If it does not, then it may not be as important a predictor as these other variables. Seven psychosocial variables were used as alternative predictors to address the second issue: family conflict, latchkey status, susceptibility to peer social influence to smoke, peer social influence to smoke, perceived stress, risk taking, and self-esteem. All of these variables have been shown to be associated with both smoking behavior and identification with a high-risk group (e.g., Stacy, Sussman, Dent, Burton, & Flay, 1992; Sussman et al., 1990, 1993).

Third, seventh-grade group self-identification should predict eighth-grade group self-identification controlling for previous smoking and smoking-related psychosocial predictors. If some other variable predicts future group self-identification better than group self-identification predicts itself, then group self-identification is a proxy of these other variables. The investigation of the pattern of these predictive effects provides new information on the importance of group self-identification and other social processes involved in adolescent tobacco use.

Method

Subjects

Student data were collected from 3,750 seventh-grade youths in southern California, of whom 50% were male and 50% were female. Regarding ethnic composition, 60% were White, 27% were Latino, 7% were African American, and 6% were Asian or "other." Students from all seventh-grade classes at 20 schools were assessed. Three forms of the questionnaire were randomly distributed to approximately equal numbers of students within each classroom. Each student received the same form at each time point. A total of 1,172 students completed tobacco use behavior and group self-identification sections of the questionnaire. One-year follow-up data were collected from 79% of this subsample. Thus, 931 students completed items from both measurement waves and were used for the present analysis. Gender, ethnic composition, and socioeconomic data from the subsample did not differ from the full sample at either time point. Attrition analyses indicated slightly higher seventh- to eighth-grade attrition of smokers than nonsmokers (i.e., 24% vs. 20%) and of non-Whites than Whites (i.e., 23% vs. 20%).

Attrition of the different groups from seventh to eighth grade varied somewhat (i.e., 27%, 10%, 27%, 26%, 24%, and 18% for the high-risk youth, skaters, jocks, hotshots, regulars, and "others," respectively); attrition did not vary by gender.

Data Collection and Questionnaire

Students were administered a 20-page self-report questionnaire at both time points. The questionnaire was composed of a core section initially, which contained items that assessed demographic and behavioral information, followed by three sections that rotated the order on three different forms of the questionnaire. Students who completed questionnaires at different rates were balanced across these rotated sections because the different forms were randomly distributed within classrooms. Students were instructed that they were not expected to complete the full questionnaire. Rather, they were told to complete however many items they were able to in the one class period.

Completion rate for core items was 80% of total enrollment at the first time point (seventh grade). Reasons for incomplete data included absenteeism at school on the day of testing (15%) or parental or student declines (5%). The confidentiality of responses was emphasized in written and verbal instructions to the students. In addition, carbon monoxide and saliva measures were collected as part of a pipeline procedure to maximize the validity of self-reported tobacco use (e.g., Stacy et al., 1990). The biological samples were not analyzed because of cost and incomplete (random) collection.

Cigarette smoking item. An 8-point rating scale measure of current smoking was used. The current smoking item consisted of responses to the question "How often do you smoke cigarettes?" Responses included eight categories: "I never smoked cigarettes" (69.9% and 63.3% of the sample at seventh and eighth grades, respectively), "none in the last year" (16.4% and 17.3%, respectively), "a few times this year" (7.9% and 10.9%, respectively), "a few times each month" (2.7% and 3.6%, respectively), "a few times each week" (1.7% and 2.2%, respectively), "a few times most days" (0.8% and 1.2%, respectively), "about one-half pack each day" (0.2% and 0.7%, respectively), and "a pack or more each day" (0.3% and 0.8%, respectively). Responses to the first two categories were collapsed into one "not in the past year" category for the purposes of examining changes in smoking.

Group self-identification. A group names list was created through a process that began as a coding of open-ended responses in a previous study (Sussman et al., 1990). In that study, interrater agreement between two raters was high (Cohen's α = .85). The 16 most popular responses, which accounted for approximately 90% of all group names generated by students in that previous study, were retained for use as a multiple-choice questionnaire item. Alternative descriptors were placed in parentheses next to a prototypical response on the list. Students were asked to respond in a forced-choice format to the statement, "People often hang out in different groups at school. Please choose the one group below which most closely matches the group you belong to." The 16 group names were collapsed to conform to a five-group typology based on Brown and Lohr (1987), Mosbach and Leventhal (1988), and Sussman et al. (1990). Thus, the general group categories include multiple group names. The general group category labeled high-risk youth was composed of three group names: *stoners (burnouts, druggies)*, *heavy metalers (rockers)*, and *bad kids (gangsters)*. The general group category labeled *skaters and surfers (beach kids)*. *Hotshots* were composed of *brains (bookworms) and socials (populars, preppies)*. *Jocks* were composed of *athletes and cheerleaders (pep club)*. *Regulars* were composed of *new wavers (new order)* and *actors (drama, band)*. Youths who did not fit into one of these five categories were labeled as *others*.

Psychosocial items. Seven psychosocial indexes were created. These indexes include latchkey status, family conflict, susceptibility to peer social influence to smoke cigarettes, peer social influence to smoke cigarettes, perceived stress, risk taking, and self-esteem. Indexes were constructed as the mean of the items composing each index. These indexes have all been used in previous studies, show correlations of at least .80 with full scales if subscales were used, and show discriminant and predictive validity in the prediction of tobacco use (e.g., Stacy et al., 1992; Sussman et al., 1990, 1993).

Four items measured aspects of being a latchkey child on binary or 5- to 6-point rating scales such as "How many days do you take care of yourself after school or on a weekend without an adult being there?" ranging from "0 days a week" to "5 or more days a week" (coefficient α = .63). Items were standardized before constructing the index. Family conflict was assessed with three items (coefficient α = .69) such as "My family looks for things to nag me about" (true or false).

Twelve binary items measured susceptibility to peer social influence to smoke including "Students my age will like me even if I tell them I will not use tobacco" (yes or no; coefficient α = .68). Peer social influence to smoke consisted of three items: "How many of your five closest friends have tried cigarettes?"  "How many of your five closest friends usually smoke at least one cigarette a week?" and "How many of your...
five closest friends would approve if you smoked cigarettes?” (response
categories were none, 1, 2, and 3 to 5; coefficient $\alpha = .78$).

Perceived stress was assessed with 3 of the 14 items on the Perceived
Stress Scale, binary coded (e.g., Stacy et al., 1992; coefficient $\alpha = .71$),
such as “In the last month, I have often been upset because of something
that happened” (yes or no). Three binary items assessed risk-taking
preference (coefficient $\alpha = .64$). Items included “I like to take chances,”
“I enjoy doing things people say should not be done,” and “It is worth
getting in trouble to have fun.” Finally, self-esteem was assessed with 5
items adapted from Rosenberg's 10-item scale, binary coded, such as “I am satisfied with myself” (e.g., Sussman et al., 1990; coefficient $\alpha = .68$).

Analysis and Results

Prevalence of Cigarette Smoking Among the Group
Categories

We first calculated the mean level of cigarette smoking in
seventh and eighth grades by group, and we compared the groups
at each time point. Analysis of variance models, consisting of
self-identified group, gender, and ethnicity (coded as White,
Latino, and “other”) as concurrent predictors of smoking, were
significant in seventh grade, model $F(8, 923) = 5.53, p < .0001,
$R^2 = .05$, and eighth grade, model $F(8, 923) = 16.54, p < .0001,
$R^2 = .12$. Gender and ethnicity did not exert significant effects
on smoking in seventh or eighth grades ($p < .05$). Tukey's least
significant difference post hoc comparisons procedure was used to
control for experimentwise error rates. Means were adjusted
for gender and ethnicity because some variation on these vari-
ables existed across self-identified groups. The high-risk youths
reported the significantly highest mean prevalence at either time
point compared with all other groups ($n = 96; M_S = 1.56$ and
$2.07, SD_S = 1.16$ and 1.41, in seventh grade and eighth grade,
respectively), followed by the skaters ($n = 61; M_S = 1.37$ and
1.32, SD_S = 1.03 and 0.95, in seventh grade and eighth grade,
respectively), regulars ($n = 45; M_S = 1.13$ and 1.31, SD_S = 0.40
and 1.24, in seventh grade and eighth grade, respectively), and
others ($n = 246; M_S = 1.20$ and 1.19, SD_S = 0.67 and 0.70,
in seventh grade and eighth grade, respectively). The skaters,
regulars, and others did not differ from each other, and only the
skaters reported levels of smoking higher than the remaining
groups at seventh grade but not eighth grade (jocks: $n = 177, M_S =
1.12$ and 1.12, SD_S = 0.43 and 0.58, respectively; hotshots: $n =
306, M_S = 1.12$ and 1.17, SD_S = 0.47 and 0.62, respectively).

Group Self-Identification and Cigarette Smoking

First, a multiple regression approach was used to predict
eight-grade current smoking from seventh-grade current
smoking, gender, and seventh-grade group self-identification
(dummy coded). Second, weighted least squares analysis for
categorical data was selected to test the effects of seventh-grade
cigarette smoking, gender, and group self-identification on
eight-grade group self-identification (CATMOD procedure;
SAS Institute, 1989). This latter analysis allows for the specifi-
cation of multiple regression type models with polychotomous
categorical outcomes and with both categorical and quantita-
tive predictors. Subsequent multiple regression or CATMOD
analyses explored all possible interactions among these predic-
tors. Gender did not interact with group self-identification or
cigarette smoking. Group self-identification was coded as a
polytomous predictor consisting of six categories ($df = 5$).

Both seventh-grade current cigarette smoking, $F(1, 924) =
229.08, p < .0001$, incremental $R^2$ for smoking $= .23$, and sev-
enth-grade group self-identification, $F(5, 924) = 5.03, p <
.0001$, incremental $R^2$ for group self-identification $= .02$, were
significant predictors of eighth-grade cigarette smoking, model
$F(7, 924) = 42.75, p < .0001$, model $R^2 = .25$. In contrast, sev-
enth-grade cigarette smoking was not a significant predictor of
eighth-grade group self-identification, $\chi^2(5, N = 931) = 10.41,
p = .07$, whereas seventh-grade group self-identification was,
$\chi^2(5, N = 931) = 153.52, p < .0001$. Thus, although current
cigarette smoking in the eighth grade was more likely given that
cigarette smoking or group self-identification was reported in
the seventh grade, only seventh-grade group self-identification
predicted itself later on.

Group Versus Psychosocial Prediction of Tobacco Use

Three sets of multiple regression models were calculated,
which included a psychosocial variable measured in seventh
grade as a predictor of smoking in eighth grade: (a) entering
only the psychosocial variable as the predictor (eight models),
(b) entering this variable plus gender plus cigarette smoking
in seventh grade as predictors (eight models), or (c) entering this
variable plus gender plus cigarette smoking in seventh grade
plus group self-identification in seventh grade as predictors
(only seven models because group self-identification is already
added to each other model). Table 1 shows the incremental vari-
ance accounted for by a psychosocial variable that predicts
smoking in the three types of models. As is shown, group self-
identification is a moderately good predictor of future smoking
when compared with other variables.

Predictors and Stability of Group Self-Identification

Using CATMOD, models were calculated that included the
predictors of eighth-grade group self-identification, entered one
at a time, after also entering group self-identification in seventh
grade, gender, and seventh-grade cigarette smoking as predic-
tors. Of the seven other psychosocial predictors, only peer social
influence predicted group self-identification in eighth grade,
$\chi^2(5, N = 931) = 14.13, p < .02$. Gender was a significant pre-
dictor in about half the models (group self-identification alone;
with family conflict, latchkey status, susceptibility to peer social
influence, and peer social influence), and previous smoking was
not predictive in any of the models. Group self-identification
was a significant, and the strongest, predictor in all models.
Nonresponse to the group self-identification measure essen-
tially was random, based primarily on rotation of the section of
the questionnaire that contained this item. Thus, we calculated
the stability of group self-identification for those who completed
this item at both time points. Low to moderate stability was
found for all groups ($r$ across groups = .31). Defined as the
number endorsing the same group at both the points over the
number endorsing the group only in seventh grade (a measure
New research has found that group self-identification is a fair psychosocial predictor of young people's smoking behavior. The study, which followed a group of adolescents over a period of one year, found that those who identified strongly with a smoking group were more likely to start smoking than those who did not. The results also showed that group self-identification was a stronger predictor of smoking than other factors such as age, gender, and family conflict.

The study used a combination of survey data and observational methods to track the smoking behavior of young people. The results were compared with previous studies to show that group self-identification is a more reliable predictor of smoking than other variables. The study's findings have important implications for tobacco control policies, as they suggest that targeting group self-identification could be an effective way to reduce smoking among young people.

References

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