Refusal Skill Ability: An Examination of Adolescent Perceptions of Effectiveness

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Abstract:

This pilot study examined whether refusal assertion as defined by a proven drug prevention program was associated with adolescent perceptions of effectiveness by comparing two sets of coded responses to adolescent videotaped refusal role-plays ($N = 63$). The original set of codes was defined by programmatic standards of refusal assertion and the second by a group of high school interns. Consistency with programming criteria was found for interns' ratings of several indicators of verbal and non-verbal assertiveness. However, a strategy previously defined by the program as effective was perceived as ineffective by adolescents while another deemed ineffective and problematic by intervention developers was viewed as effective. Interns endorsed presenting detailed and reasonable arguments as an effective refusal strategy while short, simple statements were deemed ineffective. This study suggests the importance of including adolescent perspectives in the design, delivery, and evaluation of drug prevention strategies.

Keywords: Refusal skills | Drug prevention | Adolescents

Article:

Introduction

Researchers have begun to question potential mismatches between adolescents' understanding of health-related behaviors and the understanding of these behaviors by adults (Baillie et al. *2005*; Spruijt-Metz et al.*2004*; Wright et al. *2004*). Because prevention programs are designed, written, and implemented by adults, adult perceptions of risky behavior, effectiveness, and the social context of adolescent health-related behaviors are likely to dominate curricula design. The present investigation examined adolescent perceptions of effective refusal skills and tested whether refusal assertion as defined by developers of a proven drug prevention program was associated with adolescent perceptions of effectively refusing an unwanted request.

Disparities between adult and adolescent perceptions of adolescent behaviors are articulated in the theory of meanings of behavior (Sprujit-Metz *1999*), which claims adolescents bestow health-related behaviors with affective and personal meanings; when these meanings are activated, rational cognitive decision-making processes are minimized or bypassed. Thus, behaviors such as smoking may be less influenced by cognitive processes, which, through the use of cognitive-behavioral techniques, are the primary intervention target for most prevention programs, and instead be triggered by heightened emotions including excitement, anger, depression, and stress (Spruijt-Metz et al. *2004*; Steinberg *2003*). Understanding the perceptions and experiences of the target population and designing interventions that "meet them where they are" are fundamental to health promotion and disease prevention. This paper reports on a pilot study conducted to assess the potential divide between adult and adolescent perceptions of one component of prevention programs: peer refusal skills.

The majority of prevention programs teach assertive refusal skills by providing multiple verbal strategies for resisting direct and indirect pressures to engage in negative behaviors and modeling nonverbal assertive behaviors (Botvin and Botvin *1992*; Miller et al. *2000*). Common verbal strategies include simply saying no ("no" or "no thanks"), making a statement or declaration against the behavior ("I don't smoke"), giving an excuse for not accepting the offer ("It's illegal"), changing the subject ("Did you watch the game last night?"), or just walking away. Nonverbal indicators of assertiveness may include eye contact, tone of voice, and stance. Programs that include refusal skill training have been shown to be effective in reducing problem behaviors among adolescents (Botvin et al. *1995*; Rohrbach et al. *1987*; St. Lawrence et al. *1995*; Sussman et al. *1993*). However, questions remain on whether refusal skill ability is a mediator for program effectiveness (Donaldson et al. *1995*; Wynn et al. *1997*). One study found refusal skill ability increased across three grade levels of prevention curricula, but this increase did not mediate the programs' effect on alcohol use (Wynn et al. *1997*, *2000*). Another study found refusal skill ability was effective only when adolescents believed drinking was socially unacceptable (Donaldson et al. *1995*).

Observational methods, such as role-play scenarios and/or laboratory simulations, effectively assess adolescent behavior by going beyond self-report of competence in social situations (Graham et al. *1985*; Sallis et al. *1990*; Spruijt-Metz et al. *2004*; Weist and Ollendick *1991*). Most studies, however, have used adult raters to examine refusal assertion among adolescents by assessing the degree to which raters believe adolescents' response would be effective in the real world (Sallis et al. *1990*; Shope et al. *1993*; Sussman et al. *1993*; Turner et al. *1993*; Wynn et al. *2000*). Few studies have assessed adolescent perceptions of effective refusal skills.

Assessments of the nonverbal components of refusal skills in observational studies have focused on either global behaviors, such as effectiveness or naturalness, or have examined micro-level behaviors, such as eye contact, tone of voice, and hesitancy (Sallis et al. *1990*; Shope et al. *1993*; Turner et al. *1993*; Wynn et al. *1997*). Though these studies report high interrater reliability, they provide no explanations of what makes an adolescent more or less effective in the eyes of the

raters. In an interesting exception, one study (Sussman et al. *1993*) examined associations between adult raters' assessments of refusal skill effectiveness and specific nonverbal behaviors in a role-play. Results showed effectiveness to be positively associated with a firm voice pattern and appearing natural, friendly, and assertive.

As indicated, the primary goal of the current pilot study was to explore how adolescents' perceptions of effectiveness within a refusal situation are associated with strategies that are endorsed in a state-of-the-art drug prevention program. A secondary goal of the study was to identify criteria adolescents use to determine effectiveness in a refusal situation. Understanding adolescent perceptions of an effective refusal will assist in the development of more effective approaches to delivering drug prevention programs.

Methods

Research Design

The current study is a secondary analysis of an observational study on adolescent competence. The observational study used a subsample of a larger randomized clinical trial (Botvin et al. *2006*) designed to expand and test the effectiveness of an already-proven drug prevention strategy (Botvin et al. *1995*), the Life Skills Training, on violent and aggressive behavior. Schools in the observational study volunteered to participate in additional data collection activities involving videotaped role-play scenarios and structured interviews about hypothetical situations. Because of the more intensive nature of the additional data collection activities (i.e., videotaping individual students), only the smallest schools (<150 sixth grade students) from the original study were asked to participate, the majority of which were parochial. Twenty-four schools were asked if they would be part of the substudy, of which 17 (71%) agreed. Schools participated in all baseline data collection activities (survey, videotaped role-plays, and structured interviews) with their sixth grade classes prior to the intervention. Schools in the observational study had a higher proportion of White students, lower proportion of Latino students, and a higher proportion of students living in a two-parent household than schools in the intervention trial. However, students attending schools in both the observational study and the intervention trial had similar rates of smoking and shoplifting behaviors.

Both the observational study and the intervention trial were conducted from 1998 to 2000. Coding began on the baseline videotape data in 1999 and was completed by 2000. The current study compares the original data, coded by adult graduate students, to a re-coding of the data by high school interns in 2004. Although the original observational study collected longitudinal data across all 3 years of the intervention trial, the current study only used data collected at baseline to avoid contamination with potential intervention effects. Because of time constraints, a random subsample ($N = 63$) was selected from the original study ($N = 450$) to be re-coded by adolescent interns. Although each participant had completed two refusal role-plays (smoking and shoplifting), the current study randomly selected participants within role-play type ($n = 32$

smoking;*n* = 31 shoplifting). On average, each intern was assigned 16 participants (8 per role-play).

Participants

Participants were evenly divided by gender; 45% were African-American, 27% were Latino, 23% were Caucasian, 3% were Asian, and 2% were biracial or "other." Over half came from two-parent households (65%; with 58% in family of origin and 7% in remarried or blended households), 20% lived with a single parent, and the remainder (8%) either lived in two homes, with other relatives, or with foster parents or guardians. The mean age of participants was 11.7 (*SD* = .53), and the majority (84%) attended parochial school. There were no significant differences between participants in the current study and the original observational study by gender, age, race/ethnicity, household structure, or self-reported problem behaviors (i.e., shoplifting and smoking). The only significant difference found was that students selected for the current study were more likely to attend parochial school, $\chi^2(1) = 6.73$, $p < .05$.

Original Study Procedures

A passive consent procedure (approved by the institution's IRB) informed parents about the nature of the research and provided them with an opportunity to disallow their child's participation. Consent forms were distributed in the schools for students to take home to their parents and mailed directly to students' homes. Seventy-two students (13%) returned consent forms indicating their parent/guardian did not want them to participate.

Data collectors were undergraduate and graduate students, trained for a total of 6 h over 2 days to administer the role-play prompts in a credible and effective manner. A separate room within the school was used in order to ensure private, individual assessment for the interactive tasks. A protocol was read in front of the entire class at the beginning of the day, outlining the data collection procedures. Adolescents were called out of the classroom individually. An additional protocol, explaining the specifics of the activities to be conducted, was then read. Adolescents were instructed to act as they would normally in each of the situations. A brief description of each scenario was read to the adolescent prior to the beginning of each role-play; order of presentation of vignettes was randomized across participants.

Both scenarios measure adolescent ability to refuse peer pressure to engage in a deviant behavior. One role-play task focused on an offer to smoke cigarettes and the other on a request to shoplift. The confederate prompts were standardized for both role-play tasks. Interactions were videotaped for coding purposes.

Programmatic Coding

A coding system, based on components of the prevention program, previous research (Brown and Lemerise*1990*), and an initial examination of the data, was developed and refined by the first

and third authors and used to code responses to the refusal role-plays. As the primary aim of the original observational study was to assess students' ability to perform a variety of personal and social skills (including refusal skills) that were taught as part of the drug and violence intervention program, the coding criteria for each role-play was based upon the definition of effectiveness as stated in the intervention manual. The first author had over 10 years of experience with the intervention curriculum and was a master trainer for curriculum providers.

Adult graduate students were then trained to code individual role-plays to the criteria set by the intervention. Graduate student ages ranged from the mid-twenties to early thirties. A gold-standard rater was designated within the rigorously trained team of eight graduate students and interrater agreement was calculated according to an exact match with the gold standard's scores for each prompt response. Raters needed to attain 85% agreement before they began individual coding. During individual coding 20% of all vignettes were checked and raters had to maintain at least 85% agreement with the gold standard.

Adolescent Coding

As part of the internship program, four junior high school students (three male, one female) were responsible for recoding the refusal skill role-plays. The internship program, a requirement of a specialized high school for immigrant students, was meant to expose students with an interest in science to a meaningful research experience. None of the interns were recent immigrants as they had all been in this country and the public school system since early to middle childhood. Two of the coders were Asian, one was Latino, and the fourth was of Middle-Eastern descent.

Interns were given instruction in the research process, both generally and with regards to this study. Interns received an explanation of the aims of the drug prevention program but were not trained in the teachings of the program. Instead they were trained in techniques of coding and code development and instructed to develop their own code scheme for refusal skill effectiveness. Parameters for the coding scheme were provided. For example, role-plays varied on the number of prompts used by confederates and the original coding system used the first four prompts only. How to identify the correct length of the role-play was reviewed with interns. In addition, concepts of assertive, aggressive, and passive behaviors were reviewed along with how to distinguish between verbal and nonverbal behaviors. Because over 60% of communication occurs nonverbally, interns were instructed to give more weight to nonverbal than verbal behaviors. After developing the refusal skill effectiveness code, interns completed 20 training and reliability tapes for each role-play (smoking and shoplifting) before achieving at least 85% interrater reliability with each other.

Interns then coded independently with a 20% overlap to check for coding drift. Reliability was assessed by calculating the interclass correlation coefficient (ICC) between two randomly selected coders. The ICC reflects variation in scores between two coders and is considered a strong indicator of coder reliability (Choukalas et al. *2000*). The ICC for this study was

significant (ICC = .78, 95% CI [.44, .93]) and at a level that is considered adequate (Choukalas et al. *2000*). Calculating interrater agreements, as was done with adult coders, between each possible pair of coders also revealed adequate reliability (ranging from 81–100%).

Measures

Refusal Skill Strategies (Programmatic Coding)

Participants' responses to the individual prompts in the role-play vignettes were categorized. Response categories included Simple No (just saying "no" or "no thanks"), Declarative Statements (making a declarative statement about their anti-smoking or anti-shoplifting position), Excuses (giving an excuse why they can't smoke or shoplift), Alternatives (offering an alternative to smoking or shoplifting), and Reverse the Pressure (reversing the pressure back onto the confederate, mostly through the use of sarcasm, insults, or challenges). Responses were coded as mutually exclusive, with students scored to identify which strategy was used for each prompt. Strategies were then summed across the three prompts within each role-play type (see Table 1). Omnibus interrater agreements for prompt responses ranged from 89 to 98% for the smoking refusal and from 88 to 95% for the shoplifting refusal.

Table 1 Mean rates of coding scores for verbal and non-verbal behaviors by role-play type

Coding categories	**Smoking refusal (*n* = 32)**			**Shoplifting refusal (*n* = 31)**		
	Range	***M***	***SD***	**Range**	***M***	***SD***
Verbal strategies						
Simple no	0–3	1.38	.88	0–3	.63	.70
Declarative statements	0–3	.90	.84	0–3	.98	.84
Excuses	0–2	.48	.75	0–3	.57	.76
Reverse the pressure	0–2	.23	.46	0–2	.43	.65
Alternatives	0	0	0	0–3	.25	.61
Nonverbal behavior						
Assertiveness	1–5	2.76	1.21	1–5	2.68	1.02
Effectiveness	1–5	3.44	1.16	1–5	3.10	1.49

Nonverbal Assertiveness (Programmatic Coding)

The extent to which the student responded assertively to the role-play situation was assessed with a five-point scaled score with response options ranging from *not at all assertive* (1) to *extremely assertive* (5). Behavioral indicators of assertiveness include firm, authoritative voice; speaking clearly and deliberately and at a rate that conveys confidence; using direct eye contact, especially when making refusals or key statements; having a serious and confident facial expression; and body posture that is straight, faces the confederate, and is at an appropriate distance. For the Assertiveness scores, interrater agreement was calculated as percent agreement within one point of the gold standard score. Assertiveness scores for both the smoking and shoplifting refusal role-play had an omnibus reliability of 91%. Table 1 shows the mean rates of Assertiveness scored for each role-play. All the adult rating measures have been used in previous studies conducted with this sample (Borbely et al. *2005*; Nichols et al. *2006*; Wright et al. *2004*).

Effectiveness Scale (Adolescent Coding)

Using verbal and nonverbal indicators, interns assessed how likely they felt it would be for the target student to effectively refuse the invitation (to smoke or shoplift) in a real life situation. Response options ranged from*not at all likely* (1) to *highly likely* (5). The mean Effectiveness score across both role-plays was 3.28 (*SD* = 1.38). Table 1 shows the mean score within each role-play.

Adolescent Coding Criteria

As they applied the Refusal Effectiveness scores, interns documented the criteria used to determine each score. Interns were asked to briefly provide a reason why they applied each score and then list up to eight specific verbal and nonverbal behaviors they observed during the role-play that demonstrated why they felt the score was appropriate. The mean number of criteria listed across interns was 5.36 (*SD* = 1.5).

Data Analysis

Two steps were conducted to examine adolescent coding criteria. Criteria statements for each score were reviewed within each Effectiveness level. Table 2 displays sample statements along with the frequency of each Effectiveness level by role-play type. Then interns' listed criteria behaviors were reviewed and categorized as follows: verbal, voice, body, face, global, and unclear/uncodable. Examples of each category are given in Table 3. The percentage of each category was computed both overall and by role-play type.

Table 2 Sample adolescent coding criteria by category

Category	**Sample responses**	**Frequency**		
		Overall	**Smoking**	**Shoplifting**

		N	**%**	***n***	**%**	***n***	**%**
Verbal response	Strong and reasonable arguments His answer was very short She kept saying “No, I don’t want to.” She gave detailed explanation At one prompt she thought over her answer	64	19	33	18	31	19
Voice tone/quality	Low voice Lots of hesitation Her tone was great Voice is going down every time	59	17	31	12	28	18
Body language	His body swayed She played with her fingers Good posture Her hand was moving when she spoke	90	26	49	27	41	26
Facial expression	Poor eye contact. Looking down Big smile He was talking with a confident smile	85	25	46	25	39	25
Global characteristics	Confident A little nervous She was doubtful	36	10	19	10	17	11
Unclear/uncodable	Acceptance of afraidness Hands together (nervousness)	9	3	6	3	3	2

*N*s vary by category due to variations in the number of criteria listed by interns. Interns were given up to eight opportunities to list criteria for each Effectiveness score coded. The maximum number of criteria across all role-plays would be 504; however, interns averaged 5.36 (*SD* = .15) criteria for each code

Table 3 Sample adolescent coding statements by Effectiveness score

Level of effectiveness	**Sample adolescent criterion**
1 Adolescent would be completely ineffective at resolving the task in real life	I rated him a 1 because he was very nervous, he swayed, his voice was low, the responses were short and unreasonable. Also, there were lots of hesitations during the speeches and very poor eye contact With her attitude, she showed that she was very nervous. Her answers were very short. She did not have character I rated the adolescent so, because this girl put the sunglass into her pocket, but she started to refuse at the second prompt to the fourth prompt. Her body was swaying. She talked in a low voice. She talked with hesitation. So she would very easy to be convince by the confederate
2 It is highly unlikely the adolescent would be able to resolve the task in real life	I rated her a 2 because she swayed, she didn't have responses on the first two questions that were asked. She only shook her head. That showed the nervousness in her. Her voice was also lower than the confederate. But she made a good and reasonable response on the 4th prompt, showed good eye contact This boy is vulnerable and seems sensitive. If the confederate played with his feelings he would accept. In his face, he expresses fear and it is obvious
3 It is possible, although unlikely, the adolescent would resolve the task in real life	I rated him a 3 because although he had a normal voice, he didn't show very good eye contact. He had his hands in his pockets. He gave good responses at first, but then turned short and simple. He also said that he was scared to smoke I rated him a 3 because he has a hesitation on the 3rd prompt. His speech is short, simple, and not very reasonable. But he showed good eye contact. He is confident and calm I rated the adolescent so, because this girl swayed her body a lot. At [the] first three prompts the girl kept saying "No." However, she

	made good eye contact and she gave a good explanation at the fourth prompt

Associations between the original programmatic coding and adolescent ratings of refusal skill effectiveness were assessed in two steps. First, correlations were run between programmatic ratings of both verbal refusal strategies and nonverbal behaviors and adolescent Effectiveness ratings within each refusal skill situation. Finally, multivariate models were run for each refusal skill situation by regressing the Effectiveness score on the programmatic verbal strategies and nonverbal behaviors.

Results

Table 3 shows interns placed great emphasis on how confident and serious the adolescent appeared. They found short and simple answers to be ineffective, being more convinced by what they termed reasonable and logical answers to the initial request. Few examples of what constitutes a reasonable request were supplied; however, stating not wanting to get into trouble or to get caught were both mentioned as reasonable. The specific verbal and nonverbal examples supplied by the interns also indicated that short simple answers, including just saying “no,” were not considered reasonable, and longer, more detailed arguments were considered more effective.

Table 2 shows the percentage of each coding criteria category both overall and by role-play type. Approximately one fifth of the reasons adolescents gave for assigning their Refusal Effectiveness scores concerned verbal responses to prompts. Similarly, 17% of the criteria responses included attributes of voice tone and speed. Approximately half of the coding criteria were attributed to either the adolescent’s body language or facial expression. In addition 10% of the interns’ criteria were attributed to global characteristics that are not easily classified as either verbal or nonverbal. There were no differences in the distribution of categories by role-play; however, the average number of responses reported was higher for smoking than shoplifting, $F(1, 62) = 4.24$, $p < .05$, $M = 5.75$ ($SD = 1.32$) versus $M = 4.97$ ($SD = 1.69$).

The use of Simple No, as defined by the programmatic coding, was negatively associated with adolescent ratings of Refusal Effectiveness in the shoplifting and smoking role-plays (see Table 4). The verbal strategy of Declarative Statements, however, was positively associated with adolescent ratings of Refusal Effectiveness in the smoking role-play, and Reversing the Pressure was positively associated with adolescent ratings of Refusal Effectiveness in the shoplifting role-play. Programmatic definitions of Assertiveness and adolescent ratings of Effectiveness in real life were positively associated for both shoplifting and smoking. All other correlations were not significant.

Table 4 Correlations among adult and adolescent ratings within each refusal skill role-play

Adult ratings	**Adolescent effectiveness**	
	Smoking context (*n* = 32)	**Shoplifting context (*n* = 31)**
Simple no	−.45*	−.39*
Declarative statement	.54**	−.23
Give an excuse	−.08	−.07
Reverse the pressure	.01	.51**
Alternatives	NA	.30
Assertiveness	.57**	.69**

* $p < .05$, ** $p < .01$

Table 5 shows the multivariate models for Refusal Effectiveness in both role-plays. For both smoking, $F(4, 26) = 6.25$, $p = .001$, and shoplifting, $F(4, 21) = 5.49$, $p < .01$, refusal, significant positive association were found for programmatic definitions of nonverbal Assertiveness and adolescent ratings of Effectiveness. For smoking refusal there was also a marginally significant ($p = .054$) negative association for use of Simple No and adolescent Effectiveness ratings.

Table 5 Multivariate models of adult ratings on adolescent perceptions of effectiveness

Adult ratings	**Adolescent ratings of effectiveness**	
	Smoking context (*n* = 32)	**Shoplifting context (*n* = 31)**
	B	**B**
Assertiveness	.52**	.45*
Simple no	$-.43^{+}$	−.20
Declarative statements	.02	−.18
Reverse the pressure	−.23	.23
R^2	.41	.42

$^{+}$ $p < .10$, * $p < .05$, ** $p < .01$

Discussion

This study examined associations between adolescent perceptions of what constitutes an effective refusal in real life with verbal and nonverbal strategies that have been identified by one

of the leading drug prevention programs as effective. The high school interns perceived nonverbal assertive behavior to be effective, in line with programmatic criteria. A positive association was also found between the program's verbal strategy of making Declarative Statements (i.e., "I" statements—a verbal assertive technique) and adolescent perceptions of Effectiveness in real life; however, this association was found for the smoking role-play only. Mismatches did appear with regard to other verbal strategies. Using a Simple No, one of the verbal strategies taught in the drug prevention program, was negatively associated with adolescent perceptions of Effectiveness in both the smoking and shoplifting role-plays. Likewise, no association was found between the program's verbal strategy of Excuses and adolescent perceptions of Effectiveness. In the multivariate analysis, programmatic measures of nonverbal assertiveness were the only significant refusal component and accounted for the majority of the variance in the adolescent ratings of Effectiveness. Though it is not surprising that both programmatic and adolescent coding focused on nonverbal indicators, given the coding parameters provided to the interns, the marginally significant negative association of a Simple No within this multivariate model lends additional support to the idea that this strategy is counter-productive in the eyes of adolescents. These findings suggest that programs that emphasis the use of verbal tactics such as a providing a simple no or giving an excuse may lose credibility with adolescents.

In addition, another verbal strategy that was considered problematic by intervention developers due to its aggressive content (reversing the pressure back onto the confederate primarily through sarcasm and/or insults) was associated with Effectiveness among adolescent raters in the shoplifting vignette. Contrary to the teachings of the prevention program, adolescents perceive the use of verbal aggressive behaviors to increase refusal efficacy when the offer is to engage in shoplifting. Given the differences in the relevance of specific verbal strategies, prevention programs may be most effective when adolescents are allowed to generate their own strategies.

The second goal of the current study was to examine adolescents' criteria for assessing refusal skill effectiveness in order to better understand their views on refusal skill ability. Even though adolescent raters were instructed to weigh nonverbal behaviors over verbal behaviors, approximately a fifth of their rating criteria indicated a verbal behavior. Short and simple responses were seen as ineffective and presenting a detailed and reasonable argument was seen as effective. This is interesting because excuses was not significantly associated with adolescent ratings of effectiveness. It is possible that the interns perceived Declarative Statements and Reversing the Pressure as presenting reasonable arguments. Interns' preference of detailed and reasonable arguments are contrary to teachings of the program, which emphasized short, simple statements over providing elaborated reasons for not engaging in the behavior.

Ten percent of their criteria included references to global characteristics, such as not having "character," being "vulnerable and…sensitive," and being "confident." These characteristics include both verbal and nonverbal behaviors that interact to provide an overall impression of the student. As proposed in the theory of meaning of behaviors (Sprujit-Metz *1999*), adolescent

raters applied affective and personal meanings to students' verbal and nonverbal behaviors in a refusal scenario. It is also interesting to note that adolescent raters gave slightly more weight to students' body language (26%) and facial expressions (25%) than voice tone or quality (17%); voice pattern has previously been found to be associated with appearing natural and assertive among adult raters (Sussman et al. *1993*).

Limitations

The study has several limitations that should be noted. Since interns were instructed to give more weight to nonverbal over verbal behaviors, findings showing a stronger endorsement of nonverbal behaviors must be ignored. Future studies should allow adolescent raters broader range in defining effectiveness. The majority of participants attended parochial school, which affects the generalizability of the results to other adolescent populations. Limitations also exist in terms of the adolescent coders. Specifically, adolescent coders were chosen from an internship program and may not represent the original population. All of the interns spoke English as their second language and had immigrated to the United States as young children or preadolescents. Although the original study included immigrant students and students with similar cultural backgrounds as the interns, they do represent a smaller percentage of the total population. Likewise, interns were slightly older than most groups targeted for drug prevention programming. However, because the data were collected approximately 5 years prior to the interns' coding, the videotaped role-plays represent the same time period in which the interns attended middle school. In addition, only four adolescents were able to participate in the internship. A larger and more diverse group of coders may have produced different results.

Finally, this pilot study represents a re-analysis of data originally collected over 10 years ago. In the past decade there have been a number of changes in the field of adolescent preventive interventions that are not reflected in the present study. Though peer refusal techniques are still a component of the majority of recommended programs, there are also evidence-based programs that focus on youth development and adult mentorship as well as multilevel programs that routinely include family and community components (Bauman et al. *2002*; Tebes et al. *2007*). The youth development approach is based upon a resiliency approach (Tebes et al. *2007*) that may allow for a greater inclusion of adolescent perceptions. Likewise, mentoring and multilevel approaches have the potential to expose adolescents to adult perspectives outside of the classroom that may expand their understanding of an effective refusal technique. It is also arguable that the "youth culture" has changed considerably within the last decade, given a number of societal developments including an increase in internet use and online social networks. Adolescents' perception of their peers has expanded to include individuals they have never met face-to-face. Likewise the rise in phenomenon such as violent virtual gaming and aggressive antics of media role models may be contributing to a greater acceptance of aggressive responses to peer interactions as was tentatively found in this study.

In spite of these limitations, this study is one of the first to examine adolescent perceptions of adolescent refusal skill ability and associations between adolescent perceptions of effectiveness and programmatic standards. The study's population—urban multi-ethnic early adolescents—are underrepresented in the field, especially with regard to social skills and competence. Future studies should examine perceptions of refusal skill ability among early adolescents and adolescents from other regions and demographic backgrounds.

Conclusions

This study suggests the importance of incorporating adolescent perceptions and diverse experiences in the design and evaluation of prevention programs. A curricula design that allows adolescents to incorporate refusal skill strategies they find relevant and salient instead of providing predetermined refusal techniques and scripted activities may increase the effectiveness of programs. There are numerous possibilities for incorporating adolescent perceptions into effective prevention strategies, such as the youth development approach mentioned above. For school-based approaches like the prevention program upon which this study was based, one method would be to draw refusal techniques and example situations directly from the students and incorporate them into the lesson plan as it is being taught. Both incorporating adolescent perceptions and providing opportunities for them to practice realistic situations requires interactive and participatory teaching methods. Although studies have demonstrated interactive programs to be more effective than didactic programs (Tobler and Stratton *1997*), studies of program fidelity and dissemination show the teaching of refusal skills, especially through the use of participatory methods, are given only minimal attention in the implementation of drug prevention programs (Ennett et al. *2003*; Hansen and McNeal *1999*). Finding venues for successfully incorporating the personal and affective meanings that health behaviors, including refusing unwanted requests, hold for adolescents is a critical next step in the field.

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