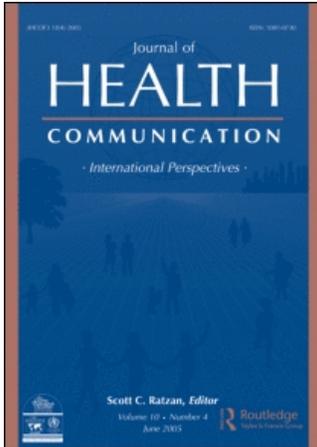


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Adolescents' Responses to Peer Smoking Offers: The Role of Sensation Seeking and Self-esteem

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This article deals with an important topic (youth smoking) and makes a contribution to the literature by validating existing research and extending our understanding of smoking resistance strategies. This study classified adolescent reports of their responses to cigarette smoking offers utilizing four drug refusal strategies of refuse, explain, avoid, and leave (REAL) and explored how personality factors explain adolescents' use of cigarette refusal strategies. Participants were predominantly Hispanic junior high students (6th–8th grades) from schools in the Northeast United States who participated in a survey design (N = 260). The strategy of explain was reported most frequently for initial and follow-up smoking offers. Adolescents with a greater number of friends who smoked were more likely to use the avoid strategy for initial smoking offers. Sensation seeking was positively related to the use of leave and avoid strategies for initial smoking offers and leave strategy for follow-up smoking offers. No association was found between self-esteem and use of smoking refusal strategies. Implications and directions for future research are discussed.

Cigarette smoking during childhood and adolescence produces significant health problems, including, for example, respiratory illnesses, decreased physical fitness, and potential retardation in the rate of lung growth (American Lung Association, 2003). Each day, approximately 3,900 young people ages 12 to 17 begin smoking. The American Lung Association (2003) also estimates that at least 4.5 million U.S. adolescents are cigarette smokers. Only 3% of high school smokers report that they will be smoking 5 years later, but studies show that 60% still will be smoking 7 to 9 years later (American Cancer Society, 2005). These data reinforce the need for efforts to reduce teenage smoking.

A number of adolescent smoking prevention programs have been implemented and evaluated (e.g., Ausems, Mesters, van Breukelen, & DeVries, 2002; Paavola, Vartiainen, & Puska, 2001; Worden & Flynn, 2002). Many smoking prevention programs have shown that refusal skills training provides an encouraging option for reducing smoking rates among adolescents (see Cuijpers, 2002; Tobler et al., 2000). Prevention programs based on smoking offer refusals consist of messages to invoke and resist social influence (see Hecht & Miller-Day, in press). In addition,

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substance offers provide a chance to study how communicators negotiate complicated and problematic situations.

This article classifies reports of adolescent cigarette smoking offers by reviewing and condensing adolescents' descriptions of refusal responses to cigarette offers, thus providing a different (in terms of changing the target from drugs to cigarettes and provision of free response) application of REAL strategies to cigarette refusals. Initial studies in this area focused on drugs and alcohol and analyzed narrative accounts of high school students (see Alberts, Hecht, Miller-Rassulo, & Krizek, 1992). In the current study, we wanted to explore the prevalence of each of the REAL refusal strategies as they apply to cigarette offers and personality differences in cigarette refusals.

Refusals Skills Training Programs

Numerous smoking prevention programs have showed encouraging results for refusal skills training (see Cuijpers, 2002; Tobler et al., 2000). For instance, the North Karelia Youth Project in Finland was designed to teach students skills to resist the social influences that promote smoking, and one-fourth of the 15-year-old daily smokers and half of the occasional smokers quit by the age of 28 (Paavola et al., 2001). Studies of smoking reveal three general strategies of resistance: (a) appropriateness (fear of disapproval), (b) consistency (personal convictions), and (c) effectiveness (fear of effects; see Reardon, Sussman, & Flay, 1989). A meta-analysis of 144 studies of 207 school-based drug prevention programs showed that programs that were effective in reducing substance use provide communication opportunities and learning drug refusal skills (Tobler et al., 2000). Cuijpers (2002) also reported that adding life skills to drug prevention programs may strengthen their effectiveness.

These positive effects of refusal skills training programs, however, fade over time or, in some cases, by the time students finish high school. Regardless of participation in refusal skills programs, students continue to smoke at the same rate near the end of high school (Flay et al., 1989). This draws our attention to the factors that may be responsible for this decreased influence of smoking refusals programs.

First, ignoring individual differences in adolescents and providing them with the same training program may explain the limited effect of these programs (see Benfari, Ockene, & McIntyre, 1982). For instance, high sensation seekers (HSS) require stronger messages (including strong sound and visual effects) for attracting and holding their attention (Donohew, Lorch, & Palmgreen, 1991). In a study of responses to anticocaine advertisements, Everett and Palmgreen (1995) found that high sensation value anticocaine advertisements were more effective in enhancing recall of messages, promoting more anticocaine attitudes, and reducing intentions among high sensation seekers to try cocaine. Thus, refusals training programs may want to utilize language and approaches that are more appealing for high and low sensation seeking groups. Second, as reported by Hecht and Miller-Day (in press), prevention messages often are generated by adult researchers and are based on their perceptions of adolescent refusals to substance offers. These messages often are neither grounded in the actual experiences of youth nor are guided by theory. Thus, the effects of such programs may fade because they do not teach adolescents how to communicatively resist substance offers.

Keeping it REAL Curriculum. The Drug Resistance Strategies project was conceptualized based on a peer-pressure model that explained adolescent substance use and abuse as arising largely from peer influence, and this new approach focused on teaching adolescents skills for resisting peer pressure (see Hecht, Alberts, & Miller-Rassulo, 1992; Miller, Alberts, Hecht, Trost, & Krizek, 2000). The central element in this project is teaching refusal skills to adolescents so that they are enabled and empowered to “say no” to drug offers (Hecht et al., 2003). These studies identified four resistance strategies that were validated in samples ranging from early adolescence to young adults of various ethnicities and regions of the United States. These strategies were identified by the acronym “REAL,” which stood for the four strategies: *refuse* (e.g., direct refusal, saying “no”); *explain* (e.g., offering an explanation, giving an excuse); *avoid* (e.g., avoiding the environment where drugs are present, avoiding the offer); and *leave* (e.g., leaving the scene; see Hecht et al., 2003). A study conducted with middle school students revealed that these four methods emerged as the primary resistance strategies (Moon, Hecht, Jackson, & Spellers, 1999). In this study, the most common response to an initial offer was a simple “no,” followed by leave, some type of explanation, and avoidance strategies (Moon et al., 1999). These four strategies also were validated with college students (Hecht & Driscoll, 1994). In the current study, we wanted to explore the prevalence of each of the REAL refusal strategies as they apply to cigarette offers rather than to drug offers. Thus, we asked the following:

RQ1: What is the distribution of the REAL (refuse, explain, avoid, and leave) refusal strategies to initial cigarette smoking offers and follow-up refusals of cigarette offers?

The keeping it REAL curriculum has been used to research many aspects of adolescents’ drugs use (see Hecht & Miller-Day, in press; Hecht & Raup-Krieger, 2006; Miller-Day & Barnett, 2004; Warren et al., 2006). Personality differences and peer smoking behavior, so far, have not been examined with respect to cigarette offers and refusals. We use the risk and protective framework to explore factors that explain differential refusal strategies reported by adolescents.

Risk and Protective Framework

One of the recent developments in substance abuse prevention theory and programming has been a focus on risk/protective factors as a unifying framework (see Flay, Petraitis, & Hu, 1999). Identification of these factors may contribute to limiting experimentation with cigarettes in adolescence and thereby decrease young people’s vulnerability to the negative outcomes associated with problem use of cigarette smoking (see Griffin, Botvin, Doyle, Diaz, & Epstein, 1999). Conceptually, risk factors (e.g., attitudinal tolerance of deviance) are proximal and protective factors (e.g., value on academic achievement) are distal to problem behavior. An individual’s likelihood of engaging in risky behavior is conceptualized as a result of balance between proximal and distal factors. For instance, psychosocial risk factors can influence cigarette smoking through direct instigation (e.g., peer pressure) and greater opportunity for cigarette smoking (e.g., association with friends who smoke; see, e.g., Griffin et al., 1999; Scal, Ireland, & Borowsky, 2003). Given the utility of risk and protective framework in exploring cigarette smoking among adolescents, we wanted

to extend the application of risk and protective factors to understanding how adolescents refuse cigarette offers.

Personality differences and peer smoking behavior, so far, have not been examined with respect to cigarette offers and refusals. Sensation seeking and self-esteem are two personality differences that have been examined in relation to risky health behaviors (see Byrne & Mazanov, 2001; Greene, Krcmar, Walters, Rubin, & Hale, 2000; Horvath, Milich, Lynam, Leukefeld, & Clayton, 2004). More specifically, sensation seeking and self-esteem may help clarify how individuals differ in refusing cigarette offers, so that prevention programs can be tailored accordingly. In the current study the risk factors examined included sensation seeking and peer smoking behavior, and self-esteem was the protective factor.

Sensation Seeking as Risk Factor. Sensation seeking is a personality trait defined by the need for novel, complex, intense, and ambiguous experiences and the willingness to take risks to obtain such experiences (Zuckerman, 1994). Sensation seeking has been researched extensively in the context of risky health behaviors (e.g., Greene et al., 2000; Horvath et al., 2004) and media choices (e.g., Greene & Krcmar, 2005; Slater, 2003). Sensation seeking has been found to be a strong positive predictor of smoking (e.g., Zuckerman, Ball, & Black, 1990), alcohol use (e.g., Donohew et al., 1999; Newcomb & McGee, 1989), and drug use (e.g., Donohew et al., 1999; Hornik et al., 2001), and other risky health behaviors (e.g., Greene et al., 2000; Yanovitzky, 2005). Several explanations for high sensation seeking and substance use have been offered in literature (see Segal, Huba, & Singer, 1980). First, substance use involves taking risks, which provides stimulation for the high sensation seeking adolescent (Zuckerman, 1994). Second, substance use causes direct neurological stimulation for the adolescent (Segal et al., 1980).

High sensation seekers (HSS) are more involved with the issue of cigarette smoking than low sensation seekers (LSS; this rationale follows the conceptualization of Stephenson, 2003, in explaining higher involvement of HSS with the issue of marijuana than LSS). High sensation seekers (HSS) may be more involved with the issue of cigarette smoking (see Stephenson, 2003) because (a) HSS start smoking at a much earlier age than LSS (e.g., Crawford, Pentz, Chou, Li, & Dwyer, 2003); (b) HSS are biologically disposed to using drugs, alcohol, and cigarettes compared with LSS (e.g., Bardow, Donohew, & Harrington, 1996); and (c) HSS' attitudes toward cigarette use are more favorable than LSS' attitudes (e.g., Ames, Sussman, & Dent, 1999). Thus, it follows that when offered a cigarette, HSS will be more open to trying a cigarette than LSS. Because HSS generally are more likely to choose a cigarette rather than refuse it, the strategy of avoiding the scene or leaving the scene will be utilized by them as it will give them an opportunity to separate themselves from the direct stimulation provided by the excitement of trying a cigarette. Thus, Hypothesis 1 is proposed:

H1: For cigarette refusals, sensation seeking will be positively associated with the strategies of avoiding and leaving and negatively associated with the strategies of refusing and explaining for both initial and follow-up cigarette offers.

Males are higher in sensation seeking than females (see Zuckerman, 1994). Also, older adolescents are higher in sensation seeking than younger adolescents. Given

this difference in sensation seeking levels, we wanted to examine differences in refusal strategies for HSS by age and sex. Thus, we asked Research Question 2:

RQ2: For both initial and follow-up cigarette refusals, what kind of association exists between sensation seeking and REAL refusal strategies, separated by age and sex?

Self-esteem as Protective Factor. Self-esteem is a personality trait tapping the value, worth, or regard one places on oneself. People with low self-esteem are typically less confident, perceive themselves as less capable, and are less happy than people with high self-esteem (Petty & Cacioppo, 1996). Although some studies have shown that self-esteem acts as a protective factor and lower self-image is associated with adolescent tobacco use (e.g., Byrne & Mazanov, 2001; Tyas & Pederson, 1998; United States Department of Health and Human Services [USDHHS], 2000), others have documented no association between self-esteem and cigarette smoking (e.g., Goddard, 1990). Abernathy, Massad, and Romano-Dwyer (1995) conclude that although the association between smoking and self-esteem is unclear, school-based health education programs aimed at raising adolescents' self-esteem have evolved to prevent smoking among adolescents. McGuire's (1968) model of personality and persuasibility provides one view of this relation, suggesting that self-esteem is positively related to reception but negatively related to yielding. McGuire (1969) reasoned that people high in self-esteem should be less accepting of persuasive messages but more attentive and thus better able to comprehend a message. On the other hand, people low in self-esteem will be more accepting of persuasive messages because they place more credence in other people. People low in self-esteem also will be less attentive to persuasive messages, however since low self-esteem and depressed people tend to be more inwardly focused.

People with low self-esteem try to avoid and leave the problematic situations, and people with high self-esteem try to solve problems and seldom avoid or leave the situations (see Dumont & Provost, 1999). Monahan and Lannutti (2000) examined how consuming alcohol differentially affects the communicative behavior and perceptions of high and low social self-esteem women as they engage in a brief interaction with a flirtatious male. They concluded that low self-esteem women were less anxious and self-disclosed more when drinking than when sober, whereas high self-esteem women were not significantly affected by alcohol consumption. Thus, it follows that adolescents with low self-esteem will try to avoid and leave situations following smoking offers, but adolescents with high self-esteem will be comfortable in refusing the offers to smoke and providing their rationale for doing so. Based on the above reasoning, we formulated Hypothesis 2:

H2: For cigarette refusals, self-esteem will be positively associated with the strategies of refusing and explaining and negatively associated with the strategies of avoiding and leaving for both initial and follow-up offers.

Additionally, we wanted to examine the combination of sensation seeking and self-esteem in predicting the use of REAL refusal strategies.

RQ3: How will sensation seeking and self-esteem interact in predicting cigarette refusal strategies for both initial and follow-up cigarette offers?

Peer Smoking Behavior as Risk Factor. Peer approval and influence is a strong predictor of adolescents' behavior such as smoking (e.g., Kobus, 2003; Poulsen et al., 2002; Van Roosemalen & McDaniel, 1992). The most commonly reported initiation of adolescent smoking is with a friend who already smokes (USDHHS, 2000). Perception of friends' approval of smoking predicts adolescent smoking behavior (e.g., Smith & Stutts, 1999; van Roosmalen & McDaniel, 1992). The rate of smoking among adolescents who have three or more friends who smoke is 10 times higher than the rate among adolescents who report that none of their friends smoke (USDHHS, 2001).

Troubled adolescents tend to associate more with peers who engage in risky behaviors, and this social context may make them vulnerable to negative peer influences (e.g., Smith, 2001; Yanovitzky, 2005). Research suggests, however, that adolescents are more likely to use the reasoning (or explain) strategy to refuse friends' offers to smoke and avoid or leave strategy when the offer persists (see Reardon et al., 1989). Thus, when cigarette offers become persistent, it becomes difficult to refuse and provide explanations for refusals, and, therefore, adolescents report leaving or avoiding the situation. Yet leaving a situation is considered a strategy that may be threatening to relationships (see Reardon et al., 1989). So, it follows that for adolescents who have a greater number of friends who smoke, they will be more likely to avoid situations where they will be offered the cigarette. Based on the above reasoning, the following was hypothesized:

H3: For cigarette refusals, peer smoking behavior will be positively associated with the strategy of avoiding for both initial and follow-up cigarette offers.

Additionally, we also were interested in exploring the interaction between sensation seeking and self-esteem with peer smoking behavior in predicting the use of REAL refusal strategies:

RQ4: How will sensation seeking and self-esteem interact with peer smoking behavior in predicting cigarette refusal strategies for both initial and follow-up cigarette offers?

Method

Participants and Procedure

The sample consisted of 260 ($N = 260$) male ($n = 104$) and female ($n = 156$) students enrolled in sixth through eighth grades in two Northeastern schools. The students ranged in age from 11 to 16 ($M = 12.49$, $SD = 1.06$) and identified themselves as predominantly Hispanic (74%), African-American (13%), bi/multicultural (7%), and others (other groups < 3% each). Institutional Review Board (IRB) approval was obtained prior to data collection, and parents of the students signed the

informed consent forms. The students completed the surveys in their classrooms as part of a larger longitudinal smoking intervention project.¹ The questionnaire for the present study took less than 40 minutes to complete and was anonymous. Due to the nature of this study, adolescents who reported smoking ($n = 32$) were deleted from analyses.

Measurement Instruments

Variables measured included initial smoking refusals, follow-up smoking refusals, peer smoking behavior, sensation seeking, and self-esteem.

Initial Smoking Refusals. Participants were presented with an open-ended question that asked, "Imagine that you and a friend are somewhere hanging out. Your friend is smoking a cigarette and offers you a cigarette. You don't want to smoke. What would you say to your friend?" Participants were presented with a half page of space and asked to write their response in the space provided.

Participants' responses were coded independently by two undergraduate students. Authors refined the REAL refusal category system that emerged from a sample of the total responses. Coders examined the entire response (including multiple codes), as opposed to using individual sentences or thought units. Pretest data were used to train the coders. Disagreements on any variable were discussed with coders until 100% agreement was reached. The operational definitions for categories and Cohen's kappa are presented in Table 1. (These codes are not mutually exclusive; that is, an adolescent could list several refusal techniques in a response.)

Follow-up Smoking Refusals. This item was an extension of the initial smoking refusals. Participants were presented with an open-ended question that asked, "What if he/she really wanted you to smoke and kept pressuring you? What would you say then?" Participants were presented with a half page of space and asked to write their response in the space provided. Participants' responses were similarly coded for topics. The only category added from initial refusals was the category "repeat," which was coded if the participant gave exactly the same answer as the initial refusal (see Table 1).

For testing of hypotheses, only four categories were retained because the hypotheses and research questions focused on the differential impact of factors on use of REAL strategies. The four categories follow: refuse, explain, avoid, and leave. Each of the four categories was a dichotomous variable.

Peer Smoking Behavior. Peer smoking behavior was measured by one item created by the authors asking, "Please tell us the number of your friends who you think have smoked cigarettes, even once or twice in the last 6 months." The participants were instructed to write the number of friends in the blank provided. The responses ranged from 0 to 16 ($M = 1.71$, $SD = 2.65$).

Sensation Seeking. The 8-item sensation seeking scale used in the study was created by Hoyle, Stephenson, Palmgreen, Lorch, and Donohew (2002) based on Form V of Zuckerman's (1994) sensation seeking scale and is a Likert-type scale with 5-point responses ranging from 1.

¹These data were collected at time 4 of a longitudinal study of adolescents' smoking behaviors. Details are available from either author.

Table 1. Categories for smoking refusals

| Categories | Description | Initial responses (%) [*] | Cohen's kappa | Follow-up responses (%) [*] | Cohen's kappa |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------|--------------------------------------|---------------|
| Accept | If participant accepted the cigarette offer (e.g., "give it to me"). | 3.1 | 1.00** | 3.5 | 1.00** |
| Refuse | If participant just said "No" without elaborating. | 31.1 | .90** | 30.8 | .93** |
| Explain | If participant refused and gave a health-based reason(s) (e.g., "smoking will give me cancer, emphysema," "smoking is unhealthy"), image-related reason(s) (e.g., "smoking will cause bad breath, yellow teeth"), reasons relating to parents' disapproval ("my mother will not like it"), or friends'/peers'/boyfriend's/girlfriend's disapproval ("my friends will not like it"). | 61.2 | .91** | 38.1 | .90** |
| Avoid | If participant tried to avoid the situation, person, or topic of discussion (e.g., "you are not my friend," "not today"). | 40.8 | .93** | 24.1 | .90** |
| Leave | If participant stated that he/she is departing or leaving (e.g., "I am leaving if you don't stop bothering me"). | 43.9 | .90** | 32.5 | .95** |
| Repeat | If participant gave exactly the same response as in initial smoking refusal. | — | — | 8.8 | 1.00** |

** $p < .001$.

*The refusal strategies reported in the table total more than 100% because some participants reported more than one strategy.

Strongly Disagree) to 5 (*Strongly Agree*). For instance, one item asked, "I would like to explore strange places." Exploratory factor analysis (principal axis factoring with promax rotation) for sensation seeking scale yielded a one-factor solution (eigenvalue = 2.15, 26.83% variance).² The reliability of this scale was moderate ($\alpha = .74$), with all item total correlations of .3 or greater on the scale. Thus, the measure of sensation seeking used in the current study was composed of seven items, summed and averaged to form a composite scale, with a higher score indicating more sensation seeking characteristics ($M = 3.51$, $SD = .74$).

Self-esteem. Self-esteem was measured by a shortened version of the index of self-esteem scale (Hudson, 1982) including a Likert-type scale with four items, with responses ranging from 1 (*never*) to 4 (*always*). For instance, "I feel that people really like to talk with me." Reliability was moderate (Cronbach's $\alpha = .69$), and exploratory factor analysis (principal axis factoring with promax rotation) yielded a one-factor solution (eigenvalue = 1.51, 37.64% variance explained) with all items loading greater than .5. These four items were summed and averaged to form a composite scale, with a higher score indicating more self-esteem ($M = 3.11$, $SD = .52$).

Results

Analyses

Hypotheses were analyzed using point biserial correlations between the independent variables (sensation seeking, self-esteem, peer smoking behavior) and each of the dependent variables (refuse, explain, avoid, and leave) for both initial and follow-up smoking offers (see Table 2). A zero order correlation matrix is presented in Table 3. Additionally, logistic regressions were performed to examine interaction effects (see Table 4). For both point biserial correlations and logistic regressions, the level of significance was set at $p < .01$, to protect against Type I error.

Research Question 1

Research Question 1 explored the distribution of adolescent smoking responses for both initial and follow-up smoking refusals. For initial smoking refusals, results suggest that the most commonly used strategy by adolescents is explain followed by leave, avoid, and refuse (see Table 1). For follow-up smoking refusals, the most commonly used strategy was explain followed by leave, refuse, and avoid (see Table 1).

Hypothesis 1

Hypothesis 1 proposed that sensation seeking will be positively associated with the strategies of avoiding and leaving and negatively associated with the strategies of refusing and explaining for both initial and follow-up smoking refusals. The results revealed that for initial smoking refusals, sensation seeking was not related to the refuse strategy or the explanation strategy. Sensation seeking was positively related to the avoid strategy, $r = .34$, $p < .001$, and to the leave strategy, $r = .30$, $p < .001$,

²One item (I get restless when I spend too much time at home) loaded less than .4 on the single factor. This item was deleted, and the factor analysis was rerun to confirm the structure.

Table 2. Point biserial correlation between predictor variables and refusal strategies ($N = 260$)

| | Self-esteem | Sensation seeking | Peer smoking behavior |
|----------------------------|-------------|-------------------|-----------------------|
| Initial smoking refusals | | | |
| Refuse | .11 | -.11 | .03 |
| Explain | -.09 | .08 | -.05 |
| Avoid | -.03 | .34** | .19* |
| Leave | -.07 | .30** | .03 |
| Follow-up smoking refusals | | | |
| Refuse | .08 | .01 | .01 |
| Explain | -.06 | .02 | -.07 |
| Avoid | .02 | .06 | -.05 |
| Leave | -.03 | .31** | .02 |

* $p < .01$; ** $p < .001$.

however. Thus, sensation seeking is positively associated with the strategies of avoiding and leaving for initial smoking refusals.

For follow-up offers, the results showed that sensation seeking was not related to the refuse, explanation, or avoid strategy. Sensation seeking was positively related to the leave strategy, $r = .31$, $p < .001$, however. Thus, for follow-up cigarette offers, sensation seeking is positively associated with the strategy of leave.

Overall, the results indicate that Hypothesis 1 partially was supported. Sensation seeking is positively associated with avoid and leave strategies for initial cigarette offers and the leave strategy for follow-up cigarette offers (see Table 2).

Research Question 2

Research Question 2 examined the association between sensation seeking and REAL refusal strategies, separated by age and sex, for both initial and follow-up cigarette offers. The results revealed that for females in initial smoking refusal situation, sensation seeking was not related to the refuse or leave strategy. Sensation seeking was positively related to the avoid, $r = .40$, $p < .001$, and explain strategy, $r = .21$, $p < .05$, however. For females in follow-up smoking refusal situations, sensation

Table 3. Zero order correlation matrix for all variables ($N = 260$)

| | 1 | 2 | 3 | 4 | 5 |
|--------------------------|------|------|------|------|------|
| 1. Sensation seeking | 1.00 | | | | |
| 2. Self-esteem | -.13 | 1.00 | | | |
| 3. Peer smoking behavior | .21* | .00 | 1.00 | | |
| 4. Age | .06 | .04 | .13 | 1.00 | |
| 5. Sex ^a | .07 | -.11 | .08 | -.10 | 1.00 |

* $p < .01$.

^aSex (1 = male, 0 = female).

Table 4. Summary of logistic regression analysis for variables predicting REAL initial and follow-up smoking refusal strategies, controlling for background variables ($N = 260$)

| Predictor | Refuse | | | Explain | | | Avoid | | | Leave | | |
|-----------------------------------------|--------|-------|-------|---------|-------|--------|--------|---------|-------|--------|---------|--------|
| | B | SE | e^B | B | SE | e^B | B | SE | e^B | B | SE | e^B |
| Initial smoking refusals | | | | | | | | | | | | |
| Sex | -. | .32 | .90 | .03 | .29 | 1.03 | .25 | .32 | 1.28 | -.15 | .31 | .86 |
| Age | .26 | .15 | 1.30 | -.10 | .13 | .90 | .20 | .14 | 1.22 | -.12 | .14 | .88 |
| Self-esteem | 2.23 | 1.44 | 9.32 | -.73 | 1.26 | .48 | 1.06 | 1.58 | 2.88 | 3.83 | 1.79 | 46.10 |
| Sensation seeking | 1.00 | 1.30 | 2.73 | -.00 | 1.13 | 1.01 | 1.92 | 1.37 | 6.82 | 4.01 | 1.59 | 54.89* |
| Peer smoking behavior | .75 | .60 | 2.11 | -.21 | .49 | .81 | .88 | .53 | 2.41 | -.15 | .63 | .86 |
| Self-esteem \times sensation seeking | -.40 | .40 | .67 | .08 | .36 | 1.08 | -.22 | .43 | .80 | -.102 | .49 | .36 |
| Self-esteem \times peer smoking | -.15 | .12 | .86 | .05 | .10 | 1.05 | -.07 | .12 | .94 | -.22 | .18 | .80 |
| Sensation seeking \times peer smoking | -.07 | .11 | .93 | -.00 | .09 | 1.01 | -.15 | .10 | .86 | .22 | .12 | 1.25 |
| Constant | -10.29 | 5.01 | .00 | 3.02 | 4.25 | 20.42 | -10.75 | 5.37 | .00 | -13.48 | 6.01 | .00 |
| χ^2 | | 13.13 | | | 4.89 | | | 34.05** | | | 34.64** | |
| df | | 8 | | | 8 | | | 8 | | | 8 | |
| Follow-up smoking refusals | | | | | | | | | | | | |
| Sex | .30 | .31 | 1.35 | -.32 | .33 | .73 | .23 | .33 | 1.25 | .49 | .32 | 1.64 |
| Age | .00 | .14 | 1.00 | -.32 | .16 | .72 | .23 | .15 | 1.26 | .16 | .15 | 1.17 |
| Self-esteem | 1.05 | 1.41 | 2.87 | -1.99 | 1.51 | .14 | -.49 | 1.49 | .61 | 4.08 | 1.86 | 58.86 |
| Sensation seeking | .64 | 1.26 | 1.90 | -1.07 | 1.28 | .34 | -.80 | 1.33 | .45 | 4.33 | 1.63 | 76.28* |
| Peer smoking behavior | -.94 | .59 | .39 | -.38 | .59 | .69 | -.34 | .60 | .71 | -.40 | .59 | .67 |
| Self-esteem \times sensation seeking | -.25 | .40 | .78 | .37 | .42 | 1.45 | .25 | .42 | 1.29 | -.108 | .49 | .34 |
| Self-esteem \times peer smoking | .11 | .12 | 1.11 | .20 | .17 | 1.45 | -.15 | .12 | .86 | .00 | .13 | 1.00 |
| Sensation seeking \times peer smoking | .16 | .10 | 1.17 | -.08 | .11 | .93 | .19 | .12 | 1.21 | .09 | .69 | 1.10 |
| Constant | -3.78 | 4.70 | .02 | 9.14 | 4.94 | 9325.6 | -2.33 | 4.97 | .10 | -19.05 | 6.34 | .00* |
| χ^2 | | 5.63 | | | 11.60 | | | 9.01 | | | 31.59** | |
| df | | 8 | | | 8 | | | 8 | | | 8 | |

Note: smoking refusal strategies (refuse, explain, avoid, leave) coded as 1 for yes and 0 for no.

* $p < .01$; ** $p < .001$.

seeking was not related to the refuse, explain, avoid, or leave strategy. Thus, for females, sensation seeking is positively associated with the strategies of avoiding and explaining for initial smoking refusals only.

The results for males in initial smoking refusal situations showed that sensation seeking was not related to the refuse or explain strategy. Sensation seeking was positively related to the avoid, $r = .31$, $p \leq .001$, and leave strategy, $r = .39$, $p < .001$, however. For males in follow-up smoking refusal situations, sensation seeking was not related to the refuse, avoid, or explain strategy. Sensation seeking was positively related to the leave strategy, $r = .44$, $p < .001$, however. Thus, for males, sensation seeking is positively associated with the strategies of avoiding and leaving for initial smoking refusals, and is positively associated with the leave strategy for follow-up smoking refusals.

The age variable was median split with younger adolescents ≤ 12 years and older adolescents 13 years and more. The results for younger adolescents in initial smoking refusal situations showed that sensation seeking was not related to the refuse or explain strategy. Sensation seeking was positively related to the avoid, $r = .47$, $p < .001$, and leave strategy, $r = .22$, $p < .01$, however. For younger adolescents in follow-up smoking refusal situations, sensation seeking was not related to the refuse, avoid, or explain strategy. Sensation seeking was positively related to the leave strategy, $r = .31$, $p < .01$, however. Thus, for younger adolescents, sensation seeking is positively associated with the strategies of avoiding and leaving for initial smoking refusals and the leaving strategy for follow-up smoking refusals.

The results for older adolescents in initial smoking refusal situations showed that sensation seeking was not related to the refuse, explain, or avoid strategy. Sensation seeking was positively related to the leave strategy, $r = .43$, $p < .001$, however. For older adolescents in follow-up smoking refusal situations, sensation seeking was not related to the refuse, avoid, or explain strategy. Sensation seeking was positively related to the leave strategy, $r = .31$, $p < .01$, however. Thus, for older adolescents, sensation seeking is positively associated with the strategy of leaving for both initial and follow-up smoking refusals.

Overall, for Research Question 2, the results showed that for females, sensation seeking is positively associated with the strategies of avoiding and explaining for initial smoking refusals only. For males, sensation seeking is positively associated with the strategies of avoiding and leaving for initial smoking refusals, and leaving strategy for follow-up smoking refusals. For younger adolescents, sensation seeking is positively associated with the strategies of avoiding and leaving for initial smoking refusals, and leaving strategy for follow-up smoking refusals. For older adolescents, however, sensation seeking is positively associated with the strategy of leaving for both initial and follow-up smoking refusals.

Hypothesis 2

Hypothesis 2 proposed that self-esteem will be positively associated with the strategies of refusing and explaining and negatively associated with the strategies of avoiding and leaving for both initial and follow-up offers. The results revealed that self-esteem was not related to the refuse, explain, avoid, or leave strategy.

For follow-up cigarette offers, the results revealed that self-esteem was not related to the refuse, explain, avoid, or leave strategy. Thus, Hypotheses 2 was not

supported (see Table 2). There is no association between self-esteem and smoking refusal strategies.

Hypothesis 3

Hypothesis 3 proposed that peer smoking behavior will be positively associated with the strategy of avoiding for both initial and follow-up cigarette offers. The results showed that for initial cigarette offers, peer smoking behavior was not related to the refuse, explain, or leave strategy. Peer smoking behavior was positively related to the avoid strategy, $r = .19$, $p < .01$, however. For follow-up cigarette offers, peer smoking behavior was not related to the refuse, explain, avoid, or leave strategy. Overall, the results indicate that Hypothesis 3 was partially supported (see Table 2). Peer smoking behavior is positively associated with the avoid strategy for initial cigarette offers but not for follow-up cigarette offers.

Research Questions 3 and 4

Eight logistic regressions were performed to answer Research Questions 3 and 4. Controls were (age, sex), self-esteem, sensation seeking, peer smoking behavior, interaction terms self-esteem \times sensation seeking, self-esteem \times peer smoking, and sensation seeking \times peer smoking. The dependent variables were the REAL strategies for both initial and follow-up smoking refusals (see Table 4).

The results of the logistic regression for initial smoking refusals showed that the models for the refuse, $\chi^2(8) = 13.13$, $p = .11$, and explain strategy, $\chi^2(8) = 4.89$, $p = .77$, were not significant. The model for the avoid strategy, $\chi^2(8) = 34.05$, $p \leq .001$ was significant. None of the variables, however, in the final model for avoid strategy were significant at the $p < .01$ level. The model for the leave strategy, $\chi^2(8) = 34.64$, $p \leq .001$ also was significant. The final model revealed that sensation seeking ($e^B = 54.89$, $B = 4.01$, $p \leq .01$) was the only significant variable that predicted the use of leave strategy for initial smoking refusals.

The results of the logistic regression for follow-up smoking refusals showed that the models for the refuse, $\chi^2(8) = 5.63$, $p = .69$, explain, $\chi^2(8) = 11.60$, $p = .17$, and avoid strategy, $\chi^2(8) = 9.01$, $p = .34$ were not significant. The model for the leave strategy, $\chi^2(8) = 31.59$, $p \leq .001$, was significant. The final model revealed that sensation seeking ($e^B = 76.28$, $B = 4.33$, $p \leq .01$) was the only significant variable that predicted the use of the leave strategy for follow-up smoking refusals.

Thus, the results for Research Questions 3 and 4 showed that there was a main effect of sensation seeking in predicting leave strategy for both initial and follow-up smoking refusals. There were no other significant main or interaction effects predicting the use of any other REAL strategies for both initial and follow-up smoking refusals.

Discussion

This study classified adolescent cigarette smoking offers utilizing the four REAL drug refusal strategies and the risk and protective framework to explore factors that may explain adolescents' use of cigarette refusal strategies. The strategy of explain was reported most frequently for both initial and follow-up smoking offers. Adolescents with a greater number of friends who smoked were more likely to use the avoid

strategy for initial smoking offers. High sensation seeking was positively related with the use of leave and avoid strategies for initial smoking offers and leave strategy for follow-up smoking offers. No association was found between self-esteem and use of smoking refusal strategies. Additionally, the results did not reveal any interaction among self-esteem, sensation seeking, and peer smoking behavior in predicting the use of REAL refusal strategies for cigarette offers.

REAL Smoking Refusal Strategies

The strategies of explain and leave were reported most frequently for both initial and follow-up smoking offers. This finding clearly indicates that “Just say No” may not be enough for teaching adolescents refusal skills (also see Reardon et al., 1989) and may prompt follow-up offers. Harrington (1995) also concluded that direct refusals prompted simpler follow-up strategies, and no refusal strategy resulted in significantly fewer persuasive attempts. Consistent with previous research, reasoning or proving explanation is used most frequently among friends (see Friedman, Lichtenstein, & Biglan, 1985; Reardon et al., 1989). Adolescents’ use of explain suggests that providing a rationale for refusing a cigarette offer may be the most preferred strategy to keeping the relationship with the friend who has offered a cigarette. The second preferred strategy for smoking refusals was the leave strategy for initial cigarette offers. This suggests that “walking away” is a strategy that may be more powerful than simply refusing the offer.

When adolescents had an increasing number of friends who smoked, they preferred to use the avoid strategy perhaps so that it would not be detrimental to the relationship. Harrington (1995) documented that strategies that saved the face of the persuader served to maintain a favorable interpersonal relationship, whereas those where negative face support was employed cultivated a less favorable relationship by decreasing satisfaction and attraction between the interactants. Maintenance of relationships, thus, appears to be a strong motivating factor that may determine choice of strategy used when refusing cigarette, alcohol, or drug offers. Additionally, Miller (1998) reported that when adolescents received an offer (for alcohol or another drug) in the presence of five or fewer people, leaving or saying “no” was the strategy adopted. In the presence of more than five people, however, providing explanations or even accepting the offer became more prevalent. Thus, presence or absence of others may be an important factor to be considered in an offer situation, which perhaps will be explored in a future study.

An option for combating forceful (and coercive) pressure to smoke is to teach adolescents assertive refusal strategies (see Botvin, Botvin, & Ruchlin, 1998). In other words, intervention programs can focus on teaching adolescents skills employing verbal argumentativeness. Finally, research on offers and refusals using different relational partners such as dating partners versus friends merits attention, particularly to understand what kinds of refusals are used most often with different relational partners (see Trost, Langan, & Kellar-Guenther, 1999).

Real and Protective Framework for Smoking Refusals

This article focused on risk/protective factors as a unifying descriptive and predictive framework for explaining smoking refusals. Sensation seeking was positively associated with the use of leave and avoid strategies for initial smoking offers and

leave strategy for follow-up smoking offers. Peer smoking behavior was positively associated with the use of the avoid strategy for initial but not follow-up smoking offers. Finally, self-esteem was not related to any specific smoking refusal strategies. The protective and risk factor provides a useful framework for examining not just risk behaviors, but also refusal strategies for risk behaviors.

Sensation Seeking and Smoking Refusal Strategies. High sensation seeking was positively related to the use of leave and avoid strategies for initial smoking offers and the leave strategy for follow-up smoking offers. High Sensation Seekers (HSS) are more likely to use cigarettes (e.g., Zuckerman et al., 1990), and the strategy of avoiding or leaving the scene may be more useful for HSS as it will give them an opportunity to separate themselves from the direct stimulation and excitement of trying a cigarette. A different perspective is provided by Greene and colleagues (2000), who suggest that smoking perhaps is becoming a more socially sanctioned activity, which takes away the whole charm of indulging in a risky behavior as a sign of independence or defiance. This suggests that portraying smoking as an uninteresting or unexciting activity may be beneficial for keeping HSS away from smoking initiation. Adolescents, particularly boys, could establish alternatives to smoking through physical activity (see Plumridge, Fitzgerald, & Abel, 2002). Additional research needs to be done to explore other kinds of activities that may be more exciting for HSS.

Self-esteem and Smoking Refusal Strategies. There was no association between self-esteem and use of particular refusal strategies in the present study. This finding is consistent with previous research that has shown inconclusive results regarding self-esteem and smoking behavior (see Baumeister, Campbell, Krueger, & Vohs, 2003). Baumeister and colleagues' review (2003) concluded that self-esteem has little association with health behavior, and high self-esteem does not appear to prevent children from drinking, taking drugs, smoking, or engaging in early sex (see also Aboud & Conway, 1992).

Recent work on self-esteem has concluded that "high self-esteem can assume relatively secure or defensive forms that relate to whether an individual possesses less conscious, negative self-feelings" (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003, p. 975). Also, research has documented that high self-esteem can assume qualitatively different forms (see Deci & Ryan, 1995; Kernis & Paradise, 2002). Because studies have shown that self-esteem does not guarantee whether an individual will avoid or confront a persuasive situation, it is still unclear what kind of refusal strategies will be utilized more frequently by adolescents differing in self-esteem. These results also serve as a caution for program designers focused on health programs revolving solely around increased self-esteem. These esteem programs might consider focusing on practicing other skills needed to refuse drug and cigarette offers.

Practical Implications

The results of these data reinforce the need for formative research for designing intervention programs (see Hornik, 2002). This study explored smoking refusal strategies as reported by adolescents. Learning from adolescents may be more effective than from adults creating programs without the input of the target population. Evaluation of interventions and campaigns also must reflect theory, and this study

provides implications for design and evaluation of interventions related to smoking, particularly interventions based on teaching adolescents new and creative refusal strategies. Different variations of the intervention programs may be desirable for HSS and LSS because they seem to use different tactics when refusing offers to smoke. Additionally, effects of sensation seeking and peer smoking behavior suggest that these individual difference factors need to be taken into account with intervention design.

Intervention programs can focus on teaching adolescents a wider variety of verbal skills. Assertive forms of refusals (combined with explanations for smoking refusals) can be termed as verbal argumentativeness (different from verbal aggressiveness; see Infante & Rancer, 1982). Teaching adolescents argumentativeness skills to counter smoking refusal strategies may be a strategy that merits attention, particularly for smoking prevention efforts. Besides use in smoking refusals, young adolescents' overall communication skills also can be strengthened by teaching them argumentativeness skills, lack of which may force them to use verbally aggressive strategies (see Roberto & Finucane, 1997).

Limitations

There are several limitations of the study worth considering. These data consisted primarily of Northeastern Hispanic adolescents, and other racial groups clearly were underrepresented. This study explored what adolescents reported they would say in a simulated case of compliance–resistance. Real-life experiences of negotiating an offer and refusal may be different from the hypothesized situation. This study does provide insight, however, into what kinds of refusal strategies are more likely to be used with a friend. Other research could address the context or setting of the offer, beyond variations in the offerer.

Future Research

Understanding adolescents' use of refusal strategies for cigarette offers merits attention, especially their creative ways of incorporating such information in interventions. Interventions delivered by peers have been effective in changing smoking-related attitude and intention (see Koumi & Tsiantis, 2001). Peer led interventions focusing on adolescent refusal strategies also provide a possible avenue for future research. There is clearly a need for more research on and training for adolescents practicing refusal skills in varying contexts. Such skills could generalize later to sexual situations, including refusing unwanted sexual advances or drug offers including alcohol. Studying cigarette offers in middle schools and the related interventions provides one early opportunity to examine practice and development of key refusal skills.

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