REFUSAL ASSERTION VERSUS CONVERSATIONAL SKILL ROLE-PLAY COMPETENCE: RELEVANCE TO PREVENTION OF TOBACCO USE

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SUMMARY

Conversational and refusal assertion skills of 768 seventh grade youth were assessed through ratings of global (for example, effectiveness) and non-verbal (for example, eye contact) behaviour performed in two role-play scenarios. The ratings were completed after each scenario by the subjects themselves, as well as by classmate and trained adult observers. Use of the Hays and Hayashi multitrait scaling method to interpret these data revealed two results. First, the items used to measure role-play behaviour did not achieve sufficient internal consistency to create global and non-verbal composites. Second, inter-rater agreement and discriminant validity were obtained only for ratings of the global effectiveness of each of the two social skills. Next, a series of multiple regression analyses indicated that an index of the global effectiveness of refusal assertion skill, but not of conversational skill, was predictive of intention to use tobacco. Those who were relatively unskilful at refusing offers were more likely to intend to use tobacco. Analyses exploring relations of trained observer ratings of the effectiveness of both role-play types, trained observer ratings of the other global and non-verbal items, and subjects' intention to use tobacco indicated that only a hesitant voice pattern was both negatively predictive of effective refusal assertion and positively predictive of intention to use tobacco in the future. In other words, those who are hesitant when they refuse a tobacco offer are the ones most likely to report an intention to use tobacco in the future. The consistency of this last finding in the tobacco use prevention literature is discussed.

INTRODUCTION

Social skills training is an integral component of cognitive-behavioural programmes used to help mitigate a variety of life difficulties, including shyness, depression, psychiatric disorder relapse, and drug abuse.[1-4] Of particular importance to producing therapeutic change is instruction in two types of social skill: conversational skill and refusal assertion skill. Conversational skill involves the ability to initiate and maintain a conversation, whereas refusal assertion skill involves the ability to refuse requests or commands made by others. Instruction in these two social skills has been posited as being of particular importance in achieving successful programme effects in the adolescent tobacco and drug use prevention context.[5-7] Some prevention researchers have hypothesized that youth are less likely to intend to use tobacco if they are effective

at generating conversation;[6] such youth would be relatively better able to avoid using tobacco or drugs as a primary means of creating social bonds with peers. Most researchers have hypothesized that youth are less likely to intend to use tobacco if they are effective at refusing requests of others; such youth would be relatively facile at combating negative peer pressures such as dares to use tobacco. Valid assessment of acquisition and use of these two skills is needed so that programme success can be attributed to their mediating effects.

A variety of strategies have been used in previous studies to assess children's conversational and refusal assertion skills, including role-playing, direct behavioural observation, self-report questionnaires, and self-ratings.[4] In tobacco or drug use prevention research, audiotaped role-play, observer ratings, and self-rating methods have been used to assess conversational skill.[8,9] Pentz[8] used an audiotaped rating of social competence, as well as observer ratings of assertiveness, in two studies which provided equivocal empirical support that social competence exerts a preventive effect on substance use. Wills *et al.*[9] used a questionnaire approach adapted from Gambrill and Richey[10] and found that, whereas refusal assertion skill was inversely related to substance use, some elements of general social skill (such as conversation initiation, giving compliments) were positively related to substance use. They suggested that socially active youth are more likely to enter into multiple social situations in which drugs are likely to be experimented with, leading them subsequently to experiment with drugs.

Regarding measurement of refusal assertion skill in tobacco or drug use prevention research, multiple strategies of assessment include ratings of audiotaped role-plays,[11] live ratings assessed by peer raters, the actor, and adult raters,[12,13] paper-and-pencil responses to scenarios,[14] and questionnaire responses.[15] Generally, these studies find a negative relation between ability to perform refusal assertion strategies well and likelihood to have used tobacco or intention to use tobacco.

No tobacco use prevention study has assessed role-played conversational and refusal assertion skills with the same adolescents. Furthermore, previous research has not examined systematically the discriminant validity of different types of role-played social skill ratings as predictors of intention to use tobacco. The present study used the statistical approach outlined by Hays and Hayashi[16] to investigate systematically the convergent and discriminant validity of global (for example, judgements of effectiveness, friendliness) and non-verbal (for example, eye contact) social skills measures assessed by four different sources of ratings. The study also performed regression analyses to investigate which social skills items predict intention to use tobacco.

METHOD

Subjects

The sample consisted of 768 seventh grade students (approximately 12 years old). The subjects were 50 per cent male, 59 per cent white, 21 per cent Hispanic, and 20 per cent other ethnicities. Students were sampled from 48 junior high schools in southern California, evenly split by rural/urban region.[17] At each school, four classes were selected randomly to be included in the assessment. Four students were selected randomly from each class, blocked by gender (half male), to participate as role-play subjects. All selected subjects agreed to participate in this study.

Measures

Parallel questionnaire item sets were developed for four raters in each role-play: an adult observer, two student assistants, and the role-play subject. Two copies of these same item sets

Table I. Description of the items and raters for the two role-plays

| | Role-play type and raters | | | | | | | |
| | Conversational skill | | | | Refusal assertion skill | | | |
Item sets	Adult	MC	FC	SB	Adult	MC	FC	SB
Global rating item set								
Effectiveness item	×	×	×	×	×	×	×	×
Naturalness item	×	×	×	×	×	×	×	×
Nervousness item	×	×	×	×	×	×	×	×
Friendliness item	×	×	×	×	×	×	×	×
Non-verbal (specific) rating item set								
Eye contact item	×	×	×	×	×	×	×	×
Facial expression item	×	×	×	×	×	×	×	×
Body angle item	×	×	×	×	×	×	×	×
Voice speech pattern item	×	×	×	×	×	×	×	×
Voice tone item	×	×	×	×	×	×	×	×

MC = male confederate; FC = female confederate; SB = subject; × indicates item rating completed within item set, skill type, and rater. There are nine items listed on the left of this table. An item rated by one rater is said to be an 'item rating'. Items collapsed across raters are said to compose an 'index'. Items nested within the global or non-verbal type of rating are said to be a member of an 'item set'.

were used by each rater to assess (a) general conversational skill performance and (b) refusal assertion skill performance, as described in the procedure section to follow. A description of the item sets and raters for two role-plays is shown in Table I.

Global social skill qualities assessed in the role-plays included (a) the effectiveness/correctness of the role-play (definitely effective/correct, somewhat, not at all), (b) nervousness (definitely yes, mostly, slightly, definitely not), (c) friendliness (definitely yes, mostly, slightly, definitely not), and (d) naturalness ('Do you think the student would act the same way if this were a real-life situation?'; definitely yes, probably, probably not, definitely not). The use of a naturalness item has recently been found to be predictive of whether or not the person would perform that behaviour in 'real-life'.[18] In addition, the adult rater assessed the assertiveness of the role-play (definitely yes, mostly, slightly, definitely not).

Non-verbal behaviour social skill qualities assessed in the role-plays included (a) eye contact (all of the time, some of the time, none of the time), (b) facial expression (frowning/serious, neutral, smiling), (c) body angle (leaned or stepped backward, stood upright, leaned forward), (d) voice speech pattern (hesitant, normal, firm), and (e) voice tone (soft, medium, loud). The four global rating items and five non-verbal rating items, completed by all four raters, are among the primary measures used in role-play assessments.[12,13,18,19] The number of response categories for the global and non-verbal ratings were limited to three or four response options because they permit more reliable completion relative to more complex response systems.[20]

Subjects also completed an item after the second role-play rating which indicated their intention to use tobacco ('Do you think you will try tobacco in the future?'; definitely yes, probably, probably not, definitely not). Behavioural intention to use tobacco is the best non-behavioural predictor of future tobacco use among adolescents.[21]

Procedure

Persons involved in the assessment procedure for each class included (a) one adult collector, who brought subjects individually to an empty classroom after instructing them that they would be involved in a study to assess their social behaviour; (b) two student assistants per class who participated in the role-plays; and (c) the subject whose behaviour was evaluated. The adult, two assistants, and subject provided four sources of ratings for each role-play type (Table I).

Adult data collectors

A total of three adult data collectors previously had been trained extensively regarding how to assess role-play behaviour, using the instrument described previously in the measures section. Live and videotaped role-play scenarios of the two types used in the present study served as training stimuli. Across all behaviours, raters were trained to an 0·85 inter-rater agreement criterion based on written operational definitions of each response category. In the present study, each rater assessed approximately one-third of the students (that is, only one adult rater visited each classroom). In addition, raters simultaneously assessed additional subjects from videotaped scenarios (taken from other classes), to prevent observer drift effects. The adult raters coordinated the assessment procedure.

Student assistants

The classroom teacher was instructed to select a boy and a girl, who would be likely to be cooperative participants, to serve as the assistants for all of the role-play assessments in that class. The assistants were to participate in the role-plays as well as rate the subjects' performance. Because the assistants were to learn a brief script and complete a written item set after a role-play sequence, the teacher was instructed to choose persons who were of at least average reading skills. Once selected, the two student assistants were informed by the adult data collector that they would be helping to conduct the role-plays. The girl was to participate in the role-plays involving the female subjects (the male assistant was to serve only as observer and rater), and the male assistant was to participate in the role-plays involving the male subjects (the female assistant was to serve only as observer and rater). Same-sexed scenarios were selected for the role-plays since most peer social interactions at that age involve same-sex groups.[22]

The assistants were instructed that in the first scenario (conversational skill) they were to imagine that they were sitting in front of their house (having forgotten their keys and locked themselves out) when a student (the role-play subject) approaches them and speaks to them first. The assistant then was to respond to the subject's greeting by saying: 'Hi...I'm just sitting here waiting for my mom to get home. I locked myself out of the house.' Next, the subject was to respond to this statement. The adult rater then was to stop the scene, and the adult rater, the subject, and the two peer assistants were to rate the behaviour of the subject considered across both the greeting and the additional conversation statements.

For the second scenario (refusal assertion skill), the assistants were informed that they were to be the first to speak, following their script. In this scenario, the assistant was to say (using a cigarette pack prop): 'Here, do you want a cigarette?' After the subject gave a first response, the assistant was to say: 'It's OK...Go ahead, take one. One puff won't hurt you.' Then the subject was to give a second response. The adult rater then was to stop the scene, and the four raters were to assess the behaviour of the subject considered across the first refusal and second refusal statements.

Subjects were directed to the role-play assessment location after the assistants and the adult data collector had prepared for the role-play scenarios. The assistants were provided several minutes to become familiar with the scenes and their lines. They were instructed to pay attention to how the subject acted because they were to be answering questions about the subject's behaviour. They were told to pay particular attention to the subject's posture and eye contact, and how nervous and how friendly the subject sounded. The assistants were told to adhere to the exact wording of their script.

Student subjects

The classroom teacher was instructed to pick 'at random' two male and two female students to participate as subjects in the role-plays. If a student did not wish to participate, then the teacher was to pick a replacement student. The subject was unaware of what the assistants had been instructed. The subject was informed that he or she was to take part in two role-plays. The first, 'front porch' scenario was described in terms of the setting of the role-play: that a student, the subject had seen during lunchtime at school but never talked to before, and who he or she wanted to meet, was seen sitting outside a house one day after school. The subject was instructed to start a conversation with this other person. After the first role-play was completed, the 'cigarette smoking' scenario was described in terms of the setting of that role-play: that the subject was at a party and someone he or she had seen from school was smoking in front of them. Subjects were told to act as if this were a real situation. When the assessment procedure was completed for one subject, the next subject was brought to the assessment location.

As in most role-play assessments, ratings made by multiple raters are completed after each role-play or role-play type. The subject usually is aware that he or she will be rated; it is possible that maximal performance is being measured. Thus, if subjects respond with behaviour that is quite different from that in their everyday life (for example, in a waiting room before doing the role-play[18]), it is relatively unlikely that they will actually perform the behaviours exhibited in the role-plays when applicable outside the laboratory. One could assess all role-plays at a single post-test to minimize test reactivity; however, it is likely that recall inhibition effects across role-play types would minimize the quality of the ratings. There are at least three alternatives to this role-play form of assessment that would minimize a test reactivity confound. One would be to observe subjects' behavioural skills in the natural environment in tobacco-use-related situations. However, in young adolescence such situations are difficult to observe in public and are too infrequent to enable a practical means of assessment.[23] A second alternative would be to use assistants who approach subjects who are blind to the purposes of the study, and involve them in role-play situations which approximate the ones used in the present study. Alternatively, subjects could be rated behind a one-way mirror in a variation of the role-play assessment approach. Ethical concerns (deception of children) preclude use of the latter two procedures.

Analysis

First, as a preliminary analysis, Cronbach's alpha was calculated among the four items composing the global rating item set, and the five items composing the non-verbal rating item set, to establish whether or not the internal consistency of the item sets was high enough to create global and non-verbal composites. Cronbach alphas of 0·5 were considered sufficiently high to form indices, since for each index only six correlations were included from four sources of ratings, and three of the ratings were from untrained and independent sources.

Next, convergent and discriminant validity was assessed for all items by using the multitrait scaling method outlined by Hays and Hayashi.[16] This method involves calculation of item-rating/index correlations. In the present application of this method, ratings of an item summed across the four raters are defined as composing an 'index'. A correlation is calculated between each item rating and each index, the latter consisting of the sum of the four item ratings. Correlations between each of the item ratings hypothesized to define an index (referred to as a 'trait' by Hays and Hayashi[16]) and the index are calculated with a correction for item-rating/index overlap. Next, differences between the correlation of the item rating and the index it is hypothesized to measure ('same-index correlation') is compared with the correlations between the item rating and the other indices it is hypothesized not to measure ('different-index correlations'), examining whether these correlations differ by more than two standard errors.[16] Thus, patterns of differences between correlations are examined. For example, for any item (such as effectiveness), its correlations with its index result in four correlations, one reflecting each rater's correlation with the index. These correlations then can be compared with the correlations among each item with each index of a different type of item rated by the same raters (such as naturalness). Since there are a total of nine items, four general and five non-verbal, a total of eight differences between correlations are examined for each item-rating/index comparison (within one rater). As a decision rule, 75 per cent of the comparisons within each rater should reveal differences by two standard errors between the same-index correlation and different-index correlations to demonstrate sufficient discriminant validity. Convergence among ratings of the same item was established by the size of the rating/index correlations and by calculation of Cronbach's alpha. Convergence assessed by these procedures was expected to be somewhat lower than that typically reported in psychometric scale development studies, because in this study convergence was based on independent methods of assessment. Discriminant validity criteria were considered to be more reflective of index validity.

The correlations between indices were evaluated in two additional ways. First, the zero-order correlations between the indices were examined. Second, the correlations of each index with a 'total index' (items summed across raters and item sets within each role-play type) adjusted for unreliability of measurement were examined. Index/total-index correlations should be substantially less than unity to support discriminant validity of the indices.

Finally, using the same methodological procedure, it was examined whether or not indices which had shown discriminant validity *within* role-play types (that is, conversational or refusal assertion role-plays) were discriminable *across* role-play types. This was accomplished by comparing item-rating/index correlations within versus between role-play types.

This first set of analyses accomplished an evaluation of internal consistency of the items composing each item set, inter-rater consistency of each item, and calculation of discriminant validity of items composing different indices. Results from these analyses indicated which predictors should be included in subsequent multiple regression analyses to compare role-played conversational skill versus refusal assertion skill as predictors of behavioural intention to use tobacco, as well as explore relations among the predictors.

RESULTS

Preliminary analyses

Preliminary internal consistency analyses revealed that neither global rating items, nor the non-verbal rating items, achieved sufficiently high internal consistency coefficients to create global or

non-verbal composites. Thus, items were evaluated separately in the subsequent analyses, as is the case in most role-play assessment studies of this type.[13]

Multitrait scaling method analyses

Results for the conversational skill role-play indicated that only two of nine indices, facial expression and global effectiveness, showed discriminant validity. Specifically, each of the four ratings of facial expression correlated better with the index of facial expression than with any other indices; that is, same-index correlations were greater than two standard errors larger than were different-index correlations among the four items composing the facial expression index (Cronbach's alpha = 0·52). An identical pattern of findings was obtained for the four different ratings of global effectiveness; that is, same-index correlations were more than two standard errors larger than were different-index correlations among the four items composing the effectiveness index (Cronbach's alpha = 0·59). Not surprisingly, the index/total-index correlations adjusted for unreliability of measurement were also substantially less than unity for these indices (the facial expression index/total-index r corrected for overlap = $-0·23$; the effectiveness index/total-index r corrected for overlap = 0·03).

Refusal assertion skill role-play analyses revealed an identical pattern of results. The facial expression index/total-index r corrected for overlap = $-0·08$ (facial expression index Cronbach's alpha = 0·53). The effectiveness index/total-index $r = 0·07$ (effectiveness index Cronbach's alpha = 0·60). In summary, sufficiently large differences between same-index and different-index correlations, sufficiently low index/total-index correlations, and sufficiently high Cronbach's alpha coefficients were achieved for facial expression and global effectiveness across both conversational skill and refusal assertion skill role-plays.

Inter-rater consistency and discriminant validity were estimated *across* the two role-play types using the two sets of facial expression ratings and the two sets of global effectiveness ratings supported in the previous analyses, each item from four sources of ratings. The facial expression items across the two role-play types did not show discriminant validity with each other, whereas the effectiveness judgements across the two role-play types maintained the same discriminant validity and adequate alphas. These analyses indicated that only the global effectiveness judgements were reliable across trained and untrained raters, and discriminable when rated across different role-play types.

Regression analyses

The first regression model evaluated the relative strength of the conversational skill global effectiveness index versus the refusal assertion skill global effectiveness index as predictors of intention to use tobacco. Indices were composed of the sum of the ratings on these items across the four raters. The model was significant ($F (2, 768) = 19·90, p < 0·0001; R$-square $= 0·06$). The refusal assertion global effectiveness index exerted a significant predictive effect ($F (1, 768) = 37·76, p < 0·0001; r$ with intention $= 0·24$); the conversational skill global effectiveness index did not ($F (1, 768) = 2·04, p > 0·1, r$ with intention $= 0·05$). Effective refusal assertion skill was negatively predictive of intention to use tobacco in the future.

All subjects provided behavioural intention data. In addition, subjects provided self-report data of tobacco use on a separate questionnaire completed during the same class session. No names or identification numbers were placed on the role-play assessments. An attempt was made to match the assessments with the questionnaire on the basis of gender and birth date. Only half of the questionnaires could be matched to the role-play assessments. Analyses using a dataset

Table II. Multiple regression analyses predicting conversational skill global effectiveness, refusal assertion skill global effectiveness, and intention to use tobacco from other global and non-verbal behavior ratings

Conversational skill global effectiveness	
Model *F*,*R*-squared	139·03‡, 0·61
Significant effect *F*s:	
facial expression	3·70*
voice pattern	9·94†
voice tone	7·91†
sounding real	126·10‡
nervousness	17·41‡
assertiveness	81·29‡
friendliness	17·82‡
Refusal assertion skill global effectiveness	
Model *F*,*R*-squared	81·18‡, 0·47
Significant effect *F*s:	
voice pattern	5·92*
sounding real	48·70‡
nervousness	5·02*
assertiveness	193·18‡
friendliness	4·04*
Intention to use tobacco	
Model *F*,*R*-squared	3·49†, 0·04
Significant effect *F*s:	
eye contact	4·09*
facial expression	8·44*
voice pattern	6·12†
voice tone	3·51, $p < 0.06$

* $p < 0.05$, † $p < 0.01$, ‡ $p < 0.0001$; model d.f. = 9, 768; only trained adult raters' data were included in these models.

which merged role-play data with tobacco use self-reports indicated no relation of overall conversational skill to lifetime and current cigarette smoking, whereas a negative relation was found between refusal assertion skill and lifetime and current cigarette smoking. These results were consistent with the behavioural intention data. However, because (a) prospective behaviour data were not available, (b) behaviour intention data would apply to those who never tried tobacco as well as those who did, and (c) only behaviour intention data were available on the full sample, tobacco use behaviour data were not presented in the text.

A second set of models explored which of the other global items and non-verbal items predicted conversational skill global effectiveness and refusal assertion skill global effectiveness. Only the adult raters' assessments were used in this set of analyses since reliability of ratings on all items had been established only for this source (that is, adult raters previously had been trained to a high criterion level of inter-rater agreement), and inter-rater agreement with the untrained raters was relatively low on all items aside from facial expression and global effectiveness. The model predicting conversational skill global effectiveness was significant (Table II). Conversational skill global effectiveness was predicted by facial expression, voice pattern, voice tone, sounding

natural/real, nervousness, assertiveness, and friendliness. Less smiling, a more firm voice pattern, a louder voice tone, and appearing relatively natural/real, relaxed, assertive, and friendly were associated with effective conversational skill. The model predicting refusal assertion skill global effectiveness was also significant (Table II). Refusal assertion skill global effectiveness was predicted by voice pattern, sounding natural/real, nervousness, assertiveness, and friendliness. A relatively firm voice pattern, and appearing relatively natural/real, relaxed, assertive, and friendly were associated with effective refusal assertion skill. Thus, the patterns of global and non-verbal behaviours predictive of each skill type were quite similar.

Finally, a model was calculated to determine which global items and non-verbal items predict intention to use tobacco in the future. This model was significant (Table II). Eye contact, facial expression, voice pattern, and voice tone were predictive of intention to use tobacco. Greater eye contact, less smiling, a more hesitating voice pattern, and a soft voice while performing the role-play predicted greater intention to use tobacco in the future.

DISCUSSION

These findings highlight the usefulness of the Hays and Hayashi[16] procedure for multitrait scaling as it applies to an important health research area. In particular, this procedure is a useful extension of the multitrait-multimethod (MTMM) methodology outlined by Campbell and Fiske.[24] Campbell and Fiske's guidelines involve establishing convergent and discriminant validities basically through the inspection of the sizes of the correlation coefficients, whereas Hays and Hayashi's[16] procedure systematizes this inspection by computing standard errors and by summarizing test results. In addition, Hays and Hayashi's extension of the Campbell and Fiske approach is quite flexible in its range of applications. For example, both item discrimination and discriminant validity of constructs can be estimated with the same procedure.

In assessing the MTMM matrix, Campbell and Fiske recommended the use of four criteria. The first criterion is for convergent validity, and requires that the convergent validities within a trait (in the present case, an item considered across multiple raters) be significantly different from zero and substantial in magnitude. The other three criteria are for discriminant validity. The second criterion requires that convergent validity correlations exceed correlations between dissimilar traits measured through different methods; that is, the validity coefficients for a trait should be higher than the correlation obtained between that variable and any other variable having neither trait nor method in common. The third criterion requires that the convergent validity coefficients must exceed correlations between dissimilar traits measured by the same method. This involves comparing the values in the convergent validity diagonal to the values in the heterotrait-monomethod triangles. The final discriminant validity criterion states that the pattern of trait intercorrelations should be replicated within all heterotrait-monomethod and heterotrait-heteromethod triangles. The Hays and Hayashi approach uses a statistical software program which can evaluate any of the first three criteria through a means that extends Campbell and Fiske's criteria to instances in which only a single method of measurement (such as self-report) is used. Further, this procedure involves a step-by-step approach, involving use of statistical decision rules, towards the estimation of item convergence and discrimination among multiple items that form Likert-type scales. An alternative statistical procedure that compares hierarchically nested structural models to provide an MTMM-type assessment is provided by Graham et al.[12] This alternative is much more complex and can lead to errors of inference if the model is misspecified.[25]

As a result of using the Hays and Hayashi approach, the following findings were obtained in the present study. First, items composing each item set (global or non-verbal) did not show high

inter-correlations. This result would be expected as these items were intended to measure different dimensions of behaviour (for example, effectiveness versus naturalness). Second, high inter-rater agreement and discriminant validity were obtained for ratings of the global effectiveness of the behaviours, but not for any other rating of global or non-verbal behaviour, considered across the four raters and two role-play types. This result is curious, but not totally surprising. Many people are able to report with ease whether or not another is socially skilful in some context. However, providing any more specific rating requires training and practice or else little reliability may be achieved, even when relatively little inference seems to be involved in making the judgements.[1,26]

The multiple regression analyses retained the global effectiveness indices as predictors of intention to use tobacco. Refusal assertion skill global effectiveness, but not conversational skill global effectiveness, was predictive of intention to use tobacco. These results generally were consistent with those achieved by Wills *et al.*[9] Whether rated through self-report items or role-play effectiveness, it appears that conversational skill is not predictive of intention to use tobacco. It is likely the case that conversational skill helps enhance the individual's social mobility – that is, making liaisons with social groups that provide access to desirable resources.[27,28] However, the use that a person makes of such skill is dependent on whether or not the person approves of, or disapproves of, tobacco use. If a teenager approves of tobacco use, conversational skill may *promote* tobacco use, because he or she might be relatively better able to acquire tobacco in peer group social interactions. If the youth disapproves of tobacco use, conversational skill may *inhibit* tobacco use, because he or she would be relatively better able to avoid social pressures to use the substance (for example, by skilfully changing the topic of conversation). Future studies might predict an interaction effect between conversational skill and tobacco use intention on subsequent tobacco use. While the Wills *et al.*[9] study found that subjective ease of conversation initiation was positively predictive of substance use, an inspection of their items suggests that they tapped provocative or age-inappropriate behaviours among the young adolescents composing their sample (for example, requests to go on dates). The present study combined conversation initiation with conversation continuation skills in the assessment; yet, both skills were tailored towards the very beginning of the establishment of a relationship, and the present data indicate that conversation initiation *per se* is unrelated to intention to use tobacco.

Only a hesitant voice pattern was both negatively predictive of effective refusal assertion and positively predictive of intention to use tobacco in the future, as assessed by the trained adult raters. Although naturalness/realness, nervousness, assertiveness, and friendliness of the role-play were predictive of both conversational skill global effectiveness and refusal assertion skill global effectiveness, these other items were not predictive of intention to use tobacco. Conversely, greater eye contact and lack of smiling predicted intention to use tobacco but did not predict either of the role-play global effectiveness items. These results indicate only a modest relation between qualities of social skills and tobacco-oriented behaviour. Recent analysis of primary prevention data suggests that perception of peer approval of substance use, but not social skill *per se*, mediates program effectiveness.[5,29]

Still, the relations between some refusal assertion skill components and intention to use tobacco converge across several studies, whether tapping refusal assertion skill through audio-taped assessments,[11] paper-and-pencil scenarios,[14] or live role-play ratings as in the present study. In particular, those who are hesitant when they refuse a tobacco offer are the ones most likely to use or report intention to use tobacco in the future. This finding, and the finding that certain types of associated refusal assertion strategies (such as hedging) are predictive of tobacco use, suggest that the key to refusal assertion training is to teach youth to respond quickly, firmly and negatively to an offer. Other types of behaviours may not be as important for the effective refusal of tobacco offers.

On the other hand, these findings might be interpreted in a converse direction. Perhaps youth exhibit certain refusal assertion behaviours because they desire to smoke. They may not desire to perform better, and thus they hesitate when refusing an offer. Recent research does not support this interpretation. For example, one small-scale experiment found that refusal assertion skill improvement was due to programme effects on learning and practice of skills, not to an effect on motivation to perform well.[19] Other data indicate that refusal assertion self-efficacy is predictive of tobacco use among previous non-triers.[15] However, prospective studies are needed to better understand the order of precedence between refusal assertion skill performance and tobacco use.

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